The Decorative Scheme of the Royal Pavilion, Brighton:

George IV's Design Ideas in the Context of European Colour Theory, 1765 – 1845

A thesis submitted in fulfillment of requirements for the degree of PhD in the Department of Art History at the University of Sussex

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I hereby declare that this thesis has not been and will not be submitted in whole or in part to another University for the award of any other degree.

Signature ……..

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Dedication

This is for my grandmother Marianne Wiehn (1923 – 2003)
and my brother Tommy (1972 – 2013).

UNIVERSITY OF SUSSEX
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The Decorative Scheme of the Royal Pavilion, Brighton: George IV's Design Ideas in the Context of European Colour Theory, 1765 – 1845

Abstract

This thesis investigates the use of colour in the interior decorations of the Royal Pavilion, Brighton. The building was created between 1785 and c.1823 by the Prince of Wales (1762 – 1830), later Prince Regent and George IV. The main aims of the thesis are firstly, to analyse the intense colour scheme of the building and set it in the historical context of colour theory and pigment production, and secondly, to establish to what extent personal tastes and fashion influenced these designs.

Chapter 1 brings together nineteenth century descriptions of and reactions to the building from early guidebooks and visitors' accounts, followed by brief outlines of restoration work carried out since 1850 and observations on how the building is experienced by visitors today.

The aim of Chapter 2 is to provide an overview of colour theory and literature in Europe between c.1765 and c.1845, in order to highlight the cultural, social and scientific background to the use of colour in art and interior design.

Chapter 3 outlines the role of key figures involved in the creation of the building. It first discusses the Prince's tastes in art and considers to what extent he may have drawn inspiration from other members of the Royal Family and earlier Oriental buildings and interiors. The chapter then discusses the artists and designers John and Frederick Crace, Robert Jones and Humphry Repton.

Chapter 4 describes the colour schemes and chromatic layout of the interior of the building in its various stages from the 1780 to the 1820s. The chapter includes a case study of the conspicuous and varied use of silver as a colour in the building, discussed in the context of the use of silver in other European interiors.

Three appendices provide detailed information of colour terms found in contemporary account books, pigments identified in the Royal Pavilion so far, their historical context and where they are found in the interiors.

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Loske, Alexandra, *'Carmine, Lake, Vermillion, Crome, Yellow and other expensive* colours': *Pigments Analysed and Identified in the Royal Pavilion and Their Historical Context.* Word document, compiled in preparation for the *Regency Colour and Beyond 1785-1845* display at the Royal Pavilion, 2013.

Notes and abbreviations:

- **George IV** is referred to thus throughout, also when not strictly referring to the period when he was king. When his specific current status as Prince of Wales (1763 - 1811), Prince Regent (1811 - 1820) or King (1820 - 1830) is significant this will be pointed out in the text.

- **The Royal Pavilion** is referred to thus throughout, also for the period when the building was not known under this name (c. pre-1838). It has been known under various names, most frequently 'Brighton Pavilion' (occasionally with the variant spelling 'Pavillon') and 'Marine Pavilion'.

- **CL** *Crace Ledger*
- **RJA** *Robert Jones Accounts 1821 - 1823.*
- **RPAA** *Royal Pavilion Abstract of Accounts, c. 1826.*
- **RPI1828** *Royal Pavilion Inventory, c. 1828*.
- **RPRB** *Royal Pavilion Requisitions Book, c. 1826*.
- **RPRF** *Royal Pavilion Restoration Files.*

Introduction and sources

The interiors of the Royal Pavilion in Brighton, created between 1786 and 1823 by a number of architects and interior designers under the patronage of King George IV (as Prince of Wales, Prince Regent and sovereign), have often been described as extremely colourful and brilliant. In 1823, the year of their completion, local writer Richard Sickelmore commented on the decorative splendour and taste of one of the new state rooms with these gushing words:

> Splendour of light and colour, with a natural and effective disposition of shade, appear to have been a grand and successful aim of this room; and art, guided by judgment, lively and polished taste, has availed itself of all sorts of materials to attain the end proposed. The splendid number of glossy jars of blue porcelain, well appropriated and judiciously placed, contribute magnificently to this effect; they excel, in richness and brilliancy, whatever the kind we have before seen, foreign or native […][1]

Many other early visitors and handbooks emphasised the particular exuberance of the colour scheme, which might have come as a surprise after having first seen the stone-coloured Indian-style exterior of the building. In 1833 historian John D. Parry noted that 'the Pavilion is enriched with the most magnificent ornaments and the gayest and most splendid colours; yet all is in keeping and well relieved.'[2] These 'gay and splendid colours' are a conspicuous feature, and perhaps the one aspect the building is mostly associated with. This thesis will interpret the chromatic exuberance of the Royal Pavilion within the context of the cultural significance of colour literature, artists' manuals and pigment availability in the early nineteenth century, while also considering the personal tastes of George IV and his designers and decorators.

The thesis aims to contribute significantly to academic research in the field of colour and interior design by means of the following: Firstly, it will set the colouring of the interior design schemes of a specific building into the art-historical context of

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[1] R. Sickelmore, *The History of Brighton, From the Earliest Period to the Present Time* (Brighton: Printed and published by and for R. Sickelmore and Co, Gleaner Office, 1823), p.30.
[2] J. D. Parry, *An Historical and Descriptive Account of the Coast of Sussex* (Brighton: Wright & Son and London: Longman & Co, 1833), p.115.

colour theory and colour literature of the late eighteenth and early nineteenth century, while also compiling data on the scientifically identified pigments used in the building. The Royal Pavilion serves here as a case study and can be considered a primary document. Its decorative schemes will be considered in their various historic stages from c.1786 to 1823, with some references to changes and repairs carried out between 1823 and 1845, when it effectively ceased to be used by members of the Royal Family. By addressing the social, intellectual and professional contexts of the principal designers and creators of the Royal Pavilion the thesis thus explores the connection between fashion, personal taste, material and chemical aspects of colour, and the general cultural and intellectual context with regard to colour.

Secondly, this thesis will look closely at which colours were used and how they were distributed in several complete interior design schemes of the Royal Pavilion in various stages of its development. This aspect will be put into the context of the beginnings of interior design as an art form in its own right and how colour theory was applied to interior design. In doing so, key figures relating to the development of the creation of the building will be identified, notably George IV himself, but also his principal designers John Crace (1754–1819), Frederick Crace (1779–1859) and Robert Jones (active 1815–1835), as well as people and buildings that might have influenced George IV's design decisions or are representative of certain trends and fashions in colour decoration, such as Humphry Repton (1752 –1818), the exotic structures at Kew and early royal Chinoiserie interiors or collections.

This thesis is the result of a Collaborative Doctoral Award between the University of Sussex and the Royal Pavilion, Brighton, and was funded by the Arts & Humanities Research Council (AHRC). The original focus of the project, as proposed by the then Keeper of the Royal Pavilion Andrew Barlow, was a study of the Royal Pavilion in relation to Johann Wolfgang von Goethe's (1749 – 1832) publications on colour theory. However, my subsequent research revealed a much wider interest in colour theory across Europe. The focus of my thesis therefore shifted to an investigation of the international connections and intellectual exchange concerning colour between

1765 and 1845. Part of my aim was to establish which, if any, colour writers, researchers and publications from English speaking countries could be linked to George IV and his designers and may therefore might have had a an influence on the decorative schemes of the Royal Pavilion.

I carried out my research part-time, beginning in 2008. In the same year a major exhibition on Chinoiserie design, *Chinese Whispers: Chinoiserie Design in Britain 1650 – 1930*, took place at Brighton Museum and Art Gallery and the Royal Pavilion. It was curated by David Beevers, then Curator of Fine Art and from 2009 the Keeper of the Royal Pavilion, and was accompanied by an exhibition catalogue.[3] While this exhibition covered a variety of aspects of Chinoiserie style, including interior decoration, the subject of colour was not dealt with specifically in either the display or the catalogue. The collaborative AHRC scholarship provided an opportunity to explore this under-researched aspect of the Royal Pavilion interiors, coinciding with major restoration and conservation projects carried out in the building, notably the Saloon scheme. The nature of the collaborative award allowed me to have practically unlimited access to the building itself, the archives and related collections, and to discuss my research with relevant conservators and curators. With the help of generous funding from INTERREG IV A France (Channel) I was able to present some of my research to the general public in the form of a small exhibition curated by Senior Conservator Janet Brough and myself. *Regency Colour and Beyond 1785-1850* was on display at the Royal Pavilion from June to November 2013. It was accompanied by an illustrated exhibition guide written by me[4] and a condensed list of pigments identified in the Royal Pavilion to date (Appendix 1)[5].

Added to this thesis are two further appendices that were compiled by me as part of my research and preparations for the *Regency Colour* exhibition that will

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[3] D. Beevers (ed.), *Chinese Whispers: Chinoiserie in Britain 1650-1930* (Brighton: The Royal Pavilion & Museums, 2008).
[4] A. Loske, *Regency Colour and Beyond 1785 – 1850*, (Brighton: Brighton & Hove City Council, 2013).
[5] J. Brough, *Colour in the Regency. Identification of Regency Pigments Used in the Original Decorations of the Royal Pavilion* (Brighton: The Royal Pavilion, 2013). PDF document, published online at http://www.brighton-hove-rpml.org.uk/ [Appendix 1].

further inform this thesis. Appendix 2[6] is a list of colour names, pigment names, colour terms and descriptions of painting techniques and surface finishes found in the archival resources, dating 1802 to 1828, most relevant to this research, i.e. the earliest inventory of the Royal Pavilion and the account books of the principal interior decorators. Appendix 3[7] examines in detail the pigments identified and analysed in the Royal Pavilion so far and sets them in the context of pigment history and colour literature of the eighteenth and nineteenth centuries. Two of these pigments were analysed on Brough's and my intitiative while curating the colour exhibition. We took samples of original paint surfaces to the Scientific Department of the National Gallery, London, where a carmine red and a verdigris glaze were identified.[8]

Many of the interior design schemes of the Royal Pavilion were directly influenced by the fascination China held for Europe. George IV's eccentric tastes help explain why he embraced Chinoiserie some fifty years after oriental interiors were at the height of fashion. The Royal Pavilion is a royal interior and therefore cannot and does not reflect the interior house painting and decorative styles of middle class or working class houses of the same period. While court style can generally be expected to be more elaborate than other styles, in the case of the Royal Pavilion its physical location, main purpose and the excessive, creative and eccentric nature of its creator George IV must also be taken into consideration.

The colours of the interior of the Royal Pavilion were full of subtleties, many of them unfortunately lost over the last 200 years. Today there are hardly any surfaces left in the building that have not been altered, over-painted, replaced or damaged, which makes the interpretation and restoration, as well as the scientific analysis of pigments and techniques difficult. We do know that most pigments found in the Royal

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[6] A.Loske, *Colours, Pigments, Finishes and Materials Mentioned in the* Crace Ledger*, the* Robert Jones Accounts *and the* Royal Pavilion Inventory from c.1828. Word document, compiled in 2013 [Appendix 2].
[7] A. Loske, *'Carmine, Lake, Vermillion, Crome, Yellow and other expensive colours': Pigments Analysed and Identified in the Royal Pavilion and Their Historical context*. Word document, compiled in 2013 [Appendix 3].
[8] R. Morrison*, Report: Analysis of Green Glaze.* Unpublished document. (London: National Gallery Scientific Department, May 2013), and D. Peggie, *Report: Analysis of Lake Pigments.* Unpublished document. (London: National Gallery Scientific Department, March 2013).

Pavilion are of particularly high quality and high saturation. In their account books the Craces frequently mention the use of 'expensive' and 'proper colours'. In some cases this means 'true to nature' or 'realistic', in others it seems to describe high quality and brilliance of the pigments. By contrast, the term 'common colours' was an expression often used in decorators' manuals to describe whites, creams, greys and browns.[9] These colours were considerably cheaper than the intense blues, reds, greens and yellows found in the Royal Pavilion.

The colours of the Royal Pavilion cannot be discussed without considering the impact of lighting, mirrors and surface finish. Reflective surfaces are of great importance in the design schemes of the building. It has large areas of gilding and silvering, sometimes in combination, and treated using a variety of styles – matte, burnished, glazed and sanded – partly to reflect light in different ways. Many silvered objects have transparent coloured glazes. On walls, colour and varnish were often applied thickly as if to imitate lacquer furniture, which is most obvious in the Music Room. Varnish and paint were used to create 'japanned' furniture, doors and panels in imitation of oriental lacquer, and completed the decorations.

It is important to remember that the history of the decorative schemes of the Royal Pavilion is extremely fluid and multi-faceted. The building developed over forty years, with most rooms (particularly the three central rooms now known as the Saloon, Banqueting Room Gallery and Music Room Gallery) having undergone several structural changes and complete re-decorations. Furthermore the building now looks back on more than 160 years of municipal ownership, during which it has been used in many different ways, in some cases with little concern for historic interiors or historically correct presentation. Between 1845 and 1850, when the Royal Pavilion was sold by Queen Victoria to the town commissioners of Brighton, it was stripped of most of its contents, including most fixed decorative features and wall-hangings, as well as

[9] See P. Baty 'The Hierarchy of Colour in Eighteenth Century Decoration'. Nov 13th, 2011. http://patrickbaty.co.uk/2011/11/13/hierarchy-of-colours/ [accessed 30 January 2013] and P. Baty, 'Palette of Historic Paints'. *Country Life*, 20th February 1992, pp.56-57, and I.C. Bristow, *Interior House-Painting: Colours and Technology 1615-1840* (New Haven, CT: Yale University Press for the Paul Mellon Centre for Studies in British Art, 1996), p.158.

carpets, fireplaces, soft-furnishings and chandeliers. Although many objects were returned and others have been reproduced to replace missing elements, the result is still, and will, in all likelihood, remain an incomplete picture of the interiors during the period of royal occupation.

Sources and literature

The main subjects of this thesis, the Royal Pavilion and colour theory in the eighteenth and nineteenth centuries, have both been studied and researched extensively in the past, although not often in relation to each other. In order to explore this relationship more fully I have put particular emphasis on original sources related to these topics, some of which have not been considered in scholarship. The sources I have considered most original and useful for this research project fall into the following categories: documents prior to 1845 (comprising account books, inventories, ledgers, letters and other written reference works), printed and illustrated material prior to 1845 (comprising early guidebooks, travel accounts, commissioned publications on interiors, colour and colour theory), followed by literature composed and published after royal occupation (post-1845).

Furthermore, I have considered visual resources to be of particular importance to the study of interior design schemes and colour. Neither the state of the Royal Pavilion as is, nor historic images or descriptions alone can provide a true idea of how the interiors appeared during the reign of George IV, but the comparison of as many visual resources as possible, including early watercolours, designs, early aquatints, design drawings and fragments of original wallpaper and surface finishes (which are extremely rare) with historic descriptions, a range of related literature and the scientific knowledge acquired by the conservation team of the building, may help create an approximation of the appearance of the original interior.

Manuscript sources relating to the Royal Pavilion

The history of the Royal Pavilion is well documented, with a wealth of surviving archival resources from the period of royal ownership, but these are not in one homogenous collection, neither are they all transcribed or easily accessible. Some sources are incomplete and in general the interior decoration of the Royal Pavilion is poorly documented prior to 1802 (coinciding with the introduction of the Chinoiserie interiors). With regard to colour and pigments, it has to be noted that none of the relevant account books and inventories refer to the source of pigments or paints used. No information about which colourmen provided the raw material is provided. When a pigment name is used to describe a colour or finish this does not necessarily mean that this was the actual pigment used. However, the frequency of colour names and descriptions of surface finish and decorative materials found in the Royal Pavilion accounts and inventories provide a good idea of the importance and value assigned to certain colour schemes and finishes. Occasionally the mention of a pigment can be considered as referring to the actual pigment, based on circumstantial evidence and likelihood. Ultimately though, the primary sources consulted here are more likely to provide an image of the colour scheme rather than evidence for the use of specific pigments. Comments on the latter can only be made with certainty after scientific analysis, as is addressed in chapter 4 and Appendices 1 and 3.

The main document sources concerning the Royal Pavilion are the accounts by the principal designers and artists, i.e. John and Frederick Crace and Robert Jones, the *Royal Pavilion Inventory* from c. 1828 (hereafter RPI1828)[10] and various accounts relating to George IV's expenditure on buildings, including the entries relating to Brighton in the *George IV Accounts 1787-1830* [11] in the Royal Archives, the *Royal*

[10] *Royal Pavilion Inventory, c. 1828*. Manuscript. The Royal Pavilion Archives.
[11] *George IV Accounts 1787-1830*, Residences and Properties: Pavilion at Brighton. Royal Archives, Windsor, 33498 – 34224.

Pavilion Abstract of Accounts (hereafter RPAA)[12] and the *Royal Pavilion Requisitions Book* (hereafter RPRB) from c. 1826[13].

Of these the inventories are lacking detailed descriptions of decorative surfaces, while the account books often include descriptions of work carried out, including the hanging of paper, designing patterns and painting surfaces. Of considerable significance are also two sources which were created in preparation for Queen Victoria's first visit to Brighton as sovereign and which thus provide an insight into the state of the Royal Pavilion at the end of William IV's reign and the dramatic changes and repairs carried out under Victoria: the *Royal Pavilion Inventory, c. 1837*[14] and the *Royal Pavilion Memorandoms 1836 - 1845*.[15] Transcripts of all of the above are available in the Royal Pavilion archives.

The accounts of the Royal Pavilion's paperhangers Robson and Hale[16] also survive, covering the crucial period of re-decoration and transformation of the Royal Pavilion between January 1818 and October 1823. These accounts add information about some materials, finishes, colours and colour combinations used in the wall designs. A transcript of this substantial source is not available, but photocopies are in the Royal Pavilion archives.

The most direct and reliable descriptions and documentation of the Royal Pavilion interiors are found in the accounts compiled by the principal interior designers themselves, the *Robert Jones Accounts* (hereafter RJA)[17] and the *Crace Ledger* (hereafter CL)[18]. Although the contents of both are repeated in shortened form in the

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[12] *Royal Pavilion Abstract of Accounts in the Lord Chamberlain's Department, c. 1826*. Presented by Mr. J. Haines, Ref. Lib: 23007 / SB9 / Ac2. Manuscript. The Royal Pavilion.
[13] *Royal Pavilion Requisitions Book, c. 1826*. Manuscript. The Royal Pavilion Archives.
[14] *Royal Pavilion Inventory, c. 1837*. Manuscript. The Royal Pavilion Archives.
[15] *Royal Pavilion Memorandoms 1836 - 1845*. Manuscript. The Royal Pavilion Archives.
[16] *Robson and Hale Accounts*. *Goods Delivered and Work Done by Order from the Lord Chamberlain's Office*. January 1818 – October 1823. The National Archives: Lord Chamberlain's Department: Bill Books, Series IV. References LC11/25 XC0867 – LC11/41/XC1029.
[17] *Robert Jones Accounts 1821 - 1823*. Manuscript. The National Archives: Lord Chamberlain's Department: Bill Books, Series IV.
[18] *Crace Ledger.* Transcript of copies of ledger entries from the books of Messrs Crace & Sons, during the time spent in the Pavilion 1802-04, 1815-1819, and 1820-23. The Royal Pavilion Archives.

general accounts in the Royal Archives and the Lord Chamberlain's Papers in the National Archives, these are of utmost importance, since they form the longest and most detailed description of the work carried out by the artists and it can be assumed that they were written by the Craces and Jones themselves. The CL is an early twentieth century transcript of copies of ledger entries from the books of Messrs Crace & Sons made during the time spent in the Royal Pavilion in 1802 to 1804, 1815 to 1819, and 1820-23. The original document was once in the possession of Messrs Cowtan & Sons Ltd of 18 Grosvenor Gardens, London SW1, and of New York, who acquired them on taking over the business of Messrs Crace in 1899. The originals are now believed lost. Robert Jones's accounts survive in his original handwriting in the National Archives and copies and a transcript is kept at the Royal Pavilion.

A further document that has not been researched until now is to be found in the British Library collection of manuscripts. It is an account book without a title, described in the British Library catalogue as *Brighton: Accompts rel. to the Royal Pavilion: 1821-1824*[19]. The manuscript consists of a large folio volume that covers the period from April 5, 1821 to July 5, 1825 (with entries for the Royal Pavilion finishing in 1824). An accompanying second volume (ADD MS 46,150) covers the period from 1835 to 1841, but has no entries for the Royal Pavilion. The manuscripts are in a mid-twentieth century binding (1964), which incorporates the original tooled leather spine labels on the inside board, reading 'His Majesty'. At the top of each page 'His Majesty' is written in ink; from 1837 onwards this is replaced with 'Her Majesty'. The manuscript appears to be a fragment, lacking any explanatory title pages, but the British Library catalogue notes for both volumes describe them as 'ACCOMPT-BOOKS of furnishing expenses, repairs, etc., for royal palaces and other establishments and for a number of royal occasions; 1821-1842'. His Majesty'. They were presented to the British Museum by Harry Norman[20], presumably shortly before they were bound.

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[19] *Brighton: Accompts rel. to the Royal Pavilion: 1821-1824*. British Library, Add MS 46149. 5 Apr 1821-5 Jul 1825. In: *ACCOMPT-BOOKS of Furnishing Expenses, Repairs, etc., for Royal Palaces and Other Establishments and for a Number of Royal Occasions; 1821-1842*. British Library, Add MS 46149-46150.

[20] The identity of Harry Norman is unclear. He is listed in the British Library catalogue as 'Esq., Unspecified, of Richmond, county Surrey' and might have been a mid-twentieth century writer on ornithology. He donated at least six further lots of manuscripts, dating from the seventeenth to the nineteenth centuries.

The contents of this document suggest that the expenditure recorded here concerned the material costs of movable objects only, i.e. furniture, soft-furnishing, ornamental objects, as well as their acquisition, repair and cleaning (often referred to as 'jobbing') were included. It is unclear what purpose these account books served and why they became separated from the Lord Chamberlain's papers in the National Archives or material in the Royal Archives, but they give a further insight into the role the Royal Pavilion played in George IV's life and finances. Volume ADD MS 46149 includes an index of buildings and events covered (Also/; The Royal George Yacht, Ascot Heath Hennell, The Prince Regent Yacht, Carlton House, Cottage, Saint James's Palace, Stud Lodge, Buckingham House (Palace), Kensington Palace, Cumberland Lodge, Kings Mew's, Coronation, Westminster Hall, Ranger's Lodge – Bushy Park, Kew Palace, Cottage Windsor Great Park, Dublin Castle, Hanover, Royal funerals, Cranbourne Lodge, James Watt/Steam Packet). Brighton (Pavilion) is first on this list and has the highest number of entries (at least 22, but possibly more; there is some loss to the page), followed closely by Carlton House.

The damage to the volume (paper loss, water damage and other discolouration), as well as fading of the ink make it difficult to read all the entries, but in some cases additional information about certain objects, colouring and decorative features designed for the Royal Pavilion can be gleaned from this odd volume. While volume two rarely makes references to individual designers (and neither volume includes the cost of the design work), volume one frequently mentions Robert Jones as the designer. The December 1822 entries for the Saloon, for example, include '2 very elegant Cabinets for the Piers formed into compartments to receive ornamental China richly decorated inside and with carved and gilt ornaments the grounds prepared for Mr Jones's decoration and the whole finished to Mr Jones's design'[21].

[21] *Brighton: Accompts*, p.118.

Early printed material concerning the Royal Pavilion interiors

As I explained above, an important part of this thesis will consider descriptions of the Royal Pavilion found in popular guidebooks and travellers' accounts dating from the eighteenth and early nineteenth century. While there are only a few detailed descriptions of the eighteenth century interior of the building available, a considerable number of guidebooks from the 1810s and 1820s document the transformation of the building during the Regency and provide immediate first impressions of the exuberant Oriental design schemes.

Among the key authors or publishers are H.R. Attree[22] of the influential Brighton-based family of solicitors, surgeons and landowners, R. Sickelmore[23] and Edward W. Brayley. Brayley included an early description of the recently finished interiors in *Topographical Sketches of Brighthelmston*[24] from 1825 and, in 1838, provided the first detailed description and a history of the building in the new edition of John Nash's pictorial book *The Royal Pavilion at Brighton* from 1826[25]. This new edition was entitled *Illustrations of her Majesty's Palace at Brighton*[26] (hereafter 'Nash's Views') and can be considered the first authorized description of the interiors of the building. Later guidebooks, which add information about early restoration efforts and interpretations under municipal ownership and changing attitudes to Chinoiserie style, are also taken into account here.

In the later nineteenth century local historian and newspaper editor John George Bishop (1825-1919) began publishing a range of substantial books on Brighton and the Royal Pavilion specifically, for example *The Brighton Pavilion and its Royal*

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[22] H.R. Attree, *Topography of Brighton, and Picture of the Roads From Thence to the Metropolis* (Brighton: Longman, Hurst, and Co., 1809).
[23] R. Sickelmore, *An Epitome of Brighton, Topographical and Descriptive* (Brighton: Printed by W. Fleet, 1815), *History of Brighton* (1823) and *Descriptive Views of Brighton* (London: R. Sickelmore, Jun., Cavendish Street, 1824).
[24] E.W. Brayley, *Topographical Sketches of Brighthelmston* (London: Havell, c.1825 [plates dated 1824]).
[25] J. Nash, *The Royal Pavilion at Brighton* (London: published by the command of & dedicated by permission to the King by John Nash, 1826).
[26] E.W. Brayley, *Illustrations of her Majesty's Palace at Brighton: Formerly the Pavilion, Executed by the Command of King George the Fourth, Under the Superintendence of John Nash. To which is prefixed a History of the Palace* (London: J. B. Nichols and Son, 1838).

Associations[27] (first published in 1875 and in at least a further eleven editions until 1903), which included a detailed descriptive guide of the building and a chronological table of events associated with it. A Brightonian born and bred, he became the sole proprietor of the *Brighton Herald* in 1880. His publications proved extremely popular, went into many editions and are full of detailed descriptions, but suffer from a distinctly anecdotal and, at times, sensationalist style. Bishop's work includes much tantalising information about the Royal Pavilion, but in most cases lacks source references, frequently providing incorrect dates and associations[28], and must therefore be considered with caution. His work does, however, give an impression of the increasing pride in the municipal history of the building and the emerging museum, and Bishop frequently demonstrates a good understanding of the intricacies of the colour schemes and is conscientious about pointing out what has been replaced or significantly altered under municipal ownership. For example, he explains that the silver wallpaper in the Saloon has been reprinted from old blocks but that the red and gold silk hangings in the panels have been replaced with ruby flock paper and also comments on its visual effect:

> It will be observed that the thin paper has a very satin-like appearance; and it is thought by some that this effect is obtained by the paper being coloured in different shades; but, at closer inspection and by shifting the point of sight, it will be found that it is produced by the refraction of light on the curved wall, and, consequently, is due to accident and not design.[29]

Post-nineteenth century literature on the Royal Pavilion

The twentieth century saw the publication of a number of more conscientiously researched publications on the history of the Royal Pavilion, including detailed accounts on the design schemes. Henry D. Roberts, who was appointed first Director of

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[27] The edition I have consulted is the fourth edition from 1882: J. G. Bishop, *The Brighton Pavilion and its Royal Associations* (Brighton: "Herald Office", 1882 [1875]).

[28] For example, Bishop repeatedly informs the reader that the dragon chandelier was sent out in 1814 with Lord Macartney's Embassy to China as a present to the Emperor and, following the failure of the negotiations, was brought back to England. Here Bishop gets both the dates of the Macartney Embassy (1792-94) and the creation of the chandelier (post-1817) entirely wrong. Needless to say, the chandelier never travelled to China. Bishop, *Pavilion* [1884], p.116.

[29] Ibid., p.122.

the Royal Pavilion estate in 1920, published the first scholarly researched *History of the Royal Pavilion* in 1939[30]. In it he combined a thorough knowledge of the building with an understanding of the importance of archival resources and historical accuracy. He included extracts from inventories and account books in the publication. After WWII Clifford Musgrave, Director of the Royal Pavilion from 1938 to 1968, had the difficult task of dealing with war-time damage and neglect suffered by the building, but also documented the return of many important original objects on a permanent loan basis by H.M. Queen Elizabeth II in 1956. He published a number of guide books and historical accounts of Brighton in general and the Royal Pavilion in the post-war years. While most of these are aimed at the general public and therefore also anecdotal in style, they are considerably more focused than Bishop's works and reflect a curator's rather than a journalist's knowledge of the building. Despite some inaccuracies, Musgrave's *The Royal Pavilion: A Study in the Romantic* from 1951[31] is still a good source for the study of the Royal Pavilion.

In the wake of the 1975 fire and the major restoration project that followed, John Dinkel (Keeper of the Royal Pavilion from 1974 to 1989) wrote a new guidebook[32] that put particular emphasis on the Chinoiserie context of the building and correct description of the decorative objects and surfaces of the building. Published in 1983, this lavishly illustrated guide preceded the important restoration projects of the gardens and the Yellow Bow room. Dinkel died in 1989 and the guide was never updated. Despite this it is still an excellent reference work. Shortly after Dinkel's guidebook John Morley (Director of the Art Gallery and Museums in Brighton 1968 – 1985) wrote and published the largest and most detailed work on the interior decoration of the Royal Pavilion to date, *The Making of the Royal Pavilion*[33], in 1984. In his book Morley reproduces, analyses and comments on many of the surviving designs and drawings related to every phase of the Royal Pavilion, making it the single most important published source concerning the design schemes of the building.

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[30] H.D. Roberts, *A History of the Royal Pavilion, With an Account of its Original Furniture and Decoration* (London: Country Life Limited, 1939).
[31] C. Musgrave, *The Royal Pavilion: A Study in the Romantic* (London, 1951).
[32] J. Dinkel, *The Royal Pavilion* (London: Scala/Philip Wilson, 1983).
[33] J. Morley, *The Making of the Royal Pavilion* (London: Sotheby Publications, 1984).

Other important publications about the Royal Pavilion followed in the late twentieth and early twenty-first century, including a book by Director Jessica Rutherford on how the building functioned, *A Prince's Passion: The Life of the Royal Pavilion*[34] from 2003. Although this is of less informational value regarding the colour schemes, Rutherford also wrote a significant article about lighting in the Royal Pavilion [35], which adds much to the understanding of the appearance and effect of the interior design schemes. Following Morley's book a major exhibition about the work of the Crace family firm was staged at the Brighton Museum and Art Gallery in 1990, which included many of the design drawings from the Cooper-Hewitt collection. It was curated by Megan Aldrich, who also edited and contributed to the accompanying catalogue *The Craces, Royal Decorators 1768-1899*[36]. Aldrich can be considered the leading expert on the history and work of the Crace family, having received a doctorate in 1987 based on her research into the Craces.[37]

Visual and material resources relating to the Royal Pavilion

The most relevant visual resources for the study of the Royal Pavilion, apart from surviving original fabric and surfaces in the building, are the design drawings by the Craces and Robert Jones, other related designs and commissioned watercolours and aquatints. Material produced by the Craces (predominantly Frederick Crace) survives in great quantities and in a variety of formats and media, ranging from ink and pencil drawings to watercolour and gouache sketches, often with accompanying notes. A significant number of Crace drawings (approx. 122) are in the Cooper-Hewitt, National Design Museum in New York[38], which acquired them in 1948. Most, but not

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[34] J. Rutherford, *A Prince's Passion: The Life of the Royal Pavilion* (Brighton: 2003).
[35] J. Rutherford, ' "As Full of Lamps as Hancock's Shop": Lighting in the Royal Pavilion 1815-1900', in: *Country House Lighting* (Leeds: Temple Newsam, 1992).
[36] M. Aldrich (ed.), *The Craces, Royal Decorators 1768-1899* (Brighton: The Royal Pavilion, Art Gallery and Museums and John Murray, 1990).
[37] M. Aldrich, *The Crace Firm of Decorators 1768 to 1899*. Doctoral thesis, University of Toronto, 1987.
[38] In the Cooper Hewitt catalogue this is not listed as a separate collection but comprises objects from the Drawings, Prints, and Graphic Design department with accession numbers beginning with 1948-40. All objects are listed as 'Museum purchase through gift of Mrs. John Innes Kane' in 1948. http://collection.cooperhewitt.org/ [accessed 2011-2013].

all of these relate to the Royal Pavilion. Approximately 230 loose sketches and an important complete sketchbook[39] with designs for the Royal Pavilion are in the *Royal Pavilion & Brighton Museums* collection. All of the material at the Royal Pavilion is attributed to Frederick Crace, but it is highly likely that some of the earlier designs for the first Chinoiserie interior are the work of John Crace. Both the sketchbook and the loose design drawings reveal that the Craces often copied designs directly from decorations on Chinese porcelain, Canton enamels and embroidered textiles, with little deviation from the original colour schemes. Further material relating to the Crace firm, spanning five generations, is in the collection of the National Art Library at the V&A Museum, with some of the material stored at the V&A's Archive of Art and Design at Blythe House, London. In most publications on the Craces these papers are referred to as the *Mostyn-Crace Bequest*, but they are now listed as *Crace Family Papers, Documents* and *Correspondence*[40] in several batches in the NAL catalogue.[41]

Authenticated drawings by Robert Jones are very rare, but three signed designs for the Royal Pavilion survive in the Brighton Museums and Art Gallery collection, while four drawings in the Cooper-Hewitt Museum, acquired with the Crace drawings in 1948, have been cautiously attributed to Robert Jones.[42] These four relate to the Royal Pavilion, depicting designs for the Music Room and Yellow Drawing Room of the Royal Pavilion. Two surviving fragments of the design for the carpet in the Saloon, owned by Axminster Carpets, as well as a large but faded fragment of the actual

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[39] F. Crace, *A Frederick Crace Book of Designs.* A book with 68 coloured designs from Chinese ornaments drawn by Frederick Crace, 1800-1820. Brighton Museums & Art Gallery, Prints and Drawings Collection, FA103696.

[40] *Crace Family, Interior Decorators: Papers, ca.1740 - 1919.* 735 files. National Art Library, Archive of Art & Design, London, V&A. AAD/1992/3 : AAD/2000/15 : AAD/2001/6.
Crace Family, Correspondence, ca. 1795-ca. 1915. 38 items. National Art Library, Special Collections, London, V&A. MSL/1989/6/2.
Crace Family, Documents, ca. 1767-1852. 18 items. National Art Library, Special Collections, London, V&A. MSL/1989/6/3.

[41] In her doctoral thesis Aldrich provides details on Crace material and locates further sources, some relating to earlier and later Crace generations: Aldrich, *Crace Firm,* pp.6-26.

[42] Cooper-Hewitt Collection, accession nos. 1948-40-20, 1948-40-73, 1948-40-74 and 1948-40-75.

carpet[43], provide an insight into a design detail and are particularly interesting with regard to the use of bright colours reminiscent of multi-coloured export china.

The Royal Pavilion has a large wallpaper archive, containing samples and fragments of wallpaper and related surface finishes possibly from as early as the 1780s up to recent and current restoration projects. This archive was created by the conservation team, and in particular paper conservator Heather Wood, over the last decade. This collection is largely un-catalogued but is stored in good archival order, with many of the pieces being marked with reliable conservation notes and records. However, many of the older fragments cannot be identified with certainty in respect of their original location. As part of the *Regency Colour and Beyond* display some examples of wallpaper dating from royal occupancy were photographed, framed and labelled. While many of the fragments have suffered from decay, exposure to light and abrasion, they still provide valuable information on the manufacture, materials and design detail of the original colour schemes. The wallpaper archive is supported by extensive records created by the conservation team in *The Royal Pavilion Restoration Files* (RPRF)[44]. These are archives documenting the history, conservation and restoration of each room, comprising notes, images and other material, and they are located in the Royal Pavilion conservation studios. The RPRF are not catalogued.

Contemporary watercolours and coloured prints

The interior designs scheme of the Royal Pavilion in what could cautiously be described as its most finished state under George IV was recorded in the 1820s in a series of watercolours by Augustus Charles Pugin (1762–1832). These were engraved by various artists and printed as aquatints with hand-coloured additions for what has become known as Nash's *Views*[45]. This was an elaborate volume, entitled *The Royal Pavilion at Brighton,* comprising folio views and six smaller engravings of the exterior

[43] This belongs to H.M. Queen Elizabeth but is not catalogued in the Royal Collection. It is currently stored at the Royal Pavilion and examined in preparation for the impending re-creation of the Saloon carpet.
[44] *Royal Pavilion Restoration Files*. The Royal Pavilion Archives.
[45] See footnote 25.

and interior of the Royal Pavilion as completed by John Nash. It was commissioned by George IV and published in 1826, although it did not appear until 1827. Nash's *Views* provides a rich source of images of exterior views (for example fig. 1), layouts and cross-sections (for example figs. 2, 3, 4 and 5) and the interiors of the Royal Pavilion (for example figs. 6, 7, 8, 9, 10 and 11). Significantly, these include views of design phases pre-ceding the 1820s final scheme (for example figs. 9 and 10), indicating an interest in the design history of the building (with the notable absence of the very first neo-classical interior). Most of Pugin's preparatory drawings and watercolours were created in 1824, just after the completion of the final design scheme, although some of the images of earlier phases of the Royal Pavilion were created a few years earlier, with some of the plates marked as having been etched in as early as 1818. This being a royal commission the aquatint plates, published by Rudolph Ackermann, are of high quality, and were advertised in a prospectus from 1824 as 'Picturesque Views, highly finished in Colours, as facsimiles of the original Drawings, by AUGUSTUS PUGIN (educated in Mr NASH's Office)'[46], stressing the authenticity of the coloured images. The prospectus further assured prospective buyers of the high quality of the publication by stating as one of the conditions that 'The Work will be finished in the first style of elegance, and only 250 copies printed, after which the plates will be destroyed.'[47] This publication remains the principal source of reference for much of the current restoration work in the building, and Musgrave considers these detailed hand-coloured aquatints 'among the finest productions of an age in which engraved book illustration was at a high level'[48]. He also notes that 'exquisite as they are, they do not compare with the original watercolours drawings of Pugin'[49].

As with any engraved and aquatinted work, the colours depicted have to be considered with a reasonable amount of caution, taking into consideration the additional production stages and therefore loss of immediacy. The watercolours can be

[46] Cited in: Musgrave, *Pavilion*, p.77.
[47] Ibid., p.78.
[48] Ibid., p. 79.
[49] Ibid. For a short but succinct essay on Pugin's watercolours of the Royal Pavilion see: D. Rogers, 'A.C. Pugin's drawings of the Royal Pavilion at Brighton', *The Connoisseur*, June 1978, p.118-123.

regarded as the most authentic record of the interiors as they appeared in the 1820s, but here fading of pigments in the watercolours has to be taken into account.

The same applies to the invaluable visual record we have of other royal residences in the form of William Henry Pyne's *History of the Royal Residences*[50], which, preceding Nash's *Views*, was an ambitious publishing project in three volumes, containing 100 high-quality aquatints after watercolours by Charles Wild, James Stephanoff and other artists. Although it received royal support, this was an independent commercial venture which nearly drove Pyne to bankruptcy. For the purpose of this thesis the images of Carlton House, Buckingham House and Frogmore are of particular contextual importance. The additional value of Pyne's publication lies in its detailed descriptive text.

By comparing the surviving watercolours, aquatints of several copies of these publications and their accompanying text (where present) an approximate picture of the colour scheme of the Royal Pavilion and related buildings emerges. While Brayley added valuable descriptions to the re-issue of Nash's *Views* under Queen Victoria in 1838, the quality of the illustrations in this later edition is noticeably inferior to the first edition. Wherever possible I have inspected the original watercolours in question, of which a number are in the collection of BMAG, but because of archival and storage conditions it was not possible to source high-quality photographs of these works (see for example figs. 12 and 13).

Primary sources concerning colour, colour theory and interior design

The amount of material published on the subject of colour and interior design in the late eighteenth and early nineteenth century is vast. I have consulted and referred to the most relevant and representative publications from the period in question, but this selection by no means aims to be a complete picture. I would like to

[50] W. H. Pyne, *The History of the Royal Residences of Windsor Castle, St. James Palace, Carlton House, Kensington Palace, Hampton Court, Buckingham House and Frogmore* (London: L. Harrison for A. Dry, 1819).

emphasise that I considered the state of print culture, illustration techniques and the material make-up of these publications very important factors. I have therefore, wherever possible, inspected the actual publications and manuscripts. In the case of illustrated colour literature in particular I have also in many cases compared several copies and editions. Only in a very few cases have I had to resort to digitised versions or reprints.

Printed and scholarly sources concerning colour, colour theory and architectural colour

Research into colour literature and the history of colour theory and pigment production was under-represented in the early twentieth century, with a notable exception being Rupprecht Matthaei, who from the 1930s onward critically assessed Goethe's colour theory and its application[51], culminating in a substantially annotated and illustrated edition of *Farbenlehre*, published simultaneously in Germany and as an English translation in America in 1971[52]. This edition included Goethe's writings concerning colour preceding his *Farbenlehre* from 1810[53]. The later twentieth century saw a significant increase in publications on and research into the history of colour, with a four-volume work, comprising nearly 7,000 pages, by Johannes Dobai on artists' literature in Britain between 1790 and 1840 being published in Germany in 1977. This vast reference work compiles, classifies and critically annotates the body of works published on all aspects of painting, drawing, colour, design, landscape gardening and architecture, but, as it lacks an index and illustrations, is not easy to use. It is, however, the most complete annotated source of literature on the subject and period in question.

In the 1970s the American colour researcher and practitioner Faber Birren donated his private collection of 226 books on the history of colour theory to Yale University, together with an endowment that ensures the development of this

[51] R. Matthaei, *Die Farbenlehre im Goethe-Nationalmuseum* (Jena: Verlag von Gustaf Fischer, 1939).
[52] R. Matthaei, *Goethe's Colour Theory* (London: Studio Vista Limited, 1971).
[53] J.W. von Goethe, *Zur Farbenlehre* (Tübingen: J.G. Cotta'sche Buchhandlung, 1810-[1812]).

collection. For this thesis I have worked with material from a number of significant specialist colour literature libraries, including the Faber Birren Collection of Books on Color (now located at the Robert B. Haas Family Arts Library at Yale), as well as colour material at Rare Books and Manuscripts at the Yale Center for British Art. The most important source in Britain was the Colour Reference Library at the Royal College of Art, with which I also collaborated on a number of projects related to this research, for example the *Regency Colour and Beyond* display at the Royal Pavilion and a colour symposium held at the RCA in 2013[54]. Also of interest was the colour library of Charles Lock Eastlake (with later additions) at the National Gallery, London, comprising many eighteenth and nineteenth century colour publications and manuscripts.[55]

Significant bodies of historic colour literature, although not homogenous collections, can be found at the National Art Library at the V&A, London, and the British Library. I have not been able to inspect physically a collection of artists' manuals at Heidelberg University but the University has digitised many of the rare items from the collection in high quality.[56] A small but important private collection, the Sammlung Spillman, located in Basel, Switzerland, has not been accessible to me, but a publication on it with good quality images and short descriptions of each object is available.[57] This publication considers the books and colour charts as objects and is a valuable source for the comparison of early colour illustrations, specifically with regard to the deterioration of pigments in representations of colour.

For pigment history and information about pigment identification and analysis I have predominantly consulted the following sources. R. D. Harley's *Artists' Pigments*

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[54] 'Global Perspectives on Colour' Symposium, RCA, London, 22 February 2013.

[55] Eastlake's library was purchased by the National Gallery in 1870, five years after Eastlake's death. It was catalogued by George M. Green and printed in 1872. In 2012 it was published online by Fondazione Memofonte in collaboration with the National Gallery and research carried out by Susanna Avery-Quash: Green, George M., *Catalogue of the Eastlake Library in the National Gallery, London 1872* (London, The National Gallery Libraries and Archive, 2012). http://www.memofonte.it/home/files/pdf/EASTLAKE_S_LIBRARY.pdf [accessed throughout 2013]

[56] Universität Heidelberg, *Quellen zur Geschichte der Kunstgeschichte – digital* http://digi.ub.uni-heidelberg.de/de/sammlungen/gkg.html [accessed 2008-2013]

[57] W. Spillmann (ed.), *Farb-Systeme 1611–2007. Farbdokumente in der Sammlung Werner Spillmann* (Basel: Schwabe Verlag, 2009).

c.1600-1835[58], which, although first published in 1970, is still an extremely useful reference work, used by many conservators. Harley has also published separately on colourman George Field's (c.1777–1854), early notebooks and colour fading tests.[59] Sarah Lowengard provides a meticulously researched overview of the science, technology and intellectual concepts concerning colour and pigments in the eighteenth century with her e-publication *The Creation of Color in Eighteenth-Century Europe.*[60] Lesley Carlyle's body of work mostly refers to paintings conservation and oil painting, but her publication *The Artist's Assistant*[61] is an exhaustive reference work on colour literature and commercial pigment production and dissemination in nineteenth century Europe. As with Spillmann, colour books are here regarded as objects in their own right and Carlyle provides locations in libraries and collections of many of the rare publications.

Good general introductions into the scientific, cultural and social history of colour have been produced by a number of authors, but John Gage, whose body of work is broad and extremely well-known, stands out, particularly *Colour and Culture* from 1995 and *Colour and Meaning* from 2000.[62] Gage was also important as a researcher into J.M.W. Turner's interest in colour theory[63] and George Field's life and work, having curated and written the catalogue for an important exhibition about *George Field and his Circle*[64] at the Fitzwilliam Museum in Cambridge in 1989. This exhibition followed on from an equally important exhibition at the Fitzwilliam a year

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[58] R.D. Harley, *Artists' Pigments c.1600-1835. A Study in English Documentary Sources* (London: Archetype Publications Ltd; 2001).
[59] R.D. Harley, 'Field's Manuscripts: Early Nineteenth Century Colour samples and Fading Tests', in: *Studies in Conservation*, Vol. 24, No. 2 (May, 1979), pp. 75-84.
[60] S. Lowengard, *The Creation of Color in Eighteenth-Century Europe,* (New York, Columbia University Press, 2006). Digital book: http://www.gutenberg-e.org/lowengard/index.html [accessed 2007-2013]
[61] L. Carlyle, *The Artist's Assistant. Oil Painting Instruction Manuals and Handbooks in Britain 1800–1900* (London: Archetype Publications, 2001).
[62] J. Gage, *Colour and Culture: Practice and Meaning from Antiquity to Abstraction* (London: Thames & Hudson, 1993), and *Colour and Meaning: Art, Science and Symbolism* (London: Thames & Hudson; 1999).
[63] J. Gage, *Colour in Turner: Poetry and Truth* (London: Studio Vista, 1969).
[64] J. Gage, *George Field and his Circle: From Romanticism to the Pre-Raphaelite Brotherhood* (Cambridge: Fitzwilliam Museum, 1989).

earlier, focussing on artists' manuals from 1800 to 1860, curated by Peter Bicknell and Jane Munro.[65]

More recently Philip Ball provided a good general work on the history of pigments and the relationship between the sciences and the arts with *Bright Earth – The Invention of Colour*[66]. I have consulted a number of further sources on specific pigments, artists and issues, too numerous to list here, but any articles written by the team of conservators at the Royal Pavilion, especially Janet Brough, deserve special mention.[67]

In the field of historic interiors and architectural colour the two British scholars Ian Bristow and Patrick Baty have produced an incomparable and hugely important body of work. Bristow's two-volume work *Architectural Colour in British Interiors/Interior House-Painting: Colours and Technology*[68], covering the period from 1615 to 1840 is unrivalled in respect of detail, meticulous research and provision of case studies, examples, lists of colour names, pigment charts and general cultural context. It is the single most important published reference work for historic paint research. While Bristow has now retired, Patrick Baty is still working as an historical paint consultant, based in London, and writes and reports frequently on current historical paint issues, observations and projects he is involved in. Baty publishes mostly online and on a well-edited personal website and blog[69]. A major printed work on historical architectural paint is in preparation but, regrettably, was not published in time to include it in this thesis. I therefore had to refer to Baty's online publications and the occasional magazine article. Both Bristow and Baty have in the past conducted research and paint analysis at the Royal Pavilion and they were consulted in preparation for the *Regency Colour and Beyond* display. This thesis builds on the work

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[65] P. Bicknell, Peter and J. Munro, *Gilpin to Ruskin. Drawing Masters and their Manuals, 1800-1860* (Cambridge: Fitzwilliam Museum and Grasmere: Dove Cottage and the Wordsworth Museum, 1988).
[66] P. Ball, *Bright Earth: The Invention of Colour* (London: Viking, 2001).
[67] For example: J. Brough, 'Synthetic Yellow Pigments at the Royal Pavilion, Brighton, 1800 to 1822', Société de Chimie Industrielle, 16-18 September 1998, Paris. http://www.scholarshome.org.uk/mdb3/royal/paper4.htm [accessed 2009-2013].
[68] I.C. Bristow, *Interior House-Painting* and *Architectural Colour in British Interiors 1615-1840* (New Haven, CT: Yale University Press for the Paul Mellon Centre for Studies in British Art, 1996).
[69] P. Baty, http://patrickbaty.co.uk/ [accessed 2011-2013].

of these two scholars. Their general knowledge and findings in the area of historic architectural colour can be regarded the most relevant and reliable current material in the field. Steven Parissien, the most recent biographer of George IV[70], has a particular interest in his tastes in respect of interior design and has added valuable information on fashionable colours in Regency interiors in *Regency Style*[71] and *Interiors. The Home Since 1700*[72].

Structure of the thesis

Chapter 1 of this thesis will introduce the colour scheme of the building by considering how colour was and is still experienced, firstly by compiling and comparing nineteenth century descriptions of the interior design scheme from guidebooks and contemporary visitors' accounts and, secondly, by recording how a twenty-first century visitor experiences the building in the context of entering a museum-like space that has been faced with a multitude of challenges since it was stripped of most of its interior features prior to 1850, when Queen Victoria sold it to the town commissioners of Brighton.

The aim of Chapter 2 is to provide a thorough overview of colour theory and literature about colour in England between the late eighteenth and first half of the nineteenth century. In doing so I will highlight the cultural, social and scientific background to the use of colour in art and interior design, which will help understand the interplay of print culture, fashion, aesthetic ideas, science and material culture with regard to the use of colour in the fine arts and, eventually, interior design. This will assist in establishing links between colour theory and design decision made in relation to the interior of the Royal Pavilion.

The chapter is divided into three sections. In the first section colour literature from the eighteenth century will be discussed in the context of Enlightenment ideals

[70] S. Parissien, *George IV: The Grand Entertainment* (London: John Murray, 2001).
[71] S. Parissien, *Regency Style* (London: Phaidon, 1992).
[72] S. Parissien, *Interiors: The Home Since 1700* (London: Laurence King Publishing, 2009).

and the desire to classify colour and explain it scientifically. Here particular emphasis is put on the differentiation of additive and subtractive colour. Beginning with Newton's *Opticks*[73], the section will chart the development of colour science towards colour systems and manuals that included representations of colour systems suitable for the illustration of scientific literature as well as the fine arts in general. For this the entomologist Moses Harris will serve as an important example in the history of colour literature. The section will further discuss how figurative representation of colour and colour theory reflect changing attitudes to colour. Section two will concentrate on the renewed surge in interest in colour studies in the very early century, coinciding with the creation of the Chinoiserie interior of the Royal Pavilion. Here George Field and Mary Gartside will be singled out as examples; the former because of his status as possibly the most influential colour researcher and writer of the first half of the nineteenth century, the latter as an under-researched case study that provides a good image of the intellectual and artistic circles from which much of the colour literature of that period derived. Gartside's work was also known to certain members of the Royal Family, possibly George IV himself.

The final section offers an analysis of colour theory applied to interior decoration. A range of handbooks on architectural colour and techniques was available when the Royal Pavilion was created. Unlike colour theories and painting manuals, these rarely included illustrations. Instead they provided detailed paint recipes and instructions on how to achieve certain decorative finishes and paint effects such as marbling, lacquering or wood graining, all of which are found in the Royal Pavilion. Fewer publications deal directly with the application of colour theory to interior design, but this section will discuss the beginnings of the concept of interior design as a distinct art form and how, in some cases, colour writers and designers applied certain principles laid out in colour theory to interior decoration.

Chapter 3 will outline the role of key figures involved in the creation of the Royal Pavilion and discuss to what extent personal taste and fashion influence the

[73] Sir I. Newton, Opticks: or, A Treatise of the Reflexions, Refractions, Inflexions and Colours of Light (London: Sam. Smith & Benj. Walford, 1704).

choice of colour and surface finish in their work or choice of interior decoration. The chapter begins by charting the inspirations for and influences on the Royal Pavilion from within the Royal Family, with particular focus on Chinoiserie interiors or collections created by female royals, either before or alongside the creation of the Royal Pavilion. This will also include George IV's collecting habits, his involvement in design decisions, as well as the interiors of buildings created by George IV himself that may have informed the Royal Pavilion, notably Carlton House.

The chapter will continue with an overview of designers and artists involved in the creation of the Royal Pavilion and investigate their interest in colour and colour theory, as well as their specific techniques: his principal designers John Crace and his son Frederick, artist Robert Jones, about whose life and circumstances very little is known, as well as Humphry Repton, who represents a good example of a landscape designer and architect who embraced colour theory in his work and literary output.

The concluding chapter 4 will first describe the colour schemes of the Royal Pavilion in its various recorded stages, beginning with the largely unknown Neo-classical interior from c. 1786 to 1802, followed by the first Chinoiserie interior introduced by father and son Crace from c. 1802 onwards; finishing with the best documented 'final' scheme that developed alongside John Nash's major transformation of the building from 1815 to 1823. The chapter will further discuss the use and distribution of colours and pigments in the building with particular focus on how and in what sequence the building was experienced by visitors. Colour will here be identified as one important aspect of sensual stimulation.

The chapter will finish with an analysis of the large-scale use of silver on surfaces in the Royal Pavilion interiors. Although not strictly a pigment, silver is here considered a colour and major decorative element of the interior design scheme. Historic silvered interiors are, by nature, rare survivors, as silver tarnishes quickly; and it appears that silver was not often used in British interiors of the Georgian period. The use of silver leaf in the Royal Pavilion, often in combination with gilding but also with

added transparent layers of colour (for example green in the form of verdigris and red in the form of carmine) is varied, creative, and unusual in early nineteenth century British interiors. Whilst the Royal Pavilion is exceptional in the degree of the use of silver, the thesis will also put this characteristic element of the Royal Pavilion into a wider historical and geographical context and thus judge its significance as a building with intricate surviving silvered interiors in Britain.

Other pigments identified in the historic surfaces of the Royal Pavilion will be included in the form of a detailed list in Appendix 3[74], which builds on Brough concise list (Appendix 1)[75], but provides the historical context of pigments. The following pigments have been analysed and identified via various methods in the Royal Pavilion since the 1970s and are covered in appendices 1 and 3: cochineal carmine red, vermilion red, chrome yellow, Turner's Patent yellow, Prussian blue, blue verditer, verdigris, calcium carbonate white and zinc white. Further pigments have not been identified with certainty, such as an unspecified green dye and green verditer.

While colour theory, colour literature, interior design and pigment history are well researched subjects, a number of aspects of this thesis have not been researched before in detail, notably the work of artist Robert Jones, the description and reception of the intensely coloured Royal Pavilion interiors as described by nineteenth century visitors and writers, the female influence on George IV's tastes, the work of colour theorist Mary Gartside, and Humphry Repton's interest in colour theory, and the use of silver as a colour and unifying design element.

Finally, while the thesis highlights specific colours and pigments used in the interiors, it will also discuss its exterior colour scheme briefly where appropriate and the building in the context of complete interior design schemes and the sequential colour experience of the rooms. This is linked to both the function of the building, i.e. how, when and in what order rooms were seen and used, and emerging ideas about the application of colour theory to interior design in the early nineteenth century. The

[74] Loske, *Pigments* [Appendix 3].
[75] Brough, *Colour in the Regency* [Appendix 1].

sheer number of colours, colour combinations and surface finishes used in this highly ornamented building make it a good case study for colour, but it must always be seen in the context of Oriental architecture in Europe. With regard to taste and fashion, it forms a late, extreme and highly personal take on Oriental or Chinoiserie interiors. The Royal Pavilion is an example of court style and developed from design ideas of a hugely privileged person. In addition to these circumstances, it was created by a man who was known for his excessive tastes and impulsiveness and can therefore only very cautiously be regarded as a continuation of a fashion that was at its height in the mid-eighteenth century. However, despite its exceptional status, the building might serve as a link or predecessor to ideas and attitudes to polychromatic and highly saturated interiors that developed shortly afterwards in Victorian Britain.

Chapter 1

A coloured palimpsest: The colour experience of the Royal Pavilion

There is no shortage of visual and written records from the early to mid-nineteenth century documenting and describing the interior of the Royal Pavilion. Nash's detailed *Views*, accompanied in the 1838 edition by Brayley's descriptive text, requisition and account books such as the CL, inventories and other documents provide a rounded picture of George IV's extravagant design project from within an inner circle of people directly involved with it. This section of chapter 1 will investigate what descriptions were available to the general public in the early to mid-nineteenth century and what kind of picture Brighton guidebooks and historical accounts paint of the interiors of the Royal Pavilion. The aim of this section is to gather and interpret eye-witness impressions of the interiors as they were experienced when they were first created. Section 1.2 will provide a brief history of restoration work carried out at Royal Pavilion since 1850 and will outline how the building is presented and experienced by visitors in 2013. The chapter as a whole will highlight the difficulties of analysing an historic interior. Re-decorations, deterioration, restoration work, change of use and ownership are just some of the many factors that make it impossible to identify one 'original' or 'complete' interior. Instead, the building can be compared to a multi-layered and multi-coloured object or palimpsest.

1.1 '*Splendour of light and colour*' - Nineteenth century descriptions of the interior design schemes

Eighteenth and nineteenth century descriptions of the Royal Pavilion's decorative scheme from visitors and people not involved with creating the interiors both reflected and influenced the general public's often varied opinions of this unusual building, and form a necessary contrast to the commissioned texts that accompanied the second edition of Nash's *Views*. These early popular descriptions have never been discussed in detail and are useful in identifying public tastes, recreating the early

nineteenth century first-time visitor experience and providing information on what colours and design features were considered most notable.

A considerable degree of repetition is noticeable in any descriptions of the building before municipal ownership because access to the building was not easily arranged and not always achieved. In 1826 the German artist and architect Karl Friedrich Schinkel was keen to see the inside of the Pavilion but he notes in his journal on 9 June that 'Lord Conyngham had refused the Ambassador's request for permission for us to view the Pavilion in Brighton, as the King does not allow anyone in […]'[76]. Schinkel finally gained access because the king learned who the prospective visitor was and, presumably, gave permission on the grounds of Schinkel being a renowned architect. It can therefore be assumed that only a select few applicants were allowed access, and eyewitness descriptions of the interior were freely recycled and embellished until the general public had easy access from 1850 onwards.

The earliest handbooks and travel guides published after 1800[77] and aimed at visitors to the fashionable resort, such as Charles Walker's *Brighton and its Environs*[78] and H.R. Attree's *Topography of Brighton*[79] (both from 1809) include only brief descriptions of the Pavilion in its first neo-classical manifestation, built by Henry Holland in 1787, and rate the interior more highly than the exterior. When these two guidebooks were published the first interior re-decoration in a Chinoiserie style, thought to have been begun in around 1802, would have been completed. Furthermore, the building had also been extended in the shape of two 'conservatories', protruding at roughly 45 angles from the north and south ends (fig.

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[76] K. F. Schinkel, *'The English Journey'. Journal of a Visit to France and Britain in 1826.* Edited by David Bindman and Gottfried Riemann, translated by F. Gayna Walls. (New Haven and London: Yale, 1993), diary entry Friday 9, June 1826, p.104. German edition: K. F. Schinkel, *Reise nach England, Schottland und Paris im Jahre 1826*. Ed. By Gottfried Riemann. (Berlin: Henschelverlag, 1986).

[77] A guidebook that provides a brief description of the 1780s Neo-Classical interior, Henry Wigstead's *Excursion to Brighthelmstone, Made in the Year 1789*, will be discussed in Chapter 4.1.

[78] C. Walker, *Brighton and its Environs* (London: Printed for the author, Townsend, Powell, and Co., 1809).

[79] Attree, *Topography*.

15).[80] Although the exact look of the interiors of these rooms, removed in or just after 1815 during Nash's transformation, is not recorded, many Crace drawings and account entries, as well as the early guidebooks, suggest that the interiors were in a Chinoiserie style. Walker informs the reader that 'the entrance hall […] is embellished, as are all other rooms, according to the Chinese taste'.[81] He notes distinct changes in colour schemes in different rooms, describes the entrance hall to the Music Room (the 'conservatory' at the south end) as being 'entirely formed of stained glass, on which is painted the insects, flowers, and fruits of the Chinese'.[82] Referred to as a 'lamp of beauty', he tells the reader that this room is 'on particular occasions […] brilliantly illuminated, and an observer of no very warm fancy may, at these seasons, imagine himself in Fairy Land'.[83] Walker identifies a number of design features of the Royal Pavilion interiors that were carried over and developed into the extended building after 1815: distinct colour schemes, oriental imagery, coloured glass and dramatic lighting.

Many pre-1820s reactions to the oriental interior are notably positive and express awe and wonder, but rate the exterior lower by comparison. Attree states that the interior 'never fails to excite the most rapturous astonishment; but the exterior, though it may please for the moment, possesses nothing very strikingly grand to surprise or interest.'[84] This is not surprising, since Nash had not yet given the exterior its Indian makeover and the Pavilion was until 1818 eclipsed by William Porden's recently finished domed stables complex. Attree includes colour names or refers to the 'brilliancy' of the interiors in almost all of his brief paragraphs on each of the rooms, thus providing one of the earliest detailed descriptions of the colour scheme: The Entrance Hall is 'the colour of […] warm clay', in the Ante-Room the ground colour is identified as 'scarlet', in the Drawing Room as 'bright yellow', the Conservatory (or

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[80] Morley refers to a small book of drawings in the Royal Archives at Windsor which documents these alterations made between 1801 and 1803. Based on the inspection of this book he assumes that Henry Holland was responsible for the alterations, but also mentions the tradition of associating his pupil P.F. Robinson with some of the work. Morley, *Pavilion*, pp.35-36.
[81] Walker, *Brighton*, p.3.
[82] Ibid., p.4.
[83] Ibid.
[84] Attree, *Topography*, p.6.

Music Room) is described as 'indescribably brilliant in effect', with a roof 'painted in imitation of tea and rose wood, and supported by twenty columns of a scarlet colour'.[85] The most detailed colour information is given of the Rotunda (Saloon): the clouded sky ceiling, suspended dragons and 'lanthorns' are described in great detail, as are other ornamental features: 'The cornice and frieze of this elegant apartment are scarlet, blue and yellow, before which hangs a yellow silk net, with tassels and bells, splendid in effect, and perfectly unique.'[86]

As in Walker, lighting and illumination are here identified as major components of the decorative scheme: 'In the various lanthorns are upwards of thirty organd burners, which diffuse a brilliance more easily conceived than expressed and display the panelled sides of the room, and a beautiful paper of a blue ground, the ornaments of which are white etched with silver.'[87] The emphasis on reflective surfaces is evident, and the description of the blue and silver wallpaper matches a design drawing by Frederick Crace in the Cooper-Hewitt Museum, dated 1802 or earlier (fig. 14) and might be the wallpaper seen in the earlier of the two images of the Saloon in Nash's *Views* (fig. 10). The anonymous publication *Three Grand Routes from Brighton to London*[88] from 1815 copies Attree's text word for word, suggesting that Attree himself was the author or that the text was plagiarised. In any case it indicates the text was still considered an accurate description of the interiors.

From 1815 to the late 1820s the local historian Richard Sickelmore Senior, writer and publisher of guide books and maps, provides detailed descriptions of the evolving decorative scheme. His popular publications *An Epitome of Brighton* (1815)[89], *The History of Brighton* (from 1823 to 1827, in at least five editions)[90] and *Descriptive Views of Brig*hton (1824)[91] all include accounts in excess of ten pages of the main

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[85] Ibid., pp.6-8.
[86] Ibid., p.9.
[87] Ibid., pp.9-10.
[88] [Unknown author] *The Three Grand Routes from Brighton to London, and Topography of the Fashionable Watering Place* (Brighton: Printed by J. Forbes for W. Saunders, 1815).
[89] Sickelmore, *Epitome*.
[90] Sickelmore, *History*.
[91] Sickelmore, Descriptive Views.

rooms of the Pavilion. Sickelmore publications are of particular importance, since they record the changing interior schemes during the crucial period of Nash's transformation (1815 to 1823). That said, his 1815 publication closely follows Attree's descriptions of Holland's building, with additional notes on building work carried out, for example 'At present, this Hall, which makes part of the late improvements, is in an unfinished state, and plain in appearance'[92]. In a similar vein Charles Wright, author of the *Brighton Ambulator*[93] (1818), which is 'dedicated, by permission, to His Royal Highness the Prince Regent', attests to the 'internal beauties and embellishments of this delightful residence', but adds that owing to the unfinished state of the Banqueting Hall and Music Room 'it is impossible to do justice to the magnificence of the taste and style displayed in the principal apartments.'[94] The book includes an unusual engraving showing the east front of the Royal Pavilion in 1818, with Nash's Music and Banqueting Rooms already added, flanking Holland's building (fig. 16).

