Mary Gartside: A female colour theorist in Georgian England

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The aim of this paper is to gather and evaluate the surviving work of a little known flower painter and colour theorist, Mary Gartside, active in London between 1781 and 1809. In chronological as well as intellectual terms Gartside can cautiously be regarded as an exemplary link between Moses Harris, who published an influential theory of colour in the second half of the eighteenth century, and Goethe's substantial publications on colour in the early nineteenth century. Certain elements of Gartside's theory might have predated ideas which Goethe elaborated on in much greater detail, such as the effect of colour combinations, the significance of light and shade in relation to tints, and the eye of the beholder as the centre and origin of colour perception.

In the years between Goethe's first publication on colour, *Beiträge zur Optik,* in 1791, and the complete three-part *Zur Farbenlehre* in 1810, Gartside wrote, published and revised her own colour theory. It is highly unlikely that she read Goethe's German publications, but similarities as well as differences in their viewpoints and argumentation provide an interesting comparative study and might explain and confirm certain trends in critical thinking and developments in colour theory in early nineteenth-century Europe. Gartside directly refers to Newton and Harris in her writings but adds certain aspects to her theory that may predate some of Goethe's findings and ideas. Ian Bristow, one of the few scholars to mention Gartside while outlining 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."[1] Bristow is referring here specifically to Gartside's classification of colours in warm, cold and light colours, as well as the need to harmonise tints with regard to painting. Another scholar, Ann Bermingham, also gives credit to Gartside, referring to her publications that deal with some of Goethe's preoccupations years before him, such as the sensory effects of colours and colour combinations.[2]

The early nineteenth century saw a surge in publications on colour theory, which was partly fuelled by the invention and widespread availability of new pigments, as well as other factors including improvements in printing and publishing, particularly with regards to coloured illustrations. In England, the two editions of Gartside's theory predated a much more influential treatise by James Sowerby, who was like her a botanical illustrator, in 1809, which pays tribute to Newton in its title.[3]

Mary Gartside is an exception in the realm of early nineteenth-century colour theory. Colour theory was still strongly associated with scientific research into optics and pigments and was almost exclusively a male domain. Gartside appears to have been the only female writer of partly theoretical treatises on colour, albeit in the respectable guise of a painting manual. She was a remarkably prolific writer and three published books by her have survived in small numbers, all of which deal specifically with colour theory and its application in the art of painting in watercolour. The books are *An Essay on Light and Shade* from 1805, *Ornamental Groups, Descriptive of Flowers, Birds, Shells, Fruit, Insects etc* from 1808 and the second edition of the first book with a new the title *An Essay on a New Theory of Colours*, also published in 1808 but some time after *Ornamental Groups*. In March 1809 her publishers announced the preparation of a new three-part edition of *An Essay of a New Theory of Colours* "showing its application to flowers, landscapes, figures and composition in general."[4] The proposed publication date for the second part, on landscapes, was April 1810. No part of this three-volume set can be traced. There is no further mention of the project in the press, suggesting it was abandoned, most likely because Gartside died soon after the March 1809 ad was placed. William Miller continued to publish aquatints, based on Gartside's paintings and engraved by Robert Havell, for *Ornamental Groups* until 1811.

These books provide some insight into the circles Gartside moved in, the restrictions she worked and published under and the general intellectual climate in the art circles of her time. There appears to be no other theoretical publication on the subject of colour theory published by a woman which precedes Gartside's. It is important to establish where Gartside positioned herself in the tradition and development of colour theory and how she used what Bermingham calls "the veiled language of flower painting"[5] to pursue scientific research and publish theoretical writings in a male dominated environment.

Recent critical reception

Gartside's work has been of occasional scholarly attention only since the mid-twentieth century. In an article on Moses Harris from 1948, F. Schmid describes her illustrative colour blots as "very fantastic and modern suggesting paintings by the Swiss artist, Giacometti, or even a Walt Disney film."[6] [Fig. 1 and 2] The abstract quality of Gartside's colour blots was recognised more recently in a short article by Jean-Jacque Rosat[7] in 2005 and by Raphael Rosenberg, who included some of her blots in an exhibition on early abstract art at the Kunsthalle in Frankfurt in 2007/8.[8] The exhibition focused on Turner but didn't draw direct comparisons between Turner and Gartside. However, looking at a juxtaposition of Gartside's yellow blot and Turner's painting *Light and Colour (Goethe's Theory)*

Fig. 1. Mary Gartside. *Crimson*, 1808. Etching (?) and watercolour. Originally published in *An Essay on a New Theory of Colours*. Image courtesy of the Colour Reference Library, Royal College of Art, London. Photo: Dominic Tschudin.

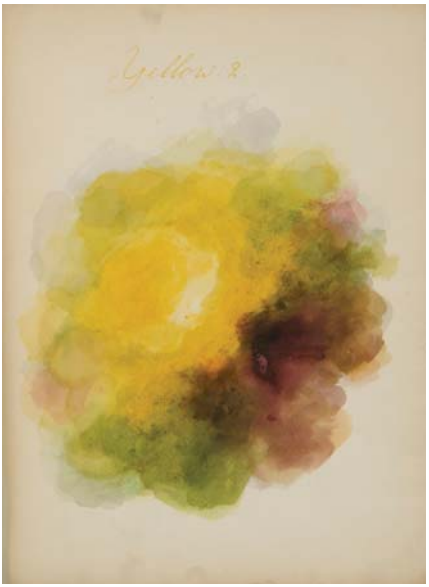

Fig. 2. Mary Gartside. *Yellow*, 1808. Etching (?) and watercolour. Originally published in *An Essay on a New Theory of Colours*. Image courtesy of the Colour Reference Library, Royal College of Art, London. Photo: Dominic Tschudin.

[Fig. 2 and 3], one of a pair of paintings directly referring to Goethe's colour theory, the similarities in the treatment of colour and shade as well as the use of abstraction and circular shapes are striking. A further loose theoretical connection between Gartside, Goethe and Turner was established by Gerald E. Finlay in his essay on Turner's creative experiments with colour theory.[9]

In 1990 Martin Kemp mentions Gartside in the chapter "Newton and after" of his book *The Science of Art* and claims that her colour circle is an illustration of a prismatic ball proposed earlier by Benjamin West.[10] Two attempts have been made recently to provide a more rounded picture of Gartside, with relation to social circumstances and the female sphere in early nineteenth-century Britain. Both Francina Irwin[11] and Ann Bermingham[12] examine Gartside's artistic and theoretical work within the context of the social history of drawing and watercolour. Irwin highlights the tradition of paint manuals written by women and emphasises the significance of the intellectual circles Gartside moved in, while Bermingham investigates the genre of flower painting and assumes that

> [Gartside's] ruling passion was not flowers so much as colour and the relationship among colours found in the prismatic spectrum ...she is an excellent example of a woman who pursued flower painting as a route to something else – in this case, scientific knowledge as well as a professional artistic career...The very modesty of the genre obscured the originality of Gartside's inquiries, and in so doing enabled her to pursue them.[13]

Professional career and social circles

Very little is known about Gartside's life. The only primary sources of information are her three surviving published books and a few letters that have come to light recently at the National Art Library. Even these sources only cover a period of about three years, raising the question of whether there were other publications before or after this period. It seems unlikely that three such significant publications would have stood isolated. Anonymous authorship of other works is a possibility, as is the loss of smaller publications. There are no contemporary sources that evaluate her achievements as an author. All knowledge