The completion, or near completion, of the building's interior following Nash's transformation was clearly a catalyst for a great number of new guides including descriptions of the new and newly decorated rooms, beginning with an article in the *Brighton Herald* on 21 January 1821.[95] This was most probably written by Sickelmore himself and forms the first detailed popular account of the interiors, despite their unfinished state. This is evidence for journalists and other members of the public having, on appointment, access to a building still under construction and reflects the considerable public interest in the development of the building. In November 1821 London-based author John Evans acknowledges this 'original account' from the *Brighton Herald* and copies the passages describing the Music Room and Banqueting Room in a popular guidebook for London travellers.[96] All other rooms are omitted, stressing the particular interest in the new Nash extensions to the north and south of

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[92] Sickelmore, *Epitome*, p.38.
[93] C. Wright, *The Brighton Ambulator, Containing Historical and Topographical Delineations of the Town, From the Earliest Period to the Present Time* (London: Sherwood, Neely, and Jones, 1818).
[94] Ibid., p.45.
[95] *Brighton Herald*, 21 January 1821. Brighton History Centre (from November 2013 'The Keep').
[96] J. Evans, *Recreation for the Young and the Old. An Excursion to Brighton, with an Account of the Royal Pavilion: A visit to Tunbridge Wells; and A Trip to Southend* (Chiswick: Printed for Whittingham, 1821), pp.41-49.

the building. An article from January 1822 in the local paper *Brighton Gazette* reports on the elaborate lighting and use of coloured glass in the Royal Pavilion[97], which included gas lights being placed on the roof of the building to illuminate the interiors: 'in no single instance has gas been used within the walls of the palace; exteriorly it is so illuminated, and most brilliantly, when needed, and the stained glass of the Music and Banqueting Rooms, together with that of the hall etc are made to display their rich variety of tints inwards by the blaze of gas without'.[98]

Many other contemporaries of Sickelmore refer to him as the definitive source of information and many subsequent guidebooks and newspaper articles copy his text or do little but paraphrase his descriptions, for example Brayley in *Topographical Sketches of Brighthelmston*[99] (c.1825) and Whittemore in *Brighton and its Environs* [100] (first edition 1825) and Bruce in *Bruce's History of Brighton*[101] (1828).

Echoing Walker, Sickelmore compares the interior to an 'enchanted place'. Light, lighting, stained glass, lanterns, mirrors, and the large chandeliers are rightly seen as crucial aspects of the decorative scheme. They intensify the colour scheme and enhance oriental imagery and objects, creating a 'magical' effect. The sense of awe and wonder continues to be expressed in all these publications. Sickelmore says, for example, that 'it is scarcely in the power of words to convey an accurate idea of [the Pavilion's] rich and glowing magnificence'.[102] Much attention is given to the colour scheme of each individual room, from describing the tints and shades of wallpaper and carpets to emphasising the material and sheen of many decorative objects and furniture, in particular ceramics. However, the number of rooms described is limited to

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[97] First mentioned in CL, entry for Christmas 1802 to midsummer 1803, p.24. Morley identifies several Crace sketches as possible designs for the glass passage, which may relate to rough pencil sketches concerning Royal Pavilion designs that can possibly attributed to George IV: Morley, *Pavilion*, pp.106-115.

[98] *Brighton Gazette,* 17 January 1822, cited in Rutherford, *Hancock's Shop*, p.31.

[99] Brayley, *Brighthelmston*.

[100] J. Whittemore, *Brighton and its Environs. A New Historical and topographical Picture of Brighton and Complete Visitor's Guide* (Third edition, Brighton: 1827 [1825]).

[101] J. Bruce, *Bruce's History of Brighton and Stranger's Guide: Including a Description of the Several Buildings, Churches and Other Places of Worship, Public Offices, Most Esteemed Rides, &c.* (Brighton: Sold by J. Bruce, and at the Libraries and Booksellers, 1828).

[102] Sickelmore, *History*, p.24.

the principal state rooms, and in some cases to the post-1817 Banqueting Room and Music Room.

From 1823 Sickelmore describes the colours in the principal rooms of the finished Nash buildings as follows, with no changes in the various editions of his book: Omitting descriptions of the Octagon and Entrance Hall ('Vestibule' and 'Hall') he begins by describing the Long [Chinese] Gallery in a string of superlatives as 'one of the most superb apartments that art and fancy can produce and which, for richness in effect, and dazzling brilliance of decoration and design, is not to be equalled, perhaps, in Europe, if [not] the world.'[103] He refers to the colour of the ceiling and the walls as 'coloured peach-blossom throughout, with niches, figures, &c. and light blue emblazonments in the Chinese fancy', thus describing the hand-painted wallpaper by Frederick Crace (fig. 17), which forms a contrast to the 'yellow marble' and 'light yellow' of the niches[104]. By describing the wallpaper design as 'in the Chinese fancy' Sickelmore expresses an understanding of the influence of Chinese artefacts. The colouring of the Long Gallery wallpaper may well have been inspired by Chinese ceramics, such as famille rose, as seen, for example, in the pair of porcelain pagodas now in the Royal Pavilion collection (fig. 18).[105]

Nash's Music Room is compared to 'Thousand and One Nights, and the popular tales of magic, involving the enchanted palaces of Genii' and Sickelmore summarises it as 'the beautiful combination and effect of the myriads of glittering objects'.[106] It must be assumed that he is here referring to not just export ware in the form of ceramics and furniture but also fixed ornaments, such as the gilt cockle-shells and silvered dragons and snakes around the room. He continues with a description of these plaster cockle-shells ('gilt with green gold') and the central ornament on the ceiling ('representing, in all its vivid tints, the sunflower'). The colour of the Chinese images on

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[103] Ibid., p.22.
[104] Ibid., pp.23-24.
[105] These pagodas (DA341300/1) are not original to the building but are a typical example of coloured Chinese porcelain export ware (with underglaze and overglaze enamels) from the early nineteenth century.
[106] Sickelmore, *History*, p.24.

the coves under the dome is described as 'green gold, upon a light blue and red ground', enhanced by the coloured clerestory windows.[107] The references to 'green gold' here are fascinating, since a number of examples of a green glaze over silvered ornaments have been identified in this room, but the effect of green gold on the ceiling seems to have vanished altogether.

Sickelmore meticulously describes the colouring and surface finish of Crace's wall paintings of the Music Room: 'highly finished, imitative of crimson japan; the subjects introduced are views in China […] of a bright yellow, heightened in gold […] frames of gold, with a bordering of blue and yellow fret, heightened in gold.'[108] Here Sickelmore captures one of the principal effects of this particular Crace design: the imitation of lacquer furniture. He continues describing the tri-chromatic scheme of the window draperies (blue, red and yellow) and the Axminster carpet 'of a light blue, with Chinese subjects, in gold colour' and concludes by mentioning the brilliance and the colours of some of the ceramics in the room, for example the pagodas 'resting on [Spode] bases of shining blue'.[109]

Sickelmore's paragraph about the central chandelier in the Banqueting Room is as dazzling and elaborate as the object itself and was copied in many later guidebooks:

> The lilies, when illuminated, dart their copious and vivid rays through the multiplied and sparkling tints, and influence connected objects to the semblance of rubies, pearls, glittering brilliants, and shining gold - creating, if the figure may be allowed, in mid-air, a diamond blaze. Its effect is magical: it enchants the senses, and excites, as it were, a feeling of spell-bound admiration in all within its radiance and circle.[110]

This flight of fancy notwithstanding he does not omit to inform the reader that 'everything here and throughout the Palace is almost entirely the work of British materials and British hands; it combines a whole, in which the high and cultivated taste

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[107] Ibid., p.25.
[108] Ibid., 25-26.
[109] Ibid., pp.26-27.
[110] Ibid., p.28.

of a patriot monarch forms a strong feature'[111], thereby suggesting that the decorative scheme highlights national worth and is symbolic of British manufacturing power and taste.

In the Banqueting Room, Sickelmore frequently likens surfaces to mother-of-pearl, actual pearls, and, crucially, interprets the 'silvery hue' of the background of Robert Jones's figurative Chinoiserie wall paintings as 'a contrast to the splendid furniture, and brilliant colours of the paintings which it surrounds'[112], thus identifying a possible key function of the use of silver as a colour in the Pavilion, as will be explored in chapter 4.2. The overall 'grand and successful aim' of the Banqueting Room, Sickelmore concludes, is 'splendour of light and colour, with a natural and effective disposition of shade.'[113] After having covered the Long Gallery, the Banqueting Room and the Music Room in such elaborate detail, Sickelmore devotes only about 150 words to the rest of building, mentioning the Saloon, the North and South Drawing Rooms only briefly, praising instead the 'close alliance' of the rooms, and sees them as resolving themselves 'into a species of glowing perfection as a whole.'[114] But while his writing style might appear hyperbolic and a little too emphatic, it is clear that Sickelmore understood an important principle of the interior design: the building has to be understood as a complete work of art, not simply a sequence of rooms with a variation of interiors. This will be discussed further in the following section of this chapter on the experience of the building today, and in the context of the application of colour theory to interior design in chapter 2.3.

In *Brighthelmston* (1825) Brayley copies Sickelmore almost word for word, praising 'this unique, but superbly ornamented structure' and describing the dazzling effect of the interior, created by combining vibrant colour schemes, glossy surfaces and the extensive use of chandeliers, skylights and mirrors. In 1838 Brayley provides a new and altogether more factual commentary on the interior for a Victorian reprint of

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[111] Ibid., pp. 27.
[112] Ibid., pp. 28-29.
[113] Ibid., p.30
[114] Ibid., p.31.

Nash's *Views*, in which he includes many more rooms, some at different stages of their development, in accordance with the aquatint plates included in the volume.

Whittemore's *Brighton and its Environs* is significant because it includes two rare early images of the interior of the Pavilion in small guidebooks: the Banqueting Room and the Music Gallery (figs. 19 and 20). They are reproduced as small steel engravings, based loosely on plates from Nash's *Views*.[115] Before photographic reproduction methods in book publishing, illustrations in small format guidebooks were expensive and therefore usually limited to maps, decorated title pages, frontispieces or broader topographical views. They were rarely coloured, and if they were (usually offered as an optional extra by the publisher), the colour would bear little resemblance to reality. This is indeed the case with the two plates in Whittemore, where the colours of both rooms are predominantly dull shades of green, pink and yellow that fail to capture the high saturation of the reds or any reflective surfaces, while omitting the blues in the Banqueting Room altogether. Despite the lack of representative quality of the colour scheme, these two plates are significant as they deem the interiors worthy of illustration. They are also among the earliest images in popular guidebooks of the Royal Pavilion interiors in their finished state after Nash's transformation.

A few early descriptions of the Pavilion by foreign visitors, other than guests to George IV, exist. Of particular interest, given that Chinoiserie fashion was very much associated with continental interiors, is the publication of a French visitor's travel account. Published in 1834 in both Paris and London, this account by Le Comte Auguste de La Garde of his travels to England in 1827 provides an invaluable example of how a French citizen experienced the building. Like Schinkel, he needed written permission from the Lord Chamberlain to enter the building. While the architecture is described as 'bizarre', the Comte is delighted by the 'striking' interior, commenting on the amount of gilding, the bright colours and especially the tones and patterns of the

[115] Nash's *Views* was not published until 1826, but individual plates had been in circulation from 1824, sold by John Nash himself. Printing dates can be found on most of the individual aquatints.

wallpaper. He seems genuinely deceived by this Oriental fantasy, created with the help of lavish decorative schemes and colours:

> Si l'extérieur de ce palais m'avait paru d'une construction bizarre, le goût fantastique de sa décoration intérieure me frappa bien autrement. Le salon, la salle à manger, la salle de concert, la galerie, resplendissent d'or et de couleurs vives; les plus riches étoffes y sont drapées sous toutes les formes; mais ce qui, dans une résidence royale européenne, excita mon étonnement, fut de voir une minutieuse imitation du luxe et des décors de la Chine. Rien n'y semble avoir été omis; les nuances étranges des tentures, leurs dessins baroques, la forme des meubles en laque, en bois de cyprès et de laurier, qui répandent de doux parfums; sur des consoles en bois précieux, curieusement sculptés, une profusion de porcelaines, de vases en jaspe, en ivoire; […] tout, jusqu'aux tapis, retrace avec une précision scrupuleuse une résidence impériale chinoise.[116]
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> [The exterior of the Pavilion had struck me as bizarre; the interior was so unexpectedly different as to be equally striking. As might expected, [the saloon], the banqueting hall, the music room, the gallery were all resplendent in gilt and bright colours, with rich hangings of every kind; but the astonishing feature – in the residence of a European monarch – was a meticulous imitation of the style and luxury of the wallpaper; the shapes of the lacquered furniture made from cypress or laurel-wood, delicately scented; console tables, curiously carved; a profusion of porcelain, of vases in jasper or ivory […] everything, down to the very carpets on the floor, reproduces with scrupulous exactitude a residence of the Emperor of China.][117]

By contrast, the notes Schinkel made on his visit to the Pavilion in June 1826 are brief, factual and clearly written from the perspective of an architect and designer. His diary entries are peppered with rough but accurate sketches of technical and structural detail, such as the bannisters of the grand staircases in the Long Gallery or a steam outlet system in the kitchen. Crucially, he focuses on colour(s) and surface finish as the main features in his notes on the rooms on the ground floor:

> 1) State Banqueting Room. Wall-covering of shimmering silver material (painted), various groups of Chinese figures. Dome culminating in a

[116] L.C.A.de La Garde, *Brighton, scènes détachées d'un voyage en Angleterre*. (Paris: Librairie de J.P. Aillaud and London: Richter et Co, 1834), pp.195-197. The French text was translated in 1974 by Eric Underwood but never published. A typescript exists in the Royal Pavilion Archives (not accessioned): Le La Garde & Eric Underwood (transl. and ed.), *Brighton: 1827 (Brighton, scènes détachées d'un voyage en Angleterre*. 1974.

[117] Eric Underwood's translation. La Garde and Underwood, *Brighton: 1827*, Ch.VI, 10, unpaginated typescript.

banana-tree, the chandelier also of the same tree. Candelabra of Indian porcelain, vases and banana forms. – Various stained glass in the lunette. Long banqueting tables.

2) Gallery[118], white and gold, palm trees.
3) Domed hall[119]. In the ceiling a painted gold-leaf dragon. Crimson and yellow wall-covering[120] (French taste), but embossed with elegant silver frieze. – Tables with inlaid work, sumptuous chairs in gold.
4) Gallery[121], white and gold, palm trees.
5) Great state room[122]. Organ. The walls lacquered in crimson, with Chinese landscapes painted in gold, the dome imitation of mother-of-pearl. The four corners of the ceiling lacquered wood and scaled like a gallery. Magnificent fireplace of white marble. Dragons everywhere. 8 towers forming candelabra of porcelain, genuine.[123]

Schinkel also adds a note to a sketch of the grand staircase and its runner, which is the only recorded direct description of its colour and design: '*a.* grey, granite-like cloth, *b.* red cloth striped, *c.* screwed down bronze plate'[124]. He thereby provides a rare visitor's description of a hardwearing and practical floor covering called drugget, which was probably made of un-dyed natural wool fibres.

Schinkel's description is a brief but reliable eye-witness account of the recently completed Nash/Crace/Jones scheme that gives a good indication of which colours dominated in each room and of the elaborate interplay between a variety of decorative surface finishes, ornamental features and materials. His descriptions are immediate (he appears to be under some time pressure while in the building) and it has to be noted that he did not experience the building when in use for entertaining, so a number of elements, such as festive lighting and illuminations, were in all likelihood not in place during his visit. The text also surprises in respect of what Schinkel fails to record or observe, as well as his misidentification of some materials or finishes. There is no mention, for example, of the muted greens in the Banqueting Room Gallery. Both galleries, despite having different colour schemes, are described as

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[118] Banqueting Room Gallery.
[119] Saloon.
[120] Described by Schinkel as a 'Tapete', which literally means wallpaper, he is here clearly referring to the fabric panels made of 'His Majesty's Geranium and gold colour satin decorated with silk gimp', *Brighton: Accompts*, entry for 5 January 1823.
[121] Music Room Gallery.
[122] Music Room.
[123] Schinkel, *English Journey*, pp. 108-109.
[124] Ibid., p.107.

'white and gold'. The walls in the Saloon are described as 'embossed with elegant silver frieze', which must be a reference to the Robert Jones's cream wallpaper stencilled with silver leaf, unless Schinkel refers to mouldings and cornices as friezes. If this was the case then it is surprising that he did not mention the combination of silvering and gilding on the cornices. Likewise the gilded cockle -shells on the Music Room ceiling are described as 'imitation of mother-of-pearl', which suggests that either the lighting was poor when Schinkel visited, or that the original gilding of the cockle-shells was more varied and complex than is commonly assumed, perhaps comprising different coloured gold leaf or even including coloured transparent glazes similar to those on various carved figurative ornaments in the Music Room.

Extremely positive and at times ecstatic reactions to the Pavilion's interior continue to be the norm in guidebooks and historical accounts of Brighton throughout the period of royal occupation. John Bruce's *History of Brighton*[125] (1828) is notable for its superlative phrases but adds little to Sickelmore's account. A few years later, in 1833, J.D. Parry published the most detailed account of the Pavilion's interior to date, as part of his *Historical and Descriptive Account of the Coast of Sussex*[126]. The number of rooms covered increases significantly and now even the kitchen and the Red Drawing Room are included. Parry attempts to interpret the iconography of some of the oriental designs and alludes to the playfulness of the colour scheme, and, surprisingly, considers it restrained in style:

> The Pavilion is enriched with the most magnificent ornaments and the gayest and most splendid colours; yet all is in keeping and well relieved. There is positively nothing glaring or gaudy, and the person who would quarrel with its richness might as reasonably do so with flowers of the parterre – the lively carnation or painted tulip.[127]

New guides were published following the opening of the London to Brighton railway line in 1841, but they need to be interpreted very carefully, since Queen Victoria began removing some furnishings, ornaments and decorative objects as early

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[125] Bruce, *History*.
[126] Parry, *Coast*.
[127] Ibid., p. 115.

as 1846. By 1850, the year of the sale of the Royal Pavilion estate to the town commissioners of Brighton, the building had been stripped of most of its contents. Wilmott's *Descriptive Guide to the Palace and Gardens of the Royal Pavilion at Brighton*[128] (1851) is the first publication that focuses solely on the Royal Pavilion and records its appearance after the sale and the valiant effort to re-create the interiors as quickly as possible, so as to be able to open the building to the public: 'In three brief months, the dingy, dilapidated ruin of the town's purchase has been transformed into "a thing of beauty"'.[129] While the interiors described here are predominantly those of the restoration efforts, they still throw light on what was considered restoring or copying, or how compromises were found in recreating an expensive decorative scheme.

The tone appears to harshen during Queen Victoria's reign, particularly after the sale of the Royal Pavilion to the town of Brighton in 1850. Some descriptions, as for example those by Charles Fleet in his *Illustrated Hand-book of Brighton*[130] (1847), are reserved and matter-of-fact, resorting in some cases to providing the reader with only the dimensions of the rooms. In 1853 George Measom voices highly critical opinions in *The Official Illustrated Guide to the Brighton and South Coast Railways*[131], calling the Royal Pavilion 'that bizarre and unintelligible pile of buildings […] as anomalous and insipid in idea, as ridiculous, too, in absurdity, as the Kremlin in Moscow'[132] The interior doesn't fare any better: 'splendid as it was in the palmy days of George IV, [now] only too closely corresponds in wretchedness of taste with the exterior.'[133]

Others are critical of some but not all aspects of the decorative scheme. *Page's Handbook to Brighton* (1875), remarks that 'the colours are fresh and well selected, the subjects well chosen to portray Chinese life and customs; though the workmanship

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[128] [Wilmott], *Descriptive Guide to the Palace and Gardens of the Royal Pavilion at Brighton. A New Edition, with Illustrations of the State Apartments* (Brighton: Charles Wilmott, 1851).
[129] Ibid., p. 9.
[130] C. Fleet, *An Illustrated Hand-book of Brighton* (Brighton: Fleet and Son, 1847).
[131] G. Measom, *The Official Illustrated Guide to the Brighton and South Coast Railways* (London: Cassell & Company, 1853).
[132] Ibid., pp.52-53.
[133] Ibid., p.53.

is not always faultless'.[134] In his comprehensive *History of Brighthelmston* from 1862, John Ackerson Erredge has stronger views and criticises the 'reckless extravagance' displayed, the lack of nobleness and considers a detailed description of the interior unnecessary:

> […] with the exception of the Chinese Gallery, and the suite of rooms which forms the east front, there was not, while it remained Royal property, a room that would content any commoner of substance … vile in taste and of meagre proportions; wholly devoid of the grandeur and nobleness which should attach itself to Royalty.[135]

Although there was no shortage of negative reactions to the Pavilion during George IV's and William IV's reigns, they were rarely found in guidebooks or history books. The increase in negative responses in Victorian times might reflect Victoria's perceived dislike of the Pavilion or the decline in popularity of Chinoiserie style in general, as well as an uncertainty about the Royal Pavilion's future after it had entered municipal ownership.

During George IV's lifetime the excessive use of Oriental features in architecture and ornament were often ridiculed, as expressed in the satirical travelogue *The English Spy*[136], published by Charles Molloy Westmacott in 1825 under the pseudonym Bernard Blackmantle. In it the traveller making his way to Brighton via stagecoach makes the following observations on a decorative style that he considers too eclectic, with oriental features ill-applied:

> On both sides of the road may be seen a variety of incongruous edifices, called villas and cottage ornées, peeping up in all the pride of a retired linen-draper, or the consequential authority of a man in office, in as many varied styles of architecture as of dispositions in the different proprietors, and all exhibiting (in their possessors' opinion) claims to the purest and most refined taste. For example, the basement story is in the Chinese or Venetian style, the first floor

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[134] T. Page, *Page's Handbook to Brighton and its Vicinity With Short Tours in Sussex. New Edition* (Brighton: Thomas Page, 1875), p.75.
[135] J. A. Erredge, *History of Brighthelmston, or: Brighton as I View and Others Knew It* (Brighton: Printed by E. Lewis, 1862), p.270.
[136] B. Blackmantle [C. M. Westmacott], *The English Spy. An Original Work Characteristic, Satirical, and Humorous. Comprising Scenes and Sketches in Every Rank of Society, Being Portraits Drawn from the Life. The Illustrations Designed by Robert Cruikshank* (London: Sherwood, Jones, and Co., 1825).

> in that of the florid Gothic, with tiles and a pediment à-la-Nash, at the Bank; a doorway with inclined jambs, and a hieroglyphic à-la-Greek […] The parterre in front (green as the jaundiced eye of their less fortunate brother tradesmen) is enriched with some dozens of vermilion-coloured flower-pots mounted on a japanned verdigris frame […].[137]

The mixture of styles does not display sophistication and the colours and finishes are considered garish (coincidentally, both colours mentioned by Blackmantle, vermilion and verdigris, are pigments that have been identified in the Royal Pavilion). By contrast, the parlour-windows are described as being of a 'chaste flesh-colour'. Blackmantle concludes with another highly ironic exclamation: 'Happy country! Where every man can consult his own taste, and build according to his own fancy, amalgamating in one structure all the known orders and varieties, Persian, Egyptian, Athenian, and European.'[138]

It is useful comparing these satirical remarks with comments made by Parry in 1833 when describing the Royal Pavilion. Parry was one of the first writers to put the Oriental scheme of George IV's palace into a wider European context and to provide a cultural and political justification for the money spent on it. He acknowledges that the Oriental and eclectic style might be considered questionable by some, but argues that it befits kings and rulers:

> And whilst the King of Saxony has his *Japanese Palace*[139], the Emperor of Austria his *Favorita*[140], and he of Russia his fanciful palaces of heterogeneous outline, whilst the Sovereign of England has in addition the noble and regular Gothic pile of Windsor, and the Roman palaces of London, we do not see why, if only for the sake of variety, he should not have his Oriental Marine Pavilion.[141]

Parry continues with an Imperialist argument, justifying and hailing the creation of an 'eastern palace' thus:

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[137] Blackmantle, *Spy*, pp.280-281.
[138] Ibid., p.281.
[139] The Baroque palace Schloss Pillnitz, east of Dresden, Saxony.
[140] A palais in the gardens of Augarten, a Baroque palace in Leopoldstadt, Vienna.
[141] Parry, *Coast*, pp. 115-116.

> The King of England is almost *"de facto" King of India*; and, therefore, may we not say without fanciful exaggeration, that an eastern palace, placed on the shores of that element by the ancient and continual sovereignty of which England wields such a powerful sceptre, presents an idea to the mind, full, interesting, and effective.[142]

Imperialist argumentation aside, it is clear from examining these contemporary sources that the building evoked strong reactions – both negative and positive. Almost all respond to its exotic design, colouring, lighting and rich ornamentation. It is therefore necessary to consider general attitudes to Oriental or Chinoiserie designs in the eighteenth and nineteenth century. The building is an exception within this style in respect of the extent to which Oriental ornament is applied and the period in which it was implemented. The highpoint of Chinoiserie fashion in interior design was half a century earlier, in the mid-eighteenth century, when George IV's parents were young. The question is whether this late, excessive and highly individual manifestation of Chinoiserie style can explain some of the strong reactions. The Royal Pavilion has a place in the chronology and general context of Chinoiserie fashion but at the same time needs to be considered a unique and highly individual building for which no real comparison exists.

Even in the late twentieth century art historians were still puzzled by the Royal Pavilion's place in the context of Oriental architecture in Europe. In 1977 Oliver Impey commented on the (con)fusion of styles, architects and designers of the building, as well as the surprising contrast between exterior and interior:

> Brighton is even odder [than Sezincote]: not the product of a single-minded client, nor the work of one sole architect.[…] The style was Hindoo, and was certainly partly based on Sezincote, which the Prince Regent visited in 1807. Outside, it is Hindoo, or partly so: inside it is Chinese – the Prince had changed his taste by 1815.[143]

However, Impey appeared to rate the interior a success, precisely because of its unflinching scale and execution. He called it 'one of the most thorough of all Chinoiserie interiors', both the pinnacle and the end of Chinoiserie, concluding that 'it

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[142] Ibid., p.116.
[143] O. Impey, *Chinoiserie: The Impact of Oriental Styles on Western Art and Decoration* (London: Oxford University Press, 1977), pp.156-157.

all ended in 1822 […] Chinoiserie could go no further, and the Regent's example was not much followed'[144]. Indeed, in 1840 Henry William Arrowsmith published a substantial *House Decorator and Painter's Guide*[145] but makes no mention of Chinese or Oriental style or ornament at all, despite proclaiming to 'investigate the rise, progress, and decline of the various styles of decoration, as used by the architects of the present period'. The styles covered by Arrowsmith are 'Greek, Roman, Arabesque, Pompeian, Gothic, Cinque Cento, Francois Premier, Elizabethan, and the more modern French.'[146]

What these early descriptions of and reactions to the Royal Pavilion tell us is that the building was almost exclusively considered a singular, bewildering and dazzling creation, that the interior was on the whole considered superior to the exterior, and that its intense colour scheme was almost universally seen in the context of highly reflective surface finishes, dramatic lighting effects and exotic artefacts.

1.2 The history of the restoration of the Royal Pavilion interiors and today's visitor experience

In *Bright Earth* Philip Ball states: 'No artist has ever painted an image frozen in time; all painting is a perpetual process, every scene is destined to rearrange its tonal contrasts as time does its work on the pigment.'[147] He speaks here about the changes to and deterioration of the artist's materials and how, especially when interpreting works created hundreds of years ago, it might be considered impossible to identify or even imagine an 'original' version of any work. Given the complexities of materials, uses and dimensions of entire interior design schemes Ball's argument is even more poignant. Restoration, too, even with the best intentions, is effectively a modification of the chromatic intentions of a creator and in any case an interpretation of these. For

[144] Impey, *Chinoiserie,* p.173.
[145] H. W. and A. Arrowsmith, *The House Decorator and Painter's Guide; Containing a Series of Designs for Decorating Apartments, Suited to the Various Styles of Architecture* (London: Thomas Kelly,1840).
[146] Ibid., p.1.
[147] Ball, *Bright Earth*, p.284.

this reason the previous section of this chapter focussed on people's reaction to the colour schemes of the Royal Pavilion's interior, while the following section will briefly outline the most important recorded phases of restoration in the Royal Pavilion and how an approximation of the interiors in the early 1820s has been recreated for the contemporary visitor.

Immediately after the purchase of the Pavilion in 1850 the town commissioners made great efforts to restore part of the interiors to an approximation of their former glory, as described in Wilmott's *Descriptive Guide*. Further redecoration and restoration work was carried out in the principal rooms of the eastern side of the ground floor to designs by John Dibblee Crace (grandson of Frederick Crace) in the 1880s and 1890s[148], but in 1951 Musgrave still referred to the 'municipal nakedness'[149] of the building. Instigated by Musgrave and supported by the Regency Society of Brighton and Hove (founded in 1945), regular furniture exhibitions from 1948 onwards in the building changed this appearance of emptiness, although most of the furniture on display was not original to the building. However, some significant pieces of furniture and ornamentation were returned by Queen Victoria in 1864, after a successful application by the Royal Pavilion's first director Francis de Val. Thus the two large chandeliers from the Music Room (seen in figs. 21 and 22) and Banqueting Rooms (seen in figs. 23 and 24) returned to the Royal Pavilion, as well as all the red and gold wall canvases from the Music Room and a number of Robert Jones's figurative panels from the Banqueting Room (figs. 26 and 26). Gaps in the decorative design scheme of the latter were filled by French artist Antoine Dury, who created high quality copies of Jones's missing Chinoiserie panels, which remain, as Beevers puts it, 'an integral part of the Banqueting Room decorations today'[150].

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[148] For details on this decoration in an Arabic style see J. Rutherford, 'Redecoration and Restoration: The Crace Firm at the Royal Pavilion, Brighton, 1863-1900.', in: Aldrich, *Craces,* pp.42-50; and Aldrich, *Crace Firm*, pp.165-167. Aldrich notes that the colours of this scheme were relatively bright, and that the small-scale but lavish decorations reflect J.D. Crace's studies of Arabic art, as well as being typical of 'fin de siècle' interiors.
[149] Musgrave, *Pavilion*, p.145.
[150] D. Beevers (ed.), *The Royal Pavilion Brighton. The Palace of King George IV*. (Brighton & Hove City Council, 2009), p.68.

Despite these efforts to recreate a colourful interior reminiscent of the building's original brilliance, many areas and decorative surfaces were also painted over and covered in several layers of a brown copal varnish in the Victorian age. Dinkel quotes a comment made by the Prince of Wales during a visit in 1896, noting how dingy the Royal Pavilion had become. Dinkel states that 'copious varnishing over the years had not only dimmed the decorations, but actually altered with a browning yellow film the complex harmony of colours, making nonsense of the decorative schemes.' He explains further that the Victorians valued this kind of 'patina of age' so much that in some cases they also tried to imitate it, resulting in more overpainting.[151]

A new surge in recreating the interior design scheme came after WW1, partly inspired by Queen Mary's interest in the Royal Pavilion and greatly supported by the appointment of director Henry D. Roberts in 1920. Queen Mary returned several large free-standing objects, not all of them having come from the Royal Pavilion originally, but of particular importance for the design scheme of the Banqueting Room were the eight Spode china and ormolu pedestal lamps (see figs. 23 and 24). The blue Spode and gilt bronze of the large objects form a harmonious relationship with the gilt panel frames and Prussian blue printed wallpaper in the room. In the 1930s Queen Mary returned japanned doors, gilt and silvered pilasters from the Saloon (figs. 27 a/b and 28) and Chinese wallpaper originally belonging to Queen Victoria.[152] These material gifts were matched by Roberts's serious scholarly interest in the building and his understanding of historically accurate representation. As Beevers notes, Roberts was the first director of the Royal Pavilion who examined original manuscripts and archival resources in order to pursue a conscientious restoration of the interiors.[153]

Roberts made his first attempts to remove copal varnish and dirt from a number of surfaces in the building, an effort that would continue throughout most of the twentieth century. A number of directors, artists and conservation specialists carried out the slow but thorough cleaning of the interior surfaces, but much of the

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[151] Dinkel, *Pavilion*, p.134.
[152] Beevers, *Pavilion*, p.69.
[153] Ibid., p.70.

most important work can be credited to Roy Bradley, the Royal Pavilion's first 'artist-restorer', who worked in the Royal Pavilion from 1945 until the 1970s.

Shortly after her accession to the throne, H.M. Queen Elizabeth II returned a collection of several dozen original objects to the Royal Pavilion, including the four free-standing candelabra from the Music Room Gallery. These Roberts Jones designs, incorporating hexagonal multi-coloured Chinese porcelain columns into matted and burnished ormolu, are of a similar significance to the decorative scheme of this room as the Spode lamps in the Banqueting Room.

From at least Roberts' time as director the intention behind all restoration and re-creation projects was to present the building and its surrounding park as a complete Regency design, as George IV and his designers and architects had intended it. An earlier move in the direction of historic accuracy was made by John Dibblee Crace in 1899. Rutherford notes that, despite his earlier inventive redecoration of the Banqueting Room Gallery and Music Room Gallery, his primary concern on this project was 'to restore the room to the original designs with appropriate techniques' and credits him with an awareness of the original colour schemes.[154] For almost all restoration work the main visual references with regard to complete design schemes are the images in Nash's *Views* depicting the Royal Pavilion in the early 1820s. During any restoration and repair work to the fabric of the building the conservation team collects, records and archives fragments of original decoration found in situ. Some of these, along with already stored original items, are sampled, so that pigments and painting techniques may be identified.

There were two severe setbacks in the restoration of the Music Room in the twentieth century. In 1975 an arson attack caused great damage to the east wall of the room. One long canvas panel on the south wall was completely destroyed and all decoration above the coving badly burnt, while most other surfaces suffered from exposure to heat, smoke and water. The restoration of the room took eleven years,

[154] Rutherford, 'Redecoration', p.178.

during which major structural repair work to the entire roof structure began. In 1987 the newly restored Music Room suffered once again, when a stone ball from one of the minarets surrounding Nash's tent-shaped roof became dislodged in a great storm and crashed through the ceiling. A hand-knotted carpet, replicating the original Axminster carpet, had just been laid and had to be sent back to the manufacturer in Killybegs, Ireland, for the damage caused by the stone ball to be repaired.

Major restoration was carried out on the first floor of the Royal Pavilion from the late 1970s until the mid-1990s, including Queen Victoria's private apartments above the Entrance Hall, the Bow Rooms and the South Galleries. Here the recreation of the intensely coloured wallpaper was of particular importance to the understanding of the complete design scheme of the building.

The most significant current restoration project is that of the Saloon, which aims to recreate the 1822/3 design scheme by Robert Jones. As part of this restoration, which has recently received major funding for its completion, extensive re-silvering and re-gilding on the wall ornaments has already been carried out (see capitals in fig. 29). The badly tarnished wallpaper will be replaced by a replica of the original stencilled silver on white design (fig.30), while the Chinese export wallpaper currently on the wall cartouches will be replaced by red silk hangings that can be seen in Nash's *Views* (fig. 11). There are also plans to create a copy of the multi-coloured carpet, originally designed by Jones, of which two design drawings (figs. 31 and 32) and a large original, badly faded, piece survive.[155] Further large-scale restoration and recreation work has been proposed as part of a multi-million pound 'Masterplan' for the entire Royal Pavilion estate, but the details of this have not been formulated or approved at the time of writing (January 2014).

The role of the building has changed significantly since its creation, not least due to the change from royal to municipal ownership in 1850. The Royal Pavilion is

[155] At the time of writing (2013), this piece of the original carpet is at the Royal Pavilion, on loan from the Royal Collection, for close inspection by the fabric historians involved with the re-creation of the carpet.

now (2014) a historic building that is predominantly experienced by following a prescribed linear visitor route in daytime. This route roughly resembles the route a guest invited to the building in the mid-1820s would have taken, with the addition of some servants' areas, the King's Apartments and many of the rooms on the upper floor. Visitors approach the main entrance by the porte-cochère (no. 1 on Nash's ground plan in fig.3) via the North Gate, the India Gate or the western side of the park. Unless the approach is from the India Gate on the south side of the estate, a visitor today walks along the meandering paths or coach lanes of the gardens as laid out by Nash and planted by John Furner from 1813 onwards. In his book on the history and development of the Royal Pavilion gardens, Mike Jones explains that this relatively small park is a typical example of a quintessential Regency Garden, 'which can be summarised as a group of trees, shrubs, herbaceous plants, bulbs and annuals mixed together in a relaxed composition. […] The idea was to create in the garden subtle, accidental effects seen in the countryside. Shrubs and trees were looked at more closely; leaf shapes, texture, seedpods, colour and seasonal changes were celebrated and combined.'[156] He continues that principles of pleasing and harmonious irregularity and informal appearance of architecture fashionable at the time were applied to the garden. Nash's bright Bath stone building thus sits in picturesque manner in informal gardens, and is framed by various shades of green (fig. 1); with a subtle increase in colour the closer you get to the entrance. Mike Jones explains the connection between the colouring of the planting and the interior design schemes:

> The Regency colour palette was not subdued or tonal, the colour combinations seen in the garden reflected those inside the Pavilion. Lilac and yellow were seen as harmonious and with an Autumn flowering plant such as *Aster amellus* 'Violet Queen', they were combined in the same flower with its lilac petals and yellow centres. The colours of flowers, used as jewel-like accents, were offset by the surrounding greenery and foliage, unlike later blazing miniature bedding […].

[156] M. Jones, *Set for a King: 200 Years of Gardening at the Royal Pavilion* (Brighton: The Royal Pavilion Libraries & Museums, 2005), p.78.

The building itself resembles an exotic jewel in the Regency park, contrasting in its whiteness with the greens and subtle colouring of the vegetation, and the approach via meandering paths adds to its mysterious and romantic quality.

The first room a visitor enters today is the deliberately simple and sparsely furnished Octagon Hall (room no. 2 in fig.3, and figs. 6 and 33). This small and sparsely furnished octagonal structure was added as part of Nash's Indian transformation and thus does not feature in accounts before 1820, when it was referred to as the Vestibule. Its walls and ceiling may look very similar to the exterior colour of Nash's building today, but is, in fact, a very pale pink shade. In the Crace accounts it is described as 'peach blossom':

> Preparing and painting the ornamental ceiling in shades of light peach blossom colour and moulding cut in to Do
> Do do the walls light peach blossom and the mouldings cut in dark to Do
> Do do the skirting &c peach blossom and the mouldings cut in Dark to Do [157]

From there the route takes one briefly into the Entrance Hall (no. 3 in fig.3, and figs. 7 and 34), with a ground colour of green, described in 1820 in the Crace accounts as 'light green'.

> Preparing and colouring the ceiling light green and painting a sunk margin round Do with ornamented rosettes in relief
> Do do the enriched cornice in relief of greens – […]
> Preparing and painting the walls and rubbing down the edges of paper to receive the ornamental painting in shades of Green[158]

Dinkel observed that the Entrance Hall 'is predominantly a cool green box' and 'has the effect of a peppermint taken to clear the palate.'[159] The ticket desk area to the north of the Entrance Hall has undergone major structural changes since royal occupation, but once formed part of the Yellow Anteroom(s) to the King's Apartments. Visitors do not normally see the room south of the Entrance Hall, Robert Jones's Red

[157] CL, entry for 1820, p. 119
[158] Ibid.
[159] Dinkel, *Pavilion*, p.75.

Drawing Room (room no. 10 in fig.3, and fig. 35), but it is occasionally used for special interest guided tours and functions, such as wedding ceremonies. The historic interiors of this room are not complete, but they still give a good impression of Jones's inventiveness and technical brilliance.

The visitor proceeds to the Long Gallery (room no. 4 in fig.3, and figs. 8, 36 and 37), where guests would have waited for George IV to greet them and lead them into the Banqueting Room. In the Long Gallery the ground colour is a pink described in the CL from as early as 1815, coinciding with the installation of Nash's cast iron and bronze staircases at the south and north end. The contrasting colour to the pink ground is blue:

> Preparing and ornamenting 4 pieces of fine linen pink ground, blue ornaments
> […]
> Preparing and painting in imitation of Chinese pink marble, and
> highly varnished 6 niches for Chinese figures
> Preparing in oil and graining in imitation of pink wood, and highly
> varnished 7 door faces blue and pink mouldings cut into panels.[160]

Despite significant changes to the furnishings and decorative objects in the Long Gallery after 1820 the wallpaper and imitation marble in the niches were not changed. A fragment of the hand-painted wallpaper in pink distemper with blue floral motifs survives in the Royal Pavilion archives (fig.17). The current wall surfaces are a mid-twentieth century copy.

Visitors proceed south towards the Banqueting Room (room no. 5 in fig.3, and figs. 23 and 24), which they enter via its north-western door, giving today's visitors the same visual impression of a change in scale and increase in opulence, lighting and reflective surfaces that a Georgian visitor would have experienced. However, for a more authentic visitor experience the room would have to be presented as lit in the evening after dark, illuminated by a variety of light sources. The room is not dominated by one particular colour but the combination of several highly saturated colours (for example the Prussian blue wallpaper, blue Spode torchères, red festooned curtains and red and black japanned doors), with subtler and lighter shades (for example in the

[160] CL, entry for 1815, pp. 65-66.

figure paintings on the walls, fig. 25), in combination with highly reflective surfaces, including silvered and gilt objects and wallpaper. The silver elements of the room would have been stronger in the 1820s, since the wallpaper (an early-twentieth century replacement) has tarnished. It is possible that there were areas of silvering on the canopies, which now appear brownish-golden. Another crucial element of the original design scheme is missing, a fitted Axminster carpet that can be seen in the aquatint from Nash's *Views* (fig. 24), described in the RPI1828 as decorated 'with Dragon & Lotus Center in a large party coloured Sun Flower on a blue ground, birds and dragons in compartm'nts on a large circle zig zag corners crimson & black edge.'[161]

The visitor then proceeds into the Great Kitchen via the Table Deckers' Room and the Servants' Corridor to the south of the Banqueting Room, experiencing the change from decorative exuberance in the State Rooms to the functional surroundings of the working areas. Only one row of the greyish glazed Delft tiles in the Servants' Corridor is decorated in cobalt blue. The kitchen does have decorative elements in the form of four cast iron supportive columns imitating bamboo trunks and morphing into palm trees at the top. These are simplified versions of a dominant decorative motif in the Royal Pavilion interiors, but here they show neither the subtleties of Jones's colouring of the bamboo and palm tree columns in the Red Drawing Room, nor the intricate gilding of the columns in the Music Room Gallery.

After leaving the kitchen the visitor once again passes through the Table Deckers' Room and re-enters the Banqueting Room from its south-east corner, from where the best views of the silvered dragon holding the central chandelier are possible. The next room is the Banqueting Room Gallery (no. 6 in fig.3), where the visitor experiences once again a significant change in scale (this time to a much smaller and lower room) and to more muted interiors with a ground colour of what was described by Frederick Crace in 1821 as 'flake white' with a 'light pink' ceiling:[162]

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[161] RPI1828, pp.3-4.
[162] CL, entry for 1821, p. 133.

> Preparing and coloring the ceilings light pink
> Preparing and coloring the cornice in fine Flake white
> Do do the four doors, seven windows, two columns and the skirting round the room in fine Flake white
> Flake white coloring the whole of the walls[163]

The room is embellished further with gilt Chinese fret borders and other lavish gilding and painting in flake white, although the currently displayed giltwood furniture is not original to the Royal Pavilion:

> Ornamenting the Cornice in Gold
> Ornamenting the walls with a Chinese fret in Gold, to 14 pannels and 4 over the doors
> Ornamenting the 4 doors and architraves with a Chinese fret
> Ornamenting the two Palm Trees in white and gold

From there into the Saloon (room no. 7 in fig.3, and figs. 7, 28, 29 and 30), which still forms the centre of what is an essentially symmetrical building. This room is currently (2013/14) undergoing major restoration. Large areas of re-gilding and re-silvering on carved and stucco work at higher level are already completed, while all but one pilasters and most of the giltwood frames and gilded crestings have been removed from site for the restoration work. The tarnished silver and white wallpaper (an early twentieth century replacement) has been removed and some of the Chinese export wallpaper in the wall panels has been covered up for protection. The clouded ceiling on the dome and the north apse dates from Victorian times, but in 2005, following some water damage, some of the silvered ornamentation from Jones's scheme was discovered in the south apse. A decision was made to secure the original element, a silver palm leaf, and re-create Jones's design in the south apse, while leaving the rest of Victorian ceiling untouched (fig. 29). Over the next two years Jones's design scheme from 1822/23 will be recreated, which will involve replicating the 'very large window curtains and draperies of 'His Majesty's Geranium and gold colored silk, lined and

[163] Ibid.

decorated to Mr Jones's design'[164] for the windows and the panel spaces, currently occupied by Chinese export wallpaper from c.1800.

The visitor then enters the predominantly 'flake white' and gold Music Room Gallery (no. 8 in fig.3) to the north of the Saloon. In the CL the original colours and finishes for this room are described in very similar terms to the Banqueting Room Gallery. Nash's Music Room (no. 9 in fig.3, and figs. 21 and 22) is entered through double doors on the south side by the east wall, and the dominant colour in this room is red with a glossy finish and yellow and gold figurative and topographical ornamentation, in imitation of japanned furniture. The canvas painting on the walls (to designs by Frederick Crace and mostly carried out by the decorative artist Henry Lambelet (1781 - 1860)[165]) are all original, apart from the long narrow panel in the north-east corner (on the far right in fig. 21), which was lost in the fire of 1975. However, the paint surfaces of these paintings and the canvas itself have suffered much damage and deterioration since they were first installed, and large areas have been overpainted at various points.

Significant pieces of colourful decorative and functional furniture are missing from the room, for example six colossal Chinese pagodas of famille rose porcelain on blue and white hexagonal Spode bases, embellished with bells and other porcelain elements. Four of the pagodas were 581 cm in height, the other two slightly smaller. These survive in the Royal Collection, where they famously hold the inventory number 1 (RCIN 1). Two Chinese porcelain pagodas, purchased by the Royal Pavilion in 1950 from Kenneth Clark and displayed by the west wall of the Music Room, are currently undergoing restoration (fig. 18). However, the overall effect of the colour scheme survives, with the walls reminiscent of lacquer furniture, strong primary colours contrasting with each other, and brilliancy added by large-scale gilding on the tent-shaped ceiling and mirror surround, silvered and glazed carved ornaments, and the

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[164] *Brighton: Accompts*, entry for 5 January 1823.

[165] Henry Lambelet has recently been researched by Grant and Lavender Jones: *Henry Lambelet, Decorative Artist 1781-1860.* November 2013. http://henrylambelet.wordpress.com/ [accessed 30 November 2013].

whole brought together by the replica Axminster carpet in intense blue and yellow.[166] Multi-coloured clerestory windows throw coloured light into the room at certain times of the day (figs. 38 and 39). As with the Banqueting Room, today the interior design scheme of this room is not typically experienced at the time of day or the lighting conditions a Georgian guest would have encountered.

Visitors leave the Music Room via the door in the south-west corner of the room, which leads to the Long Gallery, but the route continues with a right turn to what was part of the Yellow Ante Room and then joins the Servants' Corridor at the north end of the building. The 'Masterplan' includes several proposals for replacing a lost elliptical staircase in Chinoiserie style in this area. This lost staircase and the Ante Room were dismantled in 1867. Some information about the design scheme for this area can be gleaned from Jones's entry in the RPAA from January 1822:

> Anti Rm to his Majesty's Apartments
> Paint'g and colour'g the Ceiling with lines
> Repair'g & Paint'g the Walls a plain Yellow
> Paint'g and Decorat'g the Doors Skirting Windows &c
> Preparing and paint'g the frames to Chinese Paintings
>
> North Building Up Stairs
> Paint'g and decorat'g with plain lines and bamboo mouldings
> Doors Windows Linings Skirtings &c making designs and Models for
> Glass frames. Painting in Bamboo 4 Glass frames[167]

From the Servants' Corridor the visitor enters the King's Apartments, which face the western part of the Royal Pavilion gardens. The ground colour of these rooms is green, highlighted with gilt stucco work. Much of the furniture in these rooms is not original to the building, but the mixture of objects and furniture of different styles is representative of George IV's eclectic tastes. The wallpaper is a hand-painted mid-twentieth century copy of the printed 'dragon paper', originally designed by Robert Jones for the Red Drawing Room (see fig. 35). From here the visitor briefly re-enters the Yellow Ante Room area, before having the option of going to the upper floor via

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[166] For the recreation of the carpet see J.Dinkel, 'The Re-creation of the Music Room Carpet', The *Royal Pavilion, Libraries & Museums Review,* 1987, no. 1, pp.2-3.
[167] RPAA, 5 Jan. 1822, p.71. Typescript p. 152.

the North Staircase of the Long Gallery or leaving via a shortcut through the Long Gallery.

On the upper floor the visitor enters the blue North Gallery and then has the option to turn right towards the North West Gallery, the Adelaide Corridor and the café and restaurant area on the west side of the building, or turn left into the Yellow Bow Rooms. While few original wall decorations survive in the café and the North West Gallery, the east wall of the Adelaide Corridor is covered with remnants of an original set of Chinese export wallpaper acquired by George IV in 1815 and hung in the Royal Pavilion in 1820.[168] This hand-painted wallpaper features non-repetitive narrative motifs and is a remarkable survivor, as it appears to be in its original location. However, it has suffered badly from abrasion, exposure to light and Victorian varnishing. One panel behind the door at the north end of the corridor has recently been cleaned and reveals the brilliant original colouring.

The Yellow Bow Rooms are a suite of rooms comprising two bedrooms, a servant's room and a small lobby on the east side of the building, overlooking the Steine area (figs. 40 and 41). They were the bedrooms of George's brothers, the Duke of York and the Duke of Clarence. The suite was restored to its original colour scheme in the late 1980s and early 1990s, when the chrome yellow woodblock-printed 'dragon paper' (another colour variation of Jones's popular design, fig. 42) was reprinted by John Perry Wallpapers (part of Cole & Son) using the original technique (fig. 43), and corresponding soft furnishings and drab Brussels carpet with flower motifs were reproduced.[169] The significance of the use of chrome yellow in these rooms will be discussed in Appendix 3.

On leaving the Yellow Bow Rooms the visitor re-enters the blue North Gallery before arriving at a sequence of rooms chosen by Queen Victoria as her and Albert's private apartments. The rooms were designed for her third visit to the Royal Pavilion,

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[168] Beevers, *Pavilion*, p.45.

[169] For technical detail on the process of reprinting the 'dragon paper' see H. Wood, 'Old Blocks for New: The Reprinting of the Dragon Wallpaper', in: *The Royal Pavilion, Libraries & Museums Review,* 1993, no.1, pp.7-10.

in 1842. Here the colour scheme is dominated by a reproduction of yellow-ground Chinese export wallpaper, harmonising with muted green *gros de nap* window curtains and the draperies of a reconstructed Victorian bed. The rooms were restored in the 1990s, with the Chinese wallpaper design painted by hand by Gordon Grant. Via adjoining servants' rooms and a narrow corridor the visitor enters the South Gallery (figs. 44 and 45), which boasts the same blue colour scheme as the North Gallery, described in the current guidebook as 'painted in vivid azure blue, overlaid with trellis work of cut-out strips of paper, block printed in imitation of bamboo'[170]. None of the wallpaper and wallpaint is original, but fragments survive in the Royal Pavilion archive (figs. 46 and 47), and the 'vivid azure blue' has been identified as the pigment blue verditer (seen in fig. 48 as found on a kylin figure in the same room) in soft distemper.[171] The South Galleries were restored in 1992 and the large skylight was cleaned and repainted in 2012.

The rooms to either side of the South Gallery have lost all of their original wall decorations and many of their original structural features. The William IV room to the west is a multi-purpose space used for many corporate events and functions, while George IV's first private apartments to the east, now referred to as the Prince Regent Gallery, have been used regularly as an exhibition space since 2011.

Visitors descend down the North Staircase of the Long Gallery, from where they enter the Servants' Corridor at the south end of the building again, which leads into a visitor shop and café at the south-west corner of the building. This shop is part of 4/5 Pavilion Buildings and is structurally not original to the Royal Pavilion. Large areas at the south end of the estate, mostly comprising servants' quarters and further kitchens, were sold shortly after the purchase of the Royal Pavilion by the town commissioners in 1850 and subsequently demolished.

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[170] Beevers, *Pavilion*, p.55.
[171] A. Sowden, 'The Restoration of the South Galleries at the Royal Pavilion', in: *The Royal Pavilion and Museums Review,* 1992, no.l, pp.1-5.

There are significant parts of Royal Pavilion interiors that are not on the visitor route. These include the previously mentioned Red Drawing Room to the south of the Entrance Hall. Neither the basement areas, nor the tunnel leading from the north end of the building to the Dome (the former stables complex) are open to the public. Nash's central onion-shaped dome, known as 'The Bottle', is accessible via a spiral staircase north of the Prince Regent Gallery, but is not on the visitor route for health and safety and security reasons. The staircase leads to several small rooms in the dome, which were used in Georgian and Victorian times by valets but might originally have had other intended uses. Both in the stairwell and in the unrestored rooms above remain many fragments of a block-printed Georgian wallpaper with a green and black pattern on what is probably zinc white.

None of the rooms at the north end of the building, in account books referred to as the 'New North Building', are open to the public. These are currently used as offices, control rooms and archive space. Not many original wall surfaces and decorations have survived in these areas, although some structural elements are original. Some account books, for example the *Brighton Accompts* and the RPAA, provide tantalising information on expenditure on the furnishing and decoration of these areas, but no visual records or general description of the interior design schemes survive. For example, in the RPAA some of Jones's work in George IV's bathroom (on the north-east corner of the ground floor, accessed via a jib door from the King's Apartments) is described thus: 'Paint'g the ceiling of the Bath Rm in oil and decorat'g with a silver grey. Paint'g in highly varnished green tints the Walls of the Bath Rm Paint'g and decorat'g the Window reveals sashes architraves, Door &c and highly varnish'g the whole'[172]. It is somewhat surprising that none of the rooms in the North Building were included in Nash's *Views*. The 'Masterplan' includes suggestions for possible inclusions of some of these areas into a future visitor route.

[172] RPAA, entry for 10 October 1823, p.75. Typescript p.159.

Chapter 2

Colour theory and colour literature in Britain between 1765 and 1845, with reference to some German and French sources

This thesis investigates if and to what extent the colour schemes of a building were influenced by emerging and developing ideas about colour and colour theory. The Royal Pavilion serves here as a case study and a primary document. This chapter will provide the theoretical background to this investigation, which will assist in evaluating the influence of colour theory on the interiors of the Royal Pavilion.

The late eighteenth and early nineteenth century saw a surge in publications on colour treatises, painters' and decorators' manuals, colour manuals and theories about colour. The reasons for this were varied, and spanned both ideas and principles rooted in Enlightenment ideals as well as in notions of beauty, harmony and composition from the Romantic Movement, combining ideas from the sciences, philosophy and the fine and applied arts. This surge was fuelled by a variety of interdisciplinary factors, among them the invention and widespread availability of new pigments, scientific research and discoveries in relation to colour, colour perception and pigment production, as well as developments in printing technology and publishing, particularly with regard to coloured illustrations. The desire to explain, systemise and formalise colour sprang from scientific minds as well as those of art historians, writers and poets. The effect of colours on the observer, their aesthetic qualities, the aspect of harmony and applications in art and design became as important as scientific analysis. A blurring of boundaries between scientific treatises and intellectual concepts of colour is noticeable in publications from this period. There was also significant cultural exchange among colour writers within Europe, specifically between France, Germany and Britain, with many treatises swiftly being translated into other languages and some published in bi-lingual editions. This surge of interest culminated in Johann Wolfgang von Goethe's *Zur Farbenlehre*, an imposing and, in part, scientifically dubious theory that was published in its complete form between 1810 and 1812. An English

translation by Charles Lock Eastlake was published in 1840[173] but parts of it might have been in circulation earlier.

In many cases colour theorists and authors of colour manuals were scientists as well as artists, or poets as well as scientists, scholars as well as practising artists. Most authors frequently referred to other disciplines in their works on colour. A surprising number of writers on colour were botanists, astronomers, geologists or entomologists, which might partly explain a heightened interest in and awareness of accurate colour representation. Other factors that help explain the increase in publications on colour in this period are the promotion and much-needed formalisation of the arts in Britain in the form of art societies, such as the Society of Artists, founded in 1760, and the Royal Academy, founded in 1768. In some ways related to the institutionalisation of the arts in Britain is the rise of watercolour painting as a pastime for the general public, resulting in the publication of many painting manuals for amateurs.

This first section of this chapter (2.1) will provide an overview of some of the most representative examples of colour literature in the eighteenth and nineteenth century. It will begin by explaining what impact Isaac Newton's *Opticks* (1704) had on colour theories published later in the eighteenth century and identify some of his most significant followers, notably Moses Harris (1730 – c.1788). This section will also discuss how colour systems and orders were represented in literature, ranging from diagrams and charts to figurative images. The following section (2.2) will concentrate on the unprecedented surge in publications on colour in European intellectual and artistic circles in the early nineteenth century and discuss possible reasons for this, including the rise of watercolour as an art form as well as changing intellectual and aesthetic concepts of colour. The section will illustrate the colour literature scene and circumstances by focussing on a selection of colour theorists, such as Goethe, James Sowerby, George Field and Mary Gartside. The previously sparely researched case of Gartside will be presented as an exemplary case, illustrating the social, cultural and institutional circumstances of dominant concepts and ideas in colour literature of the

[173] J.W. von Goethe, *Theory of Colours* [Translated with Notes by Charles Lock Eastlake] (London: J. Murray, 1840).

early nineteenth century. The final section (2.3) will seek to provide an overview of specific publications on architectural colour in colour literature by examining works that are likely to have been consulted by the designers of the Royal Pavilion interiors. Furthermore, it will discuss whether and in what ways theoretical and philosophical works on colour might have influenced interior decoration and to what extent colour theory has been applied to interior design. The entire chapter will put particular emphasis on the significance of advances in print culture and how the illustrated book forms a vital part in the history of interior design.

2.1 Colour literature in the eighteenth century: From immaterial to material colour

At the beginning of the eighteenth century two things occured that proved highly symbolic and significant in the history of colour and colour literature: In Berlin in 1706 the German chemist and colourman Heinrich Diesbach invented what it commonly referred to as the first 'modern' colour, i.e. an inorganic and synthetically produced pigment. At the time Diesbach was working and experimenting with the alchemist Johann Konrad Dippel. The pigment became known as Prussian blue, Berlin blue or, occasionally, Parisian blue, referencing its origin or place of manufacture. It is an iron compound ($[Fe_4[Fe(CN)_6]_3]$) and formed a good alternative to the expensive mineral pigment ultramarine.[174]

The invention of a synthetic colour marked the beginning of a new era of pigment production and had an immediate impact on the arts. Lowengard considers Prussian blue an excellent example of a pigment that found a great variety of uses and was therefore truly interdisciplinary. ‘As a manufactured color,’ Lowengard argues, ‘Prussian blue, like Naples yellow, Turner’s yellow, and Scheele’s green, involved materials and production methods that crossed the traditional boundaries of several

[174] Prussian blue is indeed found in relatively large quantities in the Royal Pavilion. See Appendix 3, pp. 7-9.

groups: colormakers, apothecaries, drysalters, and manufacturing chemists'[175]. Disputes frequently surrounded synthetic pigments, which reflected both the economic implications and marketability of new pigments, as well as scientific and intellectual interest in colour studies and pigment production. The early eighteenth century can thus be seen as the beginning of a new age in colour production. As Chapter 4 and Appendices 1 and 3 will demonstrate, pure pigments of particularly good quality, and a number of 'modern' pigments were used in the Royal Pavilion interiors. The building is thus a good example of this new era of pigment production.

The other milestone in colour history was Isaac Newton's ground-breaking publication *Opticks, A Treatise of the Reflexions, Refractions, Inflections and Colours of Light* in 1704 (fig. 49a)[176], which became the main focus and reference point of much intellectual discussion in the field of colour studies in the eighteenth and early nineteenth century. Newton explained that his aim was *'not to explain the Properties of Light by Hypotheses, but to propose and prove them by reason and experiment'*, making *Opticks* exemplary of the values of the Enlightenment and the Age of Reason. By experimenting with rays of light directed through prisms, Newton identified and systematised seven spectral colours: red, orange, yellow, green, blue, indigo and violet. These colours represent the range of electromagnetic radiation known as wavelength which the human eye can see, but the concept of wavelengths had not been discovered, and Newton's division of the spectral range into seven colours was subjective, if not entirely arbitrary. He provided a colour system in the form of a colour circle comprising these colours, where the far ends of the spectrum (blue and red) meet. Newton was keen on the association of music and colour, relating each segment to one of the seven diatonic intervals. The notion that colour and music are linked was explored later by George Field (c.1777 – 1854), and remained popular until well into the twentieth century, with abstract artists like Wassily Kandinsky and Robert and Sonia Delauney exploring synaesthetic aspects of colour and music experience.

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[175] Lowengard, *Colour*, Chapter 32.

[176] The image shows George III own copy, now in the the British Library. In addition to the English first edition George III owned two early Latin editions and an Italian edition, which might well have been known to his son George IV. See F.A. Barnard, *Bibliothecæ Regiæ Catalogus. King's Library.* (Londini: Excudebant Gul. Bulmer et Gul. Nicol, 1820-1829), entries for NEW, p.321.

Newton's representation of his colour system was included in the earliest editions of *Opticks* in the form of a woodcut illustration (fig. 49b). Although sometimes credited with having invented the colour circle, Newton was not in fact the first to arrange colours in a circle[177], but he did place complementary colours opposite each other and also acknowledged that the hues were not equally proportioned. His woodcut illustration was not coloured. It relied exclusively on letters and lines indicating the names and proportions of colour on the circle, but as can be seen in fig. 49a his illustrations were meant to be highly instructive and to be consulted during reading: the copper plate engraving is a sheet folded and bound into the volume in such a way that it can be displayed next to the text without removing it from the book or turning to the relevant illustration.

As the title made clear Newton's theory was almost exclusively concerned with the study of immaterial, or additive, colour, i.e. the colour of light. When different coloured light is combined, the frequency or wavelength sent out by the light is increased, starting with black (no colour at all) moving towards white (all colours), hence additive. However, most artists, designers and decorators needed to learn about material, or subtractive colour, i.e. pigments and paints. When different coloured paints are mixed together, frequencies decrease because each colour absorbs light rather than reflecting it back, so with each added colour the paint becomes darker, hence subtracting them from the final mixture. In certain art forms, specifically in architecture, interior design and landscape gardening, the study of coloured light was of use to a designer, as for example in designs for stained-glass windows, in the application of transparent colours or glazes, or lighting in general, but historically artists and designers have mostly dealt with pigments and paints. In works on colour following Newton's *Opticks* there was a considerable degree of confusion and blurring of boundaries between material and immaterial colour, even within individual

[177] Hand-drawn circular and spherical representations of colour system are, for example, found in *Physica, Book 9, Chapter VII: Om Symen* by the Finnish-Swedish philosopher and astrologist Sigfrid Aron Forsius, from 1611.

publications, suggesting that the difference was not always clear to the author or that the desire was to find one all-encompassing system and explanation for colour.

Newton's optical theory was quickly disseminated, discussed and promoted in European intellectual circles. Among his early supporters were the French philosopher Voltaire, who published *Elémens de la philosophie de Neuton*[178] in Amsterdam in 1738, and the mathematician Brook Taylor, who shared Newton's fondness for the analogy of the colour spectrum and musical scales and included his own detailed interpretation of the colour wheel in an appendix to *New Principles of Linear Perspective*, entitled *'A New theory for mixing of Colours, taken from Sir Isaac Newton's Opticks'*[179] in 1749. Taylor's appendix is significant in that it discusses the applicability of Newton's optical theory to material colour:

> If the Nature of the material Colours, which are used in Painting, was so perfectly known, […] by these Rules one might exactly produce any Colour proposed, by mixing the several Materials in their just Proportions. But tho' these Particulars cannot be known to sufficient Exact ness for this purpose […] yet the Knowledge of this Theory may be of great use in Painting.[180]

Many subsequent publications on colour and optics reference and discuss Newton, if not always favourably. An early opponent was the French Jesuit mathematician and scientist Louis-Bertrand Castel, who, in 1740, criticised the limitations of the colour range identified by Newton in his work *L'Optique des couleurs*[181]. Castel's criticism foreshadows the strongly anti-Newtonian 'Polemic part' of Goethe's *Farbenlehre*, in which he questions and tests the validity of Newton's research methods and findings, proposing different colour orders and applying moral and aesthetic values to colour. Goethe included a number of coloured copper-plate engravings illustrating the failings of Newton's methods in his volume of plates

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[178] Voltaire, *Elémens de la philosophie de Neuton / mis à la portée de tout le monde, par Mr. de Voltaire* (Amsterdam: Chez Jacques Desbordes, 1738).
[179] B. Taylor, *New Principles of Linear Perspective: or, The Art of Designing on a Plane the Representations of All Sorts of Objects, in a More General and Simple Method than Has Been Done* (London: Printed for John Ward, 1749), pp. 72-79.
[180] Ibid., p.77.
[181] L-B. Castel, *L'Optique des couleurs* (Paris, Chez Briasson, rue Saint - Jacques r à la Science, 1740). See also: Lowengard, *Color*, Chapter 3.

accompanying his *Farbenlehre* (see for example fig. 50, entitled *Newtons Mücken/Newton's Flies*).

Despite focussing on coloured light rather than material colour, Newton proved tremendously influential on scientists and artists alike throughout the eighteenth and early nineteenth century. It is not possible in this context to provide a complete overview of subsequent publications on colour inspired or influenced by Newton, but a few stand out and should be mentioned. Very shortly after Newton's *Opticks* the first known coloured image of colour circles is included in Claude Boutet's *Traité de la peinture en mignature*[182], published in The Hague in 1708. Boutet inserted two colour circles on facing pages, incorporated in pictorial scenes (fig. 51). Like Newton's system, his first colour circle is unsymmetrical, proposing seven colours. In contrast to Newton's illustrations, these plates are hand-coloured in watercolour and the subject of his work was clearly material colour.

In 1772 the Austrian Jesuit priest and entomologist Ignaz Schiffermüller discussed in *Versuch eines Farbensystems*[183] why he supports Newton's theory to an extent, and presented a colour wheel comprising three primaries, three secondaries, and six tertiary colours (fig. 52), thus changing Newton's asymmetrical spectrum into a symmetrical system. He also applied the system to material colour, allocated some pigments to it and divided the circle into even segments, while at the same time acknowledging Newton's scientific experiments in the pictorial vignettes surrounding the circle. In the top left corner of the plate a natural rainbow is depicted, coloured in Newtonian sequence, while the bottom left corner is a figurative representation of Newton's experiment of directing a ray of light through a prism. The vignettes in the other two corners illustrate the application of the theory in design and painting.

In Britain it was the entomologist Moses Harris who produced the first comprehensive system of colours applicable to painting, as well as the first colour

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[182] C. Boutet (attr.), *Traité de la peinture en miniature pour apprendre aisément à peindre sans maître* (The Hague: van Dole, 1708).
[183] I. Schiffermüller, *Versuch eines Farbensystems* (Vienna: Agustin Bernardi, 1772). See also: Lowengard, *Color,* Chapter 3.

circles as representations of a colour system, in his short but hugely influential work *The Natural System of Colours*[184]. The exact date of the first edition, which was dedicated to Sir Joshua Reynolds, is uncertain, but is now considered to have been between 1769 and 1776[185]. A posthumous edition from 1811[186] found a wider readership, indicative of the renewed increase in publications and new interest in colour theory in the early nineteenth century.

Harris's treatise initially paid tribute to Newton's prismatic spectrum before changing the focus to subtractive colour mixtures and the qualities of certain pigments. He stated 'by the term colour, or colours, we would be understood to mean one or all of those appearances which are seen in the rainbow refracted by the prism, or that so beautifully decorate the leaves of flowers, or any other substance except such as are white, which is but a term for a total privation or absence of colour […]'[187], thus combining the concept of Newton's prismatic spectrum with concepts of beauty in nature, which are reminiscent of notions expressed by Edmund Burke and William Hogarth in the mid-eighteenth century.

In *Philosophical Inquiry Into the Origin of Our Ideas of the Sublime and Beautiful*[188] from 1757 Burke recommended the use of 'clean', 'soft' and 'weak' colours in order to achieve beauty: 'First, the colours of beautiful bodies must not be dusky or muddy, but clean and fair. Secondly, they must not be of the strongest kind. Those which seem most appropriate to beauty, are of the milder of every sort; light

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[184] M. Harris, *The Natural System of Colours, Wherein is Displayed the Regular and Beautiful Order and Arrangement, Arising from the Three Premitives* [sic]*, Red, Blue, and Yellow* (London: Laidler, [c.1769-1776]).

[185] This time frame was estimated recently by researchers at the Royal College of Art, who noted that since the book's dedication is to Sir Joshua Reynolds, President of the Royal Academy, the publication date cannot be earlier than May 1769, when Reynolds received his knighthood. The latest possible date of 1776 is based on the fact that Harris references his colour circle in a later publication, *Expositions*, from that year. Royal Academy of Arts Collections, record no. 03/5967: h*ttp://www.racollection.org.uk/* [accessed 14 August 2013]

[186] M. Harris, *The Natural System of Colours, Wherein is Displayed the Regular and Beautiful Order and Arrangement, Arising from the Three Primitives, Red, Blue, and Yellow. New edition with additions by Thomas Martyn* (London: Harrison and Leigh, 1811).

[187] Harris, *Colours* [c.1769-1776], p.4.

[188] E. Burke, *A Philosophical Inquiry Into the Origin of Our Ideas of the Sublime and Beautiful* (London: Printed for R. and J. Dodsley, in Pall-Mall, 1757).

greens; soft blues; weak pinks; pink reds; and violets.'[189] William Hogarth was more specific about colours in his *Analysis of Beauty* from 1753, devoting two chapters entitled 'Of Composition with regard to Light, Shade and Colours' and 'Of colouring' to the subject. In the latter he discussed ideal physical beauty and appearance, colour in the natural world, colour in painting and, surprisingly, the aspect of colour or pigment degradation, thus perhaps reflecting the debate about pigment production and quality in the eighteenth century in the wake of the introduction of the synthetic pigment Prussian blue:

> Notwithstanding the deep-rooted notion, even amongst the majority of painters themselves, that time is a great improver of good pictures, I will undertake to shew, that nothing can be more absurd. Having mention'd above the whole effect of the oil, let us now see in what manner time operates on the colours themselves; in order to discover if any changes in them can give a picture more union and harmony than has been in the power of a skilful master, with all his rules of art, to do. When colours change at all it must be somewhat in the manner following, for as they are made some of metal, some of earth, some of stone, and others of more perishable materials, time cannot operate on them other- wise than as by daily experience we find it doth, which is, that one changes darker, another lighter, one quite to a different colour, whilst another, as ultramarine, will keep its natural brightness even in the fire.[190]

Hogarth's inclusion of a painter's palette with numbered tints in one of the large fold-out instructive plates that illustrate *Analysis of Beauty* leaves no doubt that, despite putting much emphasis on light and shade, he was concerned with material paint, i.e. subtractive colour. The colours he proposes are therefore not referencing Newton but the paint found on a painter's palette, including white and black as paints or pigments, but omitting orange: 'There are but three original colours in painting besides black and white, viz. red, yellow and blue. Green, and purple, are compounded; the first of blue and yellow, the latter of red and blue ; however these compounds being so distinctly different from the original colours, we will rank them as such.'[191]

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[189] Ibid., 'Section XVII. On Beauty in Colour', pp.102-103.
[190] W. Hogarth, *The Analysis of Beauty, Written with a View of Fixing the Fluctuating Ideas of Taste* (London: Printed by J. Reeves for the Author, 1753), p.118, footnote 1.
[191] Ibid., p.116.

One of Harris's aims was to provide a source of reference for painters and colour makers, based on the principle of three primary colours (the 'primitives' red, yellow and blue), three 'mediates' (orange, green, purple), thus reducing Newton's seven colours to six, omitting indigo. To all colours but purple he allocated pigments (vermillion for red, king's yellow for yellow, ultramarine for blue, red orpiment for orange, sap-green for green)[192] and provided an equivalent of the colour found in the botanical world. As Hogarth's proposal of five original colours, with the addition of black and white, has shown, artists and authors still experimented freely with the number and distribution of main colours included in any proposed colour system in the mid and late eighteenth century, with the concept of the three primary colours red, yellow and blue slowly becoming the dominant basic structure.

Harris illustrated his work with copper plates showing two concentric circles, each comprising eighteen sectors of 'prismatic' and 'compound' colours at varying degrees of saturation, resulting in a total of 660 different tints. In the centre of each circle he placed overlapping triangles of the primitive colours. Where these three colours overlap they create black, the result of mixing yellow, red and blue pigments or paints. The triangles in the circle of compounds are the 'mediates' orange, green and purple, which also create black when mixed together. This highly complex system could not be represented by the mechanical colouring techniques available at the time. Aquatinting, while suitable for pictorial images, did not represent a reliable and accurate technique for this subject, so Harris decided to personally engrave the copper plates and hand-colour them, using mineral colours such as red lead (figs. 53 a and b, and a re-cut plate from the 1811 edition, fig.54).

Kuehni and Schwarz have commented on the peculiarity of Harris's circles and their representational compromise between additive and subtractive mixture, by basing his colour circle of spectral colours and using some of Newton's vocabulary, while identifying the pigments vermilion, orpiment or king's yellow, and ultramarine as

[192] Harris, *Colours* [c.1769-1776], p.4.

representatives for red, yellow and blue and only consider his treatise 'a small step forward in the effort to understand color order'[193]. However, Harris, while clearly writing for painters and colour makers as well as scholars, can perhaps be considered a link between colour theorists and writers of painters' manuals, as well as bridging the gap between science and aesthetic ideas associated with the mid and later eighteenth century. He was aware of the difficulties artists faced when using pigments and hoped that his colour circles would provide guidance and assistance to the artist: 'Colours, which we may call material or artificial, are very imperfect in themselves; and, being made of various substances, as animal, vegetable and mineral, renders it extremely difficult, if not impossible, to effect the colouring of the schemes with any degree of perfection'[194]

Harris also exemplified the desire for accurate colour representation in art and the sciences, thereby justifying and explaining the particular interest of eighteenth century authors to find an order for colour in relation to pigments and paint. He applied his colour circle to his own art in *Exposition*[195], a work on British insects, first published in 1776. *Exposition* is illustrated with no fewer than fifty-one hand-coloured copper plates, each showing numerous meticulously drawn and coloured insects. The subtitle of this work gives an insight into the concerns of scientists and artists from this period with regard to good colour representation. Harris assured the reader that the figures on the plates are 'accurately drawn & highly finished in colours, from nature' and that an 'explanation of colours, [is] likewise given in the work'[196]. The first coloured plate of *Exposition* is entitled *Scheme of Colours* (fig. 55) and is a variation of his own colour circle as proposed in *Natural System of Colours*, here applied to entomological illustration and followed by an explanatory list of seventy-two colours. His aim, Harris explained, is 'to assist the conception of the reader and to give some

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[193] R.G. Kuehni and A. Schwarz, *Color Ordered: A Survey of Color Order Systems from Antiquity to the Present* (New York and Oxford: OUP, 2008), pp.60-61.
[194] Harris, *Colours* [c.1769-1776], p. 8.
[195] M. Harris, *An Exposition of English Insects: Including the Several Classes of Neuroptera, & Hymenoptera, & Diptera, or Bees, Flies, & Libellula* (London: Printed for the author, sold by Mr. White, bookseller, in Fleet-street, & Mr. Robson, in New Bond street, 1776).
[196] Harris, *Exposition*, title page.

idea of each [colour] meant by the catalogue'[197]. Significantly, a copy of the 1811 edition of *Natural System of Colours* and three further books by Moses Harris, including *Exposition*, are recorded in King George III's library.[198] By 1811 George III would have been too ill to order or indeed read Natural System of Colours, so it is likely that his wife Queen Charlotte, or even George IV, purchased it.

The eighteenth century saw the publication of many more treatises on colour, predominantly in French, English, German and Swedish. The exchange about colour studies within Europe is evident in early translations, authors with a multi-cultural background or education, cross-referencing in the works and occasionally bi-lingual editions. Jacob Christoph Le Blon's *Coloritto*, an early and influential work on multi-coloured printing technique, was first published in London in a bi-lingual French/English edition[199]. Born in Germany, the engraver and printer had studied in Rome and Switzerland and gained experience in his profession in Paris, London, Germany and Amsterdam. Harris's *Exposition*, too, was published with parallel English and French texts.

Occasionally attempts were made at presenting three-dimensional colour systems, to include other dimensions of colour, such as saturation or the light value of tints. Kuehni and Schwarz point out that a path from one-dimensional to two-dimensional and finally three-dimensional systems can be observed from the sixteenth to the nineteenth century, and argue that 'the necessity for three dimensions was clearly understood by the later eighteenth century'[200]. Frequently cited examples for early three-dimensional colour systems are the triangular and pyramidal shapes proposed by the German astronomer and mapmaker Tobias Mayer from 1758

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[197] Harris, *Exposition*, preface, unpaginated. For a detailed account on Harris's colour circles see F. Schmid, 'The Color Circles by Moses Harris', in: *The Art Bulletin* , Vol. 30, No. 3 (Sep., 1948), pp. 227-230; and W. Spillmann, 'Moses Harris's *The Natural System of Colours* and its Later Representations', in*: Wiley Periodicals: Color Research and Application.* Vol. 29, no. 5 (Oct. 2004), pp. 333-341 (New York: Wiley, 2004).
[198] Barnard, *Bibliothecæ Regiæ Catalogus*, entry for HAR, p.260.
[199] J. C. Le Blon, *Coloritto, or, The Harmony of Colouring in Painting / L'Harmonie du coloris dans la peinture […].* (London: [publisher not identified], 1725). An edition from 1756 is recorded in King George III's library: Barnard, *Bibliothecæ Regiæ Catalogus*, entry for LEB, p.34.
[200] Kuehni and Schwarz, *Color*, p.21.

onwards. He in turn strongly influenced the German astronomer and mathematician Johann Heinrich Lambert, who interpreted and extended Mayer's numbered triangular system and presented a seven-tiered colour pyramid in 1772, containing 107 tints (fig. 56). The top triangle represents 'whiteness or light', while the colours in the lowest triangle 'are mostly quite dark except where they border on yellow'[201]. The system is visualised not in an entirely abstract style; the pyramid vaguely resembles an architectural structure, with a base displaying twelve pigments, which are named in the text as Naples yellow, lamp black, king's yellow or, juice green, auripigment, chrysocolla, azurite, verdigris, smalt, cinnabar, indigo and Florentine lake. These are twelve pigments that were commonly available in Germany in 1772. Lambert also provided a key for the 107 tints displayed in the tiers of the pyramid, thus placing his system firmly into the context of subtractive colour and the art of painting, while also stressing the applicability of his system to merchants and the dyeing industry.

What unites most colour literature from the eighteenth century is an approach to colour theory based on science, investigation and the search for colour systems, orders and schematic representations, clearly reflecting and expressing Enlightenment values and pursuits. Where these colour systems were illustrated, they relied almost exclusively on hand-coloured copper-plate engravings or etchings, with earlier examples in woodcut. These abstract colour diagrams were designed with the aims of clarity and instructive usefulness. The format of these illustrations ranged from colour charts and lists to a variety of geometric shapes, with the circle or wheel dominating.

By the end of the eighteenth century the discussion of colour had become a firm element in aesthetic discourse, in teaching and in academic publications, although *colore* had not quite achieved the same status as *disegno*. In his *Discourses*, i.e. lectures delivered at the Royal Academy between 1769 and 1790, Sir Joshua Reynolds discussed colour and colouring predominantly in the context of the Italian masters, and even then only as a subordinate element in the art of painting. However, while not

[201] J.H. Lambert, *Farbenpyramide, from Beschreibung einer mit dem Calauschen Wachse ausgemalten Farbenpyramide, wo die Mischung jeder Farben aus Weiß und drei Grundfarben angeordnet* (Berlin: Haude und Spener, 1772), pp. 83-84; cited in Kuehne and Schwarz, Color, p.22.

actively discussing colour theory, some of his comments seem to reflect the eighteenth century desire to find a reliable colour system, while reiterating Burkeian principles of simplicity:

> With respect to Colouring, though it may appear at first a part of painting merely mechanical, yet it still has its rules, and those grounded upon that presiding principle which regulates both the great and the little in the study of a Painter. By this, the first effect of the picture is produced; and as this is performed, the spectator, as he walks the gallery, will stop, or pass along. To give a general air of grandeur at first view, all trifling, or artful play of little lights, or an attention to a variety of tints is to be avoided; a quietness and simplicity must reign over the whole work; to which a breadth of uniform and simple colour will very much contribute. Grandeur of effect is produced by two different ways, which seem entirely opposed to each other. One is, by reducing the colours to little more than chiara-oscuro, which was often the practice of the Bolognian schools; and the other, by making the colours very distinct and forcible, such as we see in those of Rome and Florence; but still, the presiding principle of both those manners is simplicity. Certainly, nothing can be more simple than monotony; and the distinct blue, red, and yellow colours which are seen in the draperies of the Roman and Florentine schools, though they have not that kind of harmony which is produced by a variety of broken and transparent colours, have that effect of grandeur which was intended. Perhaps these distinct colours strike the mind more forcibly, from there not being any great union between them; as martial music, which is intended to rouse the nobler passions, has its effect from the sudden and strongly marked transitions from one note to another, which that style of music requires; whilst in that which is intended to move the softer passions, the notes imperceptibly melt into one another.[202]

While Reynolds was noticeably cautious about the use of 'distinct' colours (by which he seems to mean primary tints in high saturation), it is interesting that he discussed the principle of the three primaries at all. His comparison of 'distinct' colours to martial music in the concluding paragraph both unwittingly referenced Newton's analogies to music and anticipates musical analogies made a generation or two later by the colourman George Field.

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[202] J. Reynolds [ed. E. Malone], *The Works of Sir Joshua Reynolds, Knight; Late president of the Royal Academy.* 3 vols. (London: T. Cadell, Jun. and W. Davies, 1801), pp.88-89.

Artists working in the genres of landscape painting and botanical illustration were less concerned with inventive and non-representational use of colour, than with the desire to understand and classify colours and combine them effectively and accurately. As early as 1790 the painter William Gilpin included comments on a colour system based on three primaries, as proposed by Moses Harris some twenty years earlier, in a notebook[203] (now in the Rare Books collection of the Yale Center for British Art) that was perhaps an early draft for his influential *Three Essays*[204] on the picturesque in art. Referring to landscape painting, he states 'In order to colour chastely & harmoniously, use only 3 tints: red, yellow, & blue, of wh[ich] compose the other colours wh[ich] are requisite to make out the parts in the difft. distances.'[205] This statement he accompanied with a colour chart illustrating tints that will achieve the appearance of certain levels of distance (fig. 57).

Although Gilpin did not refer to principles of colour contrast, which would have been of little relevance in his preferred genre, his dedication to a three-primary system is exemplary of a heightened awareness and understanding of both basic principles of colour order (as proposed by both Newton and Harris) and issues of pigment purity and colour mixing in the late eighteenth century. This is reiterated in print in *Three Essays* some years later, to which Gilpin adds a poem in blank verse entitled *On Landscape Painting*.

> One truth she [the muse] gives, that Nature's simple loom
> Weaves but with three distinct, or mingled, hues,
> The veil that cloaths Creation: These are red,
> Azure, and yellow. Pure and unstain'd white
> (If colour deem'd) rejects her gen'ral law,
> And is by her rejected.
> […]
> Draw then from these, as from three plenteous springs,
> Thy brown, thy purple, crimson, orange, green,
> Nor load thy pallet with a useless tribe
> Of pigments, when commix'd with needful white,

[203] W. Gilpin, *Hints to Form the Taste & Regulate ye Judgment in Sketching Landscape,* ca. 1790. Manuscript. Yale Center for British Art, Paul Mellon Collection, ND1340 G5 1790.
[204] W. Gilpin, *Three Essays: On Picturesque Beauty, on Picturesque Travel and on Sketching Landscape. To Which is Added a Poem, on Landscape Painting* (London: Printed for R. Blamire, in the Strand, 1792).
[205] Gilpin, *Hints,* unpaginated.

As suits thy end, these native three suffice.[206]

In his notes to the poem Gilpin stresses once more the principle of colour order and alludes to the relation of the painter's wheel to Newton's prismatic colours: 'One truth she gives, &c. From these three virgin colours, red, blue, and yellow, all the tints of nature are composed. Greens of various hues, are composed of blue, and yellow: orange, of red, and yellow: purple and violet, of red, and blue. The tints of the rainbow seem to be composed also of these colours.'[207]

A generation later, the landscape painter David Cox, who published many handbooks on painting in watercolour, discussed contrast and the purity of colours in the context of both composition and colour mixing. In one of his earliest publications from 1811 he acknowledged the basic order of three primaries and three secondaries in painting, but recommended a reduced palette: 'It will be observed that red, blue and yellow, the primitive, or simple tints, do not afford the most pleasing contrasts; nor do the derivative, or compound tints, orange, purple or green […] of which is learned, that real beauties, as applied to the art of painting, do not consist in a multiplicity of colours, but in the just combination of a few.'[208] However, these comments are presented as part of an argument for the measured use of contrasting tints for best effects, with Cox showing a clear understanding of both pigment mixing, the concept of the colour wheel and its application to composition: 'All colours or rather tints, when used simple, are clearer than when compounded, and they appear to greater advantage, whatever the strength, by being judiciously opposed to compound tints.'[209] This concern with contrast and harmonising tints became a major aspect of many early nineteenth century publications on colour, as the next section of this chapter will discuss further. Examples of writings on colour at the end of the eighteenth century show the strong influence of aesthetic ideas of the picturesque and

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[206] Gilpin, *Essays,* pp.12-13 (Poem). The poem is also discussed and partially quoted in Gage, *Gilpin to Ruskin*, p. 19, where Gage considers it 'unusual amongst Gilpin's writing as it is directed at the artist and not the viewer of the landscape'. He also comments that it is perhaps 'unique as a drawing manual in verse.'

[207] Gilpin, *Essays,* p.31 (Poem).

[208] D. Cox, *A Series of Progressive Lessons, Intended to Elucidate the Art of Landscape Painting in Water Colours* (London: T. Clay, No. 18, Ludgate Hill, London, printed by J. Hayes, 1811), p.20.

[209] Ibid., p.19.

the Romantic Movement, which were further developed in colour literature in the early nineteenth century.

Figurative representations of colour theory

While most illustrations of colour studies and colour theory in the eighteenth century displayed a certain degree of abstraction and had to serve the purpose of visualising concepts and systems, it is worth noting that some figurative or allegorical representations were also produced. While these were not of any instructive use, they shed light on the popular reception of colour literature and theories. The rainbow as a motif had been used for centuries, mainly as a symbolically charged trope in both landscape painting and portraiture, not necessarily with much regard for optical correctness (for example the *Rainbow Portrait* of Elizabeth I at Hatfield House, attributed to Isaac Oliver, from c. 1600-1602).

Rainbows, colour ranges, and palettes often featured in allegories of painting, usually represented by a woman (for example Giovanni Domenico Cerrini's *Allegory of Painting*, 1639, Pinacoteca Nazionale, Bologna), as putti or cupids (for example Francois Boucher's *Allegory of Painting*, 1660s, State Hermitage Museum, St Petersburg), or combinations of both (for example a different *Allegory of Painting* by Boucher from 1765, National Gallery of Art, Washington). Associations of colour and the art of painting with women are likely to have their origins in Greek mythology, where the goddess Iris was the personification of the rainbow and a messenger of the gods. This also explains the frequently featured clouds and skies in conjunction with colours and rainbows, especially in Baroque and Rococo painting.

The post-Newtonian era saw a shift in the style of the inclusion of rainbows and figurative representations of colour. Many eighteenth century images concerning colour were literal and included clear narrative references to the story of Newton's experiments with prisms. The figurative scenes framing Boutet's colour circles from 1708 (fig. 51) illustrate the art of painting and portraiture (thus making clear that the

subject here is subtractive colour), whereas Schiffermüller's circle is surrounded by images of various putti recreating Newton's experiments and painting rainbows on a canvas, thereby paying tribute to optical colour studies and presenting Newton as a fundamental figure in the realm of painting (fig. 52).

In the later eighteenth century many images of Newton and others in homage to him were created and these were often used in later editions or translations of his work. Many of them incorporate images of the prismatic range of colours or shafts of light, clearly used as a visually striking symbol of Newton's scientific achievements. Occasionally the rays of light are depicted in association with the divine light of wisdom emanating from Newton, as for example in a frontispiece to early editions of Voltaire's *Eléments de la philosophie de Newton.* A more direct reference to spectral colours and Newton's experiments is made in *Pour Newton* (fig. 58), a depiction of an allegorical tomb of Newton, from a series of twenty plates representing monuments in honour of illustrious men from Britain, published in France in c. 1741 and based on a painting in the Fitzwilliam Museum. Here Newton's rays of coloured light and Newton's tool of the trade, such as glasses and prisms, are set into a grand, imaginary architectural context, and again associated with divine light.

Figurative and allegorical representations of colour continue to be published throughout the eighteenth century alongside abstract diagrams and charts. They appear to have had a popular appeal as furniture prints, as the case of Angelica Kauffman's *Colouring* (fig. 59) suggests. The founding member of the Royal Academy was commissioned in 1778 to produce ceiling roundels for the new Council Chamber in the Royal Academy when still located at Somerset House, The Strand, in London. The four roundels, painted in oil, depict the 'four elements of art': *Design*, *Invention*, *Composition* and *Colour* (fig. 60). Female allegorical figures are usually set in a firmly Neo-classical context, with Kauffman's *Colouring* depicting a female painter dipping her paint brush into a Newtonian rainbow. A further symbol that alludes to colour is a chameleon in the foreground. The images were stipple-engraved by Bartolozzi in 1787 (after Kauffman had left England for Italy) and appear to have been some of the most

popular prints after Kauffman. The coincidence of Kauffman's later friendship with Goethe aside, the rainbow might here symbolise in a playful way the understanding that the painter's art does rely on Newton's finding. It also reflects the Royal Academy's awareness and interpretation of Newton's *Opticks* and later literature on colour. Significantly, the colour scheme of the painting is formed of dominant shades of the three additive primaries red (in the woman's shawl or cape), yellow (her dress) and blue (the sky, which constitutes much of the picture plane in the background), set against neutral naturalistic browns, greens and greys[210]. Intriguingly, the earliest description of the painting by Joseph Baretti in *Guide Through the Royal Academy* from 1781 mentions a prism in place of the paint palette: 'Colouring appears in the form of a blooming young Virgin, brilliantly, but not gaudily, dressed. The varied Colours of her garments unite and harmonise together. In one hand she holds a prism, in the other a brush, which she dips into the Tints of the Rainbow.'[211] It is possible that, as art historian Paul Schweizer suggested, the prism was subsequently painted over[212]. Kauffman's fascination with the rainbow and, it can be assumed, the study of colour literature, was later echoed by the second president of the Royal Academy Benjamin West, who, as early as 1787 would advise his students to use the rainbow as a guiding principle in painting: '[…] in that point Nature has placed the most glowing colours of the Rainbow, so that any deviation from this order of colours becomes offensive, and sikens every Eye […]'[213].

This conflation of the symbols of colour theory and the material aspects of painting, combined with references to Newton, can also be seen in an anonymous print from the same period (1785) and entitled *Theory of Colours* (fig. 61). Here the reference to Newton is made very clear by a virginal figure holding a prism against the

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[210] Incidentally, Kauffman would much later in life choose the same combination of primary colours in her retrospective self-portrait *The Artist Hesitating Between the Arts of Music and Painting, (*1791 or 1794, at Nostell Priory, West Yorkshire, another copy at the Pushkin Museum, Moscow), where she dresses the allegorical figure of Paining in bright red, yellow and blue.

[211] J. Baretti, *A Guide Through the Royal Academy, By Joseph Baretti Secretary For Foreign Correspondence To The Royal Academy* (London: [ca. 1781?]), p. 26. Cited in: R.L. Lee and A.B. Fraser, *The Rainbow Bridge. Rainbows in Art, Myth and Science* (Pennsylvania: Pennsylvania State University Press and Washington, SPIE Press, 2001), p. 77.

[212] Cited in Lee and Fraser, *Rainbow Bridge*, p. 77.

[213] Cited (without reference to primary source) ibid., p. 335, footnote 78.

sunlight, with the spectral colours appearing on what could be a large sketchbook or portfolio. Significantly, despite the subject matter of theory and immaterial colour, multiple pictorial references are made to painting and even the production of pigments: gathered on the table next to the figure are a painter's palette with paint brushes, a phial (most likely for the preparation of pure pigments), a book (an allusion to the theory underpinning painting) and flowers, which could be alluding to the genre of flower painting or the imitation of nature in painting in general. A large vat in the background might also allude to pigment production or pigment storage. This small but significant engraving reflects the appreciation and status of colour studies and colour theory in the later eighteenth century and refers to their application in the fine arts and even pigment production.

In the nineteenth century, figurative pictorial images of colour theory, optical concepts or the art of painting in general made way for much more literal and narrative illustrations, which can often be explained by the need for advertising and marketing. A number of decorative prints depicting Newton carrying out his experiments with prisms and light were produced throughout the nineteenth century, as for example a posthumously published print after George Romney entitled *Newton with the Prism* (1809) (fig. 62). The print is monochrome and the painting cannot be traced easily, but Lee and Fraser, who appear to have seen it, note that despite Romney's interest in the subject matter he interpreted Newton's spectrum freely, placing a spurious band of indigo next to red[214]. The scene is imagined and romanticised, showing Newton surrounded by scientific instruments and apparently performing his experiments with a prism in order to educate the two young women present; this perhaps being indicative of the association of the art of watercolour, and in particular flower painting, with a pastime for young ladies.

[214] Ibid., p.215.

More prosaically, David Cox's frontispiece for *The Artist's Companion* from 1825[215] shows an assembly of artist's materials and tools in a studio environment, carefully arranged in the style of a still life (fig. 63), whereas the frontispiece of an 1844 colour manual by Rudolph Ackermann[216] depicts a young Queen Victoria and Prince Albert happily pursuing the art of watercolour painting, surrounded by Ackermann artist's materials (fig. 64). Here visible patronage, product placement and advertising have replaced allegorical representation or instructive intent.

In 1833 another figurative representation of colour, or colouring, appeared in a satirical publication on the art of painting, *Hints upon Tints*, by Henry Warren[217]. In this curious volume satirical poems in which painters and overenthusiastic readers of colour literature are mocked, sit side by side with adverts for the latest edition of serious publications on house-painting. Some elements of art, for example colour, drawing, freedom, composition and execution, are illustrated in humorous sketches that largely play with the double-meaning of words. Colour is here represented as a 'person of colour', the grim and dark looking face of what appears to be an Arab, wrapped in scarves (fig. 65). While orientalising in its approach, the publication as such highlights the degree to which discussions, lectures and publications about colour and the arts in general had become part of the public consciousness, certainly enough to warrant a lengthy satirical response.

An interesting figurative image that appears to be closer in style to eighteenth century than nineteenth century style was identified by F. Schmid in 1948 in a short article on Moses Harris. He refers to and provides an image of a frontispiece to George Field's first edition of *Chromatics*[218] from 1817 (fig. 66), 'a colored engraving in the

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[215] D. Cox, *The Young Artist's Companion or, Drawing-book of Studies and Landscape Embellishments: Comprising a Great Variety of the Most Picturesque Objects Required in Various Compositions of Landscape Scenery Arranged as Progressive Lessons* (London: S&J Fuller,1825).
[216] T. H. Fielding, *Ackermann's Manual of Colours, Used in the Different Branches of Water-colour Painting: With an Ample Description of the Value and Properties of Each Colour* (London: Ackermann and Co., 1844).
[217] H. Warren, *Hints Upon Tints, with Strokes Upon Copper and Canvass* (London: Printed for J.F. Setchel, 1833).
[218] G. Field, *Chromatics, or, An Essay on the Analogy and Harmony of Colours* (London: printed for the author by A. J. Valpy, Tooke's Court, Chancery Lane; and sold by Mr. Newman, Soho Square, 1817).

manner of Bartolozzi, [depicting] three little putti with vases colored yellow, red, and blue out of which a rainbow held by an angel emerges. On the ground are flowers, a steer's head, and a rock indicating the colors from the vegetable, the animal, and the mineral kingdom.'[219] This image, although not easily traceable[220], is interesting in that it does combine Newtonian references, mythological imagery (the winged figure is likely to be the goddess Iris) and allusions to pigment types and sources in a nineteenth century publication on colour. Schmid explains the imagery of the lower part of Field's frontispiece by pointing out that Harris provided equivalents from the plant world for pigments and colours (Field refers briefly to Harris in his work). However, the trio of references to the vegetable, animal and mineral world are perhaps more reminiscent of a new edition and interpretation of an eighteenth century nomenclature by German geologist Abraham Gottlob Werner[221], published in 1814 and again in 1821 in London with the title *Werner's Nomenclature of Colours, With Additions, Arranged so as to Render it Highly Useful to the Arts and Sciences, Particularly Zoology, Botany, Chemistry, Mineralogy, and Morbid Anatomy. Annexed to Which Are Examples Selected From Well-known Objects in the Animal, Vegetable, and Mineral Kingdoms.*[222] The editor Patrick Syme (1774 – 184), a flower painter at the Wernerian and Horticultural Societies in Edinburgh, illustrated the book with detailed colour charts, comprising numerous shades and variations of the colours green, orange, yellow, blue, purple, red, black, white, grey and brown, and (in strict chart format) descriptions of equivalents for each particular tint in the plant world (mostly flowers), animal world (insects and birds feature heavily) and the mineral kingdom (figs. 67 and 68). Syme, unlike Field, was less concerned with pigments, and with his examples focused on the appearance and recognisability of a colour, but the similarity in structure between the Field frontispiece and Syme's *Werner's Nomenclature* is a

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[219] Schmid, 'Moses Harris', p.229.
[220] I have inspected five copies of this extremely rare book (only 250 were printed), but the frontispiece was not present in any of them; possibly removed for its pictorial value by previous owners.
[221] A. G. Werner, *Von den äusserlichen Kennzeichen der Fossilien* (Leipzig: Crusius, 1774).
[222] P. Syme (ed.), *Werner's Nomenclature of Colours, With Additions, Arranged so as to Render it Highly Useful to the Arts and Sciences, Particularly Zoology, Botany, Chemistry, Mineralogy, and Morbid Anatomy. Annexed to Which Are Examples Selected From Well-known Objects in the Animal, Vegetable, and Mineral Kingdoms* (Edinburgh: William Blackwood and London: John Murray and Robert Baldwin, 1814). The 1821 edition is almost identical and was published by William Blackwood in Edinburgh and T. Cadell in London.

further example of the growing interest in the early nineteenth century in interdisciplinarity and the applicability of colour research, while still referencing older sources and styles of representation.

2.2 Colours of the mind: The rise of colour literature in the early nineteenth century

The early nineteenth century saw a renewed surge in painters' manuals and general publications on colour, as well as theoretical treatises on colour. Alongside new works an astonishing number of eighteenth century treatises on colour were published in new editions. In some cases manuscripts from previous centuries that had never before been in print were resurrected and published for the first time. While this can in many respects be interpreted as a continuation of the scientific, practical and aesthetic interest in colour prevalent in the eighteenth century, certain social and historical factors might help explain this concentration of colour literature published in the first three decades of the nineteenth century. A surprisingly large number of these influential publications were published between 1805 and the 1820s, coinciding with the implementation and finalisation of the Oriental interiors of the Royal Pavilion. This subchapter will discuss the social and historical circumstances that led to a shift in attitude to colour studies, colour research and the application of colour. The life and work of the colour writer and teacher of painting in watercolour, a Miss Mary Gartside (active between 1781 and 1809) will serve as an exemplary case study of the circumstances in which colour research took place, developed and was disseminated in the early nineteenth century.

As chapter 2.1 has shown, colour studies and the use of colour in the arts in the eighteenth century were heavily informed by Enlightenment ideas and the desire for objective and scientifically verifiable explanations of colour concepts. The search for a representative visual system of colour order and colour interaction led to a multitude of diagrams and geometric representations of colour, with the aim of forming a useful tool or source of reference for many disciplines within the fine arts and beyond. While

scientific interest in both additive (immaterial) colour and subtractive (material) colour (specifically the invention and production of new, synthetic pigments) was considerable, *colore* still played a subordinate role in comparison to *disegno*. Neo-classical ideas of beauty did not embrace the experimental and exuberant use of colour. This was expressed poignantly in 1764 by Johann Joachim Winckelmann in *Geschichte der Kunst des Alterthums (History of the Art of the Ancients)*, in which he assigns the essence of beauty to pure white shades, here seen in relation to sculpture, while colour should merely act as a tool in assisting beauty. The allusions to Newton's concept of white light may or may not be coincidental:

> Die Farbe trägt zur Schönheit bey, aber sie ist nicht die Schönheit selbst, sondern sie erhebet dieselbe überhaupt und ihre Formen. Da nun die weiße Farbe diejenige ist, welche die mehresten Lichtstrahlen zurückschicket, folglich sich empfindlicher macht, so wird auch ein schöner Körper desto schöner seyn, je weißer er ist […]
>
> [Colour contributes to beauty, but it does not constitute beauty in itself; rather it heightens beauty and its forms. Since white is the colour which reflects the greatest number of light rays, and thus becomes the most easily recognised, a beautiful body will appear more beautiful the whiter it is …][223]

These purist and chaste beauty ideals change dramatically in the early nineteenth century. Colour was beginning to take the lead in the creation of 'The Beautiful', or 'The Picturesque', culminating in an application of the concepts of colour contrast, primary and secondary tints (i.e. the colour wheel) and higher saturated tints, especially in fashion and interior decoration.

Many of the early nineteenth century publications on colour have to be evaluated first in the context of the history of painting in watercolour (specifically landscape and flower painting) and the aesthetic ideals of the Picturesque and the Romantic movement, but the interest in colour quickly expanded to other areas, including other forms of painting (in oil and fresco), as well as interior decoration. The design, scope and format of books on colour were also strongly influenced by

[223] J. J. Winckelmann, *Geschichte der Kunst des Alterthums. Erster Theil.* (Dresden: Waltherische Hof-Buchandlung, 1764), pp.147-148 [my translation].

developments in publishing and book illustration, with noticeable changes coinciding with the introduction of chromolithography from around 1820 onwards. Prior to the 1820s many illustrated books contained either hand-coloured woodcuts, copper etchings or engravings, or, from around 1800, aquatinted engravings from either steel or copper plates. The hand-colouring of illustrations in books was expensive and labour-intensive and accounts for small circulations and the scarcity of surviving original editions of many of the books with high quality hand-colouring. However, it appears to have remained the preferred method of colouring illustrations in publications on the subject of colour, particularly in instructive manuals of watercolour painting until the later 1830s.

A number of professional organisations promoting the art of watercolour painting were founded in the early nineteenth century, such as the Royal Watercolour Society in 1804, the New Society of Painters in Water Colours in 1807 (which became the Royal Institute of Painters in Water-Colour in 1831), highlighting the fact that painting in watercolours was, due to the affordability and ease of use of the medium, an extremely popular pastime and could be pursued at a professional as well as amateur level. The popularity of watercolour painting was fuelled by the commercial production of portable painting equipment, such as small watercolour boxes or satchels. In 1842 collapsible tubes for oil paints became commercially available, widening the already large field of amateur painting manuals to oil painting.

Many of the early nineteenth century colour writers had connections with the Royal Academy and focussed on themes such as light and shade, composition, colour harmony and colour contrast. Academics, artists and other associates of these institutions lectured on colour, proposed colour theories (for example James Sowerby and Benjamin West) or published practical colour manuals (among many others John Burnet, Julius Caesar Ibbetson, David Cox and John Varley). The boundaries between these genres of colour literature were often blurred, with colour theories occasionally embedded in books on interior design or painting manuals. A particularly good

example of the former is the published work of the landscape designer Humphry Repton, which will be discussed in chapter 3.4.

While considerable research and publication activity is noticeable in and around Royal Academy circles, some members of the older generation of academics were still teaching according to ideals closer to Burke or Winckelmann. John Opie's lectures, for example, delivered at the Royal Academy in 1806 and published posthumously by his widow in 1809, are an example of this generational divide. He clearly subscribed to the Neo-classical hierarchy of form over colour, referring to the sixteenth century Italian Renaissance theme of the conflict between *disegno* and *colore*: 'Colour represents nothing, and lights and shadows have no meaning, till they are circumscribed by form. Drawing is therefore evidently the foundation and first element of the art, without which all the others, ideal or practical, are not merely useless, but non-entities.'[224] It can be assumed that considerable debate about these issues took place in art institutions and academies.

Of particular intellectual interest in a number of European countries was the substantial work on colour produced and published by the German poet and playwright Johann Wolfgang von Goethe. As briefly mentioned earlier, Goethe had begun experimenting with colour in the 1780s and had published shorter treatises on colour as early as 1791/92, for example *Beyträge zur Optik [Contributions to Optics]*[225], in which he proposed a dualistic colour system based on the polarity of darkness and light, represented by the 'pure' colours blue and yellow, from which all other colours can be produced, including the 'impure' red:

> Unter den eigentlichen farbigen Erscheinungen sind nur zwei, die uns einen ganz reinen Begriff geben, nämlich Gelb und Blau. Sie haben die besondere Eigenschaft, daß sie zusammen eine dritte Farbe hervorbringen, die wir Grün nennen. Dagegen kennen wir die rote Farbe nie in einem ganz reinen Zustande: denn wir finden, daß sie sich entweder zum Gelben oder zum Blauen hinneigt.

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[224] J. Opie, *Lectures on Painting, Delivered at the Royal Academy Of Arts: With a Letter on the Proposal for a Public Memorial of the Naval Glory of Great Britain. By the Late John Opie, Esq. Professor in Painting to the Royal Academy* (London: Longman, Hurst, Rees, and Orme, 1809), p.22.
[225] J. W. von Goethe, *Beyträge zur Optik* (Weimar: Im Verlage des Industrie Comptoirs, 1791/92).

> [Among all colours only two can be considered as absolutely pure: yellow and blue. These colours are special in that, when combined, they produce a third colour, which we call green. Red on the other hand is never pure: we find that it tends either to yellow or to blue.][226]

Goethe argued further that black and white are not colours as such, but instead representations of total darkness and the brightest light:

> […] so ist das reine Weiß dagegen ein Repräsentant des Lichts, das reine Schwarz ein Repräsentant der Finsternis, und in jenem Sinne, wie wir die prismatische Erscheinung farbig nennen, ist Weiß und Schwarz keine Farbe; aber es gibt so gut ein weißes als schwarzes Pigment, mit welchem sich diese Erscheinung auf andere Körper übertragen lässt.
>
> [… hence pure white represents light, while pure black represents darkness, and in the manner in which we call prismatic appearance colour, black and white cannot be considered colours; but there are black and white pigments, which allow the appearance to be seen on objects.][227]

Kuehni and Schwarz comment that 'Goethe did not distinguish between additive and subtractive color mixture' and had 'little interest in color order beyond the hue circle'[228], but that he did acknowledge the existence of black and white pigments and frequently referred to paint and pigments available to the artist, suggesting that, like Harris, he might simply not have fully understood the difference between material and immaterial colour. Readers of *Beyträge zur Optik* were encouraged to recreate certain experiments with three-sided prisms, which included looking through a prism at various objects and surfaces. To that effect Goethe included an expensively produced set of twenty-seven woodblock printed and coloured 'playing cards'. These were wrapped in brown paper with a woodcut vignette depicting tools and motifs of colour studies. It was probably designed by Goethe himself and shows his own eye surrounded by a rainbow, set against the rays of the sun, with a prism and a mirror or a lens lying in the foreground (fig. 69).

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[226] Ibid., p.18 [my translation].
[227] Ibid., pp.17-18 [my translation].
[228] Kuehni and Schwarz, *Color*, p. 62.

Goethe pursued his research into colour for a further twenty years, culminating in the publication that was probably the most substantial treatise on colour composed in the nineteenth century. *Zur Farbenlehre* [literally: *On the Doctrine of Colours*] was published in three volumes (one of them comprising a series of coloured plates) in 1810. As mentioned in chapter 2.1 Goethe was strongly anti-Newtonian in his approach and attempted to prove Newton wrong by elaborately recreating his prismatic experiments. However, the real impact of Goethe lies perhaps in the sheer volume, complexity and variety of his intellectual output on the subject of colour.

The first, 'didactic', volume of Goethe's *Farbenlehre* was translated by Charles Lock Eastlake and published in 1840, but, according to Ian Bristow, Eastlake had finished the translation by 1820[229], suggesting that aspects of Goethe's colour studies were discussed in academic circles soon after its publication in German. There is no doubt that *Farbenlehre* became hugely influential on other colour writers, academics and artists in the mid and late nineteenth century, most notably J.W.M. Turner. Turner owned a heavily annotated copy of Eastlake's translation[230], which is testimony to his thorough and critical examination of the work.[231] John Gage studied the annotations carefully and came to the conclusion that Turner thought Goethe's concept of complementary colours for harmonious compositions was 'far too rigid a framework within which to understand and express the diversity of natural coloration'[232]. Despite his notable 'suspicion of colour theory in a more general sense'[233], Turner was inspired to paint two canvasses with direct references to Goethe's *Farbenlehre* in the titles, *Light and Colour (Goethe's Theory): The Morning after the Deluge, Moses Writing the Book of Genesis* (exhibited 1843, Tate no. N00532, fig. 70) and *Shade and Darkness - the Evening of the Deluge* (exhibited 1843, Tate no. N00531), in which he explores

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[229] Bristow, *Architectural Colour*, p.189.
[230] Turner also owned copies of Harris's *Natural System of Colours* (1811), Field's *Chromatography* (1835), Charles Hayter's *Introduction to Perspective, Drawing and Painting* (1815) and a number of other relevant publications on colour and colour theory. The complete lists of books owned or quoted by Turner in relation to the topic of colour is provided by Gage in *Colour in Turner*, pp. 215-220.
[231] The book is in a private collection but it has been on temporary loan for display at Tate Britain in the past. Photographic copies of each page are available at the Tate Library.
[232] Gage, *Colour in Turner*, p.116.
[233] Ibid., p.18.

Goethe's concepts of polarity in colour system, aspects of light and shade and spiritual dimensions of colour in painting.[234]

However, Turner aside, direct references to Goethe's colour studies are notably rare in English literature before the 1840s. It appears that Goethe's intellectual ideas were known and discussed in England, but found their way into the realm of published literature only with a considerable time-delay. As Gage explained, 'not until after Goethe's death do we encounter a colour theory based substantially on the Theory, in a work by the Weimar theatre artist Friedrich Beuther, and even here Goethe was barely mentioned. In Germany in the 1840s Goethe's book had a low reputation among artists, and although by the mid-nineteenth century this had ceased to be so, it still seems to have been neglected in painterly handbooks until long after then.'[235]

Incidentally, Goethe's colour theory was discussed in great detail and in relation to architectural colour by John Gregory Crace, son of Frederick Crace, one of the principal interior designers of the Royal Pavilion, in an article published in *The Builder* in 1867[236]. This article will be discussed in chapter 3.2. Nevertheless, seen in the greater context of Romantic art, Gage assigns Goethe a substantial legacy in being exemplary of a new generation of artists and writers who 'sought to extract new meanings for colours from their positions in space'[237] and began to consider subjective colour perception, emotional responses and analogies between colours and character qualities and moral connotations. Significantly, Gage entitled an entire chapter of *Colour and Culture* 'Colours of the Mind: Goethe's Legacy'[238], stressing the importance of the shift towards the consideration of subjective experience of colour.

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[234] For a critical analysis of Turner's paintings relating to Goethe's Farbenlehre see G.E. Finley, 'The Deluge Pictures: Reflections on Goethe, J. M. W. Turner and Early Nineteenth-Century Science', *Zeitschrift für Kunstgeschichte*, Band 60, Heft 4, 1997, pp. 530-548.
[235] Gage, Colour and Culture, p.203.
[236] J. G. Crace, 'On Colour', *The Builder*, 30th Nov. and 7th Dec. 1867.
[237] Gage, *Colour and Culture*, p.194.
[238] Ibid., pp.191-212.

The case of Mary Gartside

The flower painter Mary Gartside is in some ways an exception in the realm of early nineteenth-century colour theory. While she has only recently come to attention of colour researchers[239], I will discuss her here as a good example of an artist and writer who reflects both the intellectual discourse on and a practical interest in colour in the early nineteenth century. She is also worthy of consideration in the context of this thesis because at least one of her publications was owned by George IV's sisters and/or mother, thus making it possible that her work was known to George himself. Gartside was exceptional in having succeeded in publishing extensively on colour theory as a woman in what appears to have been a male domain. Exceptional too, is the style of illustrating her books, as I will explain later. With regard to content, scope and the circumstances of her publications, Gartside will be considered here as a case study to illustrate the state of colour research and attitudes to colour in the arts at the beginning of the nineteenth century. Gartside wrote, published and revised her own colour theory and published at least three books on the subject. These were, in chronological order, *An Essay on Light and Shade, and on Composition in General*[240], self-published in 1805; *Ornamental Groups, Descriptive of Flowers, Birds, Shells, Fruit, Insects*[241] from 1808; and the second edition of the former with a new the title *An Essay on a New Theory of Colours*[242], also published in 1808

Very little is known about Gartside's life. We lack confirmed dates and locations for her birth and death, but she appears to have grown up near Manchester and retained an address there (now no longer traceable, but in the Peak District village of Hope) until at least 1808. She taught painting in watercolour, probably in London, and exhibited botanical drawings at the Royal Academy in 1781 and at a number of other

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[239] Surprisingly, Gartside is not mentioned by either Gage, Spillmann or Kuehni and Schwarz in any of their publications.

[240] M. Gartside, *An Essay on Light and Shade, on Colours, and on Composition in General* (London, Printed for the author, by T. Davison, and sold by T. Gardiner, 1805).

[241] M. Gartside, *Ornamental Groups, Descriptive of Flowers, Birds, Shells, Fruit, Insects, &c., and Illustrative of a New Theory of Colouring* (London: W. Miller, 1808).

[242] M. Gartside, *An Essay on a New Theory of Colours, and on Composition in General, Illustrated by Coloured Blots Shewing the Application of the Theory to Composition of Flowers, Landscapes, Figures, &c.* (London: T. Gardiner, W. Miller and I. and A. Arch, 1808).

art societies until 1808. A number of letters written by Gartside survive in the records of the *Associated Artists in Water-Colours*, where Gartside exhibited in 1808.[243] Some of these were composed in Hope and some in London. The London letters bear the address Charles Street, Queen's Elm, Botanical Gardens. The content of her letters supports the impression of a confident, engaged and meticulous woman. Sadly they do not deal with matters regarding her writings or research but mainly concern practical issues arising in preparation for the 1808 exhibition. However, it becomes clear that they were written by a woman who was an assured and professional artist used to promoting her own work.

Although the exhibition dates are the only verified biographical data, general circumstances, associations, and references in her writing suggest that she was influenced by, and possibly in direct intellectual exchange with, artists and scholars from the Royal Academy over a long period of time. This can be determined from a number of sources. For example, The *Associated Artists in Water-Colours* papers include a list of people who received an invitation to the private view to an exhibition including her work on 16 April 1808. The inevitable invitees of noble background are there, such as Lady Elizabeth Loftus and the Lord Buckingham, but also well-known names from the arts scene and the wider Royal Academy circle such as M. Turner (possibly J.M. W. Turner), the designer Thomas Hope, a Mr. West (probably Benjamin West), a Mr. Lawrence (probably Thomas Lawrence), Mr. Landseer (perhaps the father of E.H. Landseer R.A.) and Mr. Beechey (most likely William Beechey).

Gartside was unmarried, working as a teacher and appears to have enjoyed relative intellectual and creative freedom. It is likely that Gartside divided her time between London and her home near Manchester. She was acquainted with a number of scientists and academics in the London area, some of whom she acknowledges in her books. She also pays tribute to Sir Joshua Reynolds, who was the President of the Royal Academy when Gartside exhibited there. Martin Kemp claims that Gartside may have intended to illustrate or interpret Benjamin West's colour theory with her

[243] M. Gartside, Mary (sender), *Letters to the Associated Artists in Water-Colours, 1808 Mar. 7 - 1809 June 2*3 / 11 items. Mss. National Art Library, V&A, London, pressmark 86.AA.18.

publications.[244] West was Reynolds's successor as President of the Royal Academy, serving from 1792 to 1805 and 1806 to 1820. All three of Gartside's books were published during West's presidency, suggesting that she might well have attended lectures by both Reynolds and West and incorporated their ideas into her writing. West lectured on colour in 1797, 1804 and again in 1817, but his ideas about colour were not published or written down by him. They survive only as lecture notes by the landscape painter A.W. Callcott[245] and in the words of his biographer John Galt.[246]

As Ann Bermingham has explained, Gartside's published work needs to be viewed within the context of the social history of drawing and watercolour painting, notably the tradition of paint manuals written by women, as well as the genre of flower painting.[247] By presenting her books as paint manuals for ladies, she managed to publish theoretical writings in a male-dominated environment.

Ornamental Groups includes a list of subscribers. This was not the case with her two other books. Since Gartside points out in her introduction to her *New Theory of Colours* that her three books should be seen and used in relation to each other, we can assume that most of the subscribers to *Ornamental Groups* also owned one of her other books. The list of subscribers has previously been examined in detail by Francina Irwin, who comments on the male/female ratio (151 of 193 are female), the geographical spread of the subscribers (there are numerous subscribers from the greater Manchester area) and notes that forty of them are of titled background, drawing the conclusion that the art of watercolouring and flower-painting was clearly a pastime for the upper classes and the privileged. She also assumes that the majority of the other subscribers are amateur artists.[248]

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[244] M. Kemp, *The Science of Art: Optical Themes in Western Art from Brunelleschi to Seurat* (New Haven and London: Yale, 1990), p.293.
[245] Gage, *Colour and Culture*, pp.109-110.
[246] J. Galt, *The Life, Studies, and Works of Benjamin West, Esq., President of the Royal Academy of London Composed from Materials Furnished by Himself.* 2 vols. (London: T. Cadell and W. Davies; Edinburgh: W. Blackwood, 1816/1820), pp.103-117.
[247] A. Bermingham, *Learning to Draw: Studies in the Cultural History of a Polite and Useful Art* (New Haven, CT: Paul Mellon Centre for Studies in British Art/Yale University Press, 2000), pp. 215-227.
[248] F. Irwin, 'Amusement or Instruction? Watercolour Manuals and the Woman Amateur.' p. 151-153, in: Orr, Clarissa Campbell (ed.), *Women in the Victorian Art World* (Manchester University Press, 1995, p.149-166.

Like her earlier books *Ornamental Groups* is dedicated to Lady Sophia Grey (1777-1849) of Dunham Massey (historically in the county of Cheshire, now incorporated in the Trafford Metropolitan Borough), the youngest daughter of George Harry Grey, 5th Earl of Stamford. This is a clear indicator of direct patronage, but there is also a Royal connection which is of particular interest and might provide a close link to George IV. George's mother Queen Charlotte heads the list of subscribers to *Ornamental Groups*, followed by the Princess of Wales and Princess Elizabeth, Queen Charlotte's seventh child. Queen Charlotte and George's sisters had a well known interest in both botany and interior decoration, and they may well have had an interest in colour theory. It is significant that both Harris's *Natural System of Colours,* as well as at least one of Gartside's books were in the possession of the Royal Family and might even have caught the eye of their son George IV.

Like many of her contemporaries, Gartside refers directly to Newton and Harris in her writings but adds certain aspects to her theory that almost appear to predate some of Goethe's findings and ideas. Ian Bristow, one of the few scholars to include Gartside in his outline of the development of colour theory, argues that 'at least two important aspects of this [Goethe's *Theory of Colours*] as it was eventually to appear are contained in *An Essay of Light and Shade* by Mary Gartside. (…) Other aspects of her book reflect the underlying attitudes of Goethe.'[249] Bristow is referring here specifically to Gartside's classification of colours in warm, cold and light colours, as well as her focus on the need to harmonise tints in painting. Bermingham, too, credits Gartside with dealing with some of Goethe's preoccupations years before the publication of *Farbenlehre*, such as the sensory effects of colours and colour combinations.[250] It is unlikely, although not impossible, that Gartside had read Goethe's German publications. However, similarities as well as differences in their chosen subject matter and argumentation might explain and confirm certain trends in critical thinking and developments in colour theory in early nineteenth century Europe.

[249] Bristow, *Architectural Colour*, p.189.
[250] Bermingham, *Learning to Draw*, p. 218.

Gartside's first book appears at first glance to fit the mould of a typical small manual on the art of drawing and watercolour, with particular emphasis on the genre of flower painting. It was modestly entitled *An Essay on Light and Shade, on Colours, and on Composition in General*, addressed to Gartside's students and thus appearing to stay within what was acceptable and achievable for a woman in the early nineteenth century. Its quarto format was the standard size for this type of illustrated artists' manual up to the late 1830s. It comprised fifty-four pages, an engraved title page, two pictorial soft ground etchings, two coloured tables, a coloured engraving of a colour circle and eight further coloured plates. The two soft ground etchings (fig. 71) show round objects, in relation to an observer's eye and to light conditions, illustrating the principles of foreshortening and shading. They illustrate an instructive section entitled 'On Light and Shadow', which precedes the section on 'Colours and their Arrangement in Groups'. This chapter clearly bears some of the marks of a traditional drawing manual, but it also introduces some of Gartside's main theoretical concerns, such as the value of round shapes or circular compositions in paintings, the importance of light and shade, relating to the status of white, black and grey, as well as recognising the significance of the eye of the artist or beholder in respect of colour arrangement. This focus on perception mirrors Goethe's attitude to some matters concerning colour research, which I will describe later.

Gartside's two hand-coloured tables are line engravings of seven 'prismatic colours', divided into the four 'elementary' colours yellow, red, violet and blue, and the three 'compounds' orange, indigo and green.[251] The second table lists seven 'compound tints of a second order, composed from the pure prismatic compounds'[252], an idea clearly influenced by Harris's system. The boxes for the tints are filled in by hand in water-colour. The other copper engraving provides the outline for Gartside's own colour circle (fig. 72), in which she adjusts Newton's order of colours to serve her own line of argumentation and the application of her theory to material colour. The circle aims to represent the prismatic spectrum and brightness noted by degrees, where each colour is given a proportional value, and is not vastly different from many

[251] Gartside, *Light and Shade*, p. 39.
[252] Ibid., p. 41.

other representations of colour order, often based on circular or two superimposed triangular shapes. It is, however, meaningful that she refers to it as a colour ball.[253] The idea of a sphere might have been on her mind and thus her circle could be seen as a precursor to German painter Philipp Otto Runge's three-dimensional drawings of a colour sphere (*Farbenkugel*), influenced by intellectual exchange with Goethe and published in 1810 (fig. 73). Runge chose a three-dimensional image specifically to include the dimension of brightness in colours.

What makes Gartside's works stand out among the wealth of illustrated books on colour and painting published in her period are the other eight coloured plates[254]. These illustrate her ideas of the arrangement of harmonising and contrasting tints. The tints (white, yellow, orange, green, blue, scarlet, violet and crimson) roughly follow Newton's prismatic spectrum (with a different weighting within blues and reds), with the addition of white, which Gartside places first in the sequence of plates.

These plates are not coloured line engravings but individual, freely painted watercolour 'blots' with a high degree of abstraction (fig. 74). In 1948 F. Schmid devoted part of an evaluation of Harris to Gartside, and was perhaps the first scholar to discuss her work. He included an image of her colour wheel in the article's illustrations and intriguingly likened the colour blots to both modern sculpture and painting, as well as to the earliest coloured animated films by Walt Disney: '[…] the impression is very fantastic and modern suggesting paintings by the Swiss artist, Giacometti, or even a Walt Disney film. These plates with their formless masses of dabs of colors and mixtures are of a fascinating beauty.'[255] The images appear organic and are vaguely reminiscent of flower heads, but Gartside's aim was to reduce examples of harmonious compositions to their colour layout and degrees of brightness within the colours. The only graphic element on each plate is the number sequence and colour name at the top of the page. In the 1808 edition numbers were added to

[253] Ibid., p.28a.
[254] Schmid only mentions six plates of colour blots, suggesting he might have inspected a copy with missing plates. Schmid, 'Moses Harris', p.229.
[255] Ibid., p.228.

the colour blots, indicating areas of light and shade referred to in the accompanying text.

Since in Newton's scheme all prismatic colours when combined produce white, or the colour of sunlight, Gartside's inclusion of white should not be interpreted as a deviation from Newton. On the contrary, she used white as a starting point in the same way that Newton placed it at the heart of all colours in his representation of a colour system. Gartside defined white in the text accompanying the white colour blot as follows: 'The true primitive colour of light, unmixed with any other substance, is white. I shall therefore speak of this colour first. Its contrast or opposite is of course black, or darkness.'[256]

It can be assumed that Gartside would have been familiar with the work of the botanical illustrator James Sowerby (1757-1822). He studied at the Royal Academy and was close in age to Gartside. It is likely, given their shared interests, that they met and discussed botanical drawing as well as their research on colour. Indeed, Gartside's colour theory predated the much more influential treatise by Sowerby from 1809, which pays tribute to Newton in its title: *A New Elucidation of Colours, Original, Prismatic, and Material: Showing their Concordance in Three Primitives, Yellow, Red, and Blue: and the Means of Producing, Measuring, and Mixing Them: with Some Observations on the Accuracy of Sir Isaac Newton.*[257]

Ornamental Groups sheds some light on Gartside's motivations and aims regarding the proposal of a colour theory. Drawing from problems and inadequacies she experienced herself as a painter, she felt that there was a lack of a 'principle to guide' and rules, particularly with regard to harmonious combination of tints, and therefore endeavoured to establish a system of colouring:

> …it may not be thought improper if I state the circumstances which directed my attention to the Theory I wish to establish. In my early

[256] Gartside, *Light and Shade*, p.15.
[257] J. Sowerby, *A New Elucidation* […], (London, Richard Taylor & Co., 1809).

> efforts as a Painter, I had no other rule than fancy to guide my Pencil; but then aware of my own deficiency, I immediately felt the want to principle to guide it … Having accidentally cast my eye on an extract from Dr. Herschell's Investigation of Colours in a periodical work, for the very word colour, was then sufficient to arrest my attention, it occurred to me, that his having ascertained the strength and brilliancy which each colour bore to another, might be of use in Painting; and having obtained sight of the whole Work, the application of it to Painting struck me more forcibly, and I perceived the possibility of forming a system on that foundation, which would at once relieve my mind from the difficulties I had laboured under, of not knowing how to place or harmonize colours.[258]

This crucial paragraph highlights Gartside's seriousness about her work as a painter, her inquisitive mind, her widespread intellectual interest, as well as her confidence about the intellectual value of her publications. Despite the fact that her writings can and should be applied to painting, she considered them a theory in their own right, based on serious scientific research and sources. The most intriguing source she included are the writings of William Herschel (1738 – 1822), the astronomer, discoverer of infra-red light and father of one of the pioneers of photography, John Herschel. [259] Gartside remarked that she does not oppose Newton's prismatic order, the colour sequence of the rainbow, but argued that colours should be arranged according to their level of brightness, thus making changes to their natural order. She placed Newton's order opposite Herschel's, and stated that 'the highest degree of illumination lies between Bright Yellow, and Pale Green; next Orange, then Red, and Blue equally with Red, then Green, Indigo, Violet.'[260]

It is important to bear in mind that the basis of Newton's research was additive colour, or coloured light, whereas Gartside's treatise focused on subtractive colour, or pigments for painting. She thus considered white a colour in its own right within the context of painting: 'But what may be surprising to those unacquainted with the nature of colours, all the seven mixed together will produce white; and though not a

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[258] Gartside, *Ornamental Groups*, p. 7.

[259] In another noteworthy coincidence William Herschel was knighted in 1820 by the Prince Regent and founded the Royal Astronomical Society, supporting the notion that George IV had an interest in theories and research concerning colour and light.

[260] Gartside, *Theory of Colours*, p.27. Gartside's interpretation of Herschel's experiments has been analysed and illustrated in greater detail by Bermingham, *Learning to Draw*, pp. 218-219.

pure colour, yet one that can be called nothing else; and if not useful as a colour, it is of importance to know, that all the variety of tints, when mixed together, destroys the strength of each other, and produces a weak unmeaning one.'[261]

These interactions with and references to other artists, scientist and writers, show that, by 1808, Gartside clearly saw herself in a tradition of colour theorists. Her case also demonstrates that colour theory and colour research were prominent interdisciplinary topics in intellectual and academic circles in the very early nineteenth century. Referring to the second edition of her book as a *new* theory of colour was surely meant to be slightly ambiguous, as it could refer to it being a second edition as well as part of a new school or era in the development of colour theory. Apart from juxtaposing Newton and Herschel in her book, she cites the colour theorists she values most in the concluding part of *An Essay on Light and Shade*: 'But should any one choose to pursue these trials, I refer them to Mr. Galton's *Experiments on Colours*, and to Mr. Harris's *System of Colours*: in the latter they will see the whole range of pure and compound colours, and the contrasting tints to each, at one view.'[262]

Samuel Galton's writings on colour featured as a short scientific article in London's *Monthly Magazine* in 1799[263]. It concerns the blending of the colour of the prismatic spectrum with reference to Newton and provides detailed data of possible combinations of coloured light. Gartside probably used Galton's division by proportional value as a basis for her colour system. Crucially, Galton goes beyond the level of scientific experimentation by discussing the harmony of certain combinations, which is also one of Gartside's main concerns, before touching briefly on pigments and dyestuff with reference to Robert Darwin's optical experiments using dyed silk and white paper: 'It may perhaps be found that this [experiment XXXVI] is the most harmonious of combinations of colour possible…'[264].

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[261] Gartside, *Light and Shade*, p.12.
[262] Ibid., p.37.
[263] S. Galton, 'Experiments on Colour', *The Monthly Magazine*, No. XLVIII, 1 August 1799 (No. 1 of Vol. VIII), London, p.509-513.
[264] Ibid., p.512.

In 1811 Harris's *Natural System of Colours* was published again, this time dedicated to Benjamin West. It is astounding that Gartside would have owned, or at least had access to, the first edition of this extremely rare book. This implies that she had an educational background of sufficient depth and breadth to recognise the importance of Harris's work in the context of colour theory. With regard to the 1811 edition it is worth noting that it was edited by Thomas Martyn[265], an entomologist, like Harris. This further supports my argument that Gartside was involved with the Royal Academy over a long period of time. It is possible that she was instrumental in intellectual and perhaps editorial exchanges about Harris's book in the Royal Academy circle. Reynolds and/or West might have been aware of Gartside's interest in colour theory and her own publications preceding the 1811 edition and might even have encouraged her to publish.

Both Gartside's and Harris's aim was to provide a chart that indicates which tints are *contrasting*, i.e. opposite each other on the circles, or *harmonising*, i.e. adjacent or close to each other, always considering the effect of colour combinations. The inclusion of the value of brightness, or illumination, in their argumentation and visualisation, is a further similarity. This is a significant development in colour theory, not necessarily away from Newton's findings but rather an extension of them into the area of painting, artificial (i.e. creative) arrangements and, most importantly, perception. Harris says he wants to 'direct the eye',[266] reminiscent of Gartside's concerns with the effect of colour, shapes, light and shadows on the eye, as illustrated in the etching seen in fig. 71.

This leads to one of the most significant similarities of Gartside's and Goethe's theory. Clearly both Harris and Gartside realised that colour and colour combinations are in the eye of the beholder, be it artist or spectator, thus opening colour theory up to a new range of possible uses, interpretations and related sciences, as well as adding metaphysical and philosophical dimensions. Goethe placed the gaze (*das Schauen*) and

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[265] For more information on Martyn see: H.B. Weiss, 'Thomas Martyn's *English Entomologist*', in: *Journal of the New York Entomological Society*, Vol. 46, No. 3 (Sep., 1938), pp. 321-325.
[266] Harris, *Colours* [c.1769-1776], p. 8.

the perception of colour at the heart of his theory, emphasised by his underlying reliance on observations rather than experiments on colour in his research. He began his main, didactic part of his *Theory of Colours* with two chapters on the effect of light, darkness and black and white objects on the eye. While Harris alluded to the eye as being the place where colour is generated, Gartside dealt with the effect colour, shades and shape have on the eye of the viewer. Goethe examined the aspect of physiological perception in much greater detail, dedicating around twenty-five pages to the aspects of colour perception and the role of the retina. He thus developed a concept he had alluded to twenty years earlier when he included a woodcut of his own eye surrounded by a rainbow on the wrapping paper of the cards that accompanied *Beyträge zur Optik* (fig. 69).

Goethe produced many sketches and illustrations for his colour theory over many years but his colour circle, which has survived in many manifestations, remains the most prominent and often referred to of his visual examples. Some of Goethe's sketches of colour circles also illustrate the mystical, emotional and allegorical values he applied to colours. In a circle called *Temperamentrose* ('temperament rose' - an interesting accidental allusion to flower-painting) (fig. 75), which he sketched with Friedrich Schiller in 1799, the two poets aligned colours with the traditional four temperaments choleric, sanguine, melancholy and phlegmatic. In a sketch drawn in 1809, just before the publication of Farbenlehre, Goethe assigned sensual and character qualities to colours, such as *good*, noble, *powerful* and *useful,* framed by the abstract concepts of *reason, imagination, sensuality and intelligence* (fig. 76). These aspects of Goethe's research were later explored comprehensively in the concluding part of the didactic part of the 1810 edition '*The Effect of Colour with Reference to Moral Associations'*. As will be shown in the following section (Chapter 2.3) Goethe applied some of these ideas to architectural colour and the decorative arts.

The extent to which Goethe applied moral values to colours can perhaps be attributed to his exchanges and friendship with many contemporary Romantic artists. Gartside's argument, though emphasising individual perception and the effect of

colour composition, did not follow in this Romantic vein and did not attribute moral values to colours. She did, however, introduce Goethe's underlying principle of duality or polarity and the relation of colours to light and shadow, manifest in the value of illumination mentioned earlier. Both theorists explained the principle of contrasting and opposing colours, based on their interpretations of the prismatic spectrum, and discussed the effect of seeing contrasting colours in compositions. Gartside, within the aims of her treatise, strictly applied these principles to painting, while Goethe, without the intention of presenting a theory for application to painting, described the effects in more general terms.

While Gartside's comments on certain colour combinations were brief and factual, Goethe's often referred to personal experiences or observations. For example, when discussing the colour yellow, to which both theorists assigned the closest affinity to light, Gartside wrote 'The contrasting or balancing tint to full yellow, is purple in its deepest degree; to which such a degree of black must be added as will not destroy the purple: for though purple is the most opposite to yellow, yet place purple in the shade and it will there appear of a deeper hue than in the light…'[267]. A typical paragraph by Goethe on yellow is much more impressionistic, attributing highly subjective and emotional values to the colour. It is noteworthy that he used examples such as different kinds of fabrics and materials, as well as painting, to support his argument:

> Yellow: This the colour nearest to light.[…] In its highest purity it always carries with it the nature of brightness, and has a serene, gay, softly exciting character.. In this state, applied to dress, hangings, carpeting, &c., it is agreeable. Gold in its perfectly unmixed state, especially when the effect of polish is superadded, gives us a new and high idea of this colour; in like manner, a strong yellow, as it appears on satin, has a magnificent and noble effect. (768) We find from experience, again, that yellow excites a warm and agreeable impression. Hence in painting it belongs to the illumined and emphatic side. […] When a yellow colour is communicated to dull and coarse surfaces, such as common cloth, felt, or the like, on which it does not appear with full energy, the disagreeable effect alluded to is apparent.[268]

[267] Gartside, *Theory of Colours*, p.17.
[268] Goethe [Eastlake], *Theory of Colours*, para. 765-771, pp. 168-169.

The related concept of light and dark hues was crucial in both writers' theoretical exploration of colours. Goethe is often credited with being the first theorist to consider colour in relation to darkness, illumination and shade, stating for example that 'Black, as the equivalent of darkness, leaves the organ in a state of repose; white, as the representative of light, excites it.'[269] He went on to explain this phenomenon in great detail from a physiological perspective before discussing the effect of blackness, darkness, shades of grey and shadows on the viewer. The title of Gartside's first book alone, *An Essay on Light and Shade*, is proof that she recognised the importance of considering colours outside Newton's realm of pure light around the same time as, or perhaps even before Goethe. Her aims and scope were very different to Goethe's, certainly more confined thematically, and as woman she was possibly influenced by social and intellectual restrictions imposed upon her.

Gartside's writings are of no less scientific and practical value than for example Harris's or Sowerby's, but it appears that, with regard to a wider readership, she was restrained by her gender and the genre of flower painting. However, it is precisely these known constraints that make her case worth investigating in an art historical context. Her theory of colour can be assigned a distinct place in the development of colour theory in Europe. While her predecessor Harris proposed a theory heavily based on Newton's highly scientific concept, Goethe's substantial work relied in large parts on phenomenological descriptions, observations and subjective perception. It was also overtly anti-Newton and in parts is movesd away from scientific verifiability, embracing instead symbolism and mysticism. Gartside's clear, factual and composed writing style bridges these two approaches. Her theory did not embrace the Romanticism and spiritualism of Goethe's often impressionistic writing, but expanded and re-interpreted Harris's approach toward a colour theory that made use of Newton's prismatic system but took into consideration the effects and aesthetic values of colour.

[269] Ibid., para. 118, p.4.

The case of George Field

Gartside's career as a colour theorist and writer was short and she did not make a significant impact on pigment production or the decorative arts. Her contemporary George Field (c.1777-1854) on the other hand enjoyed a long, successful and well recorded life and career. Field was a colourman, pigment maker, chemist and colour researcher who published his first book on colour, *Chromatics, or, An Essay on the Analogy and Harmony of Colours*[270], in 1817 in a small edition of 250 copies. He continued to write and publish continuously on colour until his death, and further editions of his works were published until the 1880s. His steady output, commercial success, connections with the art world and his wide-ranging research interests make Field's work an excellent example of the nature of colour literature and changing attitudes to colour and pigment use in the nineteenth century, bridging the Regency and the Victorian era. He is also one of the most important links between colour theory and its application, and it is not inconceivable that pigments produced by Field found their way into the Royal Pavilion via manufacturers and artists of the time.

In style, format and presentation *Chromatics* resembles Gartside's *Essay on Light and Shade* (1805) or Sowerby's *New Elucidation of Colours* (1809). Field follows in the tradition of attempting to present colour systems visually. Great care was taken with the illustrations of the book, which comprise colour charts, diagrams and variations on the colour circle in the form of overlapping triangles forming star shapes (fig. 77). All seventeen charts and plates in *Chromatics* are hand-coloured, presumably by Field himself or under his close supervision. Its price of two guineas (£2.2s.0d, which is approximately £170 in 2014), reflects the high quality of the illustrations.

The subtitle, *An Essay on the Analogy and Harmony of Colours*, also reveals the early nineteenth century focus on harmonious composition, and a Goethean interest in finding not just geometric representations for colour systems, but also analogies and symbolic associations. Like Newton, Field sees a strong connection between colour and

[270] See footnote 216.

music (fig. 78), an analogy he further explores in later publications. In contrast to Newton though, he echoes Goethe in arguing for a basic principle of duality, where yellow and blue form a polarity, associated with light and shade, as well as with activity and passivity. This idea, so Frederick Burwick argues in *The Damnation of Newton*, stemmed from underlying Romantic ideas, had been popularised by Goethe and 'become a commonplace in contemporary studies on colour'[271]. In the same way that Goethe combined this concept of polarity with a symmetrical colour system based on three primaries (or primitives) and three secondaries, as illustrated in several colour circles, Field, too, recognises and promotes the concept of three primary colours. A practising Christian as well as a serious scientist, Field combines this tri-chromatic concept of the primary subtractive colours red, yellow and blue with Christian concepts of the holy trinity, going as far as identifying the purest and most stable pigments as earthly representations of this vision, namely red madders, lemon yellow, and ultramarine blue[272].

Aside from these spiritual, metaphysical and analogous interpretations of colour, Field's gained the unrivalled status of the most important colour researcher and colour maker of the nineteenth century on the basis of his lifelong search for 'perfect pigments' and a deep understanding of the artist's craft, without ever having himself been a practising artist. He states in the final pages of *Chromatics* that perfection can perhaps only be achieved by combining pigments of the same colour:

> Pureness, brilliancy, durability, depth, and transparency are but some among the many requisites of a perfect pigment, never wholly united in the same substance: hence it is generally necessary to employ two pigments of the same colour if we would produce the fullest effect, the one allied to the principle of light, the other to that of shade […][273]

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[271] F. Burwick, *The Damnation of Newton Goethe's Colour Theory and Romantic Perception* (Berlin, Walter de Gruyter, 1986), pp. 38-39.
[272] L.M. Shires, 'On Color Theory, 1835: George Field's Chromatography.' *BRANCH: Britain, Representation and Nineteenth-Century History*. Ed. Dino Franco Felluga. http://www.branchcollective.org/?ps_articles=linda-m-shires-on-color-theory-1835-george-fields-chromatography [Accessed 16 August 2013], and Gage, George Field and his Circle, p.30.
[273] Field, *Chromatics*, p.56.

Field's most influential and extensive work, *Chromatography*[274], was published in 1835, so too late to have influenced the development of the Royal Pavilion interiors directly, but he had been experimenting with pigments and pigment manufacture from as early as 1804. He recorded his observations in extensive notebooks and was particularly concerned with the invention of tools and machines for the extraction, filtration and production of pigments (fig. 79). From 1808 he began supplying pigments to artists, other colourmen, tradespeople, artists' suppliers, printers and publishers, including Rudolph Ackermann. He also supplied William Winsor and Henry Newton, who in 1832 founded Winsor & Newton. Field's extensive notebooks were acquired by Winsor & Newton after his death. The papers remain there to this day, with copies available to researchers at the Courtauld Institute of Art, London[275]. *Chromatography* was translated into German and published in Weimar within a year, an indication of the continued pan-European interest in colour studies.[276]

During his early colour research Field was based in London, but by 1808 he was operating on a large scale as a manufacturer of lake pigments, having built and established a factory at Conham near Bristol. A few years later he moved back to London, where, by 1813, he had established an even larger pigment factory, which he referred to as 'elabotaries' [sic] at Hounslow Heath. He met with success in these years, responding to the ever increasing demand for reliable pigments, and by 1824 had moved his factory and house to Syon Hill Park, on the estate of his lifelong supporter and patron the Third Duke of Northumberland[277]. His cottage at Syon Hill Park appears to have reflected his research interests and lifelong occupation, being described in an obituary as 'his own little museum of literature, art and science'[278].

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[274] G. Field, *Chromatography, or, A Treatise on Colours and Pigments, and of their Powers in Painting, & c.* (London: Tilt and Bogue, Fleet Street, 1835)
[275] G. Field, *Papers of George Field, comprising photographs and colour slides of five notebooks* [1804-1825], The Courtauld Institute of Art, London. Ref. code GB 1518 CI/GF.
[276] G. Field, *Chromatographie. Eine Abhandlung über Farben und Pigmente, so wie deren Anwendung in der Malerkunst etc.* (Weimar: Verlage des Landes-Industrie-Comptoirs, 1836).
[277] J. Gage, 'A Romantic Colourman: George Field and British Art.' In: *The Sixty-Third Volume of the Walpole Society*. (Leeds: Maney Publishing for The Walpole Society, 2001), pp. 1–73; pp.6-8.
[278] *The Builder*, XII, 1854, p.522, cited in Gage, 'Colourman', p.6

Field was responding not only to the need for good quality pigments, but also, as Shires explains, scientifically sound and reliable published information on colour and pigments in the early nineteenth century, since 'treatises on color offered ideas and/or scientific experiments, but the connection to artistic practice itself was not always spelled out, which meant artists did not find much use in them. […]Field's *Chromatography*, however, set forth ideas about color, pigments, drying, preserving, and viewing color through new optical instruments.'[279] This would explain the continued popularity of Field's publications, all of which went into several expanded or revised editions. Gage criticised the shrewdness with which Winsor & Newton re-issued and re-packaged some of Field's work, but that in itself reflects changing demands and developments in art and print culture.[280]

Field's pigments literally stood the test of time and were from the 1850s onward used and praised by the Pre-Raphaelites (in particular William Holman-Hunt and John Everett Millais[281]), as well as singled out by Mary Philadelphia Merrifield in her 1844 translation of Cennino Cennini's *Libro dell'arte [Treatise on Painting]*[282] with regard to their high quality and permanence.[283]

Regrettably, there is no precise documentation that lists the full range of pigments Field supplied. By comparing his manuscripts, the lists included in *Chromatography* and its later editions, as well as references by contemporaries, he most certainly traded in madder lakes, ultramarine and lemon yellow, chrome yellow, a variety of other yellows, Prussian blue, vermilion, chrome green, citrine lake, russet,

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[279] Shires, 'On Color Theory', unpaginated.
[280] Gage, 'Colourman', pp.22-23.
[281] In the 1870s, Hunt states that 'The labours of Mr George Field, a chemist, who applied himself with great assiduity to his task, much improved the range and the beauty of the colours to choose from. His madders were far superior in strength than those which preceded them. […] His preparations of genuine ultramarine were so valuable that, after his death, the little store left in the hands of the colourmen went up to a premium in price, as did also his vermilion to a still greater extent.' Cited in: Gage, 'Colourman', p.14.
[282] C. Cennini (author), M.P. Merrifield (translator), S. Tambroni (introduction and notes), *A Treatise on Painting*, *Written by Cennino Cennini in the Year 1437; and First Published in Italian in 1821* […] (London: E. Lumley, 1844).
[283] Gage, 'Colourman', pp.14-15.

olive lake and an orange vermilion[284]. His *Field's Extract of Vermilion* appears to have been particularly well-known and popular, having been practically commissioned by the portraitist Sir Thomas Lawrence, who, so Field recorded, was 'anxious for a supply of [red], which differed in hue from any other Vermilion.'[285] Lawrence's use of vermilion red is a typical and striking feature of many of his works, and it is particularly intriguing that he enjoyed the patronage of George III as well as George IV. The latter commissioned many official portraits of himself and other members of the royal circle from Lawrence, as well as giving him other large scale commissions, such as the full-length portraits for the Waterloo Chamber at Windsor Castle. It is conceivable that the Craces, who worked as artists and decorators for the Royal Family at the same period, would have become aware of the brilliance of Field's pigments through exchange with Lawrence or exposure to his art, or that George IV himself mentioned the high quality colours in Lawrence's work to other artists. The elaborate use of and need for brilliant reds in the Royal Pavilion, in order to achieve the lacquer-like effects of many of the wall decorations, support this theory. The same applies to other pigments developed or supplied by Field, such as chrome yellow or Prussian blue, although no red madder pigments have yet been identified in the building.

Furthermore, it is likely that the paths of Field and Robert Jones might have crossed. As chapter 3.3 will explain, Jones probably worked for the Third Duke of Northumberland in the early 1820s on decorations for Northumberland House in London. Although Jones is not recorded to have worked at Syon House, Field and Jones would probably have been aware of each other's work, or were perhaps introduced to each other by their patron.

There is a further link between Field and George IV. In 1802, as part of a wave of new art institutions and associations in Britain, The British School 'for the advancement of the Fine Arts, and the perpetual exhibition and sale of original paintings, sculptures, drawings and engravings, by the most eminent living and departed British Artists' was founded at 2 Berner's Street in London. Field was the

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[284] Ibid., p.8.
[285] From *Papers of George Field,* MS 11, f. 209 para 287; cited in Gage, *'Colourman'*, p.8.

formative director of this short-lived venture (it closed in 1804, despite having illustrious subscribers, such as the Third Earl of Egremont) and he occasionally claimed to have been the instigator of the project.[286] It can be assumed that in this position Field acquired in-depth knowledge of the most pressing needs and concerns of contemporary artists, which perhaps inspired him to pursue his career as a colourman, but it might also have brought him to the attention of George IV, who, at the time still Prince of Wales, was the patron of the school. There is, regrettably, no documentary evidence for Field having a personal exchange with or supplying pigments to George IV, but artists and manufacturers looking for particularly bright, brilliant and permanent pigments might well have used Field's products, and it is worth noting that no records survive referring to the source of pigments purchased for the Royal Pavilion interiors. However, given the strong circumstantial evidence, it is highly likely that Field's research, experiments and literary output influenced the pigment and colour choices in the Royal Pavilion, either directly or indirectly.

Field's particular interest in the stability and general quality of pigments, as well as the commercial aspect of pigment production, make him perhaps the most significant link between colour theory and its application in the arts and design, as well as linking both early nineteenth century Romantic ideas with mid- and late-nineteenth century commercial interests. The application of Field's work in the decorative arts and in architecture has been discussed by Gage, who links the renewed interest in Field's work to the publicity created by Owen Jones's designs for the interior of Joseph Paxton's Crystal Palace for the Great Exhibition in 1851. Sir Henry Cole, the instigator of the exhibition had invited Field to exhibit his materials (presumably tools and machinery used for pigment production alongside the actual pigments), but Field, perhaps on grounds of his advanced age, declined.[287] However, Jones's proposal of an interior based on the principle of a reduced colour scheme of the three highly saturated primary colours in specific proportion, was influenced both by his studies of the decorative schemes of the Alhambra in Granada, Spain, and by Field's chromatic system. Field was mentioned by Jones in a lecture given to the Institute of British

[286] Gage, 'Colourman', p.2.
[287] Ibid., p. 22.

Architects shortly after he had proposed his plans to the committee: 'Mr Field in his admirable work on colour, has shown by direct experiment that white light consists of blue, red and yellow neutralising each other in the proportions of 8, 5 and 3.'[288]

Jones's schemes were carried out and therefore formed perhaps the only known application of Field's theories to architecture and interior design on a grand scale, and serve as an example of the usefulness of colour literature to large scale colour schemes. However, as Gage points out, practicalities and the limitations of industrial paint meant that the tints were not as highly saturated as intended, highlighting the challenges of pigment and paint production for large architectural surfaces. He quotes a review from *The Ecclesiologist,* which complains about uneven distribution and the strength of the colours, and does not rate the overall visual effect of the scheme highly:

> The blue and buff [i.e. yellow] are very light and pale; the red rather heavy; and this last being applied only to the undersides of the girders and so forth, is in a general view down the building, almost unseen. The consequence is that the only colour which is really decidedly visible everywhere, is the pale blue, and the effect is cold in the extreme. Standing at the west of the building the roof as it recedes seems to get more and more blue, until at last it dissolves in a sort of light blue fog, and is lost.[289]

Despite the critical tone of this review it does reflect an interest in the concept of the colour experience of a building's interior, and understanding of principles of harmony in interior design schemes, and sensitivity to the effect a colour scheme can and should have on the viewer or visitor. By the mid-nineteenth century discussions about the status and role of colour in art had clearly moved on to the field of architectural colour and decoration. Incidentally, Merrifield, who in her first publication on colour in 1844 had promoted Field's work, was invited to provide an essay on Owen Jones's colour scheme for the accompanying *Illustrated Catalogue* published by *The Art Journal*, which she gave the title 'The Harmony of Colors as

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[288] *Athenaeum*, 21 December 1850, pp. 1347-48; cited in Gage, '*Colourman'*, p.25.
[289] *The Ecclesiologist*, XII (New Series IX), 1851, pp. 272-273; cited in Gage, *'Colourman'*, p.25.

Exemplified in the Exhibition'[290]. In it she not only explains Jones's scheme but touches upon the implications of the variety of forms and objects in interior design on the use of colour and choice of pigments. She concludes that the same principles apply to painting a picture and designing an interior or decorative objects: 'The attainment of a good and harmonious style of colour in painting is the result-of much observation and study, not only of nature, but of the works of other artists: the same steps must be followed in Art-manufactures, or the same results will not be attained. When the principles by which the harmony of colour is regulated are clearly understood, they are easily carried into practice.'[291]

2.3 Architectural colour: Colour theory applied to buildings and interiors

The majority of publications on colour in the eighteenth and nineteenth centuries dealt with painting pictures in watercolour and oil. Even scientific and theoretical writings, when they considered the painter's craft and material colour, were predominantly concerned with painting on a small scale. Far fewer publications dealt with architectural colour, i.e. the use of colour on a larger scale, the durability of pigments and finishes in interior design or as external colour, or the application of colour theory to architectural spaces. However, there are some notable exceptions, some of which will be discussed in this chapter. The relatively small number of guidebooks specifically aimed at house-painters and decorators means that it is likely that artists, manufacturers and designer involved with the Royal Pavilion did refer to this small pool of literature.

Certain ideas about colour harmony and composition expressed in general colour literature of the eighteenth and early nineteenth centuries were applicable to interior design, and in a few cases allusions to interior decoration are made. As early as

[290] M.P. Merrifield, 'The Harmony of Colors as Exemplified in the Exhibition', in: *The Art Journal Illustrated Catalogue: The Industry of All Nations* (London: Published for the proprietors, by George Virtue, 1851), pp. I-VIII.
[291] Ibid., p. VIII.

1793 for example, the American-British-German scientist Count Rumford discussed colour emission, colour harmony, coloured shadows and the order of the colour wheel in various papers. In *Conjectures Respecting the Principle of the Harmony of Colors* he remarked on the usefulness of these principles not only to painters but to 'ladies [who] may choose ribbons for their gowns, or those who furnish rooms may arrange their colors upon principles of the most perfect harmony and of the purest taste.'[292].

Many current experts in the field of architectural colour and interior design, such as Bristow, Baty and Parissien, regard the colour theories and academic treatises on colour of the period as hugely influential on interior design and house-painting. This section will further consider some publications on furniture and interior design in general, with particular reference to books recording the entire interior design of buildings with detailed description of each room or individual ornaments. The examples chosen in this context either have a direct connection to the Royal Pavilion, may have had an influence on the Royal Pavilion interiors, or are relevant in the context of Orientalism in architecture.

Eighteenth and nineteenth century house-painters manuals

In eighteenth century philosophical treatises on beauty and art, colour in architecture is seldom discussed at length, but Burke includes a chapter on 'Light in Building' and one on 'Colour considered as productive of the sublime' in *Philosophical Enquiry Into the Origin of Our Ideas of the Sublime and Beautiful.* In both he advocates darkness and gloom and advises against gaudiness induced by colour: 'the cloudy sky is more grand than the blue; and night is more sublime and solemn than day'[293], before applying the same concept to historical painting and, rather surprisingly, to the interior of buildings, suggesting a dark palette and little ornament or surface shine as desirable for a sublime effect:

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[292] B. Thompson [Count Rumford], 'Conjectures Respecting the Principle of the Harmony of Colors', in: *The Complete Works of Count Rumford,* Volume IV (Boston: The American Society of Arts and Sciences, 1875) pp.63-71.
[293] Burke, *Philosophical Inquiry*, pp.63.

> […] in buildings, when the highest degree of the sublime is intended, the materials and ornaments ought neither be white, nor green, nor yellow, nor blue, nor a pale red, nor violet, nor spotted, but of sad and luscious colours, as black, or brown, or deep purple, and the like. Much of gilding, mosaics, painting or statues, contribute but little to the sublime.[294]

Burke concludes with strict caution against 'anything light and riant; as nothing so effectually deadens the whole taste of the sublime'[295], leaving one to wonder how his beauty ideals fared against the lightness and playfulness of both Rococo interiors and popular Chinoiserie schemes of the mid-eighteenth century, for example in the style of François Boucher (1703 – 1770).

In the eighteenth century a number of technical colour manuals were of particular importance, with one of the most influential being Robert Dossie's *Handmaid to the Arts* (1st published in 1758[296], revised and enlarged 1796[297], with further editions up until 1829). The enduring demand for Dossie's *Handmaid* might have been influenced by the increased promotion of the arts in Britain from the mid-eighteenth century onwards. As Leslie Carlyle points out, the first publication of Dossie's *Handmaid* came just four years after the founding of the *Society for the Encouragement of the Arts and Manufactures*, and was dedicated to the newly formed society, expressing the desire and need to publish and disseminate information on the arts in Britain.[298] In the foreword Dossie stresses the importance of his publication for 'the national improvement of skill and taste in the execution of works in design […] but likewise of the commercial advantages resulting from it.'[299] Instructive and technical books on painting, artists' materials and design are here assigned high cultural and eventually economic value for society, far beyond their basic purpose of the education of artists and designers. However, in the eighteenth century technical handbooks like

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[294] Ibid., p.64.
[295] Ibid., p.65.
[296] R. Dossie, *The Handmaid to the Arts: In Two Volumes.* (London: Printed for J. Nourse in the Strand, 1758).
[297] R. Dossie, *The Handmaid to the Arts: In Two Volumes. A New Edition, with Considerable Additions and Improvements* (London: Printed for A. Millar, W. Law, and R. Cater, and for Wilson, Spence, and Mawman, York, 1796).
[298] Carlyle, *Artist's Assistant*, pp.1-2.
[299] Dossie, *Handmaid* (1758), Vol. 1, p.v.. Also cited in Carlyle, *Artist's Assistant*, p.2.

Dossie's *Handmaid* were rarely concerned with colour theory beyond basic principles of colour mixing, though they do provide an invaluable source of information on what materials and pigments were available, fashionable and how these materials were prepared and applied.

It is highly likely that the Craces and Robert Jones used the 1796 revised edition of Dossie's *Handmaid*, of which Baty says 'Volume I is extremely useful for its lengthy account of the pigments and materials used in painting. In common with many other works, although this dealt primarily with artists' use, very many were equally applicable to the house-painting trade. The appendix in volume II is also interesting for its information on wallpapers, a transcript of Dr Woodward's account of the manufacture of Prussian blue, and for a description of Light Red which was omitted from volume I.'[300]

The late 1820s saw a cluster of new publications on architectural paint, which, as printed sources, cannot be quoted in direct relation to the interior design of the Royal Pavilion, but if we assume that these writings documented and reflected house-painting techniques and materials in the early nineteenth century, they can act as general historical background to the work of the Craces and Jones. In 1828 T.H. Vanherman published *The Painter's Cabinet, and Colourman's Repository*[301], which a year later was revised and renamed *Every Man his Own House-painter and Colourman.*[302] Both, according to Baty, are 'very thorough works dealing with all aspects of house-painting'[303], specifically exterior paint. Bristow, too, singles out Vanherman as an important new source and points out the expansion of literature on house-painting by the beginning of the 1830s, following a 'long gap in British house-

[300] P. Baty, *An Annotated Bibliography of Works on Paint & Colour*. Submitted in partial fulfilment of a BA (Hons) by Independent Study, University of East London, 1993, p.14.
[301] T. H. Vanherman, *The Painter's Cabinet, and Colourman's Repository* (London: Printed for the author and published by Knight and Lacey, 1828).
[302] T. H. Vanherman, *Every Man his Own House-painter and Colourman, the Whole Forming a Complete System for the Amelioration of the Noxious Quality of Common Paint; a Number of Invaluable Inventions, Discoveries and Improvements, and a Variety of Other Particulars that Relate to the House-painting in General* (London: I. F. Setchel; Simpkin and Marshall; and J. Booth, 1829).
[303] Baty, *Bibliography*, p.36.

painting literature during the eighteenth century'[304]. Bristow considers the turn of the century (1800) as the time when a 'profound change in English architectural literature books took place' and links this to the 'advent of a series of copy books in which colour was discussed as an integral part of a scheme, rather than its provision simply being assumed.'[305]

Early nineteenth century publications concerned with colour included many books and popular magazines on fashionable interiors, design in general, and books on complete house designs. It would appear that the introduction of coloured plates (aquatints, hand-coloured engravings or, from c.1819 chromo-lithographs) in a number of these both reflected and fuelled an interest in colour in interior design. Of particular importance in this context is the publishing output of Rudolph Ackermann, who embraced new techniques in colour printing and became the leading publisher of colour plates in Britain. From the late 1790s onwards Ackermann published a large number of illustrated books on design, fashion, travel, and topography, as well as painters' and decorators' manuals. Between 1809 and 1829 he published a hugely popular monthly journal entitled *The Repository of Arts, Literature, Commerce, Manufactures, Fashions and Politics*[306] (in 1829 it was renamed *Repository of Fashion*), which included hand-coloured plates showing the latest dress fashions, London buildings and their interiors, as well as furniture designs. The early editions are remarkable for their *Allegorical Wood-Cut* plates, to which were attached samples of fabrics for use in dressmaking, soft-furnishing or upholstery, making the colour, texture and design of these fabrics tangible (figs. 80 and 81). Some issues also included samples of drawing paper or embossed paper for use in interior decoration. These swatches were accompanied by descriptive text that also informed the reader about where to purchase the material, thus highlighting the strong manufacturing and marketing interests of Ackermann's *Repository*.

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[304] Bristow, *Architectural Colour*, pp. xiv-xv.
[305] Ibid., p. xvii.
[306] R. Ackermann, *The Repository of Arts, Literature, Commerce, Manufactures, Fashions and Politics* (Published monthly, London: 1809-1828).

The example of an *Allegorical Wood-Cut* in fig. 81 shows a plate from the February 1811 issue, to which is attached a sample of a 'rich furniture chintz for drawing-rooms, boudoirs and sleeping rooms', in the design of a multi-coloured flower pattern on a pale cream ground. This particular fabric was designed by Mr. Allen of Pall Mall for one of the bedrooms at Carlton House and is not dissimilar to the flower pattern found on the Brussels carpets on the upper floor of the Royal Pavilion and the soft furnishing of the Yellow Bow Rooms. Carlton House itself featured frequently in Ackermann's *Repository* and, significantly, the journal was dedicated throughout its run to George IV (when Prince of Wales, Prince Regent and King), suggesting that Ackermann thought that the Prince might well be interested in this kind of publication and that the royal association would be beneficial to the success of the journal. The fashion plates, fabric samples and accompanying descriptions constitute a lively image of fashionable colours and designs in the Regency. On the plate discussed the other fabric swatches are 'A bright orange-shot satin for dress robes, tunics and bodices' and 'A Regency velvet, of an uncommonly delicate fabric, […] for pelisses, evening robes and mantles'.

Writings on colour by 'Juninus' in Ackermann's Repository

Colour in fashion and interior design was clearly a predominant topics in Ackermann's *Repository*, but colour also features as an intellectual topic in the early issues. Between June 1809 and December 1810 the first article in each issue of the *Repository* was a letter by the anonymous author Juninus (the pseudonym perhaps chosen in reference to the anonymous eighteenth century writer Junius, who contributed political letters to the London newspaper *Public Advertiser* between 1769 and 1772), with the title 'On the splendour of colours'. This column, which until now has not been researched in detail, discussed topics relating to the arts in a playful manner, using the format of fictional correspondence between a late Miss K. (Kitty) and a number of other characters. The topics were wide-ranging, including specific works of art (contemporary or historical, paintings as well as prints), artists' styles and careers, subjects in art, the elements of painting, different genres of painting, colour in

architecture, colour in ancient Rome, philosophical discussions concerning art and the teaching of art at the Royal Academy (the latter with frequent references to Joshua Reynolds). Colour theory was discussed occasionally, with the main focus being on painting manuals and materials. The August 1809 issue laid out the basics of the painter's art, by which is meant the red-blue-yellow as primaries system, and provided a list of what Juninus considered the most useful and instructive literature on colour:

> A person that writes on the arts for the instruction of novices, must of necessity write a deal of the A B C of the profession; such as, that blue and yellow mixed, make green; blue and red, purple; yellow and red, orange; black and white, lead colour, &c. Several books teach a deal of this: *The Handmaid to the Arts*, upon the nature of colours; Sir Isaac Newton's *Theory of Colours* [sic]; a book lately published, called *Conversations on Chemistry*; the plates engraved by Wilson Lowry, who is the best engraver in this way; Gerard de Lairesse's book, which describes justly what colours set off each other best; Thos. Bardwell's book on the mixing of colours; Massoul's *Treatise on Painting and the Composition of Colours*, to be had at Ackermann's; J. Russell on crayon painting, which system he learned from his master, Francis Cotes, who was the best crayon painter in this country, and little inferior to the celebrated Venetian lady, Rosalba.[307]

This concise list provides a good impression of the variety of sources considered valuable in the very early nineteenth century. It is interdisciplinary and international, scientific and practical, and references both contemporary and historic sources. The November 1809 issue included an extract from Bardwell's book and added to the canon of noteworthy colour writers Julius Ibbetson and a probable allusion to Mary Gartside: 'Within a few years, Julius Ibbetson, the landscape-painter, has published a system[308]; and several others have lately appeared, among others one for painting flowers, &c., water colours.'[309] The November issue also included a section entitled 'Of the cause of colours', in which Newton's optical experiments were explained and the phenomenon of vision is discussed.[310]

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[307] Ackermann, *Repository*, August 1809, p.70.
[308] Ibbetson had been publishing on painting from the late 1790s onward, but this is most likely a reference to this publication from 1803: J. Ibbetson, *An Accidence, or Gamut, of Painting in Oil and Water Colours* (London: For the author by Darton and Harvey, 1803).
[309] Ackermann, *Repository*, November 1809, p.289.
[310] Ibid., pp. 286-287.

Many of the Juninus columns on colour were concerned with the quality, manufacture and sourcing of pigments, not only in relation to specific works of arts, artists and techniques, but also reflecting a general scientific and commercial interest. The October and November 1809 issues included a detailed list of commercially available pigments and binders[311], with notes on their history, manufacture, chemical makeup and specific qualities, for example: 'Vermilion is chiefly manufactured in Holland, but the best comes from China. It is made from common sulphur and quicksilver. It is often given in pills as a medicine in putrid fevers etc'[312], or 'Prussian blue is apt to change and turn greenish; in this respect its invention is an injury to painting. Indigo is the deepest of all blues, but not much used since the invention of Prussian blue.'[313] It is effectively a chart of artists' pigments available in 1809, without colour illustrations but nevertheless useful as a reference in comparison to the colour lists and charts discussed below.

Although architectural paint was not specifically discussed in Ackermann's Juninus column, colour in interior design and a wide range of art genres was a dominant theme. Significantly, colour theory and pigment quality were recurring topics, coinciding with a number of new publications on colour and the beginning of Field's colour studies. It is worth noting that this column on the fine arts was named 'On the splendour of colours' and was given a prominent position in the journal. Colour and colouring were here presented as synonymous with the arts in general, reflecting the general interest in all aspects of colour in the Regency. From 1811 onwards Juninus's contributions were given the more generic title 'Conversations on the arts'.

Colour lists and charts

Illustrated charts of architectural colour were rare in early nineteenth century literature, but in popular magazines colour options for colours in interior decoration were often described or even illustrated with images, or, in the case of Ackermann's

[311] Ibid., October 1809, pp.219-223, and November 1809, pp.286-287.
[312] Ibid., p.220.
[313] Ibid.

Repository, with fabric or paper samples. More often than not available colours and pigments were simply listed by name, as for example in Peter Nicholson's *Mechanical Exercises* from 1812 (fig. 82).[314] Nicholson listed a total of eleven colours (white, black, yellow, blue, red, green, chocolate, lead colour, brown and purple) and recommends suitable pigments to produce these colours. He also gave advice on how to create orange, purple and violet, pearl, olive, flesh and stone colour.

In 1818 the English painter, astrologer and teacher John Varley (1778-1842) published a list of colours as a single sheet[315], as a copperplate print in two blocks, with letterpress and hand-coloured paint samples (fig. 83). It was aimed predominantly at watercolour artists, with the format suggesting that it was produced for use as a handy reference chart, perhaps accompanying his much larger publication on landscape painting, which was published in instalments between 1816 and 1821. In at least one instance[316] Varley's list was included in some published paint manuals. Similar lists and standards were produced by, for example, Rudolph Ackermann in the very early nineteenth century. Although Varley's list referred to the medium of watercolour it provides a concise overview of pigments available during the Regency and might well have been used by wallpaper manufacturers or house-painters working with water-based paint. The colours listed in the 1818 edition were cobalt blue, Prussian blue, indigo, lake, gamboge, burnt sienna, yellow ochre, venetian red, vermillion and burnt umber on the upper block; followed on the lower block by the mixtures warm grey, purple grey, neutral tint, dark warm grey, warm green, olive green, orange, roman ochre and sepia. Each colour was accompanied by brief suggestions on where to use them in compositions, but also how to use them in mixtures to create other hues. In further letterpress below the colour samples Varley also discussed the suitability and quality of Indian yellow, iron yellow, madder lakes, browns and purples, as well as different types of paper and binding medium. This list is of particular importance in that, with very few exceptions, it considered actual pigments rather than colours.

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[314] P. Nicholson, *Mechanical Exercises, or, The Elements and Practice of Carpentry, Joinery, Bricklaying, Masonry, Slating, Plastering, Painting, Smithing, and Turning* (London: J. Taylor, 1812), pp.319-320.
[315] J. Varley, *J. Varley's List of Colours* (London: J. Varley, 1818).
[316] G. Hamilton, *The Elements of Drawing, in its Various Branches, for the Use of Students* (London: for Richard Phillips, 1812).

Where colour names were used (with most of the mixed colours in the lower block) the pigments contained in the mixture were listed in the accompanying note. It is also one of the earliest concise examples of colour lists concerned with the issue of the permanence of pigments. The list appears to have been deemed of considerable value in the art world, since it was published again in 1850, several years after Varley's death, subtly re-titled *Varley's Specimens of Permanent Colours*.[317] Many of the pigments included in the first edition of Varley's list have been identified in the Royal Pavilion, with the notable exception of chrome yellow, which had only just become available commercially in Britain.

While I have not been able to locate an illustrated colour chart in the style of *Werner's Nomenclature* or Varley's *List of Colours* specifically concerning architectural colour in the Regency period, an approximation to a house-painter's colour chart can be found in a decorator's handbook published in 1826 by George Smith. There is a direct link between Smith and George IV: the author was upholsterer and furniture draughtsman to the King. Smith included a plate with colour samples in his illustrated book on furniture design *The Cabinet-maker and Upholsterer's Guide* (fig. 84).[318] Similar to Varley's chart, Smith's plate comprises a list of fifty hand-coloured sample tints on a copper-plate engraving, but here the text is minimal, suggesting the aim is to show a consumer, rather than a practising artist, what colours were available. Parissien considers this list 'one of the first instances of an author and publisher attempting to provide consumers with a guide to paint choice'[319].

Given the subject matter of Smith's work, one must assume that the colour choices here also referred to soft furnishings and other elements of interior design. As already mentioned, consumers arguably had an opportunity to see colour ranges and samples in many of Rudolph Ackermann's publications from the late 1700s onwards. However, Parissien is right in singling out this chart, since it is unusual in providing an

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[317] J. Varley, *Varley's Specimens of Permanent Colours* (London: J. Varley, 1850).
[318] G. Smith, *The Cabinet-maker and Upholsterer's Guide: Being a Complete Drawing Book, in Which Will Be Comprised Treatises on Geometry and Perspective, as Applicable to the Above Branches of Mechanics* (London: Jones & Co, 1826).
[319] Parissien, *Interiors*, p.67.

early format for an architectural colour range that has since become very common. Apart from listing and naming available colours in a clear way, Smith's plate is also significant in that it clearly uses representations of colour orders established by earlier scientists and colour theorists (something Varley omits), thus making it an early example of applied colour theory in literature on interior design. At the top of his plate Smith placed a colour star that is highly reminiscent of Harris's overlapping triangles denoting the three primary colours. Smith's diagram bears even closer resemblance to the colour stars Field used in both *Chromatics* (1817) and *Chromatography* (1835) to illustrate his concepts of colour order (six overlapping triangles, denoting three primaries and three secondaries). Smith devoted an entire chapter, comprising six pages of text, to 'Colouring', in which he explains the plate, which he considered to be of instructive use to his students. The chapter begins by outlining the basic principles of material colour based on three primaries:

> There are, properly speaking, but three primitive colours; viz. blue, yellow, and red. These colours by a mixture one with the other, will produce three other distinct colours; viz. green, by the mixture of blue and yellow; purple, by the mixture of red with blue ; and orange, by a mixture of red and yellow.[320]

Smith then annotated all of the tints shown in his plates, which he referred to as those 'that are likely to be brought into use in colouring either drapery, or cabinet furniture, or any other subject confined to the two branches of Upholsterer and Cabinet-maker.'[321] However, part of the instructive value of his chapter on colour relates to the art of architectural drawing, and it has to be pointed out that the actual colour samples on the plate are watercolour and not the architectural paint that would be used in interiors. Smith's detailed account on the principles of colour order and colour mixing can be seen in the context of the chapter following this one, entitled 'Interior Decoration'. Colour and colouring thus form an introduction and necessary base for the larger concept of interior design.

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[320] Smith, *Cabinet-maker*, p.157.
[321] Ibid., p. 157-158.

Smith's work can be discussed in relation to Nathaniel Whittock's *Decorative Painters' and Glaziers' Guide*[322], which Bristow considers, alongside Vanherman's *House-Painter*, to be the most important publication on architectural paint in the 1820s[323]. Whittock focused on the variety of uses of colour in interior design and put particular emphasis on paint effects and surface finishes, such as marbling, lacquering or wood graining. It was originally issued in weekly parts during 1826 and 1827, as was common for large scale publications. Like many other publications on painting and interior design, it is illustrated with elaborate plates. The illustrations in Whittock are unusual in emulating surface finishes, such as satin wood (fig. 85) or marbling (fig. 86), rather than picturing complete design schemes for rooms or buildings. Although the manual was published a few years after the Royal Pavilion was finished, it is a typical example of the kind of book the Craces or Robert Jones would have consulted or perhaps contributed to. Wood graining, lacquering, marbling and stencilling are prominent design techniques in the Royal Pavilion.

The first chapter of Whittock's book is a thorough list and description of pigments and binding materials available to an interior decorator in the 1820s, entitled 'Introductory remarks on the nature and properties of the various pigments that produce colours, the vehicle for using them, the preparation of grounds etc.'. Whittock at once notes and laments the ready availability of many pre-manufactured paints, urging students to learn about and produce their own paint, alluding to the complexity of house-painting:

> The house painter who wishes to attain a correct knowledge of his business, should become acquainted with the nature and properties of the materials he is constantly using, particularly if he aims to become and ornamental painter, as the subjects he will then be employed on will require greater care in the selection and preparation of the various substances from which colours are produced.[324]

[322] N. Whittock, *The Decorative Painters' and Glaziers' Guide* (London: Isaac Taylor Hinton: 1827).
[323] Bristow, *Architectural Colour*, p. xiv.
[324] Whittock, *Glaziers' Guide*, p.7.

Whittock classified colours into nine groups: white, black, red, blue, yellow, green, orange, purple and brown. From these, he explains, 'any tint that can be required in any kind of painting, may be obtained by mixing one colour with another.'[325] For each colour group Whittock listed currently available and suitable pigments, followed by notes on appropriate binding materials. These pigments and colours are not illustrated, but Whittock is an excellent example of an author clearly understanding and conveying the difference between additive and subtractive colour, as well avoiding confusion of colour names with pigment names. The heightened awareness of these matters arguably stems from Whittock also writing about coloured glass, transparent glazes and the use and effect of light in architecture and interior decoration. Whittock's understanding of light and colour and the appeal of imitative surface in interior design notwithstanding, he does not favour the inspiration of the Orient and makes the following critical comments about Chinoiserie style:

> An attempt was made some years ago to introduce the Chinese style of decoration into general use; but the civilized mind revolts at the sprawling dragons, squat houses, and a perpetual recurrence of ornaments like nothing in nature, or, if like anything, making a preference of the most ugly and loathsome, as the toad lizard. If the Chinese style is ever to be used with effect, it must be in summer apartments, devoted to public amusement.[326]

While this attitude to Chinoiserie styles comes as no surprise in 1827, it should be noted that there was a history, if not a tradition, in critical attitudes and scepticism towards oriental designs in Britain. Even William Chambers, whose *Designs for Chinese Buildings*[327] was published in 1757 and dedicated to the then Prince of Wales (later George III), displayed an ambiguous attitude to Chinese inspired designs. In it he referred to Jean-Baptiste Du Halde's earlier publication about Jesuit missionaries' travels to China, *Description géographique*[328], but it was his own book which secured

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[325] Ibid., p. 8.
[326] Ibid., p.114.
[327] W. Chambers, *Designs of Chinese Buildings, Furniture, Dresses, Machines, and Utensils. Engraved by the Best Hands, From the Originals Drawn in China by Mr. Chambers, Architect Member of the Imperial Academy of Arts at Florence. To which is Annexed, A Description of their Temples, Houses, Gardens, &c.* (London: Published for the Author, 1757).
[328] J.-B. Du Halde, *Description géographique, historique, chronologique, politique, et physique de l'empire de la Chine et de la Tartarie chinoise* (La Haye: Henri Scheurleer, 1736).

him royal patronage from George III and Princess Augusta for several smaller, decorative buildings at Kew, of which the Chinese Pagoda (designed in 1757 and built by 1761) and a number of others survive.

Chambers made a case for more authenticity in Chinese designs in Europe and bemoaned the 'extravagancies that daily appear under the name of Chinese, though most of them are mere inventions, the rest copies from the lame representations found on porcelain and paper-hangings'[329]. He hoped that his book will put an end to this. But, while he praised the achievements of Chinese design and ornament, he did not define these achievements by grandeur, beauty or intricacy. His comments on Chinese buildings were curiously condescending and belittling:

> The buildings of the Chinese are neither remarkable for magnitude or richness of materials: yet there is an angularity in their manner a justness in their proportion, a simplicity, and sometimes even beauty, in their form, which recommend them to our notice. I look upon them as toys in architecture and as toys are sometimes, on account of their oddity, of workmanship, admitted into the cabinets of the curious, so may Chinese buildings be sometimes allowed a place among compositions of a nobler kind.[330]

He did, however, note the characteristic use of primary tints and highly polished surface finishes in Chinese houses: 'These doors are neatly made of wood; have several characters and figures on them, and are sometimes richly varnished, in red, blue, yellow, and other colours'[331] and furthermore recognised the deliberate use of contrasting forms, colours and shapes in Chinese design. In the chapter on gardens he noted: 'The Chinese artists, knowing how powerfully contrast operates on the mind, constantly practice sudden transitions, and a striking opposition of forms; colours, and shades. […] to dark and gloomy colours they oppose such as are brilliant, […] in such a manner as to render the composition at once distinct in its parts, and striking in the whole.'[332] These comments reveal Chambers' understanding of colour contrast resulting in increased brilliance, which is also expressed in *Treatise on the Decorative*

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[329] Chambers, *Chinese Buildings*, from the un-paginated introduction.
[330] Ibid.
[331] Ibid., p.9.
[332] Ibid., pp.15-16.

Part of Civil Architecture from 1759, where he recommended keeping the number of colours on any one piece of ornament to a minimum. He stated, for example, that '[…] there should never be above two, or at the utmost three different sorts of colours in the same chimney-piece, all brilliant and harmonizing with each other'[333]. Significantly, the first Joseph Gwilt edition of this book, published in 1824, was dedicated to George IV, with Gwilt acknowledging the King's remarkable contribution to 'the architectural embellishment of the Metropolis [London] and the foundation of a National Gallery of ancient and modern art'[334].

The powers of balancing, harmonising, and uniting: Colour theory and the concept of interior design

In 1807 the Dutch-born designer and collector Thomas Hope (c.1769–1831) published *Household Furniture and Interior Decoration*[335], based on his own designs, which were mostly inspired by classical aesthetics. It is highly probable that George IV and his designers would have owned or consulted a publication of this significance. The book is notable and relevant in this context for several reasons: Firstly, Hope's designs frequently embedded exotic (in his case Egyptian and Indian) design elements in his overtly Neo-classical style, thus creating an eclectic Oriental and Neo-classical style similar to that found in the some rooms of Carlton House and in the Royal Pavilion interiors. The latter were possibly partly influenced by Hope. Egyptian elements were present in the Royal Pavilion even before Nash's transformation in the form of an 'Egyptian Gallery' connecting the Saloon to the Banqueting Room to the north in Holland's layout of the building and probably forming part of what is now the Music Room Gallery. It is described only briefly in early accounts, such as Attree's *Topography of Brighton* (1809) as 'fifty-six feet in length, and twenty in width, the

[333] W. Chambers, *A Treatise on the Decorative Part of Civil Architecture. With Illustrations, Notes, and an Examination of Grecian architecture, by Joseph Gwilt . Rev. and ed. by W.H. Leeds* (London: Lockwood, 1862 [1759]), p.299.
[334] Chambers, *Civil Architecture,* p.vii-viii.
[335] T. Hope: *Household Furniture and Interior Decoration Executed from Designs by Thomas Hope* (London: Longman, Hurst, Rees, & Orme, 1807).

walls of which are covered with historical paper.'[336] in the green, yellow and gold King's Apartments on the ground floor, created from 1819 by Robert Jones and described by Morley as 'Chinese, Indian, even hints of Egyptian and Gothick […] blended into perfect harmony of form and decoration.'[337] The RPI1828 lists at least three Egyptian ornamental features in 1826: a Satin wardrobe with Egyptian busts in the Yellow Bow Rooms, a coffer embossed with Sphinx-like figures and '2 Large pieces of Tapestry 17ft 6 wide by 11ft 4in high one representing an Egyptian procession of Camels & horses with Trees & ruins in the Landscapes the other a Landscape with Palm Tree in the centre & various figures bringing the produce of Africa' in the store rooms[338]. The wallpaper in storage was likely to have been remnants of the historical paper in the former 'Egyptian Gallery'. Today a number of pieces of furniture based on Hope's Egyptian designs are placed in the small ante-room to the King's Library in the King's Apartments.

Secondly, and more generally, Hope's book introduced the term 'interior design' into the English language[339], and thirdly, the book, although not specifically about colour, considers and discusses the effect of design schemes on the sensual experience of an interior and stresses the significance of each individual object in the larger context of an interior design scheme. David Watkin suggests that Hope, like Sir John Soane, was familiar with Nicolas Le Camus De Mézières's *Le génie de l'architecture, ou, L'analogie de cet art avec nos sensations*[340], published in 1780.[341] De Mézières provided a detailed and room-by-room description of a generic grand French building, and elaborated on the individual character of each room. Although he did not elaborate on colour, there is a heightened sense of how rooms relate to each other and together form a complete and unified interior design scheme: 'Each room must

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[336] Attree, *Topography*, p.10. The text it duplicated in another handbook from 1815 ([Unknown author] *Three Grand Routes*, p.10), suggesting it was still in place then.
[337] Morley, *Pavilion*, p.226.
[338] RPI1828, pp.125, 327 and 333.
[339] See http://www.vam.ac.uk/content/articles/t/thomas-hope/ [accessed 4 August 2013]; also S. Parissien, *Regency Style*, p.128.
[340] N. Le Camus De Mézières, *Le génie de l'architecture, ou, L'analogie de cet art avec nos sensations* (Paris, L'auteur [et] chez B. Morin, 1780)
[341] D. Watkin, 'The Reform of Taste in London: Hope's House in Duchess Street', p.23, in: D. Watkin, David and P.Hewat-Jaboor, *Thomas Hope – Regency Designer* (New Haven and London: Yale University Press, 2008), pp. 23-43.

have its own particular character. The analogy, the relation of proportion, decides our sensations; each room makes us want the next; and this agitation engages our minds and holds them in suspense.'[342]

The sequential exploration and sensual experience of a building described here is reminiscent of the design and the colour experience of the Royal Pavilion, as mentioned in chapter 1. Significantly, Hope deliberately illustrated his book with un-coloured outline engravings in order to make it affordable for craftsmen and designers, sacrificing the depiction of 'the harmonious blending, or the gay opposition of the various colors'[343]. While this may be regrettable, it does show that Hope was aware that only good quality colouring of the plates would be acceptable for this publication and that the widest possible dissemination of his work was preferable to producing a highly-priced book with excellent illustrations.

Watkins interprets Hope's comments on and use of colour, specifically his reluctance to use the colour green in his designs, as echoing Goethe's interest in allegorical, mystical and symbolic interpretations of colour.[344] While this is a tempting suggestion, it should be pointed out that Goethe's complete *Farbenlehre* was first published in 1810 in German and in English in 1840, some nine years after Hope's death. However, this may support the theory of similar ideas about interior design developing simultaneously in Europe, perhaps following intellectual exchange predating these publications. What Hope referred to as 'the gay opposition of the various colors' alludes to Goethe's dualistic view of colour order, but equally reflects many other contemporary ideas on colour contrast and harmony based on the idea of a colour wheel formed of three primaries and three secondaries. Bristow discusses Sir John Soane's deliberate opposition of the three primary colours, red, yellow and blue, in his Breakfast Room at Pitzhanger Manor in 1802 in relation to influences from

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[342] De Mézières, Nicolas Le Camus, *The Genius of Architecture; or, The Analogy of that Art with Our Sensations* [translated by David Britt] (Santa Monica, CA / Chicago: Getty Center for the History of Art and the Humanities / University of Chicago Press, 1992), p.88; cited in: Watkin 'Reform of Taste', p. 23.
[343] Hope, *Household Furniture*, p.15. Also cited in: Watkin 'Reform of Taste', p. 23.
[344] Watkin, ibid.

classical antiquity and excavations at Pompeii[345]. He also makes a strong case for colour theory, and specifically Goethe's ideas, as another crucial influence on the use of contrasting and primary colours in early nineteenth century interiors in the concluding chapter of *Architectural Colour*[346]. He notes that his early colour studies and publications 'seem to have been in the air in English art circles at least by the early 1800s'[347]. Bristow further suggests that Goethe made the connection between colour systems and order in architectural design in developing the idea that 'the eye sought colourless space next to every hue in order to produce the complementary colour upon it.' [348] What Eastlake translates as 'space' is, in fact, also architectural space, 'Raum' in the German original: '[…] ums sich selbst zu befriedigen, sucht es neben jedem farbigen Raum einen farblosen, um die geforderte Farbe an demselben hervorzubringen.'[349] Quoting from *Farbenlehre*, Bristow points out that Goethe considered harmonious colour contrast 'a natural phenomenon of immediately applicable to aesthetic purposes.'[350] To Goethe, as a man with an interest in many art forms, this would almost certainly have included interior design.

A contemporary (1827) comment by John Britton on Sir John Soane's house at Lincoln's Inn Fields in London (like the Royal Pavilion designed in the late eighteenth and early nineteenth century and known for exuberant colour schemes) also reflects ideas about complete and harmonious design schemes, rooms communicating with each other with regard to colouring and decoration, and interiors having an effect on the person experiencing them: 'The respective apartments should either relieve or contrast, or enhance the effect of each other; that the imagination be called into play: and that the whole offer to the eye a masterly arrangement and picturesque combination.'[351] Significantly, John Crace, who worked at the Royal Pavilion from

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[345] Bristow, *Architectural Colour*, pp. 176-178.
[346] 'New perceptions on colour: Its usage at the end of the period', Bristow, *Architectural Colour*, pp. 188-219.
[347] Bristow, *Architectural Colour*, p. 189.
[348] Ibid., p.189.
[349] Goethe, *Farbenlehre*, para.806.
[350] Bristow, *Architectural Colour*, p. 189, referring to Goethe, *Farbenlehre*, para.813: 'eine Naturerscheinung zum ästhetischen Gebrauch'.
[351] J. Britton, *The Union of Architecture, Sculpture, and Painting, Exemplified by a Series of Illustrations, With Descriptive Accounts of the House and Galleries of John Soane* (London: Printed for the Author,

c.1801 onwards, collaborated with Soane on various interior design projects from as early as 1790, including Lincoln's Inn Fields. Crace and Soane were most likely introduced to each other by Henry Holland, George IV's first architect of the Royal Pavilion.[352]

In *Farbenlehre* Goethe states that 'every colour produces a distinct impression on the mind, and thus addresses at once the eye and the feelings. Hence it follows that colour may be employed for certain sensual, moral and aesthetic ends.'[353] In an early guidebook to Goethe's townhouse at the Frauenplan in Weimar, Matthaei implies that Goethe followed and displayed some of these principles of his colour theory in the arrangement of dominant colours in the rooms of his home. He refers to the enfilade on the main floor of the building, beginning with the blue Juno-room, which frames the yellow walls of the saloon, followed by the red of the adjoining room and finishing with the green decoration of the large living room and studies (fig. 87). Of this sequence blue, yellow, red and green, Matthaei argues, 'the first three are again Goethe's basic colours; the sequence begins with the two pure, original and contrasting colours blue and yellow (F707). They are followed by their two possible combinations: first red as the ideal tint, then green providing real satisfaction of our sense of colour (F783, 802). Furthermore each individual colour appears to reflect the purpose of each room'.[354]

Matthaei later developed his research into Goethe's *Farbenlehre* further and published the most extensive textual and visual commentary on it to date. The first German edition of Matthaei's *Goethes Farbenlehre* was published in 1951 and went into at least twenty-one editions, with an English translation appearing in 1971[355]. Matthaei continued to argue strongly for the applicability of Goethe's colour studies to

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1827), cited in: J. Brough, 'The Significance of Sheen: Surface Finish as an Important Aspect of Early Nineteenth Century Interiors', p.1, *The Conservation of Decorative Arts* UKIC, 1999, pp.1-10.

[352] See M. Aldrich, 'John Crace and John Soane: A Collaboration in Context', *in: Traditional Paint News* Vol. 2 No. 4, May 2009. (Edinburgh: The Traditional Paint Forum, 2009), pp. 21-29.

[353] Goethe [Eastlake], *Theory of Colours*, para.915, p.192.

[354] Matthaei, *Goethe-Nationalmuseum*, pp.80-81 [my translation].

[355] Matthaei, Goethe's Colour Theory.

interior design and provided many examples for the deliberate choice of colour in Goethe's own houses.

For example, Goethe says in *Farbenlehre* about green that it is a 'simple' colour, as it is created from yellow and blue, which he considers 'the most fundamental and simple of colours'. 'The beholder', he argues, 'has neither the wish nor the power to imagine a state beyond it.' Interestingly he applies the effect of green to architectural colour, concluding 'hence, for rooms to live in constantly, the green colour is most generally selected.' Matthaei comments on this by referring to the predominantly green interiors in Goethe's garden house in Weimar, which was mostly used for study and recreation (fig. 88).[356] Goethe also chose green as the colour for the walls of his study and library in his large house in the centre of Weimar. In the Royal Pavilion green was chosen by George IV as the predominant colour in the Entrance Hall and in his later private apartments on the north-west side of the ground floor.

Here colour becomes a tool for creating order and structure in architectural design, both externally and internally. This point was made again in 1999, when an exhibition in Germany focussed on the relationship of Goethe's colour studies and architectural space: *Pfirschblü**t** & Cyberblau. Goethe, Farbe, Raum [Peachblossom & Cyber Blue. Goethe, Colour and Space].* In an essay accompanying the exhibition, Christoph Gerlach notes that 'colour can give order to architecture by assembling individual segments in sequence or next to each other. A unifying colour can link parts of the building together. A variety of colours can create shapes, patterns or rapport between architectural elements. Finally, colour can also create deliberate disorder in the overall design.'[357]

The concept of harmony, unity, sequential order and structure, as well as perhaps deliberate chaos or disorder created with the help of colour, can certainly be

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[356] Ibid., p.175.

[357] C. Gerlach, 'Architektur und Farbe', in: H. Gundelach and K. Vatsella (eds), *Pfirschblü**t** & Cyberblau. Goethe, Farbe, Raum*; [Exhibition catalogue: Kornspeicher, Weimar 17.9. - 31.10.1999, Design Zentrum Bremen im Wilhelm Wagenfeld Haus 25.1. - 24.4.2000] (Eggingen: Edition Isele, 1999), pp.70-71 [my translation].

applied to the design of the Royal Pavilion. Brough considers the notion of harmony and proportion a 'major tenet underpinning decorative theory in the Regency period' and argues that 'deliberately manipulated surfaces played their part in theories of harmony, adding variety by breaking up the light in different ways, allowing each feature in the room decorations to contribute to the final effect, without any single part dominating'[358].

As these examples from contemporary literature have shown, ideas about colour order and the application of colour theory to architecture and interior design were developing in Europe alongside and in conjunction with colour research and advances in pigment production in the early nineteenth century. The concept of dominant interior colours in individual rooms, and the experience and perception of colour at the various building stages of the Royal Pavilion, will be discussed in chapter 4.1.

David Ramsay Hay's The Laws of Harmonious Colouring

One of the earliest and most influential publications that aimed specifically to apply colour theory to interior design and colouring was David Ramsay Hay's *The Laws of Harmonious Colouring Adapted to House-Painting.*[359] Hay was a Scottish interior decorator who, later in life, enjoyed royal patronage, receiving a Royal Warrant from Queen Victoria in the early 1840s, followed by a number of high profile commissions, including the interior decoration of Holyroodhouse and the National Gallery of Scotland.[360] The treatise was first published in Edinburgh in 1828, coinciding with Hay setting up his own business as an interior decorator in Edinburgh (the firm 'Nicholson and Hay'), and went into six successive editions until 1847. In the later edition Hay changed the sub-title of the work from *Adapted to House-painting* to *Adapted to Interior Decorations, Manufactures, and Other Useful Purposes.* Like Whittock and

[358] Brough, 'Sheen', p.1.
[359] D. R. Hay, *The Laws of Harmonious Colouring, Adapted to House-Painting* (Edinburgh: D. Lizars; London: Whittaker; Dublin: W. Curry Jun. and Co., 1828).
[360] P. Baty, 'Hay's Nomenclature of Colour'. Dec. 3rd, 2011. http://patrickbaty.co.uk/2011/12/03/hays-nomenclature-of-colours-2/ [accessed 20 September 2013].

Vanherman it was, regrettably, published after the Royal Pavilion interiors were finished, but this work would have been of great interest to the Craces and Robert Jones, since Hay was much concerned with imitative surface finishes such as marbling and graining.

Laws of Harmonious Colouring is a seminal work in the field of architectural colour because it presents a fully developed sense of both the application of colour theory to interior design and the importance of colour perception, individual taste and aesthetic principles applied to interiors. Hay begins with a chapter on harmony and contrast, explaining the significance of a complete interior design scheme of a building: 'In arranging the colours for an apartment, whether a few or a great variety are to be employed, the effect of the whole, as well as the several component parts, will depend on the skilful arrangement, as pointed out by the accidental or contrasting colours.'[361] Alluding to the complexities interior designers are faced with, he notes that, with regard to colouring, '[...] the House-painter's styles must not only be as various as the uses of the apartments which he decorates, but must vary according to the different tastes of his employers.'[362] Hay concludes that further elements that inform a house-painter's choice of colours are 'not only the style of architecture, the situation, whether in town or country, but the very rays by which each apartment is lighted, whether they proceed directly from the sun, or are merely reflected from the northern sky.'[363]

To Hay, architectural colour and colour schemes must reflect and respond to the function of the building and each individual room, the owner's personal taste, geographical location and orientation with regard to light. Hay also highlights the complexity of interior colour schemes created by the great number and variety of surfaces, materials and objects that form the design scheme, identifying unity, balance and harmony as guiding principles in interior decoration: 'The house-painter has often another very serious difficulty to encounter: A variety of highly and variously-coloured

[361] Hay, *Colouring* [1836], pp.3-4.
[362] Ibid., p.11.
[363] Ibid.

furniture is shown him, to which the colouring of the different parts of a room must be suited. It is here that his powers of balancing, harmonising, and uniting are called forth […]'[364].

With his generous references to other colour researchers and historical sources (he mentions, for example, Leonardo da Vinci, Newton, George Field and Syme) he is exemplary of a new generation of colour writers who had both internalised eighteenth and early nineteenth century colour studies and applied them successfully to the now fully established genre of interior decoration. His friend the Scottish painter David Roberts (1796 – 1864), referred to him as 'the first intellectual housepainter'[365].

Hay's publications predate those by the French chemist Michel Eugène Chevreul, who, following his consultancy work at the Gobelin tapestries, published *De la loi du contraste simultané des couleurs et de l'assortiment des objets colorés*[366] in 1839, which stressed the applicability of his colour theory to a wide range of disciplines within the arts, including 'la décoration des edifices' (literally 'the decoration of buildings', but translated in 1854 as 'interior decoration'[367]).

Like many of his contemporaries Hay developed a tri-chromatic colour system based on primary, secondary and tertiary colours and was specifically influenced by Goethe, Field and his countryman Syme, whose editions of *Werner's Nomenclature* (1814 and 1821) influenced his own *Nomenclature of Colours, Hues, Tints, and Shades*[368], published in 1845.[369] While *Laws of Harmonious Colouring* is important in

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[364] Ibid., 19.
[365] Cited in I. Gow, 'The First Intellectual Housepainter', in: *The World of Interiors*, London, May 1984, pp.17-22.
[366] M. E. Chevreul, *De la loi du contraste simultané des couleurs et de l'assortiment des objets colorés: considéré d'après cette loi dans ses rapports avec la peinture, les tapisseries des gobelins, les tapisseries de Beauvais pour meubles, les tapis, la mosaique, les vitraux colorés, l'impression des étoffes, l'imprimerie, l'enluminure, la decoration des édifices, l'habillement et l'horticulture* (Paris: Pitois-Levrault et cie, 1839).
[367] M. E. Chevreul, *The Principles of Harmony and Contrast of Colours, and Their Applications to the Arts: Including Painting, Interior Decoration, Tapestries, Carpets, Mosaics, Coloured Glazing, Paper-staining, Calico-printing, Letterpress Printing, Map-colouring, Dress, Landscape and Flower Gardening, etc. Tr. from the French by Charles Martel* (London: Longman, Brown, Green and Longmans, 1854).
[368] D. R. Hay, *A Nomenclature of Colours, Hues, Tints, and Shades, Applicable to the Arts and Natural Sciences; to Manufactures, and other Purposes of General* (William Blackwood and Sons, 1845).

applying a colour theory to interior decoration, Baty considers his now extremely rare later work *Nomenclature of Colours* to be of the utmost importance because it includes 240 named colour samples of predominantly architectural colour. The samples are in the form of hand-painted card chips, which were pasted on to the plates and were probably produced by the author (fig. 89). Baty argues that 'therein lies its importance. Instead of relying on 21st century interpretations of colour names, one can see examples of what was felt to be "drab colour", "Sage green", "olive" etc. in the 1840s.'[370]

The various editions of *Laws of Harmonious Colouring* are crucial in developing and structuring the ideas about interior colour as a deliberate and complete design element of a building that were voiced earlier by De Mézières, Hope and Goethe in either published work or application. Referring heavily to the themes that dominate colour theory in the nineteenth century, such as colour contrast, harmonious composition and the importance of light and shade, Hay makes specific suggestions for specific rooms, guided by the function, location and orientation of each room. A dining room, for example, should be 'warm, rich, and substantial, and where contrasts are introduced, they should not be vivid', whereas 'parlours should be painted in a medium style, between that of a drawing-room and dining-room'. He considers 'a solemn and grave' colouring ideal for libraries, whereas a bedroom's colouring might be 'light, clean, and cheerful' and 'a greater degree of contrast may here be admitted between the room and its furniture'. Linking rooms, lobbies and staircases, he continues, 'should all be rather cool of tone', since a cool and restrained colouring 'will much improve the effects of the apartments which enter from them'.[371] Rather than assigning specific colours to each room, Hay focusses on how rooms related to each other, how the colours of wall decorations, furniture, soft furnishings, ornament can be harmoniously combined, and how each room is lit.

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[369] Kuehni and Schwarz, *Color*, pp. 76-77.
[370] *Baty,*'Hay's Nomenclature' [accessed 20 September 2013].
[371] Hay, *Colouring* [1836], pp.27-28.

Despite his indebtedness to historical texts and research, Hay also displays a good awareness of contemporary trends and fashions, as well as offering consumers advice on where to source the best quality materials for decorating their homes. He states, rather daringly, that 'this branch of industry has suffered greatly from an inferiority in the design and colouring of our pattern of all kinds of fancy goods', rating any products coming from France as far superior and blames the lack of opportunities for training and the study of the art of design in Britain.[372] For example, the colour 'giraffe', a name given to a shade of yellow (and sometimes a spotted pattern) that resembled an actual giraffe: 'A rich hue of green upon the walls of a drawing room, accompanied by cream colour, French-white, and gilding on the cornice, ceiling, and wood-work, with damask hangings of giraffe and gold colour […]'[373]. This was a colour named in response to the public interest in the first living giraffes that arrived in France and England in 1827, resulting in fashionable ornament, hairstyles, fabric and accessories inspired by this animal's features. Hay is, to my knowledge, the only author who mentions this short-lived colour name in a publication on architectural colour.[374]

In the early nineteenth century the foundations for interior design as a distinct art form were laid by a number of writers on colour, architecture and the decorative arts, while marketed and publicised by publishers such as Ackermann. Parissien credits Ackermann's early nineteenth century publications in which *en suite* decoration is pioneered as responsible for initiating 'the concept of the instantly recognizable, comprehensive *look* to be imposed on all items in the interior'[375]. In his *History of the Worshipful Company of Painters* (of which all five generations of Craces were active members), Alan Borg refers to the nineteenth century as 'The Age of the Decorators' and identifies a shift in the company's structure: 'Increasingly, the membership of the Company was coming to consist either of those involved in the decorating trades or of

[372] Ibid., pp.53-54.
[373] Ibid., p.48.
[374] For comparison see Ackermann, *Repository,* 1 July 1828, p.57 (with related colour plate depicting the dress described): 'London Fashions. Morning Dress: Dress of giraffe-colour baptiste, with small lilac sprigs.'
[375] Parissien, *Regency Style*, p.128.

people who had no direct involvement in painting work at all […]'[376]. Just a few years after Hay's first editions, John Claudius Loudon states that colour is the most important aspect of interior decoration apart from size and proportion of a room, but bemoans the lack of a 'regular theory' on the subject. He recommends Hay and Whittock as reference works and quotes extensively from Hay, but, crucially, he also considers painters' manuals and genre-spanning works such as Burnet and Syme as indispensable:

> Colour, next to the size and general proportions of a room, exercises the most important influence on the eye of a spectator.[…] It must be confessed that this department of the art of interior decoration has not been hitherto reduced to any regular theory, and that the subject appears to be only understood by artists of a superior description, whose employment is necessarily very limited. After consulting all the works that are considered the most valuable on the subject of house and ornamental painting, we think that by far the best, and indeed the only one that embraces principles, is a small work entitled the *Laws of Harmonious Colouring*, &c., by Mr. D. Hay, House Painter, Edinburgh. For the mechanical part there is a very complete work, in a thick quarto volume, by Mr. N. Whittock, called the *Decorative Painter's and Glazier's Guide*; which also embraces the subjects of imitating a great variety of woods and marbles, and of staining glass. From the former work we have drawn the following paragraphs; but to understand the theory of house-painting so as to be able to act on it, the reader must consult Burnet, Syme, Lairesse. Hassel, Reade, Schimmelpennick, &c., including an able article on painting in *Brewster's Encyclopedia*.[377]

In a supplement to his *Encyclopedia* from 1842 Loudon acknowledges the complexities of interior decorations, but heartily encourages pursuing a comprehensive, highly ornamented and even expensive type of interior decoration, anticipating the polychromatic *en suite* styles that would develop in the Victorian age:

> The blending of form and colour is much more difficult in architecture than in painting […] Let us spare a little expense externally (and frequently it may be spared without being missed), and apply it to internal decoration. Let us be consistent in our designs; and, if we have the means of giving a princely appearance to the exterior, let us

[376] A. Borg, *The History of the Worshipful Company of Painters, Otherwise Painter-Stainers* (London: Jeremy Mills Publishing, 2005), p.143.
[377] J.C. Loudon, *An Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture. A New Edition* (London: Longman, Orme, Brown, Green, & Longmans, 1839), p.1015.

> remember that it should only prepare us for equal, if not superior, display within. The resources should be carefully husbanded, that the whole design may be in proper unison, admitting only just such discords as are sufficient to prevent monotony, and give zest to the general effect of the composition.[378]

By the end of the nineteenth century, interior design had become an established part of the arts. When Oscar Wilde visited the Royal Pavilion in 1883 to give two lectures on the principles of art and beauty, he made critical comments about the building in which he was delivering the lecture, but these should simply be interpreted as reflecting a change in taste and fashion. His remarks on colour in interiors in general show how interior design and colour schemes had become an integral part of the wider field of the arts:

> Looking around at the gorgeous decorations in the Banqueting Room in which he stood, [Wilde] said he was not quite sure whether he would not quarrel with the man who decorated that room, for he thought he had mistaken the whole meaning of Art. […] To the papering of walls in general [Wilde] was strongly opposed, unless the material employed was the Japanese leather paper; and he condemned the practice of employing paper to represent marble or of staining any kind of wood, except deal, which is not grained in any way, in imitation of any other material than it really was. One of the principle considerations in decorating the interior of a room Mr Wilde felt to be colour; the chief requisite being to secure harmonious blending. Colours corresponded to the notes of a piano, and if one wrong colour were employed a discord was produced. Neutral colours, such as gray, white, and black should be principally employed, with a sparing use of primary tints.[379]

It is clear that the colours, paint effects and surface finishes considered fashionable had changed in the sixty years since George IV had finished his Royal Pavilion, but Wilde was here referring to principles and analogies set out in the early nineteenth century by writers such as Goethe, Hope, Field, Whittock and Hay.

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[378] J.C. Loudon, *First Additional Supplement to An Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture; Bringing Down Improvements in these Arts to 1842* (London: Longman, Orme, Brown, Green, & Longmans, 1842), p.1223.

[379] 'Mr Oscar Wilde's Notions on Art and America', *The Brighton Herald*, Saturday, November 3rd 1883, [unpaginated].

Chapter 3

Key figures involved in the creation of the Royal Pavilion and their engagement with and interest in colour and colour theory

This chapter identifies key figures involved in the creation of the Royal Pavilion interiors and discusses to what extent personal taste and fashion informed George IV's collecting habits and design decisions, as well as those of his designers. The aim is to establish how far these key figures reflect wider trends and developments in colour choices in interior design and the decorative arts. The chapter begins by focussing on the influence of other members of the Royal Family on the look of the Royal Pavilion, with particular focus on Chinoiserie interiors or collections created by George IV's mother, sisters and other relatives, either before or alongside the creation of the Royal Pavilion. Based on close analysis of primary archival sources, the chapter will also discuss to what extent George IV was actively involved in design decisions and their implementation. In this context the significance of buildings preceding the Royal Pavilion or developing alongside it, notably the interiors of Carlton House and Frogmore House, will also be considered.

A further significant section of chapter 3 will bring together information on the work of George IV's designers Robert Jones and the Crace family of decorators, relating to colour, colour theory, and their specific design styles and painting techniques. While much is known about the Crace family, Robert Jones's life and work has until now not been comprehensively researched. The chapter will finish by elaborating on the special case of Humphry Repton, who was commissioned by George IV in 1805 to submit plans for an orientalised exterior of the Royal Pavilion building and gardens. His elaborate plans survive but the project was never realised. However, Repton is a good example of an early nineteenth century designer who integrated new ideas about colour and colour theory in his work and literary output.

3.1 George IV and his family

In this section I will discuss George IV's role as a patron of the arts and architecture in general and his degree of involvement with design decisions at the Royal Pavilion in particular. In this context I will underline the significance of his parents' artistic tastes and collecting habits and the particularly strong female influence George IV was exposed to in his family. Since Chinoiserie in interior design was a style often associated with women, it is worth considering how both his mother's and his sisters' interest in it shaped George IV's taste for the exotic in the early nineteenth century. The chapter will also consider oriental buildings and interiors that are likely to have informed the creation of the Royal Pavilion, some designed by family members or ancestors, some by George IV himself. Of particular significance here are Frogmore House in Windsor Great Park and Carlton House in London.

George IV is often considered one of the great collectors and patrons of the arts in British royal history, with only Charles I (1600 – 1649) as a possible comparison. He was a keen collector of art, in particular Dutch, Flemish and French paintings, but didn't show much interest in Italian masters. In view of how and where George IV placed paintings in the interiors at Windsor Castle, Carlton House and other palaces, it is clear that his fine art collecting habits would often be informed by the vision of a complete interior design scheme. Thus paintings would be hung in dedicated wall spaces, often on dark red or green backgrounds, framed by gilt mouldings, or, in the case of the Chinese export paintings in the Royal Pavilion, stuck directly onto the walls and incorporated into the wallpaper design, complete with trompe l'oeil frames. However, it has to be noted that the Royal Pavilion did never include a dedicated art gallery. Its interiors represent complete interior design schemes, where each artefact and painting predominantly has decorative value and a specific place in the overall scheme.

Early biographers such as Robert Huish[380] tended not to discuss George IV's collecting habits and architectural passions other than in the context of expenditure and excess, a critical attitude which was reflected in some contemporary caricatures. Robert Seymour's *The Great Joss and his Playthings* from February 1829 (fig. 90) is perhaps a caricature that most directly comments on George IV's excessive building projects, of which the Royal Pavilion is visually the most effective example. Here George IV is depicted as a fat Chinese Mandarin sitting on a teapot spouting public money, which pays for his expensive hobbies, among them a real giraffe and various building projects, including the remodelling of Buckingham Palace, Windsor Castle, the Hyde Park Corner arches and others. The Royal Pavilion is placed closest to his head and is immediately recognisable. The print is embellished with further references to the exotic exterior and interior style of the Royal Pavilion.[381] A similar print by S.W. Fores from 1820, *New Baubles for the Chinese Temple* (fig. 91), once again associates George IV's restless decorating and building activities and his taste for Chinoiserie with childishness and immaturity. Various Chinese objects, including a large pagoda, dragons and Chinese figures frame the scene in which George IV throws a tantrum, having been declined an increase in his salary.[382] As I have shown in chapter 1.1, style criticism directly aimed at the Royal Pavilion was common, and in the medium of caricature the building is a visual representation of George IV's obsession with building and decoration projects of questionable taste and scale.

Twentieth- and twenty-first century critical literature on George IV does elaborate on his role as patron, connoisseur, collector and builder. In his 2001 biography of George IV, *The Grand Entertainment*, Parissien devotes two consecutive chapters on this aspect of George IV's character, distinguishing between 'Architectural Patronage' and 'Connoisseur of Fine Art'[383], in which he rightly states that his 'love for art was another characteristic undoubtedly inherited from his father and, more

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[380] R. Huish, *Memoirs of George the Fourth*. 2 volumes (London: Thomas Kelly, 1831).
[381] For a detailed description of Seymour's print see: K. Baker, *George IV, A Life in Caricature* (London: Thames & Hudson, 2005), p.131.
[382] Baker, *George IV*, p.139.
[383] Parissien, *George IV*, pp. 116-165.

particularly, from his grandfather [Frederick, Prince of Wales]'.[384] Stressing the influence of his father may seem surprising, given their lifelong differences, but while George III's tastes in art might have been different from his son's, his general attitude to connoisseurship clearly shaped young George IV's interests.

Crucially, it was William Chambers' exotic buildings at Kew Gardens, designed under the patronage of Frederick, Prince of Wales and the Earl of Bute and finished in 1762, the year of George IV's birth, which might have sparked an interest in exotic architecture. Apart from the Pagoda, the largest of the exotic structures at Kew, young Prince George would have seen an 'Alhambra' (built in 1758) and a 'Mosque' (built in 1761). This area of oriental building and follies at Kew is referred to in a watercolour from 1763 by William Marlow as 'the wilderness' (fig. 92) and can almost certainly be considered George IV's first exposure to oriental architecture and design. Of these oriental garden buildings only the Pagoda survives (fig. 93), probably because it was the most substantial of the 'wilderness' structures, but it is worth noting that the pagoda young Prince George would have seen in the 1760s was a much more colourful and ornamented building than what remains today. Its ten roofs were once varnished in different colours and from each of the eight corners of each roof were suspended dragons 'covered with a kind of thin coloured glass of various colours, which produced a most dazzling reflection'.[385] It is possible that these glazed dragons were a direct inspiration for the transparent coloured glazes found on many silvered objects, including carved dragons, in the Royal Pavilion's Music Room and Banqueting Room. Other buildings, now lost, from the 'wilderness' may also have informed George IV's later design decisions, as for example the 'House of Confucius', a two-storey octagon building in a Chinese style, probably designed by Joseph Goupy. Its interiors are described by Chambers thus: 'Its walls and ceiling are painted with grotesque

[384] Ibid., p.143.
[385] W. Chambers, *Plans, Elevations, Sections, and Perspective Views of the Gardens and Buildings at Kew in Surr[e]y, the Seat of Her Royal Highness the Princess Dowager of Wales* (London: J. Haberkorn, for the Author, 1763), p.5; also partially cited in P. Conner, *Oriental Architecture in the West* (London: Thames & Hudson, 1979), p. 82.

ornaments, and little historical subjects relating to Confucius, with several transactions of the Christian missions in China.'[386]

Another of these lost ornamental buildings might have inspired a specific motif applied in the Oriental interiors of the Royal Pavilion: the interior of the Mosque, another octagonal building, flanked by two cabinets and topped by a dome, built by Chambers himself in 1761, boasted stucco palm trees which, in execution and colouring, are reminiscent of the intricately painted and coloured palm trees by Robert Jones for the Red Drawing Room (fig.35). Chambers' description and the actual objects might well have been known to both the Craces and Robert Jones: 'At the eight angles of the room are palm-trees modelled in stucco, painted and varnished with various hues of green, in imitation of nature; which at the top spread and support the dome, represented as forms of reeds, bound together with ribbons of silk.'[387] The whole is set against walls painted in 'rich rose colour' and 'straw colour'. By comparison, an entry in Jones's account books describing the palm trees in the Red Drawing Rooms reads 'Painting in imitation of Bamboo 14 trees with their gradations of Color from the ground upwards to their foliage, which is finished with bright Greens and highly Varnished.'[388]

In the field of decorative arts George IV has no rival as a collector, with many of his purchases reflecting his excitable nature and fondness for excess. Within the decorative arts furniture, weapons, and silver-gilt dominated and throughout his life he had a particular penchant for French art. He chose the Francophile architect Henry Holland as an architect for the first manifestation of the Royal Pavilion, modelled very closely on the Hotel de Salm in Paris. Even after the complete internal and external oriental transformation of the Royal Pavilion, French influences remained noticeable in certain decorative details as well as in French cuisine as the choice of food and the employment of a French chef, Antonin Carême, in 1817 for the newly built Great

[386] Chambers, *Plans,* p.4.
[387] Ibid., p.6.
[388] RJA, entry for 1820, p.3.

Kitchen and Banqueting Room. At his London residence, Carlton House, the French presence was indeed all-pervasive. George was an avid collector of Sèvres porcelain and Boulle furniture. George IV's *marchand-mercier* Dominique Daguerre supplied and also designed much of the furniture, with Holland providing many of the French-inspired exteriors and interiors. This preoccupation with French art is perhaps best explained by a desire to emulate the splendours of the court of Louis XIV. It is tempting to interpret the move away from French Neo-Classicism and, in Brighton, the embracing of Chinoiserie as a reaction to anti-French sentiments during the Napoleonic wars, but the reasons for choosing this particular look for the Royal Pavilion are more complex. Aldrich argues that the early Chinoiserie interiors of the Royal Pavilion, mostly designed by John Crace, developed from Neo-Classical design aesthetics, specifically with regard to the structural division of decorative surfaces and the use of bold base colours.[389]

George IV's largest purchase of decorative art objects came from the Watson Taylor sale on 28 May 1825, supervised by his then principal artistic advisor Charles Long, Lord Farnborough.[390] Although this sale took place after the completion of the Royal Pavilion interiors, George IV's choice of purchases, for example several pieces of furniture decorated with Florentine pietra dura panels, confirms that his taste for colourful and highly ornamented objects had not changed. Hugh Roberts comments that 'George IV shared to the full the taste of collectors in the 1820s for furniture decorated in this costly and colourful manner, although in fact his interest in the subject long predated that of most contemporaries.'[391]

However, the creation of the Royal Pavilion interiors was perhaps fuelled less by a particular collecting habit or interest, than by the desire to create a small yet opulent pleasure palace away from the London court, exceptional and extreme in

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[389] Aldrich, 'Crace and Soane', pp.21-29.
[390] For a detailed account on this sale see: H. Roberts, '"Quite appropriate for Windsor Castle": George IV and George Watson Taylor', *Furniture History*, Vol. XXXVI, 2000, pp. 115 – 137.
[391] Roberts, 'Watson Taylor', p. 119.

style, as well as having a very specific purpose: entertainment. The interiors were thus influenced by both the palace's location in the thriving seaside resort of Brighton (at a considerable distance from London, yet accessible in a few hours) and the main function of the building. The social life and location of Brighton probably encouraged more daring, playful and experimental designs, which reflected the mood of Brighton in general and enhanced the reputation the seaside resort had already acquired.

The female influence

While the exotic buildings dotted around Kew Gardens may have been a formative influence on George IV's taste for Oriental architecture in general, it can be argued that with regard to interior design schemes he was greatly influenced by female members of his family, specifically his mother, Queen Charlotte, and his sisters Charlotte (the Princess Royal), Elizabeth and Augusta. A well-known painting by Zoffany shows Queen Charlotte in her sitting room in Buckingham House (later Buckingham Palace) in c.1765, in the company of her eldest sons George and William, aged three and two (fig. 94). While on this occasion Charlotte is dressed in typical Rococo dress, her sons are wearing fancy dress costume, George the uniform of a Graeco-Roman soldier and William Middle Eastern garb with turban. Charlotte, too, was known to have been portrayed in Oriental costume and to have attended masquerade balls. The furnishings and decorative objects in the room reflect Charlotte's interest in collecting Oriental goods and export ware, such as blue and white china: the composition is brought together by a richly coloured Persian rug and, on the mantelpiece, two Chinese nodding figures can be seen, which appear almost identical to those later displayed in the Long Gallery of the Royal Pavilion.

Collecting exotic export ware and furnishing rooms in a Chinoiserie style were, as Beevers has pointed out, associated with the female sphere[392], so Queen Charlotte's tastes were not unusual, but they appear to have made a significant impact on those of her eldest son. George IV would also have been familiar with the substantial

[392] Beevers, *Chinese Whispers*, pp.21-23.

collection of blue and white china (export ware as well as European imitations) introduced to the English court by Queen Mary II (r. 1689-1694) at Hampton Court and Kensington Palace and clearly continued by Queen Charlotte and her daughters.[393]

Queen Charlotte had several rooms at Windsor Castle and Buckingham House designed in a Chinoiserie style or embellished with Chinoiserie elements. Although these interiors do not survive, they are well recorded in Pyne's *Royal Residences*. In the case of the Queen's State Bedchamber at Windsor Castle, where red forms the main background colour, Pyne notes 'the new walls being judiciously coloured with a tint that does not obtrude itself on the eye; a circumstance that should be attended to in all picture galleries.'[394] The room is significant in having at least four black lacquer cabinets, introducing a Chinoiserie element to what was effectively a picture gallery. The room is shown in Pyne as it appeared in James Wyatt's design from 1804[395], making it only slightly later than the first Chinoiserie interiors at the Royal Pavilion, but the cabinets are likely to have been acquired much earlier. However, other Chinoiserie interiors predate both the Royal Pavilion and even the early Chinese drawing room at Carlton House. Queen Charlotte's Breakfast Room at Buckingham House was furnished with black and gold painted panelling that had been transferred from the Crimson Drawing Room in 1763.[396] Pyne describes the panels as 'formed of beautiful japan, which has a pleasing effect.'[397] The room was further embellished with some of Queen Charlotte's collection of oriental and European china on shelves and on the chimneypiece. The watercolour that informed the aquatint in Pyne shows the arrangement of the room in c. 1810, but the collection of china is recorded as in situ from at least 1783 (fig. 95).[398] This room is a telling example of George IV's mother's interest in Chinoiserie, and might have inspired the later lacquer panelled rooms at

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[393] For Queen Mary's collection of china see: J. Wilson, 'A Phenomenon of Taste, The China Ware of Queen Mary II', in: *Apollo*, 96, 3, 116-23 (1972).
[394] Pyne, *Royal Residences*, Vol. 1, p.116. With a plate drawn by J., Stephanoff and engraved by J. Baly facing it.
[395] J. Roberts (ed.), *George III and Queen Charlotte: Patronage, Collecting and Court Taste* (London: Royal Collection Enterprises Ltd., 2001), p. 143.
[396] Ibid. p. 120.
[397] Pyne, *Royal Residences*, *Vol. 2, Buckingham House*, p.21. With a plate drawn by I. Stephanoff and engraved by D. Havell facing it.
[398] Roberts, *George III*, p. 120.

Frogmore House. Buckingham House, Frogmore House and Carlton House are thus relevant comparative studies and to some extent predecessors of the extreme oriental approach at Brighton's Royal Pavilion.

At Frogmore House, the female creativity of female members of the Royal Family resulted in several complete Chinoiserie schemes in the early nineteenth century. Frogmore House, in Pyne named 'Queen's House', had long been associated with female royal occupants, such as Queen Anne and Queen Caroline. In 1792 Queen Charlotte renewed the lease on the house and instructed James Wyatt to convert the existing house into a neo-classical villa set in a picturesque environment. Following these improvements the house and its setting were frequently used for fetes, concerts and garden parties from 1795 onwards.[399] The house also became strongly associated with two of Queen Charlotte's daughters, the Princesses Elizabeth and the Princess Royal (also Charlotte). [400]

While the Princess Royal and Princess Augusta had inherited their mother's interest in drawing, engraving and botanical illustration, Princess Elizabeth was particularly interested in the interior decoration of several royal residences. With some input from the Princess Royal, she is considered to be the designer of three Chinoiserie interiors of Frogmore House, two of which she appears to have partly executed herself. In Pyne's *Royal Residences* two of the six aquatints, based on Charles Wild watercolours, illustrating the house depict these Chinoiserie interiors: the Red Japan Room[401] (fig. 96) and the Green Closet (fig. 97)[402]. A further Black Japan Room and a barely described India Room are not illustrated. As complete interior design schemes, these rooms are of utmost significance to the development of the decorative schemes of the Pavilion in Brighton. Like the Royal Pavilion's Chinoiserie schemes, they are a post-Rococo manifestation of the Chinoiserie fashion and represent the late, more vibrant flowering of what was considered a feminine style. It is unclear whether the

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[399] Pyne, *Royal Residences: The History of the Queen's House, Frogmore*, Vol. 1, pp.1-3.
[400] The artistic work of Queen Charlotte and her daughters is discussed in detail in J. Roberts, *Royal Artists: From Mary Queen of Scots to the Present Day* (London: Grafton Books, 1987), pp.74-80.
[401] Pyne, *Royal Residences: The History of the Queen's House, Frogmore*, Vol. 1, facing page 17.
[402] Ibid., facing page 21.

Chinese interiors at Carlton House or the first Chinese interior at the Royal Pavilion preceded these rooms at Frogmore, but a mutual influence and inspiration among the Royal siblings can be assumed and might explain the sudden cluster of early nineteenth century Chinoiserie interiors in the circle of George IV.

Both the Princess Royal and Princess Elizabeth are credited by Pyne with producing much of the ornamental painting of the walls of Frogmore and at the Queen's Lodge (the latter probably referring to the Queen's *cottage orné* at Kew). Elizabeth is credited with painting the panels and some of the furniture in the Red Japan Room: 'The walls of this apartment were painted, in imitation of rich japan, by her Royal Highness the Princess Elizabeth; the furniture was ornamented by the same tasteful hand.'[403] The room appears to have been further embellished with a combination of Chinese teapots and European imitations of Chinese porcelain. Elizabeth also appears to have created the walls of the Black Japan Room, a room in which, according to Pyne, 'an additional interest is excited, in knowing that the taste which the room displays, is all the work of female ingenuity', since the embroidery of the upholstery and soft furnishings was carried out by a school for orphans established under the patronage of Queen Charlotte.[404]

The Red Japan Room (fig. 96) was the central room facing the garden on the ground floor of Frogmore House and is now called the Yellow Drawing Room. What the Royal Pavilion interiors and the japanned rooms at Frogmore House have in common is a radical and assured transformation from a classically inspired style, including garlands, medallions, urns and trellis-work, to a Chinoiserie style created sometime between 1797 and 1807. Jane Roberts refers to the drawing by Henry Wigstead, inscribed ‘Frogmore Hall at the Fete 1797’, that shows the Red Japan Room almost certainly decorated for a fête in the Neo-classical style. Roberts then quotes a letter from Princess Elizabeth, who had introduced the garlands in 1793, from 19 September

[403] Ibid., p.18.
[404] Ibid., p.19.

1807, in which she tells her friend Lady Cathcart: 'I am busy putting up my Japan room at Frogmore, which place [sic] is as dear to me as ever'.[405]

The India Room is described only in a few lines as an interior featuring an elaborately carved ivory bed, white satin embroidered upholstery and red velvet cushions, without a reference to a designer or creator.[406] A set of Indian sandalwood settees and chairs, veneered in ivory, was also an important feature in the later manifestation of the Royal Pavilion's Long Gallery (fig. 8). These benches and chairs, quite possibly inspired by the India Room at Frogmore House, lifted the design scheme of the Long Gallery considerably, adding a rare splash of very light coloured finishes to a scheme that otherwise avoids shades of cream, buff or white. They originally belonged to Queen Charlotte, but were bought by George IV in 1819 shortly after her death, indicating that he shared his mother's taste in oriental objects.[407] The settees are no longer in situ at the Royal Pavilion, but survive in the Royal Collection (RCIN 489).

The Green Closet formed the third Chinoiserie interior at Frogmore and is described as an 'apartment fitted up with original japan, of a beautiful fabric, on a pure green ground. The cabinets and chairs are of Indian cane.'[408] (fig. 97). Some of the numerous oriental objects seen in Wild's watercolour may have been presents given by the Emperor Qianlong to George III in 1793, suggesting that most of the interior consisted of authentic oriental materials and objects.[409] Crucially, both the Red Japan Room and the Green Closet are clearly represented as female spaces in the illustrations: both watercolours show the rooms occupied by seated women; in the case of the Green Closet a single seated female figure reading, and in the case of the Red Japan Room two seated female figures writing and in conversation. This was perhaps supposed to underline both the creative origins of these specific interiors and the association of Chinoiserie interiors with female tastes. None of the oriental

[405] Roberts, *George III*, pp. 147-148.
[406] Pyne, *Royal Residences: The History of the Queen's House, Frogmore*, Vol. 1, pp.20-21.
[407] Roberts, *George III*, p. 380.
[408] Pyne, *Royal Residences: The History of the Queen's House, Frogmore*, Vol. 1, p.21.
[409] Roberts, *George III*, p.150.

interiors at Frogmore survive, but Jane Roberts notes that some of these lacquer panels were probably transferred to the Princess Elizabeth's married home, Schloss Homburg in Hessen, Germany, where fragments survive in the 'English wing' of the palace.[410]

It is obvious that the Chinoiserie designs of the Japan Rooms at Frogmore House were closer in style to her mother's japanned Breakfast Room at Buckingham House than the Royal Pavilion interiors. The early Chinoiserie interiors by John Crace (from c. 1802, with input from his young son Frederick) for the Royal Pavilion avoided excessive japanned wall panelling and instead introduced a lighter note with pale blue wall paint or wallpaper contrasting with a darker shade of blue and two other two primary colours, red and yellow. In the wake of John Crace's death in 1811 Frederick Crace introduced large-scale wall decorations for Nash's new Music Room at the Royal Pavilion (from 1817), which appear to pick up on the lacquer panelling at Frogmore House and earlier Chinoiserie interiors at Buckingham House. The large red canvas paintings, which decorate almost the entire wall space, combine Chinese topographical and figurative motifs from William Alexander's illustrations of his Chinese travels[411] with a paint effect of lacquered surfaces (figs. 98 and 99).

Carlton House

Carlton House became George IV's London residence in 1783, when he was twenty-one. Until then he had spent most of his time at Kew, Buckingham House, or Windsor Castle. Alterations under the direction of Henry Holland began immediately after Carlton House was officially given to George IV. It was, in many ways, an architectural playground for the young prince, where he experimented with interior design schemes, some of which articulated ideas later explored further in the Royal Pavilion. Architects and designers first employed at Carlton House were later called to Brighton, including Holland and John Crace, transferring certain design ideas and styles

[410] Ibid., p.148
[411] W. Alexander, *The Costume of China: Illustrated in Forty-eight Coloured Engravings* (William Miller, London, 1805).

to George IV's new seaside residence. In some cases, even pieces of furniture and decorative objects were moved from Carlton House to the Royal Pavilion. Crucially, the building featured the first Chinoiserie interiors commissioned by George IV. These were researched in great detail by Geoffrey De Bellaigue[412], who also curated an exhibition about the decorations of Carlton House in 1991[413].

In *Royal Residences* Pyne criticises the lack of unity of the architectural design of Carlton House, which perhaps reflects the experimental character and eclectic taste of George IV in general: 'The general effect of the exterior of Carlton-House, combined with the Ionic screen, as viewed from the Pall Mall, although imposing in appearance, does not possess sufficient unity of character to satisfy the eye of taste'[414] However, in the late twentieth century De Bellaigue identified colour and repetition of materials as unifying elements in the design scheme of George IV's first large architectural experiment, with noticeable similarities to the later naming of rooms at the Royal Pavilion according to the colour schemes:

> In some cases the unifying factor was colour. We come across such names as The Yellow Bow Room, The Blue Bow Room and, unbelievable though it may sound, the Flesh- Coloured Room. Apart from colour, unity was also achieved - or intended to be achieved - by the repetition of the same materials. For example, the Prince of Wales planned to have a tapestry room in which the walls were to be hung with Gobelins tapestries and the seats were to be upholstered in the same material.[415]

Further descriptions gleaned from Pyne highlight George IV's particular interest in a variety of imitative paint surfaces and ornaments forming a contrast to the ground colour of a room. The Great Hall, which, incidentally, resembles the Entrance Hall of the Royal Pavilion in respect of a green ground colour, is a good example for this: 'The walls are of granite-green, which accords admirably with the effect of Sienna marble, the verde antique, porphyry, and the several imitations of these costly materials;

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[412] G. De Bellaigue, 'The Furnishings of the Chinese Drawing Room, Carlton House', *The Burlington Magazine*, Vol. 109, No. 774 (Sep., 1967), pp. 518-528.
[413] G. De Bellaigue, *Carlton House: The Past Glories of George IV's Palace* (London: Buckingham Palace, 1991).
414 Pyne, *Royal Residences: Carlton-House*, Vol. 3, p.12.
[415] De Bellaigue, 'Chinese Drawing Room', p. 518.

which are judiciously relieved by the deep-coloured ornaments of bronze that surround them'[416]. Granite-green was also the colour of the walls surrounding the Great Staircase of Carlton House, which was metal-gilt.

A Chinese Drawing Room at Carlton House, designed by Holland in c. 1789 and furnished in a French neo-classical style by Dominique Daguerre, is, regrettably, not described in Pyne's *Royal Residences*, possibly because by the time Pyne wrote the books these interiors had been superseded by other schemes, but two important engravings of it are included in Thomas Sheraton's *The Cabinet-Maker and Upholsterer's Drawing-Book*[417] from 1793 (figs. 100 and 101). Sheraton mostly describes the furniture (as can be expected), such as a pier table 'richly ornamented in gold' and with a marble top, various panels painted 'in the style of the Chinese', without specific references to colour, but notes that 'the upholstery work is very richly executed in figured satin, with extremely rich borders, all worked out to suit the style of the room'.[418] It is not known when exactly the interior of this room was changed, or indeed where exactly it was located, but it is likely that some of its design elements were re-used in a later, smaller, Chinoiserie room, also absent from Pyne's *Royal Residences*. The colour scheme of a later room, dating from 1805 to 1807, is described in a bill book as predominantly black and carmine, with pagodas painted on a carmine ground on the walls, while the doors were ornamented with figures in gold on a black ground. The ceiling had a ground colour of lilac and green, featuring stars and signs of the Chinese Zodiac, with a large painted dragon in the centre. At ground level the ceiling decorations were reflected in a lilac ground bamboo trellis pattern.[419] While the neo-classical Chinoiserie style of Holland and Daguerre's earlier Chinese Room seems stylistically far removed from the Chinoiserie schemes of the Royal Pavilion, the later Chinese Room displayed some elements that were shortly after found in the Royal Pavilion, notably the combination of carmine ground embellished with gold (Music Room and Red Drawing Room), central dragon ornaments on ceilings, and the rather

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[416] Pyne, *Royal Residences: Carlton-House*, Vol. 3, p.14.
[417] T. Sheraton, *The Cabinet-Maker and Upholsterer's Drawing-Book*. *In Three Parts.* [2 vols.] (London: T. Bensley, for the Author, 1793).
[418] Ibid., pp.50-51.
[419] De Bellaigue, *Carlton House*, p.20, quoting from Fricker & Henderson account books.

unusual use of lilac in the bamboo trellis pattern, which can be found at skirting to dado level in the Music Room.

Pyne does describe another room with Chinoiserie elements at Carlton House, the Rose-Satin Drawing Room: 'Situated in the south front of Carlton-House, this elegant room forming the bow which marks the centre of the building. Its embellishments are partly composed of furniture in the Chinese style, although its architecture and other decorations are generally in correspondence with the rest of the apartments.'[420] In this interior, created before 1818, Chinoiserie consists merely of additional ornaments: a chimney piece, clocks, mandarin figures and fretwork furniture, all set against an essentially classical interior of a rose-coloured satin as ground colour. It is interesting, though, that the colours of a pair of pietra dura tables flanking the chimneypiece are described as 'proper', a term also frequently used by the Craces in the CL:

> The ceiling is lightly ornamented in stucco-work, partially gilt […]. The walls are covered with rose-coloured satin damask, with gold mouldings; the upper part being enriched by festoons of the same beautiful materials […]. The chimney-piece is in the Chinese style, and executed in rosa antiqua marble and or-molu, supporting a magnificent looking-glass of British manufacture; the hangings, too, and other furniture are nearly all of English fabric. On the mantel-piece are a clock and braces for lights, in the Chinese character of design, and small china paterae borne upon metal tripods. On each side of the room are rosa antiqua tables, supported by Chinese frame-work, ornaments and mandarin figures, beneath which are recumbent Chinese figures of larger dimensions. Upon the tables are vases and other ornaments of beautiful china; and on each side of the fireplace are cabinets curiously embossed with lapis lazuli, agate, and other valuable stone, in imitation of baskets of fruit, flowers, &c. in their proper colours.[421]

At least three of the Mandarin figures from Carlton House were later transferred to the Royal Pavilion[422], as was the pier table from the earlier Chinese Drawing Room, and placed in the Long Gallery. It is possible that the rose-satin

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[420] Pyne, *Royal Residences: Carlton-House*, Vol. 3, p.31-32, with two views.
[421] Ibid.
[422] See CL, entry for 3 December 1802, p.40: 'Repairing and painting in part the 3 Chinese Figures brought from Carlton House'.

background from Carlton House was one of the inspirations for the pink Chinoiserie wallpaper design in the Royal Pavilion's Long Gallery (figs. 8, 9 and17).

It is clear that Carlton House represents in many respects a predecessor of the colour and design schemes of the Royal Pavilion. It was described by De Bellaigue as 'a testing ground for the Prince of Wales's essays in Chinoiserie, which found their fullest expression in Brighton Pavilion'.[423] A further Carlton House room that influenced the Royal Pavilion design scheme, the Circular Dining Room, will be discussed in the context of silver in chapter 4.2.

George IV's involvement in design decisions

Despite the now considerable amount of literature on George IV as collector and patron of the arts, the details of how he communicated with the architects, designers and artists he commissioned remain obscure and must be obtained predominantly from the artwork itself, circumstantial evidence and very limited archival material. The editor of George IV's letters, A. Aspinall, explains in one of his editions that, of the main body of papers relating to George IV, many letters were examined after George IV's death by one of his executors, the Duke of Wellington, who selected and destroyed much of his private correspondence in 1833, including correspondence with Maria Fitzherbert.[424] The surprising lack of letters discussing matters of personal taste in art, new design ideas or passions for a particular style or colour might well be explained by the destruction of more personal letters. The number of surviving letters to and from artists, architects and designers is frustratingly small, with documentation mostly limited to account books, expense ledgers and inscriptions on design drawings. Morley suggests that protocol forbade direct exchange with artists and designers, or that communication via letter was not necessary.[425] The lack of substantial written evidence notwithstanding, E. Maurice Bloch, Keeper of Prints and Drawings at the Cooper Union Museum, New York, who

[423] De Bellaigue, *Carlton House*, p.20.
[424] A. Aspinall (ed.), *The Letters of King George IV, 1812-30* (3 vols.) (Cambridge: Cambridge University Press, 1938), Vol. 1, lvii-lx.
[425] Morley, *Pavilion*, p. 25.

studied the design drawings for the Royal Pavilion in great detail, is of the opinion that the 'active and personal interest of the Prince Regent in his marine residence overshadowed and influenced every detail of the work created there' and suggests that 'in Frederick Crace and Robert Jones, and their assistants, he found as well a freedom entirely in accord with his own […]'[426]. He continues to paint a picture of George IV as the mastermind of the opulent project that was the creation of the Royal Pavilion, '[…] a kind of Royal impresario about to embark on operatic production, the staging envisioned over a long period, every detail planned in his fertile mind with relation to the final effect.'[427]

Indeed, the CL includes many references to the presence of George IV during the installation of ornaments, the hanging of wallpaper and changes to certain designs, supporting Morley's suggestion that discussion of design issues was not considered appropriate for written communication and demanded site visits. A closer look at these site visits paints a vivid picture of George IV's direct involvement in the design process and his remarkably close observation of the changes being made to the Royal Pavilion. An early entry in the CL from the 1802 reveals that George IV was overseeing the hanging of some Chinese export wallpaper and other work. Frederick Crace charged for 3 ¾ days 'attending the Prince in hanging the paper in sundry rooms, attending fixing up and cutting out the Birds, &c on the paper in Saloon'[428]. A particularly detailed entry in the CL records the regular attendance of George IV between July 1815 and March 1816, marking the beginning of the major interior and exterior transformation of the Royal Pavilion under John Nash:

> DAY WORK in attendance upon HIS ROYAL HIGHNESS
> July Attending His Royal Highness with 8 assistants putting in patterns of sundry works in the Small Drawing Room and Gallery
> 1½ day each and materials
> Aug 7th Attending His Royal Highness with 10 assistants putting in patterns to Small Drawing Room - framework of pannels in Saloon and arranging the India Paper for the different rooms

[426] E. M. Bloch, 'Regency Styling, the Prince and the Decorator', *The Connoisseur,* June 1953, No.531, p.130.
[427] Ibid.
[428] CL, entry for August 25th to December 24th 1802, p.6.

> 2 days each and materials
> 15th Attending His Royal Highness with 9 assistants putting in patterns to Small Drawing Room, arranging the pictures, India paper &c in Yellow Drawing Room; putting in patterns to Entrance Hall and Gallery and arranging Mr Jone's pictures
> 1½day each and materials
> Sept 16 Attending His Royal Highness with 6 assistants putting in patterns to Yellow Drawing Room, Entrance Hall, Prince Regent's Bedroom &c and arranging the pictures and India Paper
> 2½ days and materials
> Oct 18 Attending His Royal Highness with 8 assistants putting in patterns to Entrance Hall, Saloon and Yellow Drawing Room, making alterations in His Royal Highness's Bed and Anti Rooms
> 2 days each and materials
> Dec 1 To Attending His Royal Highness with 8 assistants in putting in patterns to Yellow Drawing Room, making alteration in the Bedroom, Anti Room and fixing up pictures in Bedroom
> […]
> 20 1 man in attendance by desire of His Royal Highness to keep the skylights and the whole of the house clean and in repair from December 28th to March 30
>
> DESIGNS AND DRAWINGS
> Making various designs and working drawings (by order) for the Carver, Skylight maker, Upholsterer, Stove maker &c in the whole 44 drawings including various designs &c by order of His Royal Highness, attending to the execution of the standards, skylights, canopy &c[429]

George IV also attended the hanging of the precious Chinese export wallpaper (referred to as 'India Paper' and arranged for installation in August 1815) around the same time: 'Mr Crace and his men attending His Royal Highness in arranging the hanging of the India Paper and birds in Saloon, Prince Regent's Bedroom and other rooms.'[430]

A similar entry is found in 1818, which also alludes to George IV making drawings of his design ideas and patterns:

> Attending at Brighton by His Royal Highness's command from the 23rd December to the 28th in making designs for the finishing of the ornamental painting of the Music Room
> To Artist's time assisting in making drawings and patterns
> Carriage, Lodging, &c

[429] Ibid., entry for 1815, pp.77-78.
[430] Ibid., p.80.

> Preparing designs for His Royal Highness in London and also some large patterns on linen by his desire for the finishing of the Music Room
> Paid Artist's time and materials &c assisting for the above
> Attending His Royal Highness at Brighton in making drawings and putting in patterns on the wall of the Music Room as intended to be finished
> […]
> Carriage time and lodging
> Attending His Royal Highness in making drawings for the chimneypiece, pagodas and patterns, and putting in sundry Do in Music Room[431]

A note by John Gregory Crace (Frederick's son) in the *Frederick Crace Book of Designs* (figs. 102 and 103) mentioned in the introduction to this thesis, further illustrates how George IV would have perused, discussed and chosen ornaments and colour schemes for the Royal Pavilion. J.G. Crace recorded on the flyleaf: 'Scraps from Chinese ornaments drawn by Frederick Crace. This book was often looked on by George IV'.[432]

An entry from 1819/20 in the CL reveals how particular George IV was about details of the design scheme, especially concerning colour. Here he changes his mind about the particular colour of imitation ribbons (from blue to lilac) in the Music Room:

> Preparing and painting in imitation of bamboo the receded ceiling at each end of the room and ornamenting the same with blue ribbons and highly varnished
> Repainting the ribbons Lilac instead of blue, by order of His Majesty[433]

In another incident, the Craces charged £49 for removing some 'gold speckling' on several doors because George IV had not approved of the decoration. The same entry also records the preparation of design drawings for the inspection of George IV:

> Preparing and fixing up various patterns for the approbation of His

[431] Ibid., entry for 1818, p.91.
[432] See also Morley, *Pavilion*, p.80, where he discusses the sketchbook in the context of the more sophisticated style of Frederick Crace's drawings, compared to his father's 'somewhat old-fashioned use of the Chinese idiom'.
[433] CL, entry for 1820, p. 110.

> Majesty, Artist's and men's time and material
> […]
> Preparing and gilding in Green Gold the stiles of 7 pair of folding doors and linings, redone in consequence of the Gold speckling not being approved of [434]

A number of letters among the Crace papers in the National Art Library, London, give a vivid impression of how George IV kept his designers on their toes. George IV frequently ordered Crace and Jones to meet him urgently in Brighton to inspect and discuss aspects of the interior design scheme. Many of the letters were written on behalf of George IV by the French chef and club proprietor Jean-Baptiste Watier, who became house steward as well as some kind of private secretary to George IV in the Regency period. In one letter, dated January 1st, 1818 (fig. 104), George IV expresses his concern about progress and stresses the importance of inspecting and discussing the designs on site: 'The Prince Regent wishes you to come down as soon as you can & to bring with you everything necessary, and also what you have done. The P.R. w'd rather see your progress here. He is fearful that you will not understand him unless he has you on the spot.'[435]

Entries and letters like these prompted Morley to suggest that George IV was 'always in direct intercourse, on more than equal terms, with his architects and decorators – constantly at their elbows; designing; making technical suggestions; ordering, and no doubt cajoling with his well-known 'condescension'; often rejecting, as is seen over and over again in frequent changes of mind and changes of scheme.'[436]

A couple of rough sketches of Royal Pavilion designs created by George IV himself survive (see for example fig. 105). Morley believed that George IV's interest in fashion and masquerade costumes might have been precursors to a preference for complementary colour schemes, referring to a sketch in his own hand of a Hussar's

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[434] Ibid., p.115.
[435] Letter from J. Watier to F. Crace, January 1st, 1818. In: *Crace Family, Correspondence, ca. 1795-ca. 1915.* 38 items. National Art Library, Special Collections, London, V&A. MSL/1989/6/2.
[436] Morley, *Pavilion*, p. 25.

uniform (fig. 106).[437] Jane Roberts, too, attests to the practical design interests of George IV, and his focus on fashion and interior design:

> The few drawings that survive from the Prince of Wales's hand are, perhaps characteristically, sketches of designs for furniture, a fountain, and for the decoration of the panels of the New Music Room at Brighton Pavilion in 1818 (1962 7 14 34). His interest in design and his own clothes manifested itself in his earliest drawings, in 1780 for a tripod or therme made up for him by a cabinet maker, and the present elaborate Hussar's uniform with a jewelled sword and flowered blue sash which he evidently intended to wear to a masquerade celebrating his twenty-first birthday.[438]

The few remaining designs, so Morley concludes, 'have a nervous, broken line that never assumes any fluency of expression […] a near ideal situation for patronage, given such lofty station, abilities and access to money and credit'.[439]

Finally, George IV's close supervision of any aspect of building work and design projects is also reported in the context of the production of Nash's *Views*. Benjamin Ferrey, chronicler and biographer of Augustus Welby Pugin and his father Augustus Charles Pugin, records that George IV revised the proof impressions of the engraved plates for the book personally.[440] According to Ferrey, A. C. Pugin was also once surprised by the King while making the sketches for the work in the Royal Pavilion, clearly intent on inspecting the progress Pugin was making:

> He was engaged in one of the galleries of the Pavilion colouring a view. Deeply intent upon his drawing, he did not observe that someone had entered the apartment, but on looking round, to his surprise, saw the King, who was then advancing to the spot where he was sitting. Pugin had scarcely time to rise when the King, passing by him and not perceiving a stool on which a colour-box was placed, accidentally overthrew it. The King stooped, and instantly picking up the box, gave it to Pugin with an expression of apology.[441]

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[437] Ibid., p. 20.
[438] Roberts, *Royal Artists*, p. 86.
[439] Morley, *Pavilion*, p.25.
[440] B. Ferrey, *Recollections of A. N. Welby Pugin, and his Father, Augustus Pugin; With Notices of Their Works* (London: Edward Stanford, 1861), p.9.
[441] Ibid.

Having considered the surviving examples of correspondence, records and other material concerning George IV's involvement in design decisions, I have no doubt that he was interested in every detail of the Royal Pavilion's interior design. He probably provided his designers with ideas, rough sketches and instructions, and regularly inspected and supervised the installation and execution of design schemes on site. What is less clear is how architects, interior designers and suppliers of wallpaper, furniture and other design elements communicated and worked together. Frustratingly little correspondence between John Nash and the Craces survives, but Bloch quotes a previously unpublished letter from Nash to Frederick Crace, dated May 19th, 1818, which suggests that Nash, instructed by George IV, regularly inspected the design drawings produced by the interior decorators: 'I am directed to inspect the designs you are painting for Brighton. I will thank you to bring all the drawings here at 9 tomorrow morning, particularly of the chimney pieces & such as relates to the architectural or constructive parts of the room […]'[442]. A letter in the National Art Library from Watier to Frederick Crace, dated April 7th, 1818 (fig. 107) describes a similar exchange of designs between the interior designers and the furniture makers Bailey and Sanders, suggesting that a system was in place that ensured good communication between the various designers involved in creating the decorative scheme of each room: 'Mr Crace will be so good to give his designs and instructions to Mess Bailey & Sanders for the canopies, cornices, glass frames, pannels, pillasters, & serpents connected with the draperies, for the fitting up and decorating the Music Room, at the Pavilion, at Brighton.'[443]

3.2 The Crace firm

The Craces were a family of artists and designers who worked as gilders and interior decorators for five consecutive generations, from c. 1750 until 1899, when John Diblee Crace (1838 - 1919) closed the firm. The firm had been set up in 1768 by Edward Crace (1725 - 1799). Royal patronage was secured early on and Edward Crace

[442] Cited in Bloch, 'Regency Styling', p.130. Bloch notes that the letter is in the collection of the Cooper-Hewitt Museum.
[443] Letter from J. Watier to F. Crace, April 7th, 1818. In: *Crace Family, Correspondence*, not accessed individually.

was appointed Curator of the Royal Pictures in the mid-1770s. His son John (1754 - 1819) joined the family firm in 1780 and was, with his son Frederick (1779 - 1859) frequently employed by leading British architects, including Henry Holland at Carlton House and the Chinese Dairy at Woburn Abbey, John Soane at his house in Lincoln's Inn Fields and Pitzhanger Manor, Ealing, and eventually John Nash. John and Frederick Crace were the principal designers of the Chinoiserie interiors implemented in the Royal Pavilion interiors from c. 1802, with John having been the driving creative force in this first Chinoiserie phase. In the period during and immediately after John Nash's transformation and extension of Holland's Pavilion (from 1815 onwards), Frederick Crace took the artistic lead and was responsible for the large project of the new Music Room, the Long Gallery and the redecoration of many other areas of the building. John Crace died in 1819, so it can be presumed that the majority of the work at the Royal Pavilion after 1815 was carried out by Frederick Crace.

As pointed out in the introduction, the work of the Craces is well-recorded, with hundreds of design drawings, letters, sketchbooks and other documents surviving in various collections and libraries. The Craces have been the subject of Dr Megan Aldrich's comprehensive research over many years, leading to the retrospective exhibition *The Craces: Royal Decorators 1768 – 1899* at Brighton Museum and Art Gallery in 1990. I will, therefore, not go into great detail about the specifics of the history of the Crace firm. Instead I will briefly highlight a number of stylistic characteristics in their Royal Pavilion work, before commenting on publications on colour by later Crace generations which reflect an underlying interest in colour and colour theory that probably informed all of the Craces' work.

Sources of inspiration

The large numbers of design drawings by the Craces relating to the Royal Pavilion interiors and the good documentation of their professional and private occupation provide ample information about their tastes and working methods and the inspiration for their choice of colour schemes. The Craces' interests and artistic

range were wide, and they appear to have been studious and well-informed. As Aldrich states in her doctoral thesis, 'a history of the Crace firm entails the study of coach painting, restoration and curatorial work, house decoration, the decorating of public buildings, furniture making, textile and wallpaper production, upholstery and drapery […]'[444] John and Frederick appear not to have travelled to the Far East, but they were familiar with the early Chinoiserie interiors at Carlton House and the collections of export ware owned by Queen Charlotte. John Crace himself owned a large collection of oriental artefacts and the firm supplied clients with Chinese export ware. This allowed the Craces to study the design, ornamentation and colouring of Chinese art from the actual objects. Both Morley and Aldrich point out that George IV and the Craces shared a passion for Chinese objects and refer to a painting by Dighton of Frederick Crace presenting a piece of oriental china to George IV.[445]

Other obvious sources of inspiration for the Craces were illustrated travel books. The Sotheby sales catalogue from July 7, 1819 of John Crace's library lists fourteen books on China alone[446], including William Alexander's *Costume of China*, which greatly informed the Music Room (see figs. 98 and 99) and other decorations in the Royal Pavilion. The Crace's design drawings reveal what Gordon Lang calls 'a very close, almost slavish adherence to original Chinese sources'[447]. A good example of objects as a source of inspiration is the Frederick Crace drawing seen in fig. 108, which, in respect of motif, composition and colouring was clearly inspired by Chinese court robes similar to the one in fig. 109. The fantastic birds in figs. 110 and 111 are likely to have been copied or even traced directly from decorated Chinese porcelain. The figurative hand-coloured engravings from Alexander's book *Costume of China* found their way on to the central chandelier in the Music Room and also inspired the glass panels on the landings of the North and South Staircase. Here, the colours chosen by the Craces, bright and mostly primary or secondary tints, copy the colour schemes of

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[444] Aldrich, *Crace Firm*, p.5.
[445] Morley, *Pavilion*, p.79; Aldrich, *Crace Firm*, p.47. The Dighton painting is owned by Crace descendants and there is no image of it in the public domain.
[446] The catalogue has been discussed in detail by Aldrich in *Crace Firm*, p.48. A copy of the catalogue is among the Crace papers at the National Art Gallery: *Crace Family, Interior Decorators*.
[447] G. Lang, 'The Royal Pavilion Brighton: The Chinoiserie Designs by Frederick Crace.', in: Aldrich, *Craces,* pp.42-50.

the engravings, as is best seen in the example of the Chinese comedian on the central glass panel of the North Staircase (figs. 112 and 113).

The Crace design drawings for the Royal Pavilion interiors

Bloch assigns to both Frederick and John Crace (in his studies identified as Anonymous Designer I and Anonymous Designer II respectively, since few of the drawings are signed or dated) a good understanding of colour: '[Designer I's] use of colour is rich and brilliant, frequently exotic, but always harmonious […] Designer II is less interested in precise draughtsmanship and fine details, but somewhat more concerned with the achievement of texture and colour, generally using marbleized surfaces and trellis work pattern in gay abandon.'[448] Examples of trellis work designs can be seen in figs. 114 and 115, while a detailed pencil drawing of a design for a lantern (fig. 116) includes a number system that records the colours as found on the original piece of export ware the drawing is based on, thus emphasising Frederick Crace's attention to colour detail. Another ink and pencil drawing of a specific design for the South Galleries on the upper floor of the Royal Pavilion has clear colour instructions added to the design drawing (fig. 117).

However, most Crace designs are marked by a two-dimensional quality, with colour schemes that seldom use blended tints, gradation, subtle shading or tertiary colours. This is particularly obvious when comparing lacquer work produced by Frederick Crace and Robert Jones. Fig. 118 shows a detail of a lacquer panel from a door in the Music Room, with yellow paint on a red ground, picked out in gold paint. The design remains literally two-dimensional, despite attempts at shading. Movement and depth is created mainly by the reflective quality of the yellow and gold paint and colour contrast. This is described in the CL as 'Preparing and painting in crimson 14 large pannels to Doors, richly ornamented with Chinese Devices in yellow, heightened in gold varnished and polished'[449]. By comparison, the detail of a Saloon door by Jones

[448] Bloch, 'Regency Styling', pp.130-131.
[449] CL, entry for 1820, p. 112.

(fig. 119) shows thickly applied paint and raised surfaces, which give the impression of a carved relief.

While this could be explained by the Craces' style of 'slavish' copying of original sources, it might also express an understanding of the colour wheel. A reduced number of colours in any design scheme, picked from the artist's range of primary and secondary colours, ensures brilliant and intensive effects, especially when complementary colours are combined. It is highly likely that the Craces not only understood the colouring style of Chinese artefacts but were also familiar with contemporary literature about colour and may thus have applied complementary colours in pure tints in order to achieve a particularly vibrant effect. In the Royal Pavilion interiors this is distinctly expressed in the overall colour scheme of the Music Room, where the three dominant tints are the highly saturated primaries red, blue and yellow/gold (figs. 21 and 22). The Crace Saloon scheme from c.1815, too, illustrates the penchant for tri-chromacy in the Craces' work (fig. 10). The sketches of a fantastic bird (figs. 110 and 111) by Frederick Crace illustrate his attention to figurative detail and outline and may constitute further prove that he tended to draw outlines first, before colouring in the spaces (as in fig. 116). The coloured-in version of the bird design not only resembles bright colour schemes on decorated Chinese porcelain, but shows a palette reduced to five clear tints from a painter's basic colour wheel: blue, red, yellow, green and lilac (pale purple).

The language used by the Craces in their accounts to describe the colours and finishes applied in the Royal Pavilion between 1802 and 1823 has been partly investigated by Brough in 'The Significance of Sheen: Surface Finish as an Important Aspect of Early Nineteenth Century Interiors'. Brough notes that frequent references to the application of multiple layers of varnish or paint, enriching, heightening, and 'high polishing'[450] suggest 'a preoccupation with variety and with surface effect: there are many references to different treatments over one area'[451], for example 'richly polished' elements adjacent to 'flatted' areas. Such variations in surface finish in close

[450] The CL refers to 'varnishing' and 'highly varnished' 228 times (see Appendix 2).
[451] Brough,'Sheen', pp.2-3.

proximity, Brough argues, 'would reflect the light in different ways, and the decorator [Crace] appears to take for granted that the choice of language is understood and the resulting effect the one desired'[452].

With regard to colour and pigment names and descriptions, it is notable that the Craces repeatedly refer to 'proper colours' in the CL. As mentioned in the introduction, this most certainly indicated high quality pigments and realistic colours, as opposed to the cheaper and paler 'common colours', which were mostly associated with hallways, servants' areas, flooring and matt finishes. Baty notes that common colours such as stone, white, pearl, cream chocolate, oak or lead, were derived from cheaper coloured earth pigments, and therefore more stable and less likely to fade.[453] The stress on 'proper' colours therefore reflects the overwhelming presence of highly saturated and polished paint surfaces in the Royal Pavilion, something that until the later eighteenth century was almost exclusively associated with panelled walls and woodwork.[454] Bristow notes that 'proper colours' are often associated with painted clouded ceilings in late eighteenth and early nineteenth century interiors. Here, 'proper' refers to the illusionary effect of the decoration, another dominant feature in the Royal Pavilion.[455]

The CL refers to 'proper colours' a total of fifteen times (see Appendix 2), while in two cases colours are described as 'expensive'. Interestingly, in both cases actual pigments are named, which is rarely the case in account books. In the day account from the fourth quarter of 1802, the Craces charged £77.19.0 for a variety of work carried out and time spent at the Royal Pavilion, including an astonishing £28.16.0 for 'materials used consisting of fine colors for the Patterns of Rose wood Vermillion purple brown yellow Lake Best Lake Pattent [sic] yellow and other expensive colors'[456]. Similarly, in January 1818 Frederick Crace charged £54 for 'Artist's time assisting Do and materials used from the 6th January to the 24th. Carmine, Lake, Vermillion,

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[452] Ibid., p.3
[453] Baty, 'Historic Paints', pp.56-57.
[454] Ibid.
[455] Bristow, *Architectural Colour*, p.163.
[456] CL, entry for 5 October to 23 December 1802, p.6.

Crome, Yellow and other expensive colours'[457]. The fact that the high price of the pigments is alluded to proves that the Craces created a certain amount, if not all, of their painting and decorating materials from scratch, and purchased pigments from colourmen. Frustratingly, there is no reference in any of the Crace papers to specific pigment suppliers.

The frequency of colour names listed in the CL shows an even distribution of the primaries yellow (127), blue (154) and red (159). Green is mentioned sixty-eight times and pink sixty-six times, while purple, lilac and scarlet feature sixteen, sixteen and fifteen times respectively, with other colour names used in significantly fewer instances. Of the 'common colours' it is notable that while white is mentioned 111 times, other a-chromatic colours feature significantly less: black thirty-nine times, grey thirty-seven times and brown eleven times. As mentioned above pigments are rarely specified, but there are a total of seven references to Chinese red and Chinese vermilion, five mentions of verdegrease/verdigrease, two of chrome/crome yellow, one of patent yellow, four of carmine and nine of flake white.[458]

The Craces and colour literature

In her thesis Aldrich notes that the Craces were 'influential theorists as regards the use of colour in the nineteenth century.'[459] She is here referring to the research output of later generations of the Craces, John Gregory and John Diblee, who lectured and published on the subject of colour. In 1867 a significant article by John Gregory Crace, entitled 'On Colour', appeared in *The Builder*[460], while John Dibblee Crace published an elaborate book, *The Art of Colour Decoration*[461], in 1912. Although these publications post-date the creation of the Royal Pavilion interiors, they reflect the Crace family's lifelong personal, academic and practical interest in colour, as well as

[457] Ibid., entry for 1818, p.94. This entry probably relates to decorations in the Music Room.
[458] See Appendix 2 for detailed figures of colour references in Royal Pavilion accounts.
[459] Aldrich, *Crace Firm*, p.5.
[460] J.G. Crace, 'On Colour', *The Builder*, 30th Nov. and 7th Dec. 1867. [unpaginated]
[461] J. D. Crace, *The Art of Colour Decoration. Being an Explanation of the Purposes to be Kept in View and the Means of Attaining Them* (London: Batsford, 1912).

contemporary attitudes to and aesthetic ideas about colour. John Diblee's *Art of Colour Decoration,* for example, strongly informed by the author's travels to Italy and his study of classical and Renaissance architecture, expresses a deep and well-developed understanding of the decorator's art and applied colour theory, concepts that were only just beginning to be formulated one-hundred years earlier, when John and Frederick were designing the Royal Pavilion interiors:

> The decorator has to start by forming a general scheme – that is to say, by deciding what hues are to be used in the larger fields, such as ceiling, walls, and woodwork. […] So many conditions affect the question of the wall colour that these must be thoroughly considered first […] Will the room be seen most by day or night? If the latter, it is desirable to avoid colours which tend towards the blue or violet end of the scale. A red which by daylight might appear crimson in tone may, in artificial light, appear heavy and absorbent. Colour which is to be seen by night needs always to be purer than is required for daylight.[462]

John Gregory's article in *The Builder,* on the other hand, reflects the poly-chromatic and highly-ornamented mid-Victorian attitude to colour in interiors in the wake of the Great Exhibition from 1851: 'As for me, I abominate white-wash; I see not the beauty of raw stone walls unrelieved; nor do I see the impropriety of covering those raw stone walls with glowing colour.'[463]

What is remarkable about this article, though, is the fact that John Gregory discussed many of the issues and concerns regarding colour theories of the preceding 150 years, including its applicability to interior design. In parts it almost reads like a survey of colour theory since Newton from the viewpoint of a decorative artist. He begins by pointing out the significance of Newton's experiments with spectral colour and light and his proposed colour circle, before discussing the principle of primary, secondary and tertiary colours, and an alternative colour system based on two fundamental colours, orange and blue, representing the pairing of light and heat and coolness and shade respectively.[464] This concept is reminiscent of the dualistic colour

[462] Ibid., pp.10-11.
[463] Crace, 'On Colour', para.12 [unpaginated].
[464] Ibid., para.1-3.

system proposed by Goethe in 1791/92, as mentioned in chapter 2.2. This is no coincidence: Crace goes on to explain in great detail the concepts of colour contrast, including the optical and physiological conditions of simultaneous, successive and mixed contrast, and notes that 'several men of high attainments have written upon this subject, more particularly Goëthe [sic], who published his interesting work "The Doctrine of Colours" in 1810, and it has since been translated by Sir Charles Eastlake, who added to it notes of great interest and usefulness.'[465] He also references Field and Chevreul, but it is Goethe's experiments and writings he appears to rate most highly. In one instance Crace compares an observation he made of coloured shadows to Goethe's example of a dark after-image of a white girl's face. By contrast, he says about Chevreul: 'Though I highly appreciate and admire his theories, I do not always agree with him when he regulates decorative effects of colour.'[466]

Crace then establishes a number of rules and principles regarding the harmonious use of colour in interior design and decoration, based assuredly on colour theories composed earlier in the nineteenth century, and perhaps further informed by the work of his father Frederick and grandfather John. Based on the concept of the colour wheel he proposes, for example, clear primary or secondary tints as ground colours in a room: 'In decoration it may be laid down as a principle that one colour should dominate; that dominant should be a primary or secondary; and that the other colours must be subsidiary to it.'[467] He promotes polychromy further by noting: 'It should always be remembered that the eye is never satisfied with any arrangement of colour unless all the primaries are present in some shape or other.'[468] The latter argument in particular is reminiscent of some of the multi-chromatic design schemes created by John and Frederick Crace for the Royal Pavilion. John Gregory further recommends choosing colour schemes in accordance with their aspect, location and use[469], a concept that suggests he had read Hay's books on harmonious colouring in interior decoration, but, surprisingly, Hay is not mentioned in the text.

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[465] Ibid., para.6.
[466] Ibid.
[467] Ibid., para.8.
[468] Ibid., para.9.
[469] Ibid., para.10.

John Gregory's article is not only indicative of a continued professional interest in colour and interior design in the nineteenth century; it is also a rare early reference to Goethe's *Farbenlehre* in the context of architectural colour. Furthermore, this publication, as also J.D. Crace's later publication on colour, strongly suggests that colour theory was of particular interest to several, if not all, generations of the Crace family of decorators.

Both John Gregory and John Dibblee Crace were involved with later nineteenth century redecorations of the Royal Pavilion interiors. While John Gregory's 1860s proposals were not carried out, John Dibblee's Moorish designs for the Music Room Gallery and Banqueting Room Gallery were implemented in 1884 and 1898. Aside from these perhaps questionable redecorations he also proposed and carried out major restoration work in the Music Room and Banqueting Room in the 1890s, and became a highly respected adviser to the Pavilion Committee. As mentioned in chapter 1.2, he is credited by Rutherford with introducing the concept of the protection and restoration of the original fabric of the Royal Pavilion interiors: 'J.D. Crace's contribution towards the long-term preservation of the Royal Pavilion was invaluable. With his experience and knowledge he guided the Pavilion Committee during the latter decades of the nineteenth century towards formulating a policy of restoring the interior.'[470]

3.3 Robert Jones

From at least 1815 the designer and artist Robert Jones became one of the most important creative forces in the final decorative scheme of the Royal Pavilion during and after Nash's transformation. He was responsible for the design of the Red Drawing Room, the Banqueting Room, the Saloon scheme of 1823, elements of the Music Room and various other parts of the Royal Pavilion.

[470] Rutherford, 'Redecoration', p.179.

Jones's use of colour and choice of motifs is distinctive, bold and imaginative. The lack of information and hard data about Jones means that in literature he is rarely considered separately from the Craces. Even in Morley's substantial work *The Making of the Royal Pavilion,* Jones is incorporated in the chapter about the Crace firm, although Morley presents him as a rival to the 'great ability and virtuosity' of the Craces, attributing a 'spontaneity and fire' to his designs.[471] Examination of Jones's surviving work at the Royal Pavilion reveals his introduction of a number of distinctive painting techniques and uses of colour, including subtle gradations of colour and colour combinations on single objects, silver and silvering as a unifying element in an overall design scheme, and the combination of silver and gold in close proximity and in combination with deep reds and blues (primaries). These techniques suggest that Jones had a deep understanding of colour theory and, as mentioned in Chapter 2.2, possibly knew George Field or his work.

Very little is known about this important figure. This section will first gather any information about the artist that can be extracted from the few surviving sources documenting his life and work. It will also discuss a number of artists of the same name who might be the Jones in question. It will then consider various sources of inspiration for Jones's decorative schemes at the Royal Pavilion. Finally, relevant account and inventory entries, surviving design drawings, interiors and objects will be analysed, in order to establish Jones's style, techniques and design choices with regard to colour.

There is no confirmed date of birth or death for the Robert Jones who worked at the Royal Pavilion and his identity cannot be attributed with certainty to any of the artists of that name working in Britain between 1790 and 1850. Jones is first mentioned in the CL in the period covering October to Christmas 1815, where Crace lists charges for 'Ornamental painting &c' in the Entrance Hall. The exact entry reads 'Painting and coloring 19 pannels white for Mr Jones and afterwards repairing and coloring Do in consequence of Mr Jone's [sic] paintings being removed'[472], at the cost of £11.12s. This is part of other decoration work in this room, including the painting of

[471] Morley, *Pavilion,* p.79.
[472] CL, entry for October to December 1815, p. 71.

the walls, cornices and ceiling, and the painting, silvering and varnishing ornaments: 'Preparing and coloring the ceiling sky color and clouding Do; Ornamenting a scollop ornament veined pink and high varnished; Preparing the cornice and painting it in imitation of pink Chinese marble; 40 bells, balls, and chains painted yellow and afterwards silvered and varnished green; Preparing and coloring walls green'[473]. It is not quite clear what these paintings were that had been removed, but the entry suggests that they were installed some time before this date. This places Jones in the building considerably before October 1815, the date conventionally assigned to his work in the Royal Pavilion. Moreover, the fact that here work is done *for* Jones and in preparation for his work places him in a position of relative authority, which reflects his expertise and craftsmanship. Significantly, in this last quarter of 1815, re-decorations and repair works on a large scale were carried out, marking the beginning of the complete transformation under Nash, which would take place over the next eight years.

Jones is mentioned again in the same quarter in relation to a visit from George IV, during which he supervises the hanging of various paintings and patterns, including Jones's: 'Attending His Royal Highness with 9 assistants putting in patterns to Small Drawing Room, arranging the pictures, India paper &c in Yellow Drawing Room; putting in patterns to Entrance Hall and Gallery and arranging Mr Jone's [sic] pictures'.[474] Jones is not mentioned again in the CL, despite the large projects carried out in the Royal Pavilion over the next eight years, often requiring close collaboration of the Craces, Jones and Nash. This suggests that Jones worked as an independent artist and was no longer employed by the Craces from at least 1816 onwards.

In the RPAA, Jones is described as 'Robert Jones, Artist' throughout. He refers to himself in the same way in the RJA. The RPRB lists him as 'Mr. Jones, Artist'. In the RPAA Jones is first mentioned in relation to the furniture makers Mssrs. Bailey & Saunders in 1817, who made six 'Pedestals for the Orlean Vases made to Mr. Jones

[473] Ibid.
[474] Ibid., entry for 7 August 1815, p. 78.

design'[475] for the Music Room. The same entry also explains that Jones oversees the making of objects designed by him: 'To mak'g a Model of do for Mr. Vulliamy with very rich carved Ornam'ts under Mr. Jones superintendence'[476], once again highlighting his superior role within the team of interior decorators. In the same year Bailey & Saunders carved, prepared, silvered, and eventually installed the large central dragon in the Banqueting Room, as well as made a large sideboard, both designed by Jones. Jones again supervised some of the work, including making two additional models of the dragon, the whereabouts of which are unknown:

> To a very large Dragon for the Centre of the Room richly carved with extend'd Wings to suspend Chandeliers & prepar'g it for silvering
> To silvering it at Brighton
> To mak'g & alt'g at sundry times 2 Models of the Dragon originally designed by Mr. Jones and under his superintendence
> To a very large & superbly decorated Sideboard made of very fine Rosewood Snakewood and Satin Wood with 12 large Dragons & Ornam'ts richly carved and double Gilt in the very best manner to Mr. Jones's design.[477]

Further similar references are found in 1822 and 1823 concerning much of the furniture, ornaments and fittings in the Saloon and many mirrors ('glasses') designed for various parts of the building, including the 'New North Building'. All these entries combined are evidence for Robert Jones' skills, versatility and status as both painter/decorator and designer, and suggest that by 1822 Jones was highly experienced and perhaps at the height of his career.

An 'R. Jones' is mentioned in 1826 in Smith's *The Cabinet-maker and Upholsterer's Guide*. In a chapter entitled 'Interior decoration', which, incidentally, follows on from a chapter on 'Colouring', Smith notes that there is great talent among British interior designers, and singles out Jones as the leading professional in this category:

> We have however in the present day many decorative artists (natives of our own soil) of great merit, some of whom possess uncommon versatility of talent; performing equally well both in oil and distemper

[475] RPAA, p.6, transcript p. 48.
[476] Ibid.
[477] Ibid., p.8, transcript p.53.

> colour, the three branches of decorative art; viz. figure, landscape, and ornamental painting in all its variety; as the numerous works of Mr. R. Jones (who stands at the head of his profession) sufficiently testify.[478]

Circumstantial evidence, such as royal patronage enjoyed by both Smith and Jones, and the publication of this book just three years after the completion of the Royal Pavilion interiors, strongly suggests that this is indeed the highly respected Robert Jones from the Royal Pavilion.

Of similar circumstantial weight is the mention of a Jones as one of a number of artists, of 'high talent', by John Gregory Crace in the first of 'Two Lectures on the History of Paperhangings', delivered to the Royal Institute of British Architects in 1839.[479] Crace singles out Mssr George and Frederick Eckhardt, who established their business in Chelsea, London, in 1786, as paperhangers of 'considerable taste and spirit', who produced papers 'of such elegance and beauty, as far surpassed those of all other countries'[480]. He praises the variety of manufacturing methods and the high quality printing and goes on to explain that the print designs were 'finished by Artists constantly retained by the Manufacturers, men of considerable talent, among whom were M.M. Boileau, Feuglet, Joinot and Jones; and these again were assisted in the inferior parts of the Painting by young girls, of whom more than 50 were employed.'[481] It is noticeable that Jones is the only British name among what appears to be a group of artists of French background. Morley acknowledges that this evidence is slight, but he argues that Jones's 'individual style and the occupation of Robert Jones himself, is perfectly consistent with such previous work, and makes the identification possible.'[482] Morley further suggests that if this were indeed the Royal Pavilion Jones, he might have developed his particular 'verve and dash' during his time as the only British among foreign artists.[483]

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[478] Smith, *Cabinet-maker*, p. 164.
[479] Reprinted as *'The Crace Papers', Two Lectures on the History of Paperhangings, delivered to the Royal Institute of British Architects on 4th and 18th February, 1839* (no place, reprint 1939, with foreword and comments by A.V.Sugden and E.A. Entwistle).
[480] Ibid., p.30.
[481] Ibid., p.33.
[482] Morley, *Pavilion*, p.79.
[483] Ibid.

One specific technique employed at George and Frederick Eckhardt might be further support for this theory: J.G. Crace explains that the Eckhardt papers were 'not only printed on Paper, but also on Silk, Satin and Linen – by printing too an underground of silver or gold, they obtained very beautiful effects of colour.'[484] In *The History of Wallpaper, 1509-1914* Sugden and Edmondson record that the Eckhardts were granted various patents for production methods resulting in rich decorative designs, such as one 'for a method of printing designs in imitation of needle-work, for printing from engraved plates filled in with colour and rubbed off like ordinary copper-plate printing, for printing in oil colours, and for preparing and printing in silver leaf to resemble silk and lace stuffs for use as hangings for rooms.'[485] In Jones's later work in the Royal Pavilion (1817-1823) it is clear that he was experimenting on a large scale with silver undergrounds in the form of carved and silvered objects and fittings, often overlaid with transparent glazes. Silver and gold leaf formed the background for the figurative Chinoiserie paintings on the four walls of the Banqueting Room (figs. 25 and 26). Jones also used silver leaf as an integral part in the printed and stencilled wallpaper designs for the Banqueting Room and Saloon (figs. 24 and 11), on Prussian blue and white ground respectively. It may be that the techniques patented by George and Frederick Eckhardt were partly developed by Jones. These wallpapers will be discussed further in Appendix 3. Although there is evidence for earlier uses of silvering in the Royal Pavilion on export wallpaper and to designs by the Craces, Jones's use of silver is hugely imaginative and more varied than that of the Craces.

The Royal Pavilion interiors make it more than likely that Jones learned about the use and decorative effect of silver and gold and was inspired to experiment with silver in combination with overlaid colour while working for the Eckhardts early in his career. As Sugden and Edmondson pointed out, the Eckhardts were also known for their high quality imitation of Chinese export wallpaper, so it is possible that this is where Jones had an early professional exposure to Chinoiserie designs and motifs,

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[484] *Crace Papers*, p.33.
[485] A.V. Sugden and J.L. Edmondson, *A History of English Wallpaper 1509-1914* (London, B. T. Batsford, Ltd., 1926), p.110.

such as fantastical birds: 'An extremely interesting feature of this reproduction [of Chinese wallpaper] is that a fine engraved plate has been used, to emphasise in black the outline and finer features of the stork panel, the feathers of the birds being reproduced in most effective fashion. The process is known to have been used by the Eckhardts, of Chelsea, who flourished at the end of the 18th century.'[486] The Eckhardts went bankrupt in or around 1792[487] and the last confirmed work by Robert Jones dates from the early 1830s, so even a cautious estimate of Robert Jones working at the Royal Pavilion in his early forties to mid- fifties would place him at the Eckhardts as a very young man, perhaps first in the role of apprentice or trainee.

Apart from his large-scale involvement in the Royal Pavilion from at least 1815 to 1823, little is known about Jones's other work and so far he cannot be associated with any other major building or decorating project, although a few smaller projects are recorded. A 'Jones' painted three octagonal ceiling paintings and four overdoor paintings in neo-classical style for the State Dining Room (the State Gallery until 1817) and a number of paintings for the staircase area at Stowe House in Buckinghamshire, either when the owner was the Marquess of Buckingham (1778 to 1813) or the first Duke of Buckingham and Chandos (1813 to 1839). This work cannot be dated accurately, but is first mentioned in 1817 in a contemporary guidebook that went into many editions between 1744 and 1827, published by J. and L.B. Seeley[488]: 'The Grand Stair-Case, adorned with paintings by Jones – leads to the Bed Rooms in the upper storey'[489] (p.39) and in the State Dining Room 'The cieling [sic] ornamented with gilding, by Sclater, and paintings by Jones. […] Four paintings in Chiaro Scuro, copied by Jones from subjects found in Herculeneum, are over the doors.'[490] The last Seeley edition from 1827 confirms that the dining room paintings were still in place in 1827, but no mention is made of the staircase paintings.

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[486] Sugden & Edmondson, *Wallpaper*, p.105.
[487] For details about the end of the Eckhardts firm see Sugden & Edmondson, *Wallpaper*, pp. 111-113.
[488] [J. and L. B. Seeley], *Stowe. A Description of the House and Gardens* (Buckingham and London: J. and L.B. Seeley, 1817).
[489] Ibid., p.39.
[490] Ibid., p.60.

In 1990, the author of a new guidebook of Stowe, Michael Bevington, recorded that the ceiling probably deteriorated badly and that parts of it had been replaced, including the paintings by Jones (now referred to as grisailles). Bevington also attests that they are 'probably by Robert Jones, the chief assistant to Frederick Crace at the Brighton Pavilion', although no documentary evidence is given. The paintings are all neo-classical in subject matter and style: 'They are Venus disarming Cupid (east end), Venus on her Chariot, crowned by Cupid and attended by the Three Graces (centre) and Venus at her Toilet, attended by the Graces (west end). […] There are eight smaller ones set into the ceiling depicting two pairs of vases and two of classical reliefs.' [491] Bevington makes a further possible attribution to Jones of a large central painting entitled *Venus Blindfolding Cupid* in the Chandos Houseroom, the northern half of which had, in the mid-eighteenth century, been decorated in a Japanese style, with the southern half forming a so-called Chinese Closet.[492] It is cautiously suggested that Robert Adam carried out the enlargement and re-decoration of the room in the early 1770s, which suggests that the Jones painting must have been a later addition.

A likely identification is that of an 'R Jones' who engraved several drawings by Octavien Dalvimart for a publication entitled *The Costume of Turkey*[493]. The book was published by William Miller (coincidently also the publisher of Gartside's books from 1808) in 1802 and again in 1804. The text of *Costume of Turkey* was almost certainly compiled by William Alexander, who wrote and illustrated *The Costume of China* (1805), based on his travels to China in the 1790s, for the same series. The preface of *Costume of Turkey* stresses the appeal and importance of the accurate depiction of the colours: 'the merits of this work depend upon the accuracy and beauty of the drawings and truth of the colouring'. The volumes are lavishly illustrated with hand-coloured engraved plates and R Jones is one of the engravers in the Turkey volume, alongside John Dadley (1767–after 1807) and William Poole (active 1803–1807). Alexander's *China* volume has a subscribers' list that is led by King George III ('His Majesty's Libraries, London and Kew'), the Prince of Wales, the Duke of Clarence and Princess

[491] M. Bevington, *Stowe House* (London: Paul Holberton Publishing 2002), p29.
[492] Ibid., p.31.
[493] O. Dalvimart, *The Costume of Turkey, Illustrated by a Series of Engravings; with Descriptions in English and French* (London: William Miller, 1802).

Elizabeth[494], meaning that at least four, if not five, copies were in the royal libraries, and it is confirmed that the Craces used Alexander's illustrations as templates for many of the Chinoiserie designs for the Royal Pavilion. The circumstantial links between Robert Jones and this engraver are therefore strong, and could be further supported by the fact that, if he had been at Eckhardts Paperhangers in the 1780s and early 1790s, he would have acquired considerable engraving skills there. These skills he may then have applied in this publishing project. Dinkel linked the Royal Pavilion Jones to the engraver of the Turkish costume volume in his guidebook from 1983. He wrongly referred to Jones as the illustrator, but did note the similarity in style to the figurative wall panels in the Banqueting Room.[495] If the engraver was indeed the same person as the Royal Pavilion artist, this publication might account for his being noticed by the Craces or George IV for the Royal Pavilion project.

However, with regard to the colouring style of Jones's Chinoiserie panels in the Banqueting Room of the Royal Pavilion, it is important to note that they differ significantly from Alexander's figurative illustrations and indeed the way these were copied for use in the Royal Pavilion by the Craces. While Alexander's mostly depict single figures that show as much detail of the costume and accessories as possible, Jones's Chinoiserie scenes are carefully composed groups of figures in a fictional narrative context. The colouring, though vibrant, is much more graded and of subtle tonality than the rather two-dimensional designs in primary and secondary colours by Alexander and their almost identical copies by the Craces. In general, Jones's Banqueting Room panels are more reminiscent of French Rococo Chinoiseries in the manner of François Boucher. It is highly likely that Jones drew inspiration from French art and was aware of Boucher's work through exposure to French artists and decorators earlier in his career. This would explain his preference for subtler colouring and gradation, compared to the bolder and more linear style of Alexander's images. It is also likely that Jones at some point had travelled to the continent and seen examples of French or German Rococo Chinoiserie interiors.

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[494] Ibid., unpaginated.
[495] Dinkel, *Pavilion*, p.71.

A number of other artists and craftsmen working from the late eighteenth to the mid-nineteenth century are possible further identifications of the Robert Jones from the Royal Pavilion, but there is no definitive evidence for any of them. For example, a Robert Jones held a Chester silversmith Assay mark between 1792 and 1805 and is described as a watchmaker, case maker, goldsmith & silversmith based in Liverpool.[496] Liverpool seems an unlikely location for the Royal Pavilion Robert Jones, but a number of George III period longcase clocks have been identified as having been made, engraved or painted by a Robert Jones, the latter two of these skills the Royal Pavilion Robert Jones appears to have had.

Some research was carried out by Jessica Rutherford in 1989 into a 'Robt. Jones' who worked as an apprentice and assistant to the scene-painter Clarkson F. Stanfield (1793 - 1867) in c. 1817, carrying out work at the East London Theatre in Well Street, to the east of the Tower of London[497], but without conclusive results. It would seem unlikely that in or around 1817, when Jones was working on high profile commissions at Brighton, he would have been referred to as an apprentice or assistant.

Considerable unpublished research was carried out by Royal Pavilion conservator Gordon Grant into Jones possibly having worked at Northumberland House, London, for the Third Duke of Northumberland in the 1820s, and a young Robert Jones who was sent to the Royal Academy by the Stowe family and who may have taught drawing to a young George Gilbert Scott in the 1810s. The Northumberland connection has the strongest documentary evidence: Two bills from Robert Jones, copied from a bill book for works carried out in three rooms at Northumberland House (the Glass Drawing Room[498], the Tapestry Room and the upper

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[496] Silver Makers' Marks - Chester Assay Office (R) *http://www.silvermakersmarks.co.uk/Makers/Chester-R.html* [accessed 12 July 2013]

[497] These 'Robt. Jones' references are listed in the catalogue entries of [Anonymous], *The Spectacular Career of Clarkson Stanfield 1793 - 1867: Seaman, Scene-Painter, Royal Academician* (Tyne & Wear:Tyne and Wear County Council Museums, 1979), p.47.

[498] A few ornaments of the room survive in the collection of the V&A. A model of the Glass Drawing Room on the scale of 1:32 was made in 2001 by Lucy Askew and the Network Modelmakers, London, and is on display in the British Galleries of the V&A (Museum no. NCOL3-2001).

part of the Grand Staircase), record 'Ornamental embellishments and Decoration Painting Done for His Grace The Duke of Northumberland at Northumberland House under the direction of Mr Parsons' in 1822.[499] The detailed description of the work includes 'Painting and exact restoration of the Whole of the enriched ceiling of the Glass Drawing Room, prepared from the plaster, and finished in all its Ornamental detail in Gold and Silver […] relieved with a variety of tints' and 'Groupes of Figures in colors forming Pictures, illustrative of different Subjects from the Heathen Mythology […]' [500]. Jones charged the considerable sums of £1,532 and £393 for the work carried out at Northumberland House.

The recurring references to his painting methods and working with silver on or in combination with coloured grounds are reminiscent of much of his later work in the Royal Pavilion, which was carried out around the same time as the Northumberland House decorations. The description of the figurative paintings reminds one of both the works identified at Stowe and the figurative Chinoiserie panels in the Royal Pavilion Banqueting Room, leaving little doubt that this is indeed the Robert Jones from the Royal Pavilion. This also suggests that Jones was extremely busy in the year 1822, commuting between two high-profile but geographically distant commissions. The notion of a solitary artist might therefore have to be revised. It is likely that Jones had numerous assistants and was delegating and overseeing large projects, rather than carrying them out on his own.

There is evidence of Robert Jones continuing to enjoy royal patronage after George IV's death in 1830. In 2007 Hugh Roberts published an article based on newly discovered archival material in which he discusses a substantial commission for new furniture designs for the principal apartments at Windsor Castle to Robert Jones in 1833.[501]Among the designs Jones submitted were four for canopied thrones for William IV and Queen Adelaide. The drawings for these thrones survive in the Royal

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[499] *Bill Book for Works at Northumberland House,* The Northumberland Estates. S.Y.U.I.83. I have only seen this manuscript in typescript form, generously provided by Gordon Grant. The copyright is retained by the Duke of Northumberland's Estates, Estates Office, Alnwick Castle.
[500] Ibid.
[501] H. Roberts, 'Thrones Revisited', *Furniture History*, Vol. XLIII, 2007, pp. 43 – 54.

Library.[502] The designs are in classical and gothic style, with blue and crimson or crimson and pink hangings characteristic of a generic regal colour scheme. While this commission does not add much valuable information about Jones's use of colour, it does gives a rare insight into Jones's research methods, with the artist claiming in his bill that part of the expenditure was incurred by researching illuminated manuscripts and other documents in the King's Library at the British Museum and the Earl Marshal's and the Lord Chamberlain's Offices, in order to represent any ornament relating to the Order of the Garter correctly on the throne designs.[503] The thrones were never made, but Roberts refers further to a summary account of the year 1835 in which Jones's name appears in relation to the re-decoration of some furniture of the State Apartments at Windsor Castle.[504]

A last likely reference to Jones working for the Royal Family is found in *The British Imperial Calendar* for 1838, where an entry, under 'Trades People to Queen Adelaide' lists a 'Painter, Robert Jones'.[505] After this date there are no further references to Jones working on any commissions. Entries for Robert Jones in the census records from 1841 are too many to consider here. The Royal Pavilion Jones must have died some time before 1850, as he is referred to as 'the late Mr Jones' in Wilmott's *Descriptive Guide to the Palace and Gardens of the Royal Pavilion at Brighton* from 1851: 'The decorative work in this room ['The Ladies Retiring Room', i.e. the Red Drawing Room south of the Green Entrance Hall] is in exactly the same style as in the time of George IV, and was designed by the late Mr. Jones, as also the decorations of the Banqueting Room and the Saloon; […]'.[506]

In view of the lack of literature and biographical data, Jones's few surviving design sketches and a number of Royal Pavilion related archival records constitute the only reliable sources for understanding his style, colour choices and aesthetic ideas

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[502] Royal Library inventory numbers RL18741, RL18742, RL18743 and RL18744.
[503] Roberts, 'Thrones Revisited', pp. 47-48.
[504] Ibid., pp.48-49.
[505] *The British Imperial Calendar for the Year of our Lord 1838, Being the First Year of the Reign of Her Present Majesty, Victoria the First, or, General Register of the United Kingdom of Great Britain and Ireland and its Colonies* (London: Printed for A. Varnham, [1838]), [unpaginated].
[506] [Wilmott], *Descriptive Guide*, p.14.

and inspirations. Three drawings by Jones are in the collection of the Royal Pavilion, all of them signed and dated. A few drawings in the Cooper-Hewitt collection have been cautiously attributed to Jones, but none of these are signed. Morley discussed the differences as well as similarities in the style of Frederick Crace and Jones, the difficulty of distinguishing and attributing many of the drawings and the complexity of some of the design projects in the Royal Pavilion.[507] He stated, for example, that the Music Room 'was a complicated undertaking that probably needed all available forces; one finds that in less complicated areas – for example the Red Drawing Room or the King's Apartments – one artist (in this case Jones) appears to have been employed.'[508] A collaborative and mutually inspiring working relationship between the Craces and Jones is therefore more likely than any notion of rivalry.

While Jones generally embraced highly saturated colour schemes and the use of primary and secondary colours, which was entirely in keeping with the distinctly individual Chinoiserie style of the Royal Pavilion, it is also noticeable that Jones experimented more with colour schemes and introduced a wider range of shades and surface finishes than the Craces. I have already mentioned Jones's penchant for imaginative and large scale use of silvering, which will be discussed again in chapter 4.2, and the possible Rococo influence on the palette of the figurative Chinoiserie panels in the Banqueting Room. Another characteristic of Jones's work was a greater variety of shades and the inclusion of tertiary colours, in contrast to the Craces' preference for clear primary and secondary tints. Jones also frequently painted subtle gradations of colours, often on a single object or in a clearly defined paint area. While shading was applied by the Craces in their trellis work designs, where it represented actual shadows created by the trellis work as part of the trompe l'oeil effect, gradation within one colour or from one colour to another is almost exclusively found in Jones's work. A good example of this are the supporting and engaged columns in the Red Drawing Room (fig. 35), where a subtle change from a muted ochre colour (in imitation of bamboo) to a realistic green, representing palm tree leaves, can be observed. The relevant description of these trees has already been cited in relation to Chambers'

[507] Morley, *Pavilion*, pp.78-83.
[508] Ibid., p.79.

palm tree ornaments at Kew (chapter 3.1). A similar grading can also be seen in designs with brighter colours, as for example in the surviving sketches for the Saloon carpet (figs. 31 and 32), where, on the body of the fantastic creature, blue morphs into lilac and a brownish purple, and yellow into orange, adding an element of three-dimensionality to the design. This is also apparent in the bodies of the snake-like dragons in the watercolour for a design, only partly executed, for the Banqueting Room (figs. 120 and 121) and the shaded lilac wallpaper above the overdoors in an unexecuted design for the Saloon (figs. 122 and 123). Morley concluded that, compared to the ability and virtuosity of Crace's work, 'Jones's designs are more *spirituelle* than Frederick Crace's; they have spontaneity and fire'[509].

Jones's use of colour can further be described and analysed by comparing his work in the Royal Pavilion with the surviving documentation relating to this work. The section on Jones in the RPAA[510] and his own, slightly more detailed, account books (RJA), both covering the period from 5 July 1821 to 10 October 1823, give an insight into his particular style and methods and will be discussed here. The wording in the RPAA and RJA is remarkably similar, suggesting that the former copied the latter. The RJA are in Jones's own hand, so we can conclude that the choice of words, albeit characteristically formal as befits accounts and invoices, is that of the artist himself. In some cases, additional detail on Jones's work, in particular objects designed by him, is included in the British Library's manuscript *Brighton: Accompts*.

Jones mentioned relatively few specific colours and even fewer pigments in his accounts. The pigments he referred to are carmine lake, chrome yellow and Chinese vermillion. While the recent introduction of chrome yellow to the range of pigments available commercially in Britain suggests that Jones was here referring to the actual pigment, it is questionable whether his Chinese vermillion was indeed sourced from China. It is possible that this was vermillion manufactured in Europe but described as Chinese in order to highlight its brilliance and quality. Likewise, a reference to Chinese imperial yellow, listed in connection with the walls of the Yellow Ante-Room to the

[509] Morley, *Pavilion*, p.79.
[510] RPAA, pp.71 – 75, transcript pp. 151 – 160.

King's Apartments, probably described a highly saturated yellow colour instead of providing concise information about the pigment used to create the colour. It is hence a colour name, evocative of yellow ground Chinese export ware or Imperial court robes. The time frame of the interiors of the Yellow Ante-Room suggests the pigment was mostly likely to have been chrome yellow.

In October 1822 the RJA repeatedly refer to 'green mineral (tints)' used in the King's Apartments. This, again, does not provide specific pigment information, but suggests brilliancy and quality by identifying the type of pigment used (mineral rather than organic, and therefore considered more stable)[511]: 'Preparing and painting the Chimney and Glass frame and finishing it in light and dark tints of Green Mineral and imitation of Bamboo highly Varnished'[512]. As this short entry shows, Jones's accounts are particularly interesting in respect of his descriptions of paint application, surface variation and finish, and the richness of the colour scheme in general. His relatively short account books include an astonishing thirty-two references to 'varnished', 'highly varnished' or 'highly polished' surfaces, while colours are frequently described as 'rich', and designs as 'relieved' or 'shadowed'.

Jones was also quite specific in his descriptions of techniques and materials, frequently mentioning the variety of colours and even shades of gold leaf used, for example in this entry relating to the Saloon: 'Preparing with Oil, Color & c. a permanent ground to receive the decoration. […] Preparing from the Master for Coloring and preparing with Oil Color for the Gilding Size.'[513] The creation of the painted surfaces of the Saloon doors (fig. 119), which I mentioned in the previous section in relation to the Craces, is described thus:

> Preparing and making a surface for polishing and painting the Panels, Stiles, &c. with highly polished white grounds, All the panels embellished with various Designs of Chinese subjects, in raised Japan,

[511] Bristow lists 'mineral green' as a colour name, although it was frequently associated with copper chloride pigments and the chemical pigment 'Scheele's Green', invented in 1775 by Carl Wilhelm Scheele. Bristow, *House-painting*, p.162.
[512] RJA, entry for 22 October 1822, p.12.
[513] Ibid., entry for November 1822, p.10.

> and highly finished with Gold, prepared of different Colors &c. &c.
> The Whole of the Stiles, richly wrought with minute details of Chinese ornament, &c.[514]

Jones's accounts reveal his attention to decorative detail (often with the aim to appear realistic or imitate exotic materials and objects), his interest in varied surface treatments, the use of several graded colours on individual objects, and a penchant for shimmering and reflective paint effects, resulting in a distinctive and imaginative style.

3.4 Humphry Repton

This final section of chapter 3 will introduce the landscape designer and author Humphry Repton (1752 - 1818), who, in the early years of the nineteenth century, was commissioned by George IV to propose designs for the oriental transformation and extension of Holland's neo-classical Pavilion. Although he failed to secure the large-scale commission to transform the estate, Repton is an important figure in the larger context of the Royal Pavilion and colour theory. He published widely on architecture, design and landscape gardening, at times challenging aesthetic ideas of the Picturesque, at other times embracing them. Crucially, he elaborated specifically on colour theory in some of his publications. Repton will be discussed here as a good example of how, in the early nineteenth century, colour theory was beginning to be applied to other art forms, including architecture, landscape design and architectural decoration. He might therefore have been discussed in chapter 2.3, but his close connection with the Royal Pavilion and George IV justifies an inclusion in this chapter. It is intriguing to consider to what extent he would have referred to colour literature and colour theory in the creation of the Royal Pavilion if had he been asked to go ahead with his proposed plans for the estate.

Repton embarked on a career in landscape gardening in 1788, shortly after the death of the leading British landscape designer Lancelot 'Capability' Brown in 1783. In an attempt to fill the vacuum created by the death of Brown, he quickly established a

[514] Ibid., p.11.

remarkable career, working for a wide range of clients, while at the same time writing a number of critically acclaimed books on his profession. Repton quickly became known for lavishly produced portfolios in quarto or folio format, known as 'Red Books' because many of them were bound in red morocco. These comprised watercolour paintings of 'before and after' views of gardens, landscape settings and even buildings. For maximum visual effect the 'after' views (Repton's own designs) were typically revealed by lifting an overlay glued onto the watercolour sheet.[515] Repton scholar André Rogger has identified a total number of 123 Red Books, one of which is of the Royal Pavilion estate and dates from 1806.

There are earlier tangible connections with the Royal Pavilion. In c.1796 Repton went into partnership with the then relatively unknown John Nash[516], and in 1805 he designed the gardens surrounding Samuel Pepys Cockerell's Mughal style house Sezincote in Gloucestershire, thus forming a stylistic link to both William Porden's contemporary Moorish stables building at the Royal Pavilion (completed in c.1804), and the later Indian designs for the Royal Pavilion by Repton and Nash. Repton was briefly involved with the Royal Pavilion in the summer of 1795, possibly for the design of a conservatory and in collaboration with Nash[517], and between 1797 and 1802 to advise on groundwork concerning the extensions to Holland's building by P.F. Robinson [518].

In November 1805, after the completion of Porden's Stables and additions to Holland's Pavilion, George IV once again invited Repton to produce designs for the transformation of the Royal Pavilion gardens and the palace itself, having rejected

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[515] Repton's life and career has been scholarly assessed by S. Daniels: *Humphry Repton. Landscape Gardening and the Geography of Georgian England* (New Haven and London: Yale University Press, 1999). A review of his published work was provided by Dobai in *Kunstliteratur*, pp.1243-1272. The significance of Repton's Red Book in the context of the visual arts was analysed in a doctoral thesis by André Rogger, published as *Die Red Books des Landschaftskünstlers Humphry Repton* (Worms: Wernersche Verlagsgesellschaft, 2007), with an English translation published in 2007: *Landscapes of Taste: The Art of Humphry Repton's Red Books* (London and New York: Routledge, 2007).
[516] Rogger, *Red Books*, p.34.
[517] Morley, *Pavilion*, pp.49-50.
[518] Daniels, *Repton*, p.193.

earlier Chinese-style designs by both Holland (1801)[519] and William Porden (c.1805)[520]. Repton worked feverishly on this prestigious royal commission and presented the Royal Pavilion *Red Book* to George IV less than a month later. It consisted of ambitious, fantastical and elaborate Indian-style designs for the estate, complete with the overlays creating the 'before and after' views. Two interior views were included: a conservatory-style glass corridor with heavy plantation, and a dining room with large windows and a highly ornamented plaster ceiling reminiscent of John Nash's style. According to Repton, George IV responded enthusiastically to the designs, but despite giving Repton hope of 'immediate execution', the project was never realised. [521] Repton saw George IV again in 1807 at an event in London and was summoned to Carlton House the following week to discuss plans for a great conservatory, but this project, too, after having been initially accepted, was superseded by another architect's designs.[522]

Short of commissions in the difficult years of the Napoleonic wars, Repton had the Royal Pavilion designs engraved by J.C. Stadler in 1808 and, in a joint effort with Stadler to generate money, decided to publish the plans for the Royal Pavilion, together with a treatise on architectural styles, *An Inquiry into the Changes of Architecture*.[523] The book was dedicated to George IV, perhaps in the vain hope of re-kindling his interest in the designs. The Royal Pavilion portfolio is the only one of Repton's *Red Books* that was ever published in its entirety, with only minor omissions of the original text.

There are few references in Repton's Royal Pavilion designs to interior decoration, but he advocates the use of coloured glass in architecture. In a passage from the Red Book that was not included in the published version, he recommends coloured glass for the purpose of colourful illumination of the interior, but also warns

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[519] Morley, *Pavilion,* pp.36-39.
[520] Ibid., p.43.
[521] Ibid., p.51. and Daniels, *Repton*, p.202.
[522] Daniels, *Repton*, p.203.
[523] H. Repton, *Designs for the Pavillon at Brighton. Humbly inscribed to His Royal Highness the Prince of Wales. Including an Inquiry Into the Changes of Architecture, as it Relates to the Palaces and Houses in England* (London, Printed for J.C. Stadler, no 15, Villiers Street, Strand, 1808).

that colours might interfere with views of the surrounding landscape seen through coloured windows. His comments display a good understanding of coloured light and suggest he had read Newton's *Opticks,* or had followed intellectual discourse on the topic:

> Perhaps more general use may be made of coloured glass in adorning your rooms […] there is a charming effect of transparency which depends on colour and combination, without the aid of design […] There is a curious effect from purple glass, of which little advantage has yet been taken; viz. All green objects seen through purple glass appear white and thus a beautified landscape illuminated by the midday sun of Summer will appear a perfect Winter scene covered with snow; the strange effect of contrast may perhaps be worth considering, in a room exposed to the Western sun.[524]

It is likely that Repton was aware of George IV's interest in coloured glass and illuminated interiors, since the early Chinoiserie designs of the Royal Pavilion from c.1801/2 included coloured glass in the form of a large number of coloured Chinese lanterns, as well as one or more multi-coloured 'glass passages' that probably connected Holland's building with Robinson's extensions. Coloured glass would form a significant element in the post-1815 interior design scheme, including green clerestory windows in the Entrance Hall (figs. 7 and 34), painted skylights in the Long Gallery (figs. 8, 9 and 37) and the upper-floor North and South Galleries (figs. 44 and 45), back-lit stained glass decorations on the North and South Staircase landings (fig. 113), and high-level multi-coloured windows in the Banqueting Room and Music Room (figs. 21, 22, 38 and 39).

Repton elaborated on his interest in atmospheric and seasonal light conditions and their effect on colour in landscape and interiors in a number of other publications. While this may be considered typical of a landscape designer associated with the Picturesque Movement, Repton is remarkable for making specific references to colour theories and theorists of the eighteenth and nineteenth century. In 1803 he published

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[524] Quoted in Morley, *Pavilion*, p.59 and Daniels, *Repton*, p.197. The Royal Pavilion *Red Book* survives in the Royal Library at Windsor Castle, without an individual accession number. The complete text manuscript is bound together with the watercolours and related letters. Some of the watercolours have been accessioned individually in the Royal Collection.

a compilation of extracts from the texts and images of some his *Red Books*, entitled *Observations on the Theory and Practice of Landscape Gardening*[525]. In it he commented generally on the importance of the careful application of colour to ornament, albeit mostly in respect of exterior decoration: 'While treating on the subject of ornaments and decorations, I must not omit to mention colours, since improper colouring may destroy the intended effect of the most correct design and render ridiculous what would otherwise be beautiful.'[526]

In the concluding chapter of *Observations*, Repton explained his interest in colour theory and how the application of the four elements of the art of painting can be applied to his work: 'The Art of Painting has been usually treated under four distinct heads, viz. Composition; Design, or Drawing; Expression, and Colouring. Each of which may, in some measure, be applied to Landscape Gardening, as it has been treated in this work.'[527] Colouring, he noted, relates to 'certain artificial objects', by which he meant architectural ornament and building materials. He then informed the reader about conversations with the politician William Wilberforce about a 'new theory of colours and shadows' by the mathematician Dr. Isaac Milner (1750-1820), the Dean of Carlisle and President of Queen's College, Cambridge. Repton was so taken with Milner's article that he went to great length to obtain permission to reproduce it in full in *Observations*, including a line engraving illustrating an experiment concerning coloured shadows and a hand-coloured symmetrical colour wheel comprising red, orange, yellow, green, blue and purple.[528]

Milner's theory, which appears not to have been published in any other context or on its own, is a concise and lucidly written theory based on the principle of complementary colours and ideas of colour harmony expressed by many other theorists and writers of colour manuals in the early nineteenth century. What may have impressed Repton, who was particularly concerned with the effects of light on

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[525] H. Repton, *Observations on the Theory and Practice of Landscape Gardening* (London: printed by T. Bensley and Son, Bolt Court, Fleet Street; for J. Taylor, at the Architectural Library, High Holborn, 1803).
[526] Ibid., p.161.
[527] Ibid., p.213.
[528] Ibid., p.213-219.

colour, was Milner's effortless explanation of Newton's experiments with immaterial colour, which he then applied to light conditions in nature, followed by notes on how the human eye reacts and adjusts to changing light conditions. Milner also offered practical advice concerning material colour, colour mixing and even pigments for painters. He placed his small and simple colour wheel at the end of his short treatise (fig. 124) and made concluding remarks identifying harmonious colouring and colour contrast as underlying principles to the painter's art: 'The little diagram suggests all these things to the memory, and a great many more of the same kind, and, therefore, must be extremely useful to the artist who is endeavouring to produce certain effects by contrast, harmony, &c.'[529]

In his last publication before his death in 1818, *Fragments on the Theory and Practice of Landscape Gardening* (published in 1816)[530], Repton revisited some of his ideas concerning colour introduced in *Observations*. He devoted an entire chapter each to the themes of contrast and colour. In 'Concerning Contrasts'[531] he elaborated on contrasts observed in a landscape in respect of light conditions and how they affect the appearance of foliage. He further discussed the colour schemes of gardens, and the varieties of texture and size of plants and flowers. He illustrated this chapter with a plate entitled 'Sunshine after Rain', depicting an ornamental garden and landscape scene with a double rainbow. His chapter 'Of Colours'[532] was addressed to Wilberforce and referred again to Milner's colour theory, before explaining that he had carried out some experiments with prisms himself, from which he derived some recommendation for the use of colour in creating landscape paintings, printing and the colouring of prints:

> Having placed a piece of dark cloth on a wall opposite to the light, I fastened a sheet of white paper in the middle of it; this I looked at through a prism held across my eyes a little above them, when I observed the paper took the curvature of a rainbow: from the upper edge proceeded shades of red-brown, terminating in yellow, and

[529] Ibid., p.119.
[530] H. Repton, *Fragments on the Theory and Practice of Landscape Gardening* (London: printed by T. Bensley and Son, Bolt Court, Fleet Street; for J. Taylor, at the Architectural Library, High Holborn, 1816).
[531] Ibid., pp.97-100.
[532] Ibid., pp.49-51.

> from the lower edge shades of grey, terminating in blue, as I have shewn at (C) in the annexed sketch. This I observed under various lights, and remarked, that before sun-rise no red appeared in the brown, and no violet in the grey shades; but they were exactly the same tints which I use in shading and finishing my sketches.[533]

Repton then provided instructions for the colourers of his prints, based on his observations and experiments. These instructions, incidentally, give a rare insight into the production of books containing hand-coloured plates in the early nineteenth century:

> As the Plates in my former work employed a great number of women and children in colouring them, I expect to render the process much more easy in this present work, by the following instructions given to the printer and colourer. The Plates to be printed in a bluish-grey ink (this is the neutral tint for the light and shade of the Landscape); the colourer to wash in the sky with blue or violet, &c. according to each sketch; also going over the distances with the same colour; then wash the foregrounds and middle distances with red, orange, or yellow, copying the drawings; and when dry, wash over with blue, to produce the greens in the middle distances: this being done as a dead colouring, a few touches with the hand of the master, and a harmonizing tint to soften the whole, will produce all the effect expected from a coloured print.[534]

Repton included in this chapter a plate that shows the rainbow colours he observed during his experiments with prisms (fig. 125). To this he added a 'Diagram to explain the Harmony of Colours' that is very similar to Field's overlapping triangles forming colour stars comprising the three primaries and three secondaries. The complex plate also includes colour diagrams illustrating the duality of cold and warm tints, as well as two pictorial images showing the colours of a landscape early in the morning, in twilight, before sunrise and just after sunrise. Finally, Repton included a list of the relative proportions of each colour in Newton's colour wheel, where blue and green dominate with sixty degrees each. The plate is the visual equivalent to Moses Harris or indeed Isaac Milner combining additive and subtractive colour theories with the aim of making them applicable to the arts.

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[533] Ibid., pp.49-50.
[534] Ibid., p.51.

While Repton here discussed colour theory predominantly still in the context of landscape gardening and landscape painting, the fact that he considered his own findings useful for producing and colouring prints is typical of the interdisciplinary nature of colour studies in the eighteenth and nineteenth centuries, and may even be indicative of architects and designers beginning to see a practical use of colour theory in the early nineteenth century, anticipating Hay's *Laws of Harmonious Colouring, Adapted to House-Painting* just twelve years later. It is worth pointing out, too, that by 1816 Repton had clearly developed ideas about interior design. The colour chapter of *Fragments* was followed by one 'Concerning Interiors'[535], in which Repton talked about the overall layout of houses, the functions of individual rooms, and about the importance of windows, doors or 'glazed apertures' as light sources. The accompanying plate (fig. 126) shows an older style interior with monochrome woodpanneling throughout, containing very little architectural ornament. Red upholstered chairs form the only coloured element. This was contrasted on the same plate with a view of a 'modern' library that opens into a bright conservatory, the windows and doors framed by light blue pelmet curtains and the floor covered in a fitted carpet of a light blue and yellow design. Repton illustrated the effect of window areas framed by brightly coloured curtains and mirrored in colourful patterned carpet with another plate that includes one of his overlays. In this example of a re-designed window at Barnham, crimson red, pink and green provide the 'light and cheerfulness' Repton associates with modern interiors.[536] It seems obvious that, had Repton's designs for the Royal Pavilion been realised, he would have responded to George IV's penchant for pure pigments, high saturation and oriental decoration challenging and inspiring. It might have resulted in an even more elaborate account of and publication on colour theory applied to architectural and landscape design.

[535] Ibid., pp.52-58.
[536] Ibid., p.53.

Chapter 4

Examination of the decorative schemes of the Royal Pavilion, with particular focus on the use of colour and surface finishes

This concluding chapter will first describe the colour schemes of the Royal Pavilion in its various stages, with the aim of providing a chronological overview of the changing colour schemes and decorating phases of the Royal Pavilion (4.1). This section will investigate how the changing chromatic layout of the building reflected shifts in fashion and the personal tastes of George IV and his interior designers. Modifications to the colour scheme were also brought about by architectural remodelling of the building and the resulting change of use of individual rooms. I will begin by describing the largely unknown Neo-classical interior from c. 1786 to c.1802, including fragments from this early scheme that I discovered in the archives of the Royal Pavilion. I will then describe the first Chinoiserie interior, introduced by father and son Crace from c. 1801/2 onwards and conclude with a description of the best documented 'final' scheme that developed from c.1815 to 1823.

Considerable research into which particular pigments have been used by artists and decorators at the Royal Pavilion prior to 1845 has been carried since the late 1970s. These pigments include cochineal carmine red, vermilion red, chrome yellow, Turner's Patent yellow, Prussian blue, blue verditer, verdigris, calcium carbonate white and zinc white. They make up some of the schemes explored in this chapter and are listed in Appendix 3, with information about their historical context, their distribution and application in the Royal Pavilion, and references to colour literature from the eighteenth and nineteenth centuries.

The chapter concludes with a case study (4.2) of silver as a colour in the Royal Pavilion interiors. Silver was a major decorative element of the interior design schemes of the Royal Pavilion from c.1801 onward and can perhaps be considered a unifying and harmonising element in the building's interiors. In the Royal Pavilion silver was

often used in combination with gilding and transparent coloured glazes. It is possible that the aim of these techniques was to imitate certain colourful surface finishes found on oriental export ware. This section will identify other historic European silvered interiors and place this unusual design element of the Royal Pavilion in a wide historical and geographical framework, situating the patronage of George IV in a European context.

4.1 An overview of the Royal Pavilion's historic design schemes

The development of the Royal Pavilion's interiors under royal ownership can be roughly divided into three stages (not taking into account other buildings on the estate, such as the stables complex or Grove House): The Neo-classical interior from c.1786 – c.1802, the first Chinoiserie scheme from c.1801/2 – c.1815, and the second, or final, Chinoiserie scheme from c.1815 – c.1823. A number of changes to the layout of the Royal Pavilion and its interiors were carried out by both King William IV (r.1830-1837) and Queen Victoria, who visited the Royal Pavilion four times between 1838 and 1845 before selling it to the town commissioners of Brighton in 1850. Both William IV and Victoria embraced the building's Chinoiserie style and did not introduce any elements that were entirely different from the existing design scheme. This section will describe the colour schemes of the building's interiors in these three phases.

The Neo-classical interior, c.1786 – c.1802

While the Royal Pavilion is most conspicuous for its Oriental features (externally and internally), it is less widely known that for at least sixteen years (from the completion of Holland's Pavilion in the summer of 1787 until the introduction of Chinoiserie interiors in c.1801/2) it was painted and decorated in a Pompeian or Neo-Classical style, reflecting the design of Holland's chaste exterior, described by Musgrave as 'a simplification of the style of Robert Adam'.[537] Holland's building, which incorporated some of the farmhouse George IV had been renting in the years before

[537] Musgrave, *Pavilion*, p. 14.

(on the site of what is now the Banqueting Room Gallery), consisted of a central rotunda capped with a flat dome and was flanked by two wings to the north and south. On the ground floor these wings now occupy the Banqueting Room Gallery and Music Room Gallery, but before c.1803 they were divided into two rooms each.

The building was clad in cream-coloured mathematical Hampshire tiles[538], hung on a timber framework. The tiles contrasted with blue wooden shutters, as can clearly be seen in the aquatint in Nash's *Views* (fig. 15). Most other, especially older-style, buildings in Brighton were built with brick or flint. This French-influenced Pavilion would therefore have stood out as a stylish curiosity. Mike Jones suggests that the colour scheme of Holland's building was neither accidental nor simply an imitation of French style. 'The Whig colours were blue and buff', he points out, and 'the Prince had nailed his colours to the Steine for all to see, confirming his membership for the time being. […] Later, as if to publicly distance himself from the Whigs, the new Marine Pavilion was to change colour on the outside and the garden became an enclosed space.'[539] (see related political cartoon in fig. 127, showing Whig politicians North, Fox, and Burke dressed in blue and buff). There is no documentary evidence for George IV's use of colour as a political statement, but some buildings opposite the Pavilion on the Steine side are believed to have imitated the blue and buff colour scheme to express their allegiance to the Prince, and perhaps his political leanings as they were then.

Very little is known about the earliest design schemes and furnishings of the interior, since no detailed account books, images, inventories or descriptions survive from this important phase, but despite the professional connection between Soane and Holland, these early interiors were not of the highly saturated colour varieties found in Soane's own house in Lincoln's Inn Fields, which also developed from the late eighteenth to the early nineteenth century. The image that emerges is that of an earlier, French-inspired, ultimately chaste Neo-classical style, where some brightly coloured ornamentation was set against a white or stone-colour background.

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[538] There is some confusion as to whether the tiles were glazed or not. All literature says they were glazed, but surviving tiles in the archives of the Royal Pavilion are unglazed.
[539] Jones, *Set for a King*, p.41.

An abstract of Weltje's expenditure incurred between 1787 and 1788 at the Marine Pavilion at Brighton was transcribed and published by Henry Roberts in 1935 and gives the impression of an elegant, but not necessarily lavishly furnished building, which cost a total of £21,454 to build.[540] Both Roberts and Musgrave quote from an unpublished diary written by a young female traveller, Elizabeth Collett, in which she describes the Prince of Wales's bedroom, the Music Room and another, unidentified room in the farmhouse rented by the Prince of Wales, from which Holland developed the Marine Pavilion. It is not clear how and why Ms Collett would have gained access to the building, including the royal bedrooms on the upper floor, but she provides details of the colours and style of some of the furnishings:

> This was really elegant but nothing extravagant, not when it is considered who the inhabitant is; a great deal of taste is displayed through the whole. The bed is placed in a kind of niche or recess and you go up it by steps; in the wall along side of it is placed a large looking glass. Another room is really whimsical, being full of caricatures, some of which are truly laughable.[541]

There is some doubt as to whether the interiors described here are actually those of the farmhouse. It is likely that the date attributed to this diary is wrong, since the description of the bedroom is almost identical to one published in the *Sussex Weekly Advertiser* shortly after the completion of Holland's Marine Pavilion: 'The apartment in which the Prince sleeps is hung with quilted chintz, bordered with gimp; the bed-hanging is of silk, chequered green and white; and near it is a glass, so situated as to afford the Prince an extensive view of the sea and Steine as he lies in bed.'[542] In any case, the white and green fabric scheme and the materials mentioned by Ms Collett and the *Sussex Weekly Advertiser* are entirely typical of Neo-classical furnishings and support the assumption that the first interior scheme of the Pavilion was classical and relatively restrained throughout, without any oriental features.

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[540] Cited in Roberts, *Pavilion*, pp. 28-29.
[541] Cited ibid., p.49 and Musgrave, *Pavilion*, p. 11. No reference is provided as to the location of this manuscript, but it appears to have been in Roberts's possession in 1935, since he states having obtained permission from descendants of Ms Collett's to publish it.
[542] *Sussex Weekly Advertiser*, July 9th, 1787. Also partly quoted in Morley, *Pavilion*, p. 221. Morley also considers the 1785 date for Collett's diary 'impossible early' (Ibid., footnote 156, p.252).

Musgrave suggested that the interior, like the exterior, of Holland's building 'consisted of his characteristic simplification of Adam style, as seen, for example in the interiors of Brooks's Club, St. James's, or Berrington Hall, Leominster', but also points out the French influence in the decorative scheme and the choice of furniture, the latter most likely acquired by Weltje at art sales in Paris.[543] Intriguingly, Musgrave also informed the reader that the wallpaper in the Library was 'fitted up in the French style' and of a brilliant yellow, that the Eating Room was painted yellow and maroon with a sky-blue ceiling, the corridors were painted 'French blue' and the walls of the staircase were painted bright green, contrasting with a grey and white ceiling.[544] Frustratingly, he does not provide a source for these detailed colour references.

Henry Wigstead's travelogue *An Excursion to Brighthelmstone, Made in the Year 1789* (published in 1790) provides the briefest of descriptions of the building and its interiors in the 1780s, just after their completion. The one room that is singled out is the Saloon, then the largest of the state rooms:

> The Marine Pavilion of HIS ROYAL HIGHNESS THE PRINCE OF WALES, on the West Side of the *Stein,* is a striking Object, and is admirably calculated for the Summer Residence of the Royal Personage for whom it was built; […] The Furniture is adapted with great Taste to the Stile of the Building. The grand Saloon is beautifully decorated with Paintings by *Rebecca,* executed in his best Manner. The *tout ensemble* of the Building is, in short, perfect Harmony.[545]

The painter mentioned here was the Italian fresco artist Biagio Rebecca (1734/5 - 1808). Only very few views of Biagio's interior survive, one of them a plate by Rowlandson illustrating Wigstead's book (fig. 128). The image is not reliable with regard to ornamental or architectural detail, but it does convey the liveliness and elegance of a grand Neo-classical interior, with some typical elements, such as stuccoed walls, the domed ceiling composed of small squares and floral swags, oval roundels in the centre of wall compartments, and what appears to be a pale base

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[543] Musgrave, *Pavilion*, pp. 16-17.
[544] Ibid. p.17.
[545] H. Wigstead, *An Excursion to Brighthelmstone, Made in the Year 1789* (London G. G. and J. Robinson, 1790), unpaginated. Also quoted in Roberts, Pavilion, p.27 and Musgrave, Pavilion, pp.17-18.

colour on walls and ceiling. Tinted versions of the prints exist (fig. 129), but while they cannot be considered as a reliable representation of the Saloon's colour scheme, they are a rough snapshot of a typical neo-classical colour scheme, comprising a white, grey or stone block wall colour, a shade of green often referred to as pea-green[546], and contrasting colours introduced by soft furnishings.

Two coloured architectural drawings of wall decorations for the Royal Pavilion survive in the Prints and Drawings collection of the V&A (figs. 130 and 131), archived in a box with drawings by William Chambers. One of them is inscribed 'This Design for the Great Saloon was received from M. Lignereux'. [547] However, there appears to be some confusion about the artist who executed these drawings. Musgrave investigated them as early as 1951 and concluded that they are not in the style of Chambers, but they were most likely the work of 'one of the several French decorators who produced French grotesque ornament of this kind, such as André de Labrière, who worked for Holland when he built Southill for the Whitbreads.'[548] Morley described them as 'two early unexecuted designs […], in the Etruscan or Pompeian style', probably intended for the wall and cove spaces to the left and the right of the fireplace of the Saloon in Rebecca's phase. In any case, the note about Martin Eloi Lignereux on one of the drawings may simply refer to him as the supplier or sender of the designs. He was a *marchand-mercier* who had been selling Sèvres porcelain and other French objects to George IV, sometimes via Sir Harry Fetherstonhaugh of Uppark, West Sussex.[549] Morley pointed out that Lignereux was also once paid in association with Dominique Daguerre, for work at Carlton House.[550] If Lignereux was the creator of the drawings, then Rebecca might have worked to his designs, but it is much more likely that he was simply importing examples and templates of French designs.

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[546] For the use of pea-green in interiors from 1734 onwards see P. Baty, '*Pea Green*.' Dec 9th, 2011. http://patrickbaty.co.uk/2011/12/09/pea-green/ [accessed 29 July 2013].
[547] V&A 2216.37 and 2216.4
[548] Musgrave, *Pavilion*, p.18.
[549] De Bellaigue, *Carlton House*, p.190.
[550] Morley, *Pavilion*, p. 85.

The Saloon decorations as depicted crudely by Rowlandson (figs. 128 and 129) bear no resemblance to these drawings, but during the preparations for the *Regency Colour and Beyond* exhibition, fragments of wall decoration were discovered in the Royal Pavilion archives that appear to match these drawings. The fragments are three painted roundels with silhouettes of heads in profile, imitating white marble and in the style of cameos, against a dusty pink background (fig. 132), and a single mask-like face with an open mouth and laurel leaves around the head (fig. 133). Their provenance and stylistic features – bright but not highly saturated colours and classical iconography – make it very likely that they are the only known survivors of Rebecca's neo-classical Saloon scheme.

My close inspection of the V&A drawings revealed that these fragments can, with near certainty, be linked to them. Single mask-like faces with wreath-like head-dresses appear in drawing 2216:4 at ceiling level on a frieze (fig. 134), while roundels with white heads in profile can be seen in drawing 2216:37 on wall panels above the dado level. The latter have a pale blue, instead of pink, background colour in the drawings, but the overall tonality and figurative details match the Royal Pavilion fragments. These are the only decorative elements that can give us a clearer idea of the colouring of this first interior of the Royal Pavilion, confirming a brightly coloured, but not highly saturated, neo-classical scheme on mostly white ground colour, entirely representative of mid to late eighteenth century French-inspired classicism. The fragments appear matt and chalky with regard to surface finish and reflective quality. The fragments and drawings in combination are thus indeed indicative of the motifs and pale colouring, specifically with regard to wall colour, associated with a lightly-toned variety of Pompeian or Etruscan style, omitting glossy surface finishes, as found in many eighteenth century British country houses, for example the Etruscan Room at Osterley House in West London, executed by Robert Adam.[551] Other hard evidence of Rebecca's decorations of the Saloon is a layer of green oil paint identified by in microscopic cross-section examination of a piece of original paint from the south apse

[551] See J. Wilton-Ely, 'Pompeian and Etruscan Tastes in the Neo-Classical Country-House Interior', in: G. Jackson-Stops (ed.) et al, in: *The Fashioning and Functioning of the British Country House* (National Gallery of Art, Washington: Studies in the History of Art, 25, 1993), pp.51-71.

ceiling.[552] What is known of this first interior design scheme therefore forms a stark contrast to the highly saturated colours and reflective finishes of the orientalised interiors that were to follow in the Royal Pavilion.

The two Chinoiserie schemes: c.1801/2 – c.1815 and c.1815 – c.1823

The introduction of oriental interiors to the Royal Pavilion is recorded in account books from 1802, but, as the dates of a number of Crace drawings show, had been planned from at least 1801. The ground floor of Holland's east front of the building comprised the central Saloon, flanked by two galleries. Considerable structural changes were carried out between 1801 and 1803, most importantly the addition of two conservatory style wings protruding at approximately 45-degree angles from the galleries on the east side of the building. At least one of these was connected to the existing building via a 'glass passage', as mentioned in chapter 3.4. While the interiors of these new wings are reasonably well recorded in the account books, no reliable images of the complete design schemes survive. However, descriptions in the CL suggest a multi-coloured scheme with highly polished and varied surface finishes, as this entry for a Music Room in 1802 illustrates:

> Molding and filletts round Architrave Red Blue &c
> Painting 20 Pannels red and varnished Yellow ornaments on Do and shadowed
> 36 Ornaments in Pannels of imitation Dado shadowed
> 10 Columns highly finished Scarlet ground to Shafts, fully enriched with yellow ornaments shadowed with purple and Dragons highly finished on Do with purple Capitals and enrichments Do. The bases stone color with ornaments and shadowed, the whole highly varnished at £5. 5. 0 each[553]

The CL makes some references to flatted greys, whites, duck egg greens and fawn and slate color in the Entrance Hall[554], but these 'common colours' were clearly contrasted with extremely colourful Chinoiserie designs in the room:

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[552] G. Grant, 'Out of the Blue: the Re-discovery of a Lost Ceiling Design', *The Royal Pavilion, Libraries & Museums Review,* July 2005, pp.5-6.
[553] CL, entry for Christmas 1802 to midsummer 1803, p.9.
[554] Ibid., p.14.

> Chinese fret pannels blue 2ft wide
> Chinese fret railing blue 2'6 "
> Columns scarlet and varnished
> Chinese fret frieze green ground red fret and shadowed dark green
> Red Margins twice cut in
> Chinese ornamented frieze to front of Landing
> Carved swag ornament red and varnished under Do[555]

The design schemes from this period were clearly strongly informed by John Crace's literal, two-dimensional and intensely coloured Chinoiserie style (discussed in chapter 3.2), busy with fret patterns, imitation trellis work and large areas of marbling and woodgraining. Reminiscent of Hope's and De Mézières's notion of the relationship of rooms to each other, the Craces introduced a colour scheme to the Royal Pavilion that took into consideration the layout and use of the building as a whole, rather than treating each room separately. In this period the Royal Pavilion is marked by the use of primary colours yellow, red and blue as ground or dominant colours. The choice of bright, prismatic colours, arranged for maximum effect and according to the laws of colour contrast, is particular to two-dimensional designs and figurative depictions, as found on Chinese export ware, a concept clearly understood by the Craces.

While the introduction of exuberant and highly saturated colours was not as subtle or as gradual as it would be after Nash's transformation, a deliberate structure to the distribution of dominant colours in each room can be observed. The Music Room Gallery was predominantly yellow, and the Banqueting Room Gallery blue, while the central Saloon featured a combination of vibrant reds and two shades of blue. Images of some Royal Pavilion rooms as they appeared in c. 1815 to 1818, just before and during Nash's transformation, were included in Nash's *Views* (for example figs. 9 and 10), but it has to be noted that considerable changes were made to these interiors between 1802 and 1818, so these cannot necessarily be considered pictorial representations of the interiors in c.1802. However, the watercolours and aquatints from different phases of the Royal Pavilion give a good impression of the chromatic difference between the first and second Chinoiserie scheme of the Royal Pavilion, as

[555] Ibid., p.15.

can clearly be seen in the two aquatints of the Saloon from Nash's *Views* (figs. 10 and 11).

In 1838 Brayley commented on the history of the colour schemes of these rooms, explaining that the Banqueting Room Gallery, 'was originally called the Blue Drawing Room, from the general tone of its decorations […] but it is now called the Green Drawing Room, from the prevalent hue of its draperies, which are of richly woven silks, of a pale green colour, tastefully wrought with groups of fruit and flowers.'[556] He did not go into much detail about the earlier yellow incarnation of the Music Room Gallery (fig. 13), but made comments about the two Saloon schemes illustrated, stating that the existing Jones design of white, gold, silver and crimson from 1823 was 'conceived and executed in a style of far superior taste and costliness than have been previously exhibited'[557], referring here to an earlier Crace design from either c.1815 (fig. 10) or 1816/7.[558]

By 1817 Nash's large extensions in the form of the Music Room and Banqueting Room to the north and south end of Holland's building had been added, changing the layout of the building and the functions of most rooms in the building significantly. The entrance area, too, was greatly extended. These considerable changes to how the building operated, how it was entered, and the sequence of the rooms in general, resulted in substantial redecoration of many of the existing rooms and modification of the overall chromatic layout of the building. A noticeable 'grading down' of the overly exuberant earlier oriental designs after 1818 has frequently been linked to George IV's changed role as Prince Regent and, from 1820, King. The interiors of the Saloon and his private apartments (post-1820) in particular have been described as a regal style more suitable for a newly crowned King.[559]

What is clear from consideration of the 'final' colour scheme of the building is that it reflected the use and function of the building and that colours were deliberately

[556] Brayley, *Palace at Brighton*, p.11.
[557] Ibid., p.10.
[558] For a detailed account of the complex history of the Saloon see Morley, *Pavilion*, pp.84-103.
[559] See for example Beevers, *Pavilion*, p.31.

chosen in relation to how and in what order the room of the building would be experienced by a visitor. The Royal Pavilion was designed as a party and pleasure palace and frequently used for lavish dinners, balls, concerts and other entertainment, and it was therefore in the interest of George IV to create a luxurious, exciting and sumptuous look, with the ultimate aim of impressing his guests. However, especially in the post-1817 phase the interiors, though sumptuous and highly ornamented, were not created simply to overwhelm visitors. Instead, much attention was paid to the creation of a luxurious, sensual and comfortable environment. This is obvious, for example, in the carefully chosen material for the handrails of the North and South Staircases. Here, mahogany in imitation of bamboo was used, which was warmer to the touch than the cast iron and bronze that formed the main body of the staircases.

A subtle manipulation of visitors' moods and reactions to the building was also achieved by the gradual introduction and intensification of colour, ornament and reflective surfaces. As discussed in chapter 1.2, the 1820s visitor to the Royal Pavilion would have entered the building via the sparsely decorated Octagon Hall (fig. 6), painted in one shade of very pale pink referred to as 'peach blossom' in the CL[560], and proceeded through the pale green Entrance Hall (fig. 7) towards the intriguing and highly decorated Long Gallery (fig. 8), where a fully developed Chinoiserie interior would give guests much to discuss while they waited for their host to arrive. Here the pink wall colour was much more saturated than in the Octagon Hall, and, significantly, the ground colour was no longer uniform or monochrome but decorated with floral motifs in a contrasting blue. Roy Bradley records in an unpublished typescript in the RPRF that the walls of the gallery were completely re-decorated between 1953 and 1957. Continous cartridge paper mounted on scrim was painted with Manders' 'Vernasca' eggshell finish, stained in the Royal Pavilion workshops.[561]

The colouring and decoration of the Long Gallery deserves closer inspection. A fragment of the original wallpaper by the Craces survives (fig. 17) and was included in the *Regency Colour and Beyond* exhibition as one of two examples of hand-painted

[560] CL, entry for 1820, p. 119. See also chapter 2.1.
[561] R. Bradley, *Conservation Notes*, unpaginated typescript, RPRF, not accessioned.

wallpaper that was heavily influenced by oriental ceramics, such as famille rose, or Chinese export wall paper. In terms of saturation, the pink and blue wallpaper falls between the paler green and very pale pink of the Entrance Hall and the Octagon Hall and the deep blues and reds found in the Banqueting Room and Music Room, indicating the room's position in the sequence of corresponding interiors.

It is also worth noting that, although never referred to as 'peach blossom' by the Craces themselves[562], the pink on the walls of the Long Gallery was quickly described thus, for example, as mentioned in Chapter 1.1, by Sickelmore in *History of Brighton*[563]. The term peach blossom does not refer to a pigment but is a colour name, although in 1828 Vanherman provided a basic recipe for creating it from lake or rose-pink and an un-specified white[564]. Its descriptive name from the botanical realm indicates it is supposed to describe a light pinkish tone. George Smith did not include peach-blossom is in his colour chart, but noted that it is one of the tints that demand body colour and are particularly suitable for interior house painting: '[colours] that can only be obtained by a mixture of body colour; such are the peach blossom and salmon colours, as No. 49 ; the lavender tint, No. 50, and many varieties of the drab, but as these will fall more to the lot of the decorator, than to the artist or draughtsman'[565]. Smith included peach blossom later in the group of common colours, among them pale drab, stone colour and white, suitable for creating 'a very chaste style of decoration'[566]. He further suggested tints like these should be relieved and the scheme finished with 'gold moulding placed round the walls under the cornice above, over the dado or plinth below, as well as up the angles, internal and external of the apartment'[567], omitting further ornamentation, unless applied in boudoirs or drawing rooms. The tint Smith was describing was clearly a very pale variety of pink, or even flesh colour. Bristow notes a cluster of references to peach-blossom in early nineteenth century English literature and suggests a possible intellectual link with

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[562] CL, entry for 1815, p.60: 'preparing and ornamenting 6 large paintings 28ft x 11ft on fine linen blue on pink ground for sides of Gallery'.
[563] Sickelmore, *History of Brighton*, p.24.
[564] Vanherman, *The Painter's Cabinet,* p.3, cited in: Bristow, *House-Painting*, p.169.
[565] Smith, *Cabinet-maker*, p.161.
[566] Ibid., p.230. Also cited in: Bristow, *House-painting*, p.169.
[567] Ibid.

Goethe's *Beyträge zur Optik*, where peach-blossom colour ('Pfirschblüt') is discussed as a prismatic colour.[568]

The next rooms a visitor would have entered were the culmination of ornament, light, sparkle and saturation and variety of colour. The Banqueting Room (fig. 24) and Music Room (fig. 22), Nash's great state rooms at either end of the Long Gallery, are both interior spaces of spectacular dimensions, unusual shape, exuberant colour schemes and intricate decoration. At once a continuation and intensification of the colour schemes and decorative style introduced in the preceding room, these interiors formed the climax of the visitor experience. In the Banqueting Room guests would have marvelled at a multi-coloured, spectacularly lit and partly silvered and gilt interior with complex and illusionistic decorations on every surface and in every space. In the Music Room they would have entered a room resembling – in colour and surface finish – a red and gold lacquer cabinet, with strong blues and yellows in the draperies and another large Axminster carpet completing the trio of primary tints. Secondary tints, large scale gilding, complex lighting (partly through painted clerestory windows) and large multi-coloured ornaments in the form of Chinese pagodas and standing lamps would have added to the dazzling and intense effect. The two galleries leading from the Music and Banqueting Room, were, in accordance with their modified role and location in the overall layout of the building after Nash's transformation, no longer brilliantly blue or yellow, but painted 'flake white' in combination with sophisticated gilding and a slightly more measured use of ornamentation (see chapter 1.2). The more subdued colour scheme came as a necessary contrast to the Banqueting Room and the Music Room; a relief after much visual stimulation.

The Saloon, in its last, more regal Indian incarnation by Robert Jones, also fits into this structure of interiors that were designed for sequential experience and deliberate effects. After 1817 it needed to form a balancing link between the intensely coloured and ornamented Banqueting and Music Room and the more subdued and calming galleries. The grand and exotic, yet elegant and refined gold, silver, white and

[568] Bristow, *House-painting*, p.169.

red scheme, lifted by a brightly coloured Axminster carpet with a light ground colour, and contrasting with red and gold silk hangings, draperies and upholstery, can be seen as the harmonising centre of the building, combining elements of the four rooms flanking it. With the addition of the Nash state rooms at either end of the building the balance of the interior had shifted; a shift to which George IV and his designers responded by changing the colour scheme of the rooms in acknowledgement to the function of each room and how a guest would have progressed through the building. This deliberately planned visitor route is reflected in the numbering of the principal rooms ground floor in the ground plan from Nash's Views (figs. 1 and 3), where numbers 1 to 10 mark the sequence of the porte-cochère, Octagon, Entrance Hall, Long Gallery, Banqueting Room, Banqueting Room Gallery, Saloon, Music Room Gallery, Music Room and Red Drawing Room. All other rooms are marked by letters, indicating they belong to the different grouping of private or servants' rooms.

On the upper floor, consisting of private apartments and rooms not intended to be seen by occasional guests, the oriental style, extensive woodgraining and highly saturated colour schemes seen on the ground floor continued, although the ornamentation was reduced and there were far fewer decorative objects placed in those rooms, as may be expected for rooms not intended for public use. The Craces' pink and blue wallpaper from the Long Gallery continues up the staircase landings (figs. 37 and 113), thus forming a chromatic link to the galleries on the upper floor. The rooms on the upper floor were dominated by intense yellows in the suite of Bow Rooms (figs. 40 and 41, although it is curious that the yellow does not appear very vibrant in the Nash aquatint of the cross section) and a luminous blue in the galleries (figs. 44 and 45), while the North Corridor (now the Adelaide Corridor) was decorated with colourful Chinese export wallpaper with figurative scenes. Notably absent from the upper floor were, as far as it is known, highly saturated reds in the style of the Music Room walls and panelling. This, again, supports the thesis that the Royal Pavilion interiors may be a manifestation of ideas about unified interior design schemes formulated by De Mézières, Hope, Goethe and, later, Hay and Loudon. While each room was an individual decorative and colour scheme, informed by its purpose and

use, all rooms in the building were also seen in connection to each other, with colours distributed accordingly. It is, for example, highly probable that an unexecuted alternative pink and pale blue design for the Music Room with figurative panels (fig. 135) was abandoned in favour of the design very similar to that seen in fig. 136, because the colour scheme of the former would have been too similar to that of the adjoining Long Gallery, and the decorative motifs on the panels too close to Jones's figurative panels in the Banqueting Room. Thus, principles of colour composition, contrast and harmony, as first proposed in the context of landscape painting, flower painting, botanical, entymological and zoological illustration, are here applied to the colouring and ornamentation of the interior of an entire building, reflecting ideas concerning colour theory and interior decoration proposed earlier by Hope and later by Hay and Chevreul.

4.2 *'boldly carved, silvered and tinted'* - The harmonising use of silver in the Royal Pavilion

In the previous section I have discussed the use of colours and chromatic layout of the Royal Pavilion in its various phases during George IV's lifetime. This section will highlight a further element of the overall colour scheme which is as unusual as it is difficult to identify and restore: the use of silver on decorative finishes. Silver-coloured fabrics and textiles, objects and furniture made of solid silver or with silvered surfaces were common in seventeenth, eighteenth and nineteenth century European interiors, and play an important role in both Chinese export ware[569] and George IV's personal tastes and collecting habits. By contrast, silver used in wallpaper designs and on wall-mounted decorative features is noticeably rare in Britain in the early nineteenth century. Ostentatious displays of silver ware and silver gilt were common in aristocratic and royal households, especially in Georgian times, but the use of silver on architectural surfaces in the Royal Pavilion was unusually extensive and highly inventive, and not without significant problems in respect to conservation.

[569] For an overview of silver as oriental export ware see J. Lomax, 'Chinoiserie Silver in Britain', in: Beevers, *Chinese Whispers*, pp. 39-54.

Silver is not a colour in the Newtonian or Goethean sense and does not feature specifically in colour theories written in the eighteenth and nineteenth centuries. However, it features indirectly as a source of light due to its reflective qualities, and as such relates to aspects of colour theory concerned with light, shadow and colour intensity or saturation. It is a precious metal that, in interior decoration, can either be imitated by using paint (often white mixed with aluminium or ground silver) to create the illusion of silver, or used in the form of silver leaf by the process of gilding (from now on referred to as *silvering* to avoid confusion with gold-leaf gilding).

Most silver used in Britain for making or silvering precious objects is an alloy consisting of 92.5% silver and 7.5% copper. In other countries, and therefore in the case of imported silver, it may contain other materials such as nickel and zinc and a lower percentage of silver. Silver tarnishes over time, which is a gradual process of discolouration caused by the reaction with sulphur compounds in the atmosphere. The metal turns first pink, then brown and eventually grey or black, making it difficult to identify it as silver. Very old tarnished silver might reveal itself through a very slight reflective shimmer. Tarnish can be removed via various methods (manual or chemical cleaning), but this results in surface loss. The removal of tarnish on silver leaf is therefore almost impossible, because of its thinness. Tarnishing might be prevented or delayed by certain surface treatments, for example in the form of a lacquer coat or size varnish, but removal of these is very difficult and will normally result in abrasion.[570]

Silver is found and documented in various locations and on a number of ornamental features and materials (wood, paper, plaster, canvas and objects) through several design phases in the Royal Pavilion. It was used by both the Craces and Robert Jones, with Jones displaying the more inventive and wider use. The application techniques also vary, making the Royal Pavilion a rare example of an extensive range of the use of silver in interior decoration. This chapter will discuss and explain the highly individual use of silver as a subtle but significant element in decorative schemes in the

[570] Notes by Gordon Grant in the RPRF suggest that Jones might have experimented with different forms of protective varnishes for his silver leaf decorations. Not accessioned.

Royal Pavilion, and set it in the context of a number of rare examples of other and earlier European silver interiors.

As mentioned in Chapter 1.1, it was Richard Sickelmore who, shortly after the completion of the Banqueting Room, interpreted the silvered background of Robert Jones's figurative Chinoiserie wall paintings in the Banqueting Room as 'a contrast to the splendid furniture, and brilliant colours of the paintings which it surrounds'.[571] This identifies one possible key function of the use of silver as a colour in the Pavilion. But there is also a relationship between silver and light, with silvered objects, walls and moulding adding significantly to the amount of reflective surfaces in the Royal Pavilion interiors, thus catching, multiplying and disseminating light and complementing the colour schemes. As I explained in chapter 2, colour theory, especially when applied to the arts, was rarely discussed without references to light. This justifies a case study of silver in the Royal Pavilion used as a light source and in combination with coloured glazes.

References to silvering in historic paint manuals

Eighteenth and nineteenth century painter and decorator manuals that cover silvering discuss the problem of tarnishing, which destroys its reflective quality. Many scholars interpret this lack of durability as the main factor for the restrained use of silver in interiors. Indeed, in the new 1796 edition of Dossie's *Handmaid to the Arts* (first: 1758), the author significantly extends the section on 'silvering, bronzing and Japanning, lacquering and staining'[572] and explains the limited use of silver in interior decoration. This is the edition that was most probably used by the Royal Pavilion's interior designers:

> [Silvering] is nevertheless but seldom used, notwithstanding the effect would be very beautiful and proper in many cases; and there is an extreme good reason for such a neglect of it. The reason is its tarnishing in a very short time, and acquiring frequently, besides the

[571] Sickelmore, *History*, pp. 28-29.
[572] Dossie, *Handmaid*, 1796, vol. 1, p.305.

> general depravity of the whiteness, such spots of various colours as render it very unsightly; and this tarnish and specking is not only the constant result of time, but will be often produced instantly by any extraordinary moisture in the air, or dampness, as well as by the fumes and effluvia of many bodies which may happen to approach it.[573]

Dossie further explains the silvering of leather, a method that is not present in the Royal Pavilion interiors.

Bristow does not list silver as a colour in *Interior House-painting* but does discuss gilding and silvering as an application technique alongside graining, marbling and the production of paint materials. He acknowledges the significance of silvering and gilding and refers to their intrinsic 'capacity to lend grandeur and sparkle to architecture'.[574] He points out that the use of gold-leaf was far more common than the use of silver-leaf, referring to Dossie's observation that silver tarnishes too quickly ever to be used in great quantities. Silver is therefore only rarely found on architectural features, but a few examples can be found throughout the eighteenth and nineteenth century. Bristow acknowledges the rarity of silvered interiors, singling out the following examples: Chippendale's use of silver on carved timber borders in the Yellow Damask Sitting Room at Harewood House, Yorkshire, in 1775, and the cornices in an early Saloon scheme in the Royal Pavilion in c.1802.[575] Most importantly, he mentions silver elements in George IV's London residence Carlton House, as described in Pyne's *Royal Residences*. It is interesting that at Harewood House the silver is combined with yellow coloured fabric, while in the 1823 Saloon scheme Jones combines silvering and gilding on the same architectural feature, enhanced with a cream white as the other main colour in the room. This aim of producing as much sparkle, shimmer and light by means of choosing the most reflective materials and the brightest colours on the spectrum, white and yellow, may have been the aesthetic intention behind both schemes.

Bristow further discusses the changing attitudes to the integration of gilding into eighteenth and nineteenth century interiors, referring to Hay's interpretation of gilding

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[573] Ibid.
[574] Bristow, *House-painting*, p.127.
[575] Ibid., p.131. Bristow mistakenly allocates this to the year 1804.

as a contribution to colour harmony, using either gold or gold colour, in certain colour schemes. According to Hay, gilding lends a particularly gaiety and cheerfulness to a room, which should be avoided in the 'more substantial and sombre atmosphere of the dining room.'[576] He concludes 'No doubt silvering was often seen as especially appropriate for more feminine interiors, as too, perhaps, was the painted imitation of mother-of-pearl described by Vanherman.'[577]

Significantly, Bristow emphasises that 'it was also possible, when occasion demanded, to embellish the work further by means of transparent glazes'[578], with reference to an early seventeenth century examples of a green glaze over silver on screen decorations at the Tudor Chapel at the lost Greenwich Palace and a possible use of the same technique on James Wyatt's staircase at Frogmore House in the mid-1790s. He continues his list of examples with two important pieces from the Royal Pavilion, the carved Crace dragons on the east side of the Music Room (fig. 137), and a silvered dragon that hung on the ceiling of the Entrance Hall in 1815.[579]

Excessive use of gilding was against aesthetic ideas of taste and elegance in the late eighteenth century. Both Burke and Chambers stressed the importance of select and moderate use of gold leaf in interiors. Bristow explains that 'party gilding', where only certain parts of an ornamental feature are gilded, and variations in gold leaf colour became fashionable in this period because of the awareness of the potency of gold. He refers to Chambers' notes on the necessity of careful use and distribution of gold in interiors: 'It requires a great deal of judgement to distribute the gilding properly […] in general, it is to be observed, that, wherever the gildings tends, in the least, to confuse the Design, or make the outline of any part indistinct, it is ill employed.' The question is whether similar notions would and did apply to silvering, and whether George IV, the Craces and Jones did consider, or even challenge ideas of taste that would have been associated with a previous generation.

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[576] Bristow, *Architectural Colour*, p.215-216
[577] Ibid.
[578] Ibid., p.127.
[579] Ibid., p.131

Specific use of silver in the Royal Pavilion

Much of the technical detail regarding silver in the Royal Pavilion has been compiled by Brough in an unpublished document.[580] The CL records the first use of silver in as early as 1802: 45 ft of 'Silver cut on filletts and mouldings of cornice and high varnished' were applied in the Saloon.[581] 1802 marks the year the Craces were first involved with the decoration of the Royal Pavilion, introducing the first Chinoiserie interiors. While, as Brough rightly states, 'gilding does not appear to have been such an important feature of the early decorative schemes', but a closer look at the CL revealed a number of uses of silver leaf preceding the introduction of new decorative schemes after the Nash transformation beginning in 1815. Brough argues that the sharp increase in silvering after Nash can be explained by the grander scale and style of the new state rooms: 'With the advent of the high state rooms and the great chandeliers, more surfaces were needed to reflect the flickering lights and add to the whole impact of these double height spaces.'[582]

Hardly any unrepaired silver finishes can be found in the Royal Pavilion. The reason for this is that gilded finishes are especially vulnerable to wear, and frequent cleaning would have inadvertently removed protective layers applied by suppliers or decorators. Brough explained that 'greasy deposits removed by cleaning with bread (housekeepers account) or by washing would have led to speedy erosion of the thin metal surfaces. As well as the smoke from the lamps, soot and smoke from the internal fires, and pollution in the air, would also have led to high levels of sulphur and any silver finishes would have quickly tarnished, unless they were well protected with varnish and size layers.'[583] Moreover, is not unlikely that re-silvering of certain decorative objects occurred during royal ownership of the building after George IV (1830-1850).[584] Later in the nineteenth century varnishes and copal paint were applied

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[580] J. Brough, *The Use of Silver in the Internal Decorations of the Royal Pavilion 1787-1830. With Some Notes on the Study of Decorative Finishes and the History of Such studies at the Royal Pavilio*n. Unpublished document, 2011.
[581] This is the entry Bristow refers to as example of early silvering in the Royal Pavilion.
[582] Brough, 2011, *Silver,* p.1.
[583] Ibid. p.4.
[584] Ibid.

to many surfaces in the Royal Pavilion, which not only changed the overall impression of the interior with regard to brightness and the variety of the colour scheme. This is obvious, for example, in the complex layers of paint and varnish in the cross section of the Banqueting Room dragon (fig. 138).

These changes make research difficult, but it is possible to establish that silver was used in at least three ways in the Royal Pavilion: Firstly as part of a multi-layered silvering and glazing technique in combination with transparent colours on carved wooden ornaments, as for example on the lime wood dragons and snakes in the Music Room (fig. 137), the bells and the large dragon and the phoenix birds that appear to be holding the Banqueting Room chandeliers (figs. 140, 141 and 139). Secondly, silver size was applied to architectural ornaments of plaster or wood, such as cornices, friezes, door or window frames or pilasters. This is particularly prominent in the Saloon scheme of 1822/3, where Jones created a daring combination of gilding and silvering, using both water-gilding (burnished and matt) and oil-gilding techniques in close proximity (figs. 27, 28 and 29). [585] Thirdly, silver is applied as stencilled leaf or silver paint on wallpaper designs or wall paintings, on either paper or canvas (figs. 25, 26, 29, 30 and 142). Wallpaper designs including silver leaf from the final Chinoiserie scheme are all associated with Jones, but as this section will show, the Craces also incorporated silver paint or silver leaf in wallpanels for an earlier design scheme of the Saloon.

Early surviving examples of silver in the Royal Pavilion

From the period before Nash's transformation in 1815 at least two fragments of Chinese export wallpaper with elements of silvering survive (fig. 143). These originate from the southern Bow Rooms on the upper floor of the building. The confirmed year for the introduction of Chinoiserie interiors of 1802 would date the installation of this wallpaper to between 1802 and 1815, although the paper itself may be older. These hand painted wallpaper fragments are composed of floral motifs set in a painted

[585] See Brough, *Silver*, p.4: 'Gilding in the Royal Pavilion includes; water gilding, both burnished and matt, oil gilding, sanded finishes, and gilding on canvas and on paper. Gilding found on furnishings may include gilding on bronze or silver as well as the above.'

bamboo fret frame. At the centre of the composition is an oval or round landscape scene on a dark blue background, also framed by a floral pattern. The mountains and some other details appear black, but are actually heavily tarnished silver. It is possible that other silver elements from earlier design phases of the Pavilion were never described or identified as silver, but these fragments of silvered Chinese export wallpaper suggest that silver was more commonly used than has perhaps been supposed, and that the inspiration for silvered surfaces may have come from export ware.

As mentioned above, the Craces applied silver leaf to the cornices of the Saloon as early 1802. It was used there in combination with 'Rose wood and Grey satin wood imitated and high varnished'[586] and a wallpaper with silver leaf or silver paint decorations. Sadly, no fragments of this wallpaper survive, but a design drawing illustrates its shimmering appearance (fig. 14). As can be seen in the aquatint from Nash's *Views*, the silver and bright blue wallpaper formed a contrast to the highly saturated blues and reds elsewhere in the room (fig. 10). Morley notes that, by Christmas 1816, this wallpaper had been replaced with Chinese export wallpaper, supplied by Robson and Hale, on a grey/cream ground, perhaps wrongly described in the CL as a 'green ground' paper[587].

Silver in the Banqueting Room

Silver is a conspicuous element in the colour scheme of the Banqueting Room, on both three-dimensional ornaments and wall surfaces. The carved silver bells at high level around the room (figs. 140 and 141) are now mostly badly tarnished, but would have formed a glistening border, drawing attention to the unusual shape of the ceiling and its exotic decorations. The insides of the bells were painted with a transparent red carmine glaze, and would perhaps have given the impression of flickering light. The technique of coloured glazes over silver is applied with much greater variety of colour on the more

[586] CL, entry for midsummer to Christmas 1802, p.1.
[587] '1 very fine set of India Paper, green ground colored flowers, birds &c containing 24 sheets', CL, entry for 1815, p.80. The paper can be seen in a watercolour by Augustus Pugin: *The Saloon, 1817, before 1822*, watercolour. Royal Collection, RL 18161.

elaborate carved objects in the room, notably the dragon and phoenix birds 'holding' the chandeliers. The central dragon (fig. 139) is described in great detail in the RPI1828, and several references are made to its silver components:

> A very superb Lustre of matchless design and workmanship, upheld to the center of the dome by a flying dragon boldly carved, silvered and tinted: The body of this Lustre has a rich open work border of Metal, gilt with edges of silvered Bells - Six richly carved silvered and tinted dragons issuing therefrom, each bearing a large painted ground glass lotus for a Lamp with burners: The under part composed of gilt leaves, stems and small painted ground glass Lotuses cut Glass Lotuses, Spangles, Icicles, Stars, Festoons, Tassels &c: A beautiful Jet d'eau of cut glass spangles rising in the Center; the body suspended by six silvered metal chains (ornamented with cut glass drops) to a ground glass dome, enriched with large and small silvered balls, lotuses &c surmounted by a splendid star filled with large tassels, &c of silver balls and cut glass drops.[588]

Silver leaf or silver paint also forms the background to most of Jones's large pictorial Chinoiserie paintings in the Banqueting Room (figs. 25 and 26). The RPI1828 describes the largest of Jones's pictures (which survives in its original location): 'A large center pannel (opposite windows) painted on Canvass in a group of Chinese Figures, bearing a Palanquin, on a white and silvered ground of various pattern.' [589] This silver pattern resembles the 'dragon wallpaper' from the Red Drawing Room and, later, other rooms in the Royal Pavilion. As with the dragon wallpaper, the inspiration for the silver background appears to have been Chinese Imperial robes, but Jones only copied certain elements of the pattern and iconography, disregarding the polychromy of the robes.

The silvered background of these figurative panels was frequently interpreted as mother-of-pearl, for example in Whittemore's early guidebook from 1825: 'The ground of these masterly paintings is in imitation of inlaid pearl, richly wrought in all the varied forms of oriental mythology.'[590] In 1838 Brayley, too, described the background as 'an imitation of inlaid pearl, richly and ingeniously wrought with all the varied forms of mythology of China', and also notes the exquisite quality and extremely brilliant

[588] RPI1828, p. 7.
[589] RPI1828, p. 3.
[590] Whittemore, *Brighton*, pp.32-33.

colouring of the scenes.[591] This recalls Bristow's suggestion that mother-of-pearl, silver, and shimmering surfaces were generally associated with a feminine or effeminate style. Such a style clearly appealed to George IV and his tastes, and might well have been influenced by close female family members, as discussed in chapter 3.1. The mother-of-pearl effect of the silvered background can therefore be interpreted as typical of Chinoiserie ornament, but unusual in being embraced to such an extent by a male patron.

The silvered surfaces in the Banqueting Room underwent unspecified cleaning at least once after George IV's reign. The *Royal Pavilion Memorandoms* (1838-1845) state that all gilt work in the Banqueting Room was cleaned in 1836, at the end of William IV's reign, along with Jones's murals, their borders and the central silvered dragon: 'The Dining Room gilt-work all cleaned and the Paintings on the walls cleaned & the borders of do re-varnished /The Ceiling & the Draggon cleaned & touched up with paint'.[592] This suggests that many of the silvered surfaces in the Royal Pavilion had already tarnished by that point.

Brough explains that the conservator William Frost, in the early twentieth century, probably scraped large areas of surfaces to remove insoluble later varnishes. Repairs in aluminium to decorative objects such as the dragon from which the central chandelier is suspended and silvered bells in the Banqueting Room suggest that he was at least aware of a silver-coloured finish applied to these objects.[593] A single claw-shaped wooden object (fig. 144) that probably became detached from a dragon ornament similar to the high-level dragons in the Music Room (fig. 137) in the 1820s, is possibly the only original silvered and glazed surface remaining in the Royal Pavilion.[594]

A clock made by Benjamin Lewis Vulliamy (1747–1811) and probably designed by Jones in the early nineteenth century (fig. 145), originally displayed in the Banqueting Room, is a particularly good example of how single decorative objects often reflected

[591] Brayley, *Palace at Brighton*, p.13.
[592] *Royal Pavilion Memorandoms*, transcript p.2.
[593] Brough, *Silver*, p.5.
[594] The pigment found in the green glaze on this claw will be discussed further in Appendix 3.

the colour schemes, motifs, and variety of surface finishes of a room in the Royal Pavilion. The clock combines silvered and gilt surfaces, intense blues in the form of inlaid lapis lazuli, corresponding to the Prussian blue wallpaper and Spode porcelain in the room, while the seated Chinese figures are reminiscent of Jones's figurative Chinoiserie wall panels. The iridescent effect of the multi-coloured enamelled peacock resembles the silvered and coloured dragon and phoenix birds:

> A superb Clock by Vulliamy with silvered face in a silvered circular case, mounted in richly chased mat foliage, representing Eagles, and surmounted by Japanned metal peacock: hexagonal base, enriched with lapis lazuli in front and overlaid with a key ornament, and supported by richly painted metal male & female Chinese Figures seated on an oblong ormolu plinth with lapis lazuli.[595]

The colouring of silvered surfaces might also have been inspired by Chinese enamel ware and similar glossy and multi-coloured surfaces found in export ware. In her essay '"Luscious Colors and Glossy Paint": The Taste for China and the Consumption of Color in 18th-century England'[596] Vanessa Alayrac-Fielding quotes from Erasmus Darwin's long poem 'The Botanical Garden' (written in 1789, first published in 1791 and published again in 1825), where the poet describes the decoration of oriental porcelain, which, coincidentally, includes a reference to 'huge dragons with metallic hues':

> First CHINA'S sons, with early art elate,
> Form'd the gay tea-pot, and the pictured plate;
> Saw with illumin'd brow and dazzled eyes
> In the red stove vitrescent colours rise;
> Speck'd her tall beakers with enamel'd stars,
> Her monster-josses, and gigantic jars;
> Smear'd her huge dragons with metallic hues,
> With golden purples, and cobaltic blues;
> Bade on wide hills her porcelain castles glare,
> And glazed Pagodas tremble in the air.[597]

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[595] RPI1828, p.8 (transcript p.13). The clock was removed by Queen Victoria in the 1840s and is now in the Royal Collection (RCIN 30006).

[596] V. Alayrac-Fielding '"Luscious Colors and Glossy Paint"': The Taste for China and the Consumption of Color in 18th-century England', in A. Feeser, B. F. Tobin & M. D. Goggin (eds.), *The Materiality of Color: The Production, Circulation, and Application of Dyes and Pigments, 1400-1800* (Farnham, UK & Burlington, USA: Ashgate, 2013), pp.81-97.

[597] Ibid., p.87.

Alayrac-Fielding explains that the term 'smear'd' was not a negative term, but describes a specific technique of enamelling, while the 'metallic' hues, were a specific type of Chinese decoration where iridescent colour were created by precipitating gold and tin to create a red glaze, or alkaline salts to produce blueish purples.[598] The glazed Royal Pavilion dragons, bells and other ornaments might be a rare large-scale manifestation of European artists and designers trying to emulate the colours and surface finish of this particular type of export ware. It is testimony to the superior skills and and creative minds of George IV's designer that these colours and surface finishes were transferred to very large objects and a variety of materials in the Royal Pavilion.

Silver in the Saloon

In Jones's design scheme for the Saloon (completed 1823), silver is used most lavishly and creatively. It is found at low and high level on the wallpaper, cornices, capitals, apse ceilings, and on wooden pilasters around the room. Silver leaf is applied to a variety of materials, such as stuccoed plaster, paper, metal (probably bronze) and wood, frequently in combination with gilding and contrasting with wall hangings, draperies and upholstered furniture in 'His Majesty's Geranium and gold colour satin decorated with silk gimp'.[599]

The RPRB first refers to silvering carried out in the Saloon by Jones on two occasions in or around January 1823: 'Preparing, painting and gilding in Oil Gold, and Silvering in various part the Cornice partly etched &c' and 'Painting and silvering on Paper the Styles or found of the walls to a rich design of leaf and flower'. [600] The sum charged for this particular aspect of the decorations of the room was £530. This is echoed in the RPAA entry from 5 January 1823: 'Preparing painting and gilding in Oil Gold and Silvering in various parts the Cornice partly &ched [sic, *correspond*?]&c Paint'g and silvering on Paper the Styles or ground of the Walls to a rich design of leaf

[598] Ibid.
[599] *Brighton: Accompts*, entry for 5 January 1823.
[600] RPRB, transcript p.33.

& flower design'[601] In the RJA this work, which relates mostly to the silvered wallpaper (fig. 30), is described in greater detail and dated November 1822:

> Preparing the grounds and Painting and Silvering the Enrichment, which forms the Stiles, or ground Work on the Walls, consisting of Symetric [sic] leaves, and flowers in Silver, arranged to fit the different dimensions of various situations, and relieved by shadowing on a fine ground of Pearl white the whole of the Ornament &c secured.[602]

The *Robson and Hale Accounts* for this period make no identifiable reference to paperhanging in the Saloon, indicating that it may have been entirely Jones's design and executed by him or his assistants.

The silvered wallpaper corresponded to the eight silvered and gilt pilasters (figs. 28 and 28), which are described in the 1828 inventory: '8 Pilasters in the recesses, carved, gilt and decorated with palm trees, snakes &c, in white and silver ground; with thin silver and gilt plaster caps'.[603] These pilasters were returned to the Royal Pavilion by George V in 1935 and it appears that they have at some stage been partially overpainted.

The ceiling of the dome was decorated with a painted clouded sky with some dragons and other Chinese symbols, but in the north and south apse Jones applied more silver leaf in the shape of nine stylized palm leaves arranged in a fan pattern. As mentioned in chapter 1.2, one of the original leaves from the south apse was discovered and restored in 2005 and the rest of the south apse ceiling recreated to Jones's design (fig. 29). Grant noted that that the silver was glazed, giving it a golden glow, which ties in with original silver, white and gold scheme of Jones's design.[604]

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[601] RPAA, 5 January 1823, transcript p. 156.
[602] RJA, entry for quarter ending 5 January 1823, p.11.
[603] RPI1828, p.20.
[604] 'The silver, glazed a pale golden colour, was worn and tarnished, but, surprisingly, intact.' Grant, 'Out of the Blue', p.5.

Jones also refers to silver in combination with enamel and imitation of enamel, when recording the design for the 'grand Oriental chimney […] with all the ornamental detail of its enrichments in Or Molu [sic] and Silver', with the decorative figures in the recesses 'wrought with Silver and Gold &c. &c. and highly Polished and secured from Change.'[605] To 'secure from change' probably refers to a type of varnishing that would have prevented or delayed tarnishing. An intriguing combination of blue and silver is mentioned in relation to the windows: 'Gilding the Stiles and Mouldings, with all the Mouldings of the Sash frames, which are enriched with an imitation of dark Blue Enamel on Silver, the Whole secured and highly Varnished &c.'[606] This is reminiscent of the blue and silver wallpaper in the Banqueting Room, but the attention to colour detail and surface finish is also evidence of the superior designwork and craftsmanship found in the Royal Pavilion.

Silver in other locations in the Royal Pavilion

The Royal Pavilion account book and inventory references suggests that not only silver, but other reflective materials were in common use throughout the building and applied by both Jones and the Craces (see Appendix 2). Silvered carved ornaments, glazed with a variety of colours, were also found in the Music Room. The best example of the visual impact of coloured silver can be seen in the dragon and serpents on the west wall by the windows, created by Frederick Crace in c.1820: 'Painting on Silver 4 very large Dragons in various colours and varnished, for the support of drapery to window, Do do 1 large double Serpent in various colours, and as above'[607]. Most importantly for the purposes of this study, the fire in 1975 destroyed the original ornaments and they were replaced by copies. While the loss of these original ornaments is regrettable, the replacements make it possible to see how fresh and intense the silver and glazed elements of the decorations would have appeared shortly after the completion of the interior (fig. 137).

[605] RJA, entry for 27 June 1823, p.19.
[606] Ibid., entry for quarter ending 5 January 1823, p.11.
[607] CL, entry for 1820, p.117.

The various account books and inventories of the Royal Pavilion reveal many more silvered surfaces from 1802 onwards, with a noticeable increase after 1814. In 1815 the CL records silvering in the 'New Gallery' (Long Gallery): 'Repainting and silvering in part the 16 standards in consequence of alterations made by Fricker & Henderson at Brighton'[608]. Furthermore, silvered dragons ornaments appear in a room referred to as the Small Drawing Room (unidentified, but possibly part of the North or South Drawing Rooms flanking the Saloon). Here, in typical Crace fashion, silver is used in combination with the primary colours red, yellow and blue: 'Painting a canopy over glass - red, yellow and blue ornaments, bells gilt and blue scroll, and 2 large columns supporting Do red with Dragons, silvered scaled and varnished'[609]. In the same room the Craces also silvered and varnished the feet of two screen stands.[610] There are further references to the silvering of ornaments carried out by the Craces in almost every room in 1816, including an intriguing entry for '3 Bats for draperies silvered and varnished green and purple'[611] in the Yellow Room (now the Banqueting Room Gallery), 'bells silvered and varnished green' in the Entrance Hall, and '1 large Dragon silvered and painted in proper colors', also for the Entrance Hall.[612]

An entry in the *Robson and Hale Accounts* from 1820 may indicate that the blue verditer European wallpaper in the North and South Galleries was embellished with silvered Chinese export wallpaper: '6 Dozen Chinese Silver border flower on blue' at £12.12s.[613] Regrettably, this ornamental detail is not referenced anywhere else, but it supports my argument that silver and silvering was employed as unifying tone throughout the Royal Pavilion.

In 1822 Bailey and Sanders charged £11 6s for making or furnishing a 'blue and silver bed' in the New North Buildings, which is briefly mentioned in the RPAA: 'To

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[608] Ibid., entry for 1815, p.74.
[609] Ibid., p.75.
[610] Ibid.
[611] Ibid.
[612] Ibid., p.76. This dragon, originally mounted in central position on the ceiling, survives in the Royal Pavilion, but is not in situ and has been heavily overpainted. There is a possibility that the single silvered claw taken to the National Gallery for examination in 2013 (fig. 144) was part of this dragon.
[613] *Robson and Hale Accounts*, entry for 5 April 1822, LCII/24/XC000499.

making furniture for Bedstead with the Lining & Trim'g of the Blue and Silver Bed'.[614] A more detailed entry in the *Brighton: Accompts* describes the blue and silver scheme of the bed, with white satin mentioned in relation to other furnishings in the room: 'To cleaning and repairing His Majesty's silver fringe; To making a furniture [?] for a large bedstead of his Majesty's blue striped silk and decorated with coverings and trimmings of the blue and silver bed.'[615]

Taking the surviving silvered surfaces and objects and the high number of references in primary manuscript sources relating to the Royal Pavilion into consideration, it becomes clear that silver was used much more widely in the building than previously thought. The following sections will position these silvered interiors in a wider historical context of silver in interior decoration in order to establish the significance of the Royal Pavilion in this respect.

Historic predecessors of silvering in interior decorations

Silvering does not appear to have been very popular in eighteenth century British interiors and examples of its use are rare. This section will set the silvered interiors of the Royal Pavilion into the historical context of silver in European arts, architecture and fashion prior to the 1820s.

Reasons for the rarity of historic silvered interiors in Britain may include the country's insularity, the cautious tone with regard to silvering in English language decorators' manuals, and the greater danger of damp damage and deterioration in Britain, as well as a significantly more restrained manifestation of the Baroque and Rococo styles, compared to mainland Europe. By comparison, France, Denmark and particularly Germany embraced silvering in many important royal and aristocratic interiors throughout the eighteenth century, despite the unstable nature of the material.

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[614] RPAA, entry for 5 January 1822, p.13; also RPRB, p.77.
[615] *Brighton: Accompts*, entry for 5 January 1822.

Silvered and solid silver furniture

Apart from silver services and objects such as chandeliers, silver was most commonly found in the form of silvered picture and mirror frames, as well as silvered furniture. The sheer quantity of silver and silvered objects in a number of European interiors made silver an important feature in design schemes. In some cases furniture was made of solid silver, expressing power and wealth on an unprecedented scale.

Although the interiors designed by the 'Sun King' Louis XIV (r.1643 - 1715) are mostly associated with excessive gilding, he also commissioned the extravagant *Grande argenterie*, a suite of solid silver furnishings for his apartments and the Galerie des Glaces (Hall of Mirrors) at Versailles. This silver furniture, comprising, among other items, tables and mirrors weighing hundreds of kilograms, bed balustrades, settees, firedogs and chandeliers, was on display at official functions between 1682 and 1689, when it was melted down on Louis XIV's instructions to finance the War of the League of Augsburg. While the silver objects have not survived, many contemporary and subsequent descriptions of the state apartments reveal the stunning visual effects of the silver, particularly in combination with candlelight and the large number of mirrors. This description by F.L. Payne, based on a contemporary French account from the *Mercure Galant* in 1768, illustrates the scale of highly reflective surfaces such as gold, silver and mirrors in the Versailles interiors:

> The Salon of Venus was most admired for its marble mosaics and its ceiling painting representing Venus subduing all the other deities. […] Here under candles glimmering in sconces of silver and crystal the courtiers engaged in games of billiards, while their ladies disposed themselves gracefully upon tapestried seats. And there were orange trees in silver tubs to add brilliance to the scene. In the Salon of Mars dancing parties and concerts were given. Silver punchbowls set on silver tables offered refreshment to the gay throng that coquetted and danced and applauded beneath the triumphant picture of Mars limned upon the ceiling. This room was a-glitter with silver, cut glass and gold embroidered draperies. In the crimson-hung Salon of Mercury was the King's bed of state, before which was a balustrade of silver. […] The Throne Room known as the Salon of Apollo--the seat of the Sun King--was of

> the utmost richness. The throne itself was of silver and stood eight feet high.[616]

But Versailles was not the only example of an interior embellished with silver furniture in the late seventeenth century. The silver furniture from the throne room of Rosenborg Castle, Copenhagen, survives, including three silver lions guarding the throne, made between 1665 and 1670 by Ferdinand Küblich. Silver furniture was produced in great quantity and of high quality in southern and eastern Germany, with the town of Augsburg being a capital of silver production from 1650 to 1760. However, in many cases the pieces produced were not of solid silver but of a wooden frame covered with sheets of repoussé silver.

The English court, too, had a taste for silver or silvered furniture. George III had inherited at least three suites of silver tables, mirrors and stands, made for William III in the late seventeenth century and displayed in the State Rooms at Windsor Castle. These were high Baroque style designs, clearly in imitation of Versaille interiors. Roberts notes that another set of silver or silvered furniture was acquired by Frederick, Prince of Wales, in the 1740s, but that by the later eighteenth century the popularity of silver furnishings had diminished. In February 1764 a considerable amount of silver furniture was to be melted down. It is unclear whether this actually happened, since four silver tables and other silver furnishings were recorded in an account from February 1805 of a fête at Windsor Castle, and these are later included in Wild's watercolour of the Queen's ballroom (RL 22101) from 1817.[617] One composite surviving set survives in the Royal Collection (RCNI 35299-301), which includes a silvered table designed by Andrew Moore (1640 - 1706). Roberts concludes that it would therefore appear that, by 1805, George III had had a change of heart, with these examples of high baroque furnishings now deemed suitable for his newly refurbished apartments at Windsor Castle.'[618]

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[616] F.L. Payne, *The Story of Versailles* (New York: Moffat, Yard & Company, 1919), pp.32-35.
[617] Roberts, *George III*, pp.251-253.
[618] Ibid.

Silver in fashion and soft furnishings

Silver leaf and silver thread have been incorporated in textiles since the Middle Ages, particularly in woven and embroidered tapestries, where either strips of gold and silver were woven into the fabric directly or silver leaf was wrapped around linen thread. The reason for incorporating silver and gold was similar to that for its use on furniture and other decorative items: its reflective nature would have added light and sparkle to a candle lit interior. In this context my aim is to highlight the use of silver in fashion and costume during George IV's lifetime. My argument is that fashion in dress was one of the factors contributing to his choice of silver in the Royal Pavilion interiors.

While silver-coloured fabrics had been popular in the preceding three centuries, particularly in court dress and society portraits, silver became a wider popular choice in fashion and furniture fabric in the first three decades of the nineteenth century. Many examples of silver dresses, accessories and in upholstery can be found in popular magazines such as John Bell's *La Belle Assemblée* (1806 - 1832) and Ackermann's *Repository of the Arts* (see for examples figs. 80 and 81), as this example of an evening dress from the March 1814 issue illustrates:

> A white crape, or fine muslin petticoat, worn over white satin, embroidered in silver lama round the bottom. A bodice of olive, or spring-green satin, ornamented with a silver stomacher. Short, full sleeve, and rounded bosom, trimmed with a full silver border to correspond. […] A silver fringe round the bottom of the waist. […] Occasional scarf of white silk, richly embroidered in silver and coloured silks, Gloves of white kid. Slippers of green satin, with silver rosettes.[619]

In May 1816 George IV's only child Princess Charlotte popularised this trend even further by choosing a wedding dress which appeared to have been made almost entirely of silver coloured materials. She did, in fact, wear at least four dresses on her wedding

[619] Ackermann, *Repository* (Vol. 11 1814), p.179, corresponding with plate 16.

day, three of which were predominantly of a silver and white appearance, made from silk, lamé (lama) and silver thread and decorated with lace.[620]

Silvered interior surfaces

Silvered cornices, wall ornaments and mouldings have, for example, been identified in the Rococo addition to Elector of Brandenburg Frederick III's (later King Frederick I) Baroque palace in Berlin, Schloss Charlottenburg, built from 1699 for his wife, Sophie Charlotte. The main building includes several Chinoiserie interiors and significant collections of Chinese and Japanese porcelain, as might be expected in a building of that period, designed for a woman. The so-called New Wing (Neuer Flügel) to the East was added in 1740 - 1747 for Frederick the Great to the designs of Georg Wenzeslaus von Knobelsdorff. The interiors of the King's Library and other rooms facing the gardens include elaborate silvering on cornices, doorframes and other woodwork, although not in a Chinoiserie context. The colour scheme supporting the silvering consists of pastel-shades of green, yellow and off-whites. The scheme appears particularly bright and fresh, but it has to be noted that the New Wing was almost completely destroyed in World War 2 and was entirely re-created in the late twentieth century. Lavishly decorated silver interiors are also found in the Neue Palais, a large three-winged Baroque palace, which was added by Frederick II to his Sanssouci Palace estate in Brandenburg and built between 1763 and 1769 to designs by Johann Gottfried Büring (1723 - after 1788). The interior boasts several rooms, including the King's Study and his brother's bedroom suite, that are furnished with silvered furniture, silver-plated bronze ornaments and silvered cornices, mirror frames, plasterwork and door panels.

The most significant example of eighteenth century silvered interiors in Europe is the Amalienburg, a Rococo hunting lodge in the grounds of Nymphenburg Palace in

[620] One of the dresses was described in *La Belle Assemblée* as follows: 'Her dress was silver lama on net, over a silver tissue slip, embroidered at the bottom with silver lama in shells and flowers. Body and sleeves to correspond, elegantly trimmed with point Brussels lace. The manteau was of silver tissue lined with white satin, with a border of embroidery to answer that on the dress, and fastened in front with a splendid diamond ornament.' J. Bell, *La Belle Assemblée or, Bell's Court and Fashionable Magazine Addressed Particularly to the Ladies*, Vol. 12, no. 84 (London: May 1816).p. 224.

Munich, designed by François de Cuvilliés (1695 – 1768), with interiors by the stuccoist Johann Baptist Zimmermann (1680-1758), the woodcarver Joachim Dietrich (1690–1753) and the painter Joseph Pasqualin Moretti. It was built between 1734-1739 by Charles VII (the Holy Roman Emperor) for his wife, Maria Amalia, and combines highly finished silvered surfaces in almost every room, in combination with an elaborate use of mirrors (figs. 146 and 147). Some exotic elements are present in the building, although not in the silvered rooms: the Pheasant Room, or Indian Cabinet, is hung with imitation Chinese wallpaper, while the kitchen is elaborately decorated with blue and white Dutch tiles with Chinese motifs. In typical Rococo style, the ground colours in the silvered rooms, allocated and named by Cuvilliés on architectural drawings, are a 'fond de citron' (a pale lemon yellow), a light blue, and 'couleur de paille' (a straw colour) and white ('à fond blanc et les ornements argentés').[621]

The Amalienburg is important in this context because it is the only known surviving building in Europe with a predominantly silver interior. The colour scheme and the excessive use of silver and mirrors can here be interpreted as reflecting the use and function of the building: the interiors create a cool and bright atmosphere, an association with water or even ice in certain rooms, after the heat of an afternoon's hunting. Similar to the Royal Pavilion, the Amalienburg falls into the category of playful buildings or pleasure palaces ('maison de plaisance', or 'Lustschloss') often associated with less formal and more experimental designs such as oriental structures, frequently placed at a considerable distance from the main palace (as was the case with the Kew 'wilderness' structures). Other smaller structures in the gardens of Nymphenburg Palace boast Chinoiserie interiors, notably the Pagodenburg and the Badenburg.[622] Wappenschmidt notes that, as is the case with the Royal Pavilion interiors, the colours and decorations of the Amalienburg were not gimmickry, but the application of

[621] Cited in F. Wappenschmidt, *Der Traum von Arkadien: Leben, Liebe, Licht und Farbe in Europas Lustschlössern* (Munich: Klinkhardt & Biermann, 1990), pp.97-106.
[622] To date no detailed research into the Amalienburg has been published, but some information of the silvered furniture can be found in B. Langer and G. Hojer, *Die Möbel der Schlösser Nymphenburg und Schleißheim* (Munich/New York: Prestel Verlag, 2000), while Orientalism at Nymphenburg Palace is discussed in U. Kiby, *Die Exotismen des Kurfürsten Max Emanuel in Nymphenburg* (Hildesheim, Zürich, New York: Georg Olms Verlag 1990).

'carefully selected and designed allegorical language and colour symbolism', a highly sensualised interior that aimed to evoke certain moods and sensations.[623]

A late Rococo example of silvered interiors from the Würzburg Residence in Bavaria is particularly relevant in comparison to the coloured glazes over silver found in the Royal Pavilion. The Green Lacquered Room in the northern imperial apartments in the Residence appears to be based on a design idea similar to the Craces' in the case of the Music Room, namely to imitate the effect of lacquer furniture on the walls of an entire room (figs. 148 and 149). The particular tonal quality and surface shimmer is achieved here by a very thin layer of green-coloured transparent lacquer applied to a ground of silver leaf, the whole on wooden panels and doors. Gilt borders, floral swags and putti form a contrast to the Chinoiserie ornamentation, whereas gilt furniture in green and gold by cabinet makers Johann B. Wagner and an intricate multi-coloured inlaid wooden floor (both from the 1770s) by Balthasar Hermann harmonise with the wall decorations.

As is the case with so many silvered interiors, these surfaces suffered greatly from the tarnishing of the silver. The suffered further in World War 2 when bomb damage exposed the northern parts of the building to the elements. However, the technique can be compared to the silvered dragon ornaments and bells in Royal Pavilion's Music Room and Banqueting Room. Comparison by cross-section analysis of samples from the Würzburg interiors and similar surfaces from the Royal Pavilion could provide a better understanding of how silver was used in European interiors in the late eighteenth and early nineteenth century. It is not known whether British decorators and artists would have been aware of this room, but it is not unlikely. Comparing the visual appearance of the techniques, it seems that the desired effect was in both cases that of a shimmering, pearlescent surface, resembling lacquer furniture while at the same time adding a subtle brilliancy to the interior, which would have been heightened by contemporary means of lighting. Given the discovery of verdigris as one of the pigments used at the Royal Pavilion in transparent green glazes over silver, it would be highly

[623] Wappenschmidt, *Arkadien*, p.105 [my translation].

desirable to analyse the pigments and techniques applied in the Green Lacquer Room at Würzburg.

Silver played a significant part in Chinoiserie ornament, but almost exclusively in the form of export silverware, mounting for porcelain export ware, or Chinoiserie designs on European silverware, as recent surveys by Alan James Marlowe[624], H.A. Crosby Forbes[625] and James Lomax[626] confirm. The use of silver in surface finishes and as an element in wallpaper designs is rare, not reliably recorded and possibly unidentified in many cases, although examples can be found. Lacquer, or 'japanned' cabinets were occasionally mounted on silvered stands and incorporated silver elements in the figurative decoration on the panels, but these are rarer than gilt, black or red varieties.

Silvered leather hangings, panels and screens constitute another manifestation of silver as a part of wall decorations. Gilt leather wallpapers are recorded in European interiors from as early as the fourteenth century, but became increasingly popular in Baroque and Rococo interiors in the seventeenth and eighteenth centuries.[627] Although gold leaf was used for most gilt leather, several examples of silver leaf on leather survive, and most of them are associated with Chinoiserie design. Baty provides examples of silver with a yellow varnish, to achieve the effect of gold.[628] An example of a set of silvered leather wall hangings in the Metropolitan Museum of Art, New York (fig. 150), originates from a Dutch interior from c. 1650–70. This rare surviving set is not a Chinoiserie design, but the motifs include flowers, food and putti resembling the five senses. As is the case with Baty's example, the silver here is covered with a yellow varnish to resemble gilding, with the additional desired effect of reflecting light. A painting by Pieter de Hooch, *Leisure Time in an Elegant Setting* (fig. 151), shows similar wall hangings in the context of a seventeenth century Dutch interior. In Chinoiserie

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[624] A.J. Marlowe & H.A. Crosby Forbes, *Chinese Export Silver* (London: John Sparks, 1990).
[625] H.A. C. Forbes et al, *Chinese Export Silver 1785-1885*, Milton, MA, Museum of the American China Trade, 1975.
[626] Lomax, 'Chinoiserie Silver'.
[627] For a good recent overview see E. Koldeweij, 'Gilt Leather Hangings in Chinoiserie and other styles: An English Speciality', *Furniture History*, vol. XXXVI (2000) pp.61-101.
[628] P. Baty,'*Gilt leather.* Sep 4th, 2011', http://patrickbaty.co.uk/2011/09/04/gilt-leather/ [accessed 30 January 2013].

interiors silver also played a role in the form of mirror paintings. These popular export paintings usually depicted typical Chinese motifs similar to those found on export wallpaper, painted on to the mirror and thus thrown into sharp relief against the mirror's silvered background (see for example fig. 152). It is possible that Chinese mirror paintings were one of Jones's inspirations for his Banqueting Room panels, where figure groups are set against a silvered background.

Silver interiors contemporary with the Royal Pavilion

Whereas silvered interiors and silvered ornamental objects enjoyed considerable popularity in Baroque and Rococo interiors in continental Europe, they are extremely rare and seldom recorded in Britain in the early nineteenth century. The most direct line of influence on the use of silver in the Royal Pavilion comes from George IV himself. The use of silver in the Royal Pavilion can be seen in the context of George IV's well-documented love of silver ware, highly reflective surfaces and an obsession with gilding. At least one room of his London residence Carlton House, the Circular Dining Room, was decorated in a colour scheme that incorporated a considerable amount of silvering. Like most rooms in Carlton House, it underwent several transformations, but the design scheme as it appears in the 1817 drawing and print illustrates a conversion carried out between 1804 and 1808 under James Wyatt, with chimneypieces by Richard Westmacott and Dominique Jean, and ceiling and wall decorations by Louis Delabrière or T. H. Pernotin (fig. 153). Pyne describes the colour scheme as a combination of orange, pale blue, red, black, green and silver, with the detailed description revealing the abundance of silver in the design scheme:

> A rotunda of the Ionic order, the parts selected from the purest specimen of ancient Greece. The entablature is fully enriched, and supported by scagliola columns in imitation of red porphyry, with statuary plinths and silvered capitals: the principal ornaments of the cornice and architraves also silvered, relieved by a ground of light lavender tint. […] From the soffit of each recess is suspended a Roman tent drapery of light blue silk, ornamented with silver, with which silk the walls are partly covered, creating a sort of tent-like character; and these are relieved by sub-curtains of white taffeta. Each door is inserted in an arched recess: the architraves, archivolts,

> and cornices are superbly carved and silvered, the doors are painted in arabesque and bronze on silvered ground, in devices consisting of well-designed subjects in groups of figures representing the triumphs of Harvest and Vintage. […] the pier-glasses also reflect each other, and produce the appearance of repetition in endless continuity, which gives a magical effect and splendour of the apartment. […] the plinths, shutters, and such walls that are not covered by draperies, are painted in arabesque upon a silvered ground. […] The furniture consists of settees, supported at the corners with bronze chimera, and covered with light blue silk, the fringes and lace of which are composed of silver threads and other materials of dazzling brightness. [629]

The scheme as it appears it 1817 shows some similarities to Jones design scheme for the Royal Pavilion's Saloon, such as the sky ceiling, the general layout and columnisation of the room, the combination of reflective metal surfaces on one object or in close proximity (bronze, silver, gold), and, most importantly, silvered cornices and capitals. The Circular Room of Carlton House further featured window shutters and door panels decorated with arabesques on a silver ground, as well as silver thread incorporated in the fringes of the settees.

The Circular Room is likely to have been a direct inspiration for Robert Jones. It is also possible that George IV instructed Jones to make decorative references to the Circular Room, since the re-decoration of the Saloon at Brighton coincided with the impending demolition of Carlton House. It is notable that the Circular Room was not decorated in a Chinoiserie scheme. What Pyne describes as the 'magical' appearance of the room is achieved by the prominence and juxtaposition of mirrors, as well as arabesque shapes, which can be considered only vaguely oriental or exotic. Similarly, with the Royal Pavilion's Saloon Jones created a scheme that was not overtly Chinese in style, but one that combined neo-classical features with exotic elements from the Middle East rather than the Far East, in order to achieve a more regal and stately appearance.

There are very few examples of early nineteenth century silvered interiors. One of these is the library at Moggerhanger House in Bedfordshire, which has several

[629] Pyne, *Royal Residences,* Volume 3, pp.24-25. See also: De Bellaigue, *Carlton House*, pp.214-216.

tangible connections with the Royal Pavilion. John Soane remodelled the existing earlier house between 1790 and 1812, during which time John Crace designed some of the interiors, while Repton was responsible for landscaping the parkland surrounding the house. The library was a design by William Watson dating from shortly after 1812. Peter Inskip explains that the room was an exception within the house, as it did not feature the uniform grey and buff pattern of the rest of the interior. Instead, 'green, used on architraves and dado, was allied with grained doors, windows and skirtings, and the walls covered with a simple, but rare, wallpaper of floral motifs in silver leafs (now tarnished and black), and edged with applied verditer green painted borders.'[630] The similarities to the use of silver in the Royal Pavilion are fascinating: a silver stencilled motif on a pale ground, silver in combination with green (as found on the glazed dragons and serpents) and the presence of large surfaces of woodgraining. Only fragments of this printed wallpaper survive, and it is not known who designed or manufactured it.

Another important contemporary example of a silvered interior has even stronger links with George IV and the Royal Pavilion. In the Chinese Drawing Room and the adjoining vestibule at Temple Newsam in Leeds, silver is used in playful way and on a scale that shows similarities to the silvering in the Royal Pavilion Saloon.[631] It is found here on cornices, frames, ceiling moulding and a ceiling rose, although not on wallpaper (figs. 154 and 155). The silver decorations at Temple Newsam are slightly later (1827-28) than those in the Royal Pavilion, but there is a direct connection between the two interiors which might partly explain the similarities in the use of silver: George IV, when Prince of Wales, gave several rolls of Chinese export wallpaper to Lady Irwin of Temple Newsam, on the occasion of his first visit in 1806. The wallpaper was used many years later by Lady Irwin's daughter, Lady Hartford, with whom George had an affair. She began redecorating the Chinese Drawing Room in 1822, incorporating the wallpaper given to her mother, and added the silver element to the room.[632]

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[630] P. Inskip, 'Moggerhanger, 1808-1812', *The Georgian Group Journal*, Vol.XIV, 2004, pp.235-239.
[631] Discussed in detail by A. Wells-Cole, 'Another Look at Lady Hertford's Chinese Drawing Room', *Leeds Arts Calendar*, No. 98, 1986, pp.16-22.
[632] A. Wells-Cole, *Historic Paper Hangings from Temple Newsam and other English Houses, Temple Newsam Country House Studies No. 1* (Leeds: Leeds City Art Gallery, 1983), pp.14-15.

It is highly likely that Lady Hartford was inspired by either the recent silvered decorations at the Royal Pavilion (even if they had only been reported to her) or by earlier silver elements in the Circular Room of George's London residence Carlton House. John Cornforth believes the source of inspiration was the latter, based on the fact that the Circular Room was described in Ackermann's popular *Microcosm of London 1* in 1808 as having 'walls are entirely covered with silver'[633], but the personal connection to George IV seems just as strong an argument.

Unrelated to Temple Newsam, Cornforth identified another example of '18 pieces of fine silver paper, supplied together with matching pink and silver border by Wilsons of the Strand between 1794 and 1796 for the Best Bedroom and Dressing Room at Willersley Castle' in Derbyshire.[634] He was of the opinion that the silver paper, which does not survive, was possibly made by Eckhardts. This places it in the possible vicinity of the Royal Pavilion's Robert Jones (see chapter 3.3).

What becomes clear when considering these few surviving examples of silvered interiors is that, in Britain in the early nineteenth century, this was a refined and expensive taste and, in view of the short reflective and shimmering lifespan of unvarnished silvered surfaces, perhaps one that was only applied to interiors that were frequently re-decorated or considered temporary schemes. George IV's excitable and impulsive nature might explain the pronounced use of silvering in the Royal Pavilion. His love of gilding was well-known and he is generally associated with excess rather than restraint in interior design, so it is not surprising that he would have embraced the idea of an imaginative use of silver, either in combination with gold, or glazed with transparent colours for an iridescent effect. His well-reported rapidly-changing tastes and reckless spending habits suggest that it was in keeping with his personality to experiment with silver despite its known tendency to tarnish quickly. Furthermore the Royal Pavilion must always be seen in the context of Orientalism and Chinoiserie, for which different rules of taste applied, making the use of an unusual and problematic material more likely and desirable. It appears that both the Craces and Robert Jones

[633] Cited in: J. Cornforth, 'Picked Out in Silver', *Country Life*, August 6, 1992, pp.54-55.
[634] Ibid.

were influenced by both elements of silvering present in Chinese export ware, for example silver ware, silvered wallpaper, leather hangings or mirror paintings, and possibly silvered European Rococo interiors. The technique of applying transparent glazes over silver might have been inspired by Chinese enamel ware and is a rare example in European interiors, with the notable exception of the late Rococo Green Laquer Room in the Würzburg Residence. The combination of gilding and silvering in close proximity and on a large scale appears to be characteristic of Jones's style and reflects his particularly imaginative artistic mind.

In conclusion, the variety and the number of silvered surfaces and objects in the Royal Pavilion suggest that silver was a conspicuous and unifying element in the interior design schemes of the building. The fact that silver was used by both Robert Jones and the Craces over a long period of time also indicates that they were responding to George IV's specific instructions and tastes. Inspiration for using silver as a colour and with transparent colour glazes in the Royal Pavilion interiors may have stemmed from continental Rococo interiors, Oriental export ware, and shimmering satin or silver thread fabrics popular in fashion and soft furnishings around the same time. Combining these diverse elements is typical of the exceptional and eclectic character of the Royal Pavilion's decorative schemes, making the building an extremely rare example of silvered interiors of the early nineteenth century.

Conclusion

The main aims of this thesis were firstly, to chart and analyse the intense colour schemes of the Royal Pavilion and set it in the historical context of colour theory and pigment production, secondly, to establish to what extent personal tastes, aesthetic ideas and fashion influenced these designs, and thirdly, to identify the colours, colour terminology and pigments used and analysed in the Royal Pavilion's decorative schemes.

The thesis has addressed the complexities of researching an historic interior which was, at one point, almost entirely lost, and of which only very few original surfaces survive, by discussing its appearance at various stages: as it is displayed and experienced by an early twenty-first century visitor, how it developed chronologically, and how it appeared to visitors in the time of George IV and shortly after. The latter approach included the collection and analysis of descriptions of the interiors found in early guidebooks or visitors' accounts, which provided valuable insights into the effect the opulent schemes had on visitors, and how the reaction to the interiors may have reflected changing tastes and attitudes to Orientalism.

The richly ornamented and multi-coloured decorative scheme of the Royal Pavilion was a highly individual and late expression of Chinoiserie and Orientalism, and as such was without direct followers. However, as this research has shown, George IV was clearly informed and inspired by preceding oriental structures, interiors and collections of export ware, including the buildings designed by William Chambers and others for Kew Gardens, and also by his mother's interest in Chinese porcelain and other export ware. While early Chinoiserie interiors in George IV's London residence, Carlton House, were still embedded in a Neo-classical style, other Chinoiserie interiors, introduced by his mother at Buckingham House and his sisters at Frogmore, are representative of a more colourful take on Chinoiserie, with lacquer panelling and painting in imitation of lacquer, usually with one dominant colour in each room. The various Chinoiserie interiors created at the Royal Pavilion from c. 1802 onwards were

yet another manifestation of this style, replacing lacquer panelled wall decoration of a dominant colour with much bolder, brighter and more complex themes, in which block-printed or hand-painted wallpaper, Chinese export paintings and an abundance of ornamental objects were key elements.

The thesis argues that the building's interiors can also be seen in the wider context of colour literature and advances in pigment and paint production. The creation of the Royal Pavilion coincided with a great surge in publications on colour and the application of colour theory to many disciplines and art forms. Apart from a desire to understand colour scientifically, which had been a primary concern of eighteenth century scholars, ideas about the harmonious combination of colours became a focus of colour literature in the late eighteenth century. By the early nineteenth century these aesthetic ideas of colour harmony had been extended to concepts of colour perception, the effect of colour on the viewer and, eventually, how colours could represent, symbolise, or even affect moods. As this thesis has shown, in the time frame covered here colour theory was a subject that was considered inter-disciplinary and there was a lively exchange between English, German and French colour researchers, with a number of books published in bi-lingual editions and others quickly translated. The thesis has sought to give a picture of the intellectual landscape of colour studies by focussing on a number of key figures, such as Moses Harris, Johann Wolfgang von Goethe, Mary Gartside and George Field. Of these, Gartside has never been discussed and researched in detail before.

The thesis has further established that there is some circumstantial and archival evidence that George IV and other members of the Royal Family, as well as some of his designers and artists, were well informed about and showed an interest in early nineteenth century writings on colour and colour theory. A number of the publications and authors discussed in the context of colour literature are known to have been in the libraries of George III, Queen Charlotte and George IV's sisters. Circumstantial evidence also suggests that the work of George Field was known to Robert Jones and possibly the Craces.

The use and effect of colour in architecture played an increasingly significant part in literature on house-painting and the arts in general in the period discussed here, and it is likely that the designers of the Royal Pavilion, and perhaps George IV himself, consciously or sub-consciously incorporated new attitudes to colour in their designs or design ideas. The thesis has discussed this through analysis of the particular styles of George IV's principal designers, Robert Jones and the Crace firm, and the language used to describe colours and techniques in their account books. To date Jones's work has not been the subject of any scholarly publication, partly because so little biographical material has survived. The thesis aimed to bring together for the first time the most relevant available information on Jones and glean information about his painting techniques by close scrutiny of his account books. The thesis has also established that later members of the Crace firm had a particular interest in colour theory and its application to the decorative arts and interior design, as expressed in a number of relevant publications and lectures. Although these surviving publications were the work of later Craces, it can be assumed that they reflect an interest on the part of the Crace firm in general.

The high theatricality of the building reflects its creator George IV and the main purpose of the building, which was the entertainment of guests. However, theatricality, high ornamentation and the use of clear, primary tints in combination with gilding, silvering and dramatic lighting, do not collectively mean the design schemes were not subtle. Rather, the interiors were, as Dinkel put it, 'carefully stage managed'[635] and aimed to influence the mood of guests and visitors. By considering the colour layout of the entire building, this research has revealed that the colour schemes appear to be following a carefully planned overall pattern, introducing colour and exotic ornament gradually, with intensifying hues, saturation and colour combinations the further you move into the building. Colour schemes were clearly applied to enhance or even create certain moods and to reflect the purpose of each room, with the strongest and most lavish colour schemes in the Banqueting Room, the

[635] Dinkel, *Pavilion*, p.93.

Music Room and the Saloon. In this context, the thesis also established the close involvement of George IV in the design and execution of the interiors, by examining relevant account entries, sketches and letters.

As this thesis has demonstrated, the Royal Pavilion can be considered a multi-sensory experience, in which colour, light and reflective surfaces were major visual elements, which were experience in combination with olfactory and auditory stimulation. The interiors of the Royal Pavilion provided not just a visual spectacle but were also perfumed and heated by means of underfloor heating. Guests were offered large quantites of food and wine, often accompanied or followed by musical perfomances and dancing. The Royal Pavilion in its last design scheme of c.1823 was an example of a comprehensive 'en suite' and unified scheme, as advocated and advertised by many publications on fashion, house-painting and interior design of the time. This principle of interior design was even recognised by Richard Sickelmore in an early guidebook to Brighton, in which he praises the 'close alliance' of the rooms of the Royal Pavilion, which create 'a species of glowing perfection as a whole.'[636] Colour played perhaps the most significant part in creating an interior that was to be experienced in a particular sequence and that reflected the entertainment aspect of its function. In cultural and art-historical terms this attention to sensory experience and moods could be interpreted as a reaction to Enlightenment ideas and ideals, perhaps as a Romantic attitude to colour and its use in interior design. The execution of the interiors coincides roughly with the establishment of interior decoration and design as a separate and respected art form, introduced by Thomas Hope's publication *Household Furniture and Interior Decoration* from 1807*,* and developed by a number of his contemporaries, in particular David Ramsay Hay, who applied colour theory to concepts of interior design and the chromatic layout of buildings in the late 1820s. While the specific colour schemes proposed by Hay do not correspond to those in the Royal Pavilion, the guiding principles of Hay's writing do: the colours and decorations of an interior should be balanced and harmonised, and display a unity, while each room should also reflect its purpose, its role within the greater context of the interior,

[636] Sickelmore, *History*, p.31.

and its owner's tastes. Here a building becomes a complete work of art, and consequently rules about harmonious composition laid out in painter's manuals and colour theories were applied to the decoration and colouring of interiors and exteriors, often extending to the surrounding gardens, as is evident in Humphry Repton's interpretation of colour theory. The thesis has discussed Repton's interest in colour theory as an example of the application of colour theory to other art forms, such as landscape gardening and architecture. Repton was directly involved in designs for the Royal Pavilion and thus might well have been influenced by the early Crace Chinoiserie designs and use of coloured light evident in the building from 1802 onward.

The thesis has compiled information about colours, finishes, materials and colour terminology used in contemporary accounts and an early inventory (Appendix 2). It has further provided a detailed account on the pigments that have so far been analysed in the Royal Pavilion and put them into an historical context (Appendix 3): cochineal carmine red, vermilion red, chrome yellow, Turner's patent yellow, Prussian blue, blue verditer, verdigris, calcium carbonate white and zinc white. This element of the thesis was greatly informed by scientific research carried out by the conservation department of the Royal Pavilion, while two pigments (a cochineal carmine lake and verdigris) were only recently confirmed and identified as part of the preparations for the 2013 *Regency Colour and Beyond 1785 - 1850* display at the Royal Pavilion, curated by Janet Brough and myself. The display itself, the accompanying exhibition guide[637] and Appendices 2 and 3 can be considered direct research output from this thesis.

The thesis has further contributed significantly to research in the field of interior decoration by recording and analysing the conspicuous use of silver on decorative surfaces in the Royal Pavilion. While silver played an important part in Chinese export ware, fashion and many Rococo interiors in France and Germany, silvered interiors were remarkably rare in Britain. The penchant for silvered surfaces, often in combination with gold and transparent coloured glazes, reflects George IV's experimental tastes and his designers' creativity and craftsmanship. This thesis has set

[637] Loske, *Regency Colour*.

this unusual design element in the context of silvering in interior design in general, by comparing it to earlier as well as contemporary examples in Britain and Europe.

To conclude, the decorative scheme and the use of colour in the Royal Pavilion are highly unusual and an expression of George IV's individual character and taste, but at the same time also a reflection of the fashions, intellectual discussion of colour and colour theory, and advancements in pigment production in the eighteenth and early nineteenth century. The extremely bold colour schemes and the overall exuberance and densely ornamented interiors were very much influenced and inspired by Chinese export ware. George IV's financial and creative freedom partly explains the experimental and large scale use of relatively new pigments in high saturation, for example Prussian blue, Turner's patent yellow and, most importantly, the recently developed and marketed chrome yellow. The interplay and interdependency of highly saturated colours and reflective surface finishes are other dominant features of the building's interiors and were created by using a variety of painting techniques, such as multi-layering of paint (for example transparent carmine red over vermilion), woodgraining, marbling, trompe l'oeil effects and the gilding and silvering of large surface areas. Experimental and lavish lighting, which included stained glass being lit from the outside by means of early gas lights, added to the overall shimmering and sparkling appearance of the interiors.

Academic research following on from this thesis might focus on further scientific pigment analysis of the decorations of the Royal Pavilion, including the comparison of pigments used in British decoration and Chinese export ware, such as wallpaper, export paintings and three-dimensional objects. Closer examination, as well as transcription of the *Brighton: Accompts* manuscript and the *Robson and Hale Accounts*, could further add to the understanding of the complexity of the interior design schemes of the Royal Pavilion, especially the little researched interiors of the New North Building.

Of particular interest is the further investigation of silvered interiors in Europe and beyond. It would be highly desirable to research these with regard to technique and frequency of occurrence, and to identify other lost and surviving examples.

Further research into the work of Robert Jones is also highly desirable, but it appears that at this point in time no other primary sources can be linked with certainty to the Royal Pavilion's Jones. However, ongoing digitising and cataloguing activities of libraries and archives might reveal fresh material in the future.

Also worthy of research is the connection between colour literature, print culture, interior design and the decorative arts in general in the period after 1830, by establishing how ideas first formulated in the early nineteenth century were developed further in the Victorian age. Here the focus should be on writers who were born in the Georgian period but worked and published mostly in the mid-nineteenth century, such as Field, Hay, Merrifield, Burnet and Chevreul.

Finally, the notable absence of women writers and artists publishing on colour until well into the twentieth century is of particular interest. The success stories of Gartside and Merrifield might therefore warrant closer examination, together with the identification of other female writers on colour and colour theory in the eighteenth and nineteenth centuries. The case of Merrifield is particularly interesting, since she was Brighton-based for most of her life and involved with the development of museum collections there, as well as having contacts at the National Gallery.

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Colour in the Regency Period

Identification of Regency pigments

used in the original decorations of the Royal Pavilion

Appendix 1

A major restoration of the first floor of the Royal Pavilion was carried out from the late 1970s until the mid-1990s. The intention behind the restoration was to present the entire building as a complete Regency design, as George IV, his architect and his designers intended.

The restoration was carried out alongside major repairs to the fabric of the building, during which fragments of original decoration were found in situ. These, along with stored original items, were sampled so that the pigments used could be identified. This was done not only to inform the restoration process, but to increase our knowledge and understanding of Regency decorative painting practice.

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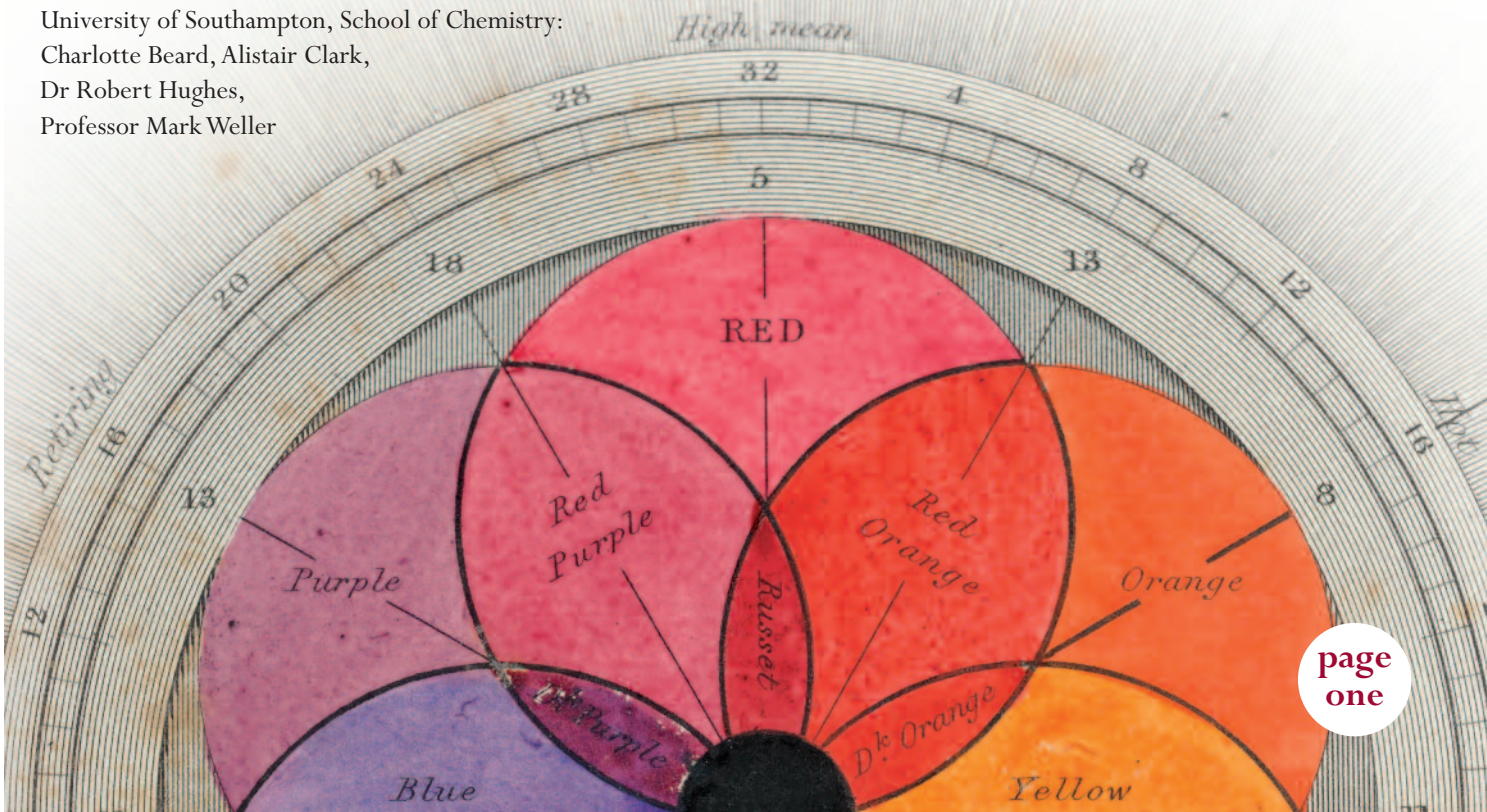
The following table is a record of the pigments that have been discovered in the Royal Pavilion. It details the objects that have been analysed and the methods used.

This material has been written and compiled by Janet Brough, Paintings Conservator, Royal Pavilion & Museums, July 2013.

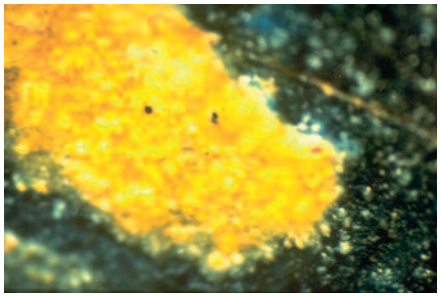
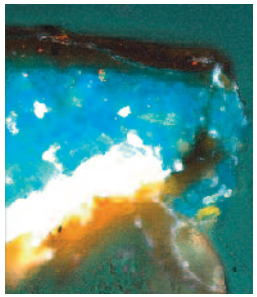
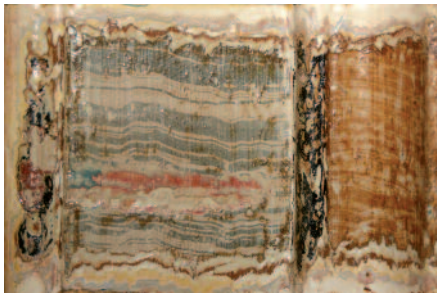


Frontispiece from George Field's 'Chromatography', London, 1841
Hand-coloured copper-plate etching
Collection Alexandra Loske
Photograph by Jim Pike, 2013, for the Royal Pavilion

page one

Colour	Object sampled, date of manufacture, and original location	Image of object	Analysis method, acknowledgements, sample identification	Further examples with similar pigment characteristics
Red transparent (Carmine) *Cochineal*	Fragment of original canvas border to murals, c.1820, Banqueting Room		High performance liquid chromatography (HPLC) by Dr David Peggie, National Gallery Scientific Department (report no. 070213) 2013. Also Scanning Electron Microscope (SEM) by Alistair Clark, University of Southampton (sample no. 1) 2006	Pigments with similar characteristics have been found in many other items, as in the Music Room murals, over silver in the Banqueting Room bells and high level ornaments, and in the lilac shadow of the Saloon wallpaper
Red opaque (Vermilion) *Mercuric sulphide*	Red spot of crown, c.1815, North Gallery		Visible and polarised light microscopy by Janet Brough, Royal Pavilion & Museums Conservation Department 1989	Pigments with similar characteristics have been found in original paper from the Red Drawing Room, the Music Room murals, the South Gallery Kylins, the pink colouring in the Saloon wallpaper, and many other items
Yellow (Chrome Yellow) *Lead chromate*	Fragment of yellow dragon paper, c.1820, Bow Rooms		Allyson McDermott c.1987	Pigments with similar characteristics have been found in other items, as in the yellow areas of the Music Room murals
Yellow (Chrome Yellow) *Lead chromate*	North window bead, c.1820, North Bow Room		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart (slide no. 2) 1989. Also scanning Electron Microscope with X Ray Diffraction (SEM/XRD) by Ashok Roy, National Gallery Scientific Department 1996	

page two

Colour	Object sampled, date of manufacture, and original location	Image of object	Analysis method, acknowledgements, sample identification	Further examples with similar pigment characteristics
Yellow (Turner's Patent Yellow) *Lead oxychloride*	Yellow under blue bamboo border in painted canvas decorations, c.1815, North Galleries		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart (North Gallery no. 2) 1989	
Yellow (Turner's Patent Yellow) *Lead oxychloride*	Yellow scales on Kylin, c.1815, South Galleries		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart (South Gallery no. 3) 1989. Also SEM/XRD by Ashok Roy, National Gallery Scientific Department 1996	
Blue (Blue Verditer) *Copper carbonate*	Kylin, c.1815, South Galleries	 	Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart 1989	Pigments with similar characteristics have been found in many other items, as in the South Gallery columns and marbled bases and the sky ceilings in the Saloon
Blue (Blue Verditer) *Copper carbonate*	Architrave of door, c.1815 (painted blue lines on second layer of pink tea wood graining), Bow Rooms		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and SEM/XRD by English Heritage (Bow/Ar/1) 1992	

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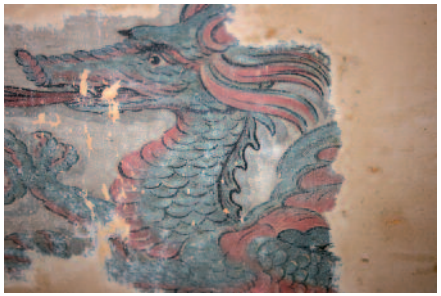
Colour	Object sampled, date of manufacture, and original location	Image of object	Analysis method, acknowledgements, sample identification	Further examples with similar pigment characteristics
Blue (Blue Verditer) *Copper carbonate*	Blue distemper wallpaper fragment (L-shaped section), c.1815, South Galleries		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart (South Gallery no. 1) 1989	
Blue (Prussian Blue) *Ferric ferrocyanide or similar compound*	Painted canvas decorations, dragon, c.1815, North Gallery		Visible and polarised light microscopy, Janet Brough, Royal Pavilion & Museums Conservation Department, and Peter Mactaggart (North Gallery no. 4) 1989	Pigments with similar characteristics have been found in many other items, as in the blue areas of the Music Room murals, South Gallery columns and bases, and in the Saloon wallpaper
Blue (Prussian Blue) *Ferric ferrocyanide or similar compound*	Fragment of silver and blue wallpaper, probably original, c.1817, Banqueting Room		SEM/XRD by Alistair Clark and Charlotte Beard, Southampton University School of Chemistry (07/BR/02 no. 2) 2006	
Green opaque (copper based, possibly Green Verditer)	Dado paper green, c.1820, Kings Apartments		SEM/XRD by Alistair Clark and Charlotte Beard, Southampton University School of Chemistry (07/KA/01 no. 4) 2006	

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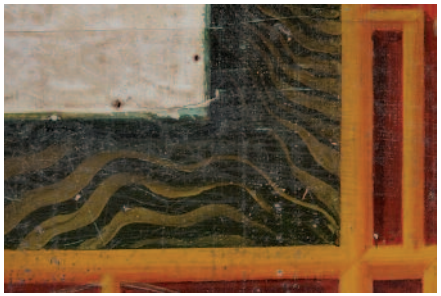
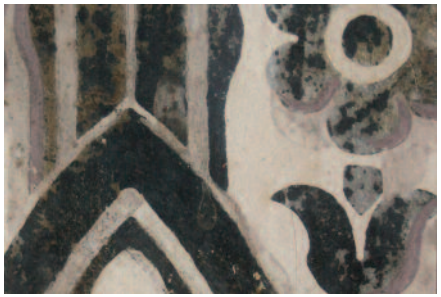
Colour	Object sampled, date of manufacture, and original location	Image of object	Analysis method, acknowledgements, sample identification
Green transparent (Verdigris) *Copper acetate*	Dragon claw green over silver, c.1815, original location not known		Fourier transform infrared spectroscopy (FTIR), SEM/EDX. Gas chromatography and mass spectrometry (GCMS) established that the medium included sandarac, by Rachel Morrison, National Gallery Scientific Department (nos. 1 and 2) 2013
Green transparent (weakly diffracting, possibly a dye)	Hand-painted dragon wallpaper, transparent green border to export oils, c.1820, Red Drawing Room		SEM by Alistair Clark, Southampton University School of Chemistry (no. 1) 2006
White (Whiting) *Calcium carbonate,* not of shell origin	Fragment of original silver and white wallpaper, c.1820, from under the papier mâché architrave, west side, north door, Saloon		Light and polarised light microscopy; Catherine Hassall (report no. A950, sample nos. 12.5.01; 12.5.02; 12.5.03) 2012 and Jon Latham, Royal Pavilion & Museums Conservation Department
White (zinc white) *Zinc oxide*	Dado paper, mixed with green, c.1820, Kings Apartments		SEM/XRD by Alistair Clark and Charlotte Beard, Southampton University School of Chemistry 2006

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Appendix 2

Colours, pigments, finishes and materials mentioned in the Crace Ledger*, the* Robert Jones Accounts *and the* Royal Pavilion Inventory from c.1828.

Compiled by Alexandra Loske in 2013

Crace Ledger. Typescript copy of ledger entries from the books of Messrs Crace & Sons. Royal Pavilion 1802 to 1822.

Royal Pavilion Inventory, c. 1828. Manuscript. The Royal Pavilion Archives.

Robert Jones Accounts 1821 - 1823. Manuscript. Public Records Office, The National Archives.

Colours and pigments	**Crace Ledger 1802-1822**	**Robert Jones Accounts 1821 - 1823**	**Royal Pavilion Inventory, c. 1828**
A-chromatic, or 'common' colours			
black	39	-	316
white	111	3	324
Of which 'flake white'	9	-	-
drab	-	-	90
stone (colour)	-	-	5
grey	37	2	23
buff	2	-	150
brown (chocolate)	11	-	141
Reds (incl. purple and pink)			
red	159	1	844
Of which "Chinese red"	3	-	
crimson	8	-	116
carmine	4	2	
(Chinese) vermillion/vermilion	4	4	
scarlet	15	-	
plum coloured	-	-	4
purple	16	2	16
pink	66	-	19
peach blossom	3	-	

Blues (incl. lilac)			
blue	154	2	376
of which “dark blue”		1	9
of which “light blue”		-	1
of which “jasper blue”	-	-	7
verditer (blue)	-	-	
ultramarine	1	-	-
sky colour / sky color	30	-	
lilac	16	-	23
Greens			
Green	68	7	403
of which verdegrease / verdigrease	5	-	-
of which “sea green”	-	-	61
of which “dark green”	-	2	
of which “light/bright green”	-	3	
Turquoise	-	-	22
Verditer (green)	-	-	
“green mineral (tints)”		3	
Yellows (incl. orange)			
yellow	127	8	179
of which ‘chrome/crome yellow’	2	1	
of which “Chinese Imperial yellow”	-	1	
(Turner’s) Patent yellow	1	-	
orange	-	-	
Related colour and finish descriptions			
“party coloured” and “partly coloured”	-	-	5
“proper colors”	15	-	
“shadow/shadows/shadowed”	89	5	
“varied/different tints”	-	4	
“relieve(d)/relief colours/tints”		11	
“various coloured golds” and “gold of varied hues”		4	
“(highly) varnished” and “varnishing”	228	32	
“appropriate tints/colours”		1	
“chiaro scuro”		1	

Materials and finishes			
bamboo (incl. imitation of)	82	10	208
beech (incl. beach)	-	-	
brass	-	-	749
bronze	4	1	45
of which “bronzed”	1	-	16
chintz	-	-	122
ebony	-	-	38
enamel (incl. “enameled”)	18	6	109
“gilt/gilding”	5	13	193
gold	37	16	283
Of which “gold coloured”	-	-	15
iron	17	-	366
ivory (including imitation of)	3	4	21
japan / japanned	28	9	55
Of which “red japan(ned)”	-	-	10
Of which “black japan(ned)”	4	-	23
lacquer, incl. “lacquered”	-	-	16
lapis lazuli / lapis lazula (imitation of, not pigment)	3	-	4
marble	57	3	168
mahogany	1	-	677
metal tinted	-	-	1
ormolu/Or molu	-	3	353
pearl (incl. imitation of)	-	5	
rosewood	11	-	97
satin	-	-	13
satin wood	12	-	48
silk	2	1	309
silver	5	6	43
silvered/silvering/ silver gilding	6	6	24
steel	1	-	92
velvet	-	-	41
Vert antique	-	-	4

Appendix 3

Alexandra Loske

'Carmine, Lake, Vermillion, Crome, Yellow and other expensive* colours': *Pigments analysed and identified in the Royal Pavilion and their historical context.

This document charts the use and distribution of specific pigments that have so far been analysed and identified in the Royal Pavilion: cochineal carmine red, vermilion red, chrome yellow, Turner's Patent yellow, Prussian blue, blue verditer, verdigris, calcium carbonate white and zinc white. This document was compiled by Alexandra Loske in preparation for the *Regency Colour and Beyond 1785 - 1845* display at the Royal Pavilion in 2013[1], which presented some of the research output of Loske's doctoral thesis *The Decorative Scheme of the Royal Pavilion, Brighton: The Prince of Wales' Design Ideas in the Context of European Colour Theory, 1765 - 1845* (University of Sussex, 2014). The images referred to in this appendix are included in the volume of images for the doctoral thesis.

For the *Regency Colour and Beyond* display Janet Brough put together a concise document with technical and scientific details regarding pigment analysis in the Royal Pavilion (see Appendix 2).[2] While this document will refer to Brough's list of pigments, it will also discuss these pigments in an historical context. It will refer predominantly to George Field, T. H. Vanherman and Nathaniel Whittock as historical sources, while the main points of reference in contemporary literature are Ian C. Bristow, Jo Kirby and R. D. Harley.

A number of pigments used in the Royal Pavilion decorations have been analysed over the course of the last forty years. Two of these were identified in 2013 in preparation for the *Regency Colour and Beyond* display. Many other pigments,

[1] *Regency Colour and Beyond 1785–1850* (The Royal Pavilion, Brighton, 15 June to 13 October 2013) http://www.brighton-hove-rpml.org.uk/WhatsOn/Pages/RPRegencyColourandBeyond15junto13oct2013.aspx

[2] J. Brough, *Colour in the Regency. Identification of Regency Pigments Used in the Original Decorations of the Royal Pavilion* (Brighton: The Royal Pavilion, 2013). http://www.brighton-hove-rpml.org.uk/ [Appendix 2].

specifically mixtures and colours appearing in complex applications, remain to be analysed.

The pigments have been analysed using a variety of methods: high performance liquid chromatography (HPLC); visible and polarised light microscopy (VPM), which identifies inorganic pigments by observing their unique crystalline structure under polarised light; using a scanning electron microscope that can identify chemical elements in paint samples via (SEM/EDX); Fourier-transform infra-red spectroscopy (FTIR), which identifies classes of materials; X-ray diffraction (XRD), which can positively identify crystalline materials; and gas chromatography-mass spectrometry (GCMS), an analytical method of forensic substance identification.

All of the paint samples analysed come from European paint surfaces, although Brough has carried out a number of tests on pigments used in the Royal Pavilion's Chinese export oil paintings and the export wallpaper still in its original location in the Adelaide Corridor. Brough identified a limited palette on all the export paintings, comprising vermilion (in large quantities), a red lake, Prussian blue or indigo, orpiment, an unspecified organic yellow, and possibly verdigris.[3] Considerable scientific research into the pigments used in Chinese export paintings and pigment trade with China is currently being carried out as part the AHRC funded project *Culture and Trade Through the Prism of Technical Art History - A Study of Chinese Export Paintings* at Nottingham Trent University[4].

Whites: calcium carbonate white and zinc white.

Of the non-chromatic colours two whites have been identified in the Royal Pavilion: calcium carbonate white and zinc white. Calcium carbonate white, or whiting, not of shell origin, was identified by Royal Pavilion conservator Jon Latham and

[3] J. Brough, 'Chinese Export Oils at the Royal Pavilion', p.16. *The Picture Restorer.* No.7, Spring 1995, pp. 14-17.
[4] *Culture and Trade through the Prism of Technical Art History - A Study of Chinese Export Painting*, AHRC, Science and Heritage Programme, (1 February 2013 – 31 January 2014) http://www.ntu.ac.uk/apps/research/groups/22/home.aspx/project/144043

Catherine Hassall in 2012, using light and polarised light microscopy. The sample analysed was a piece of the wallpaper from Jones's 1822/3 Saloon scheme (fig. 30). It is noteworthy that this naturally occurring and very common chalk pigment was found to contain small traces of vermilion[5], presumably to give it a slight pinkish appearance.

Zinc white, or zinc oxide, was identified on a piece of green dado paper from the King's Apartments by Alistair Clark and Charlotte Beard of Southampton University in 2006, using SEM and XRD. By the eighteenth century zinc white may have been being produced in Europe for several centuries, but its exact history and origin are not well recorded. It was, however, advertised in England as an alternative to poisonous lead white from around 1794, when a patent was taken out by a colour maker from Liverpool, but the pigment appears to have met with suspicion from artists and decorators. In 1834 Rudolph Ackermann began selling it as a watercolour under the new name of 'Chinese white'.[6] In the sample analysed in the Royal Pavilion zinc white served as a ground pigment for creating a green tint, and was probably mixed with a combination of Prussian blue and chrome or Patent yellow.

Reds: vermilion and carmine

Two types of red pigment, both named in the *Crace Ledger*[7] and the *Robert Jones Accounts*[8], have been identified in the Royal Pavilion decorations: transparent cochineal-based carmine and opaque vermilion. Vermilion is mentioned in the *Crace Ledger* from as early as the end of 1802: 'Materials used consisting of fine colors for the Patterns of Rose wood Vermillion purple brown yellow Lake Best Lake Pattent yellow and other expensive colors'[9] and carmine from 1818: 'materials used from the

[5] Ibid., p.2.
[6] R.D. Harley, *Artists' Pigments c.1600-1835. A Study in English Documentary Sources* (London: Archetype Publications Ltd, 2001), pp.176-180.
[7] *Crace Ledger.* Transcript of copies of ledger entries from the books of Messrs Crace & Sons, during the time spent in the Pavilion 1802-04, 1815-1819, and 1820-23. The Royal Pavilion Archives.
[8] *Robert Jones Accounts 1821 - 1823*. Manuscript. The National Archives: Lord Chamberlain's Department: Bill Books, Series IV.
[9] *Crace Ledger*, entry for 5 October to 23 December 1802, p.6.

6th January to the 24th. Carmine, Lake, Vermillion, Crome, Yellow and other expensive colours.'[10]

These two reds in combination are described by Robert Jones in the context of creating a lacquer-like effect, with the transparent carmine being applied over a ground of opaque vermilion: 'Repairing, Retouching and Varnishing on different parts of the Whole; Painting with Chinese Vermilion, and finishing with Rich Carmine Lake the ground'.[11] Giving wallpaper the appearance of red lacquer furniture is one of the most prominent style elements of the Royal Pavilion's Chinoiserie interiors and can be found in both the Craces' and Jones's designs (figs. 99, 118, 156 and 157). It is therefore not surprising that these two red pigments were used together, with the transparent and more expensive carmine giving the rich vermilion base a reflective finish.

Vermilion is a red mercuric sulphide and thus belongs to the group of inorganic, mineral pigments. It is also occurs naturally as cinnabar and this is often used as its colour name. Harley notes that since the seventeenth century the term vermilion was used more frequently.[12] Mercuric sulphide occurs naturally as a crystal structure, but production of the actual pigment is messy and difficult, meaning it is unlikely that English artists of the early nineteenth century would have produced their own vermilion. According to Harley, vermilion has been manufactured in Europe since the early Middle Ages, but by the eighteenth century English vermilion had developed a bad reputation, partly because of common adulteration with red lead.[13] Good vermilion was then imported from Holland and China. Chinese vermilion was considered to be of particularly high quality.[14] Vermilion is also frequently used as a colour-name for highly saturated reds and purples.

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[10] Ibid., entry for January 1818, p.6.
[11] *Robert Jones Accounts*, entry for 5 April 1822, p.8.
[12] Harley, *Pigments*, p.125-128.
[13] Ibid., and I. C. Bristow., *Interior House-Painting: Colours and Technology 1615-1840* (New Haven, CT: Yale University Press for the Paul Mellon Centre for Studies in British Art, 1996), p.49.
[14] Harley, *Pigments*, p.125-128.

Vermilion was identified by Brough and the Royal Pavilion conservation team in 1989 by means of visible and polarised light microscopy in painted wooden ornaments from the North and South Galleries. Pigments with similar characteristics have been found in the Craces' Music Room wall paintings and in fragments of the original hand-painted wallpaper from the Red Drawing Room (fig. 156), as well as recently, in very small quantities in the white background of Jones's silvered wallpaper in the Saloon (fig. 30). Whereas in most applications vermilion was clearly used for its vibrancy and in high saturation, in the case of the Saloon wallpaper it was added to the white paint to add the faintest glow of pink to the white background, perhaps to avoid the effect of an overly bright and unbroken white.

In the 1820s Vanherman praised this ancient pigment, especially the authentic Chinese variety that Jones might have used, and recommends it as an interior colour, but advises against excessive use: 'Vermillion, when genuine, is a beautiful warm colour, and a very useful one in house-painting, and adds brilliancy to all other reds. It is a powerful colour, and should be used with caution. […] The Chinese vermillion, if genuine, is to be preferred.'[15]

George Field, too, noted that the best variety comes from China, but that good alternatives can be sourced from many western European areas, as well as from South America. He further stated that 'Chinese vermilion is of a cooler or more crimson tone than that generally manufactured from factitious cinnabar in England, Holland, and different parts of Europe.'[16] Dispelling myths about the pigment's unstable nature he announced:

> We therefore repeat, that neither light, time, nor foul air, effect sensible change in true vermilions, and that they may be used safely in either water, oil, or fresco, — being colours of great chemical permanence, unaffected by other pigments, and among the least

[15] T. H. Vanherman, *Every Man his Own House-painter and Colourman, the Whole Forming a Complete System for the Amelioration of the Noxious Quality of Common Paint; a Number of Invaluable Inventions, Discoveries and Improvements, and a Variety of Other Particulars that Relate to the House-painting in General* (London: I. F. Setchel; Simpkin and Marshall; and J. Booth, 1829), p.27.
[16] G. Field, *Chromatography, or, A Treatise on Colours and Pigments, and of their Powers in Painting, & c.* (London: Tilt and Bogue, Fleet Street, 1835), pp.93-94.

> soluble of chemical substances. Good vermilion is a powerful vivid colour of great body, weight, and opacity.[17]

Carmine is an organic pigment, extracted from dried cochineal (*dacylopious coccus*), a scale-insect indigenous to South America and found as a parasite on cacti. There are European varieties of carmine, extracted from the kermes insect (*kermes vermillio, kermes palestinensis*) found in the Mediterranean area. Cochineal insects have also been found in Poland and the West Indies. The pigment is produced by means of the boiling of the dried insects, filtering and precipitation, and has probably been used for at least 1000 years. Trade in Mexican cochineal (as raw material or pigment) began on a serious scale in the seventeenth century, after the Spanish conquest of Mexico. According to Jeremy Baskes, the Mexican cochineal industry reached maturity in the eighteenth century, peaking in 1774, when more than 1.5 million pounds were produced in Mexico (see figs. 158 a and b) and exported to Europe, making it Mexico's most valuable export, apart from silver.[18] Carmine has mostly been used as a textile dye, but is also found in oil and watercolour. Because the pigment fades quickly once exposed to light, it was often combined with other pigments.[19] This could be another reason for its presence in the Royal Pavilion in combination with vermilion. Bristow notes how surprising it is that carmine was used in house-painting, despite its high price, and explains that 'its primary employment in house-painting would have been in the production of pinks and such tints as lavender or French grey, where only small quantities were required to produce the desired blush.'[20] In view of this, it would be extremely desirable to analyse the lavender and grey paint surfaces found in great quantities in hand-painted and block-printed wallpaper. Since carmine is transparent, it was frequently used as a finishing glaze over other colours or materials.

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[17] Ibid.
[18] J. Baskes, 'Seeking Red: The Production and Trade of Cochineal Dye in Oaxaca, Mexico, 1750–1821,' in A. Feeser et al (eds.), *The Materiality of Color: The Production, Circulation, and Application of Dyes and Pigments, 1400-1800* (Farnham, UK & Burlington, USA: Ashgate, 2013), pp.101-117.
[19] Harley, *Pigments*, p.138.
[20] Bristow, *House-painting*, pp.53-54.

Field had a particular interest in lake pigments and carried out many tests on carmine. He praised the richness and beauty of carmine reds but noticed their susceptibility to fading through exposure to light:

> These carmines are the brightest and most beautiful colours prepared from cochineal, — of a fine powdery texture and velvety richness. They vary from a rose colour to a warm red; work admirably; and are in other respects, except the most essential — the want of durability, excellent pigments in water and oil: — they have not, however, any permanence in tint with white lead, and in glazing are soon discoloured and destroyed by the action of light, but are little affected by impure air.[21]

Carmine was first identified in the Royal Pavilion in 2006 by Alistair Clark from the University of Southampton using an SEM, and again as a lake pigment in 2013 via HPLC by Dr David Peggie at the National Gallery.[22] The samples for this latest analysis came from the decorated canvas border surrounding Jones's murals in the Banqueting Room (fig. 26), while pigments from other locations, such as the red background colour of the Music Room murals, show similar characteristics but have not been analysed. The saturation, colouring and surface finish of the fragment of Jones's hand-painted Red Drawing Room paper, together with Jones's own reference to carmine, suggests that carmine was used here, too. A likely further use of carmine red is as a transparent glaze over silver on the carved bells at high level in the Banqueting Room (fig. 140), as established by Brough by means of high-magnification photography (fig. 141). This also suggests the use of carmine as a glaze on other silvered or gilt ornaments, such as the multi-coloured glaze of the dragon at the top of the dragon chandelier (fig. 142) and silvered serpents and snakes at high level in the Music Room. A cross section from the Banqueting Room dragon, photographed by Brough and Mactaggert in 1989, indeed shows a layer of red paint that could be interpreted as a carmine glaze (fig. 148).

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[21] Field, *Chromatography*, pp.100-101.
[22] D. Peggie, *Report: Analysis of Lake Pigments.* Unpublished document. (London: National Gallery Scientific Department, March 2013).

Blues: Prussian blue and blue verditer

Two types of blue pigment have been identified in the building: Prussian blue and blue verditer. Neither pigment is mentioned by name in the *Crace Ledger* or *Robert Jones Accounts*. In fact, blues are mostly generically described as blue, and sometimes as 'sky blue', the latter mostly in the context of cloud ceilings (see Appendix 1).

Prussian blue is often considered one of the milestones in colour history, since it was considered the first 'modern' pigment. It is a ferric ferrocyanid and was, reportedly, discovered by chance between 1704 and 1707, when the alchemist Konrad Dippel and chemist and colourman Heinrich Diesbach, intending to produce a red cochineal-based pigment, used leftover potash that was contaminated with animal matter. When attempting to concentrate this, it turned a deep blue colour. The exact recipe of the pigment and its production methods were kept secret until 1724, but by the later 1720s the pigment had become widely available in Europe. An account of Prussian blue was published in England by the chemist John Woodward in 1726. [23] From then on it was used in painting and as an architectural colour, for example in the production of block-printed wallpaper.

An intense, deep colour, Prussian blue was a good alternative to the expensive mineral pigment ultramarine, derived from lapis lazuli sourced from remote caves in Afghanistan. Indeed, ultramarine is only mentioned once in any contemporary accounts relating to the interiors of the Royal Pavilion, and in this case not as an architectural colour but on a decorative object, a 'large clock' in the Music Room. The Craces charged £14 for 'Painting rock work to a large clock ultramarine and blue' in 1820.[24] Prussian blue, however, was used for both opaque and transparent blue finishes on many surfaces in the Royal Pavilion, and probably also in mixtures of blue and yellow to produce green tints.

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[23] Harley, *Pigments*, p.138.

[24] *Crace Ledger*, entry for 1820, p.117. The 'large clock' referred to here is most probably the 'Rock Clock' designed by Benjamin Lewis Vulliamy (1780-1854) and Antoine Sebastian Slodtz (1655-1726), now in the Royal Collection (RCIN 2770).

In the Royal Pavilion we see good examples of Prussian blue in distemper on the wallpaper of the Banqueting Room, an original fragment of which was included in the *Regency Colour and Beyond* display (fig. 142). Roy Bradley recorded that this original piece was discovered in c.1933. Fresh blocks were cut and the blue wallpaper now in situ was reprinted, although it is not recorded whether the pigment used was Prussian blue. The particular shade of blue was chosen by Queen Mary.[25] The original paper was block-printed on a Prussian blue ground in a darker shade of blue, with stencilled silver leaf ornament. The pigment from this wallpaper was identified in 2006 by Southampton University School of Chemistry with a SEM. As early as 1989 Peter Mactaggert and Brough identified Prussian blue on painted canvas decorations from the upper floor North Gallery via visible and polarised light microscopy. Prussian blue is also very likely to be the pigment found on the bases of columns in the North and South Galleries (fig. 159).

In 1827 Nathaniel Whittock was positive about the use of Prussian in interior decoration, and noted that it was readily available from colourmen: '[…] it is a good blue, and can be used either in water or oil: it is a transparent colour, and requires to be mixed with white lead where a body is wanted; when used in distemper colouring, it is mixed with whiting, and is usually kept ready ground by the colourmen, under the name of damp blue.'[26] George Field's comments were also positive, but he noted the pigment's liability to fading or discolouring in unfavourable circumstances:

> It is of a deep and powerful blue colour, of vast body and considerable transparency, and forms tints of much beauty with white lead, though they are by no means equal in purity and brilliancy to those of cobalt and ultramarine, nor have they the perfect durability of the latter. Notwithstanding Prussian blue lasts a long time under favourable circumstances, its tints fade by the action of strong light, and it is purpled or darkened by damp or impure air. It becomes greenish also sometimes by a development of the yellow oxide of iron.[27]

[25] Bradley, Roy, *Conservation Notes,* unpaginated typescript, c.1980s, *Royal Pavilion Restoration Files*, not accessioned.
[26] N. Whittock, *The Decorative Painters' and Glaziers' Guide* (London: Isaac Taylor Hinton: 1827), p.11.
[27] Field, *Chromatography*, pp.111-112.

Jo Kirby from the National Gallery Scientific Department has carried out extensive research into the permanence of blue pigments, specifically Prussian blue. By comparing historical sources such as Vanherman, Field and others, supported by scientific investigation of fading of Prussian blue in eighteenth century oil paintings, she concluded that 'the admixture of the pigment with a large quantity of white is a critical factor in its permanence'.[28] The high saturation of the Prussian blue found in the Royal Pavilion might therefore have contributed to its high quality.

Blue verditer, also known as mountain blue, copper blue or lime blue, was another inorganic, artificial blue first manufactured in the eighteenth century. This luminous sky blue is an artificial basic copper carbonate and was discovered as a by-product during silver refining. Like Prussian blue, it formed a good synthetic alternative to more expensive blues such as ultramarine or azurite. Kirby refers to eighteenth and nineteenth century sources that record the superior quality of blue verditer manufactured in London: 'As early as 1725, Geoffroy commented that the pigment prepared in London appeared more brilliant than that of Berlin […] One of the most significant comments, however, is made by Bouvier, writing in 1827, who described the English pigment as being of higher quality than those made elsewhere.'[29] Kirby also records that blue verditer has always been more favoured by decorators than painters in oil and watercolour, perhaps because of 'a somewhat gritty texture and greenish cast, which tended to become more pronounced with the passage of time.'[30]

Field noticed its tendency to turn greenish, particularly in oil. As with many other pigments, he blamed 'impure air' for this and recommended use in distemper, which is how it was mostly used in the Royal Pavilion:

> Blue Verditer is a blue oxide of copper, or precipitate of the nitrate of copper by lime, and is of a beautiful light blue colour. It is little

[28] J. Kirby, 'Fading and Colour Change of Prussian Blue: Occurrences and Early Reports', in: *National Gallery Technical Bulletin*, Volume 14 (London: National Gallery, 1993), p.67.
[29] Kirby, 'Fading and Colour Change', p.67.
[30] Ibid., p.63.

> affected by light; but time, damp, and impure air turn it green, and ultimately blacken it, — changes which ensue even more rapidly in oil than in water: it is therefore by no means an eligible pigment in oil, and is principally confined to distemper painting and the uses of the paper-stainer, though it has been found to stand well many years in water-colour drawings and in crayon paintings, when preserved dry.[31]

Whittock, too, noted that blue verditer 'is a useful colour in painting in distemper'.[32]

As is the case with Prussian blue, blue verditer pigment found in the Pavilion is of a very high quality. It was used lavishly in the wallpaper decorating the North and South Galleries on the upper floor and has also been found as part of the woodgraining on the architrave of a door in the Yellow Bow Rooms, suggesting it was also widely used in oil. The South Galleries were restored in 1992 and the wallpaper now in situ is a reproduction in synthetic modern blue (fig. 44), since blue verditer is now rarely used as a pigment.[33] However, some fragments survive in the Royal Pavilion wallpaper archives (figs. 46 and 47), and the image from Nash's *Views* gives a good impression of the luminous appearance of the colour (figs. 45). It was probably a deliberate move to use a bright sky blue in a space often used as a breakfast room and top-lit. Blue verditer was identified by Brough and Mctaggart in 1989 and 1992, using visible and polarised light microscopy. Some blue verditer was also identified in cross-sectional analysis of a piece of paint from a kylin figure from the South Galleries (figs. 48 and 160).

Yellows: Turner's Patent yellow and chrome yellow

The two yellows identified in the Royal Pavilion, Turner's Patent yellow and chrome yellow, are both inorganic yellows that had recently been invented and thus they reflect the inventive and experimental tastes of George IV and his designers. While yellow was a popular colour in fashion and, to an extent, in upholstery, it was

[31] Field, *Chromatography*, p.113.
[32] Whittock, *Glaziers' Guide*, p.11.
[33] See A. Sowden, 'The Restoration of the South Galleries at the Royal Pavilion', in: *The Royal Pavilion and Museums Review,* 1992, no.l, pp.1-5.

unusual and controversial to choose highly saturated yellows as dominant colours for interiors until well into the 1830s. Parissien records that the Duke of Wellington, George IV's brother, was criticised for choosing yellow wallpaper for a drawing room in Apsley House.[34] This, of course, did not deter George IV from embracing the new, intense pigment chrome yellow for entire suites of rooms in Carlton House and the Royal Pavilion. In 1998 Brough gave a paper on the use of synthetic yellows in the Royal Pavilion and pointed out the symbolic significance of yellow as the colour associated with the Emperor of China, which George IV would surely have been aware of.[35] However, Chinese colour symbolism appears not to have been one of George IV's major concerns, since yellow is not used in the rooms most associated with George IV (i.e. his private apartments and the Banqueting Room and Music Room). It is more likely that George IV simply liked the intensity of colours, pigments and surface finishes in general.

Patent yellow is a lead-based mineral pigment that was patented by James Turner (d.1808, not to be confused with the painter J.M.W. Turner) in 1781, after some controversy over who had invented it. In 1770 the Swedish chemist Carl Wilhelm Scheele had discovered a yellow pigment, chemically identical to Turner's Patent yellow, as a by-product for preparing soda. [36] Turner began marketing his pigment from 1787 onwards as a good alternative to other yellows, such as King's yellow. It is a brilliant sparkly yellow, but is not made today and was only used sparingly in the Royal Pavilion, indicating that it was difficult to produce in larger quantities, or that it had, by 1818, been superseded by chrome yellow, as Harley indeed suggests.[37]

Field noted that Patent yellow is a bright and useful pigment, like the more recent chrome yellow, but that it is prone to discolouring: 'It is a hard, ponderous, sparkling substance, of a crystalline texture and bright yellow colour; hardly inferior,

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[34] S. Parissien, *Regency Style* (London: Phaidon, 1992), p.137.
[35] J. Brough, 'Synthetic Yellow Pigments at the Royal Pavilion, Brighton, 1800 to 1822', Société de Chimie Industrielle, 16-18 September 1998, Paris. http://www.scholarshome.org.uk/mdb3/royal/paper4.htm [accessed 2009-2013], para.4.
[36] Harley, *Pigments*, p.99.
[37] Ibid., p.100.

when ground, to chromic yellow. It has an excellent body, and works well in oil and water, but is soon injured both by the sun's light and impure air; it is therefore little used, except for the common purposes of house-painting, &c'.[38] In the Royal Pavilion patent yellow was found under a blue bamboo border in painted canvas decorations from c.1815 in the North Galleries, as well as on carved ornaments, such as the scales on a Kylin from the South Galleries (fig. 160). It was identified by Brough and Mactaggart in 1989 via visible and polarised light microscopy (fig. 161), and again by Ashok Roy at the National Gallery in 1996 via SEM and XRD. 'Pattent yellow' [sic] is listed by Frederick Crace as one of the 'expensive colours' in the *Crace Ledger* in 1802[39], indicating it was used in earlier design schemes and possibly the pigment used in the pre-1818 manifestation of the Music Room Gallery as the Yellow Drawing Room (fig. 13).

Chrome yellow, or lead chromate, was another new synthetic pigment. It had been discovered in 1797 by the French chemist Louis Nicolas Vauquelin (1763-1829) and was first made available commercially in Britain by the German Dr Bollman (1769-1821) between 1814 and 1820.[40] According to Bristow, it 'must be regarded as the pigment for which the eighteenth century had been waiting.'[41] Its merit lay not just in its brilliance and stability, but in its usefulness in producing a range of greens when mixed with Prussian blue.

Field experimented with chrome yellow in as early as c.1814-15, when asked by Thomas Lawrence to test samples, possibly sourced from Italy or Paris, and he recorded his findings in the notebooks he began in 1809 (fig. 79).[42] He gave a positive verdict on all chromates of lead in *Chromatography*:

> They are distinguished by the pureness, beauty, and brilliancy of their colours, which qualities are great temptations to their use in the hands of the painter; they are not withstanding far from

[38] Field, *Chromatography*, pp.77-78.
[39] *Crace Ledger,* entry for 5 October to 23 December 1802, p.6.
[40] Harley, *Pigments*, pp.100-102.
[41] Bristow, *House-painting*, p.37.
[42] R.D. Harley, 'Field's Manuscripts: Early Nineteenth Century Colour samples and Fading Tests', in: *Studies in Conservation*, Vol. 24, No. 2 (May, 1979), pp. 75-84., p.82, and *Pigments*, p.101.

> unexceptionable pigments; — yet they have a good body, and go cordially into tint with white both in water and oil; but, used alone or in tint, they after some time lose their pure colour, and may even become black in impure air; they nevertheless resist the sun's rays during a long time.[43]

This brand-new yellow was used extensively in the Royal Pavilion almost as soon as it had become available commercially in Britain, and is thus the best example of George IV and his designers embracing newly discovered pigments. The extensive use of chrome yellow is most conspicuous in the colouring of the suite of Bow Rooms at the north-east end of the upper floor of the Royal Pavilion (figs. 40 and 41). The pigment is mentioned by name in the CL and the RJA from 1818 onwards. Frederick Crace listed it as one of the 'expensive colours' used in 1818[44] and a year later in connection with the Yellow Drawing Room (later the Music Room Gallery) (fig. 13): 'picking in the ground of the ornamental painting to walls light Chrome yellow'[45]. Jones notes the use of 'rich Yellow Crome' in repainting a page's door in the King's Apartments in 1822.[46] 'Fine yellow chrome' is also mentioned in the *Robson and Hale Accounts* in 1821[47] in relation to the Bow Room wallpaper (figs. 42 and 43), as well as the dado wallpaper in the King's Apartments: 'crome on satin green' and 'crome yellow greens'.[48] The latter entry may be documentary evidence that chrome yellow was used to produce greens, probably in combination with Prussian blue.

Bristow credits Vanherman with providing the first printed reference to the pigment in 1828.[49] In *Every Man his Own House-painter and Colourman* from 1829 he commented: 'chrome yellow surpasses every other yellow, for brilliancy, beauty, and intensity of colour, either as a full, or in its gradations when lowered with white. There are two sorts manufactured, the orange and the lemon: the first is a rich warm tint,

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[43] Field, *Chromatography*, p.77.
[44] *Crace Ledger*, entry for 1818, p.94.
[45] Ibid., entry for 1819, p.106.
[46] *Robert Jones Accounts*, entry for 20 October 1822, p.12.
[47] *Robson and Hale Accounts. Goods Delivered and Work Done by Order from the Lord Chamberlain's Office.* January 1818 – October 1823. Manuscript. The National Archives: Lord Chamberlain's Department: Bill Books, Series IV. LC11/25 XC0867 – LC11/41/XC1029, entry for 6 April 1821, LCII/31/XC/029.
[48] Ibid., entry for 5 January 1822, LCII/34/XC/939.
[49] Bristow, *House-painting*, p.38.

the latter is cool, and elegantly delicate.'[50] Given the overall warm appearance of the chrome yellow used in the Bow Rooms it is likely that the former was used here. In 1845 Hay included chrome yellow in *Nomenclature of Colours* with a pigment sample (see triangle no. 2 in fig. 89) and refers to it as 'the purest' of yellows[51].

Chrome yellow was identified by Allyson McDermott in c.1987 on a fragment of yellow dragon wallpaper from the Bow Rooms, dating from c.1817 - 1820 (fig. 42). It was also identified on the window frames in the Bow Rooms by Brough and Mactaggart in 1989, using VPM, as well as by Ashok Roy at the National Gallery in 1996, using SEM and XRD. Brough suggests that it is highly likely that chrome yellow was used on yellow decorations of the Music Room murals (fig. 99).[52] There are no other recorded interiors from dating from before 1820 where chrome yellow was used on the same scale as in the Royal Pavilion, but the dining room of Thomas Jefferson's house Monticelli in Virginia, US, was painted in a bright yellow in 2010, following recent paint analysis that revealed that chrome yellow had been applied sometime after 1815 to the walls of the neo-classical interior.[53]

Green: verdigris

Despite the popularity of green as an architectural colour in Georgian times, stable greens were not developed until later in the nineteenth century. Many of the greens found in the Royal Pavilion are probably mixtures of Prussian blue and yellow. It is also highly likely that a green version of verditer was used.[54]

However, the only green analysed and identified with certainty in the Royal Pavilion is the copper-based verdigris, used as a glaze on carved wooden ornaments. A claw-shaped wooden object (fig. 144) that has historically been accepted as originating from a dragon ornament in the building similar to the high-level dragons in the Music

[50] Vanherman, *Every Man*, pp.28-29.
[51] Hay, *Nomenclature*, pp.13-14.
[52] Brough, *Colour in the Regency* [Appendix 2], p.2.
[53] Thomas Jefferson Monticelli, http://www.monticello.org/site/house-and-gardens/paint-and-wall-coverings [accessed June 2013]
[54] Brough, *Colour in the Regency* [Appendix 2], p.4.

Room (fig. 137) was taken to the National Gallery Scientific Department in May 2013 for pigment analysis. This claw probably became detached in the early to mid-nineteenth century, and so escaped the re-varnishing and overpainting with bronze or aluminium associated with other silvered and glazed objects in the building. It was analysed by Rachel Morrison and identified as verdigris in oil, using SEM, FTIR and GCMS. In the medium Morrison also found boiled linseed oil and traces of pine resin and another resin, Sandarac, which, since at least the eighteenth century, had been used to make varnishes.[55]

Harley indicates that the verdigris, or basic copper acetate, is the oldest manufactured green and, until the end of the eighteenth century, was mostly associated with Montpellier as its source location, although a patent for its manufacture had been granted in England in 1691. She also notes that, given the easy process of manufacture (little more than copper, vinegar and time is needed), crude verdigris was readily available and was used predominantly in decorating and by the dying industry.[56] Field had little positive to say about verdigris pigments: 'They are the least permanent of the copper greens, soon fading as water-colours by the action of light, &c, and becoming first white and ultimately black by damp and foul air. […] In varnish it stands better, but is not upon the whole a safe or eligible pigment, either alone or compounded.' [57] While Harley's notes on the qualities of verdigris explain why it was used in the Royal Pavilion (i.e. in interior decoration), Field's comments, although of a critical nature, are further evidence of the particular use of verdigris in the Royal Pavilion. Applied over silvered surfaces on decorative objects (such as the carved wooden dragons and bells), the pigment was indeed used in varnish and not as a watercolour, thus making the best use of the raw pigment's brilliance and sparkle.

[55] Ibid., p.5, and R. Morrison, *Report: Analysis of Green Glaze.* Unpublished document. (London: National Gallery Scientific Department, May 2013).
[56] Harley, *Pigments*, pp.80-83.
[57] Field, *Chromatography*, p.130.

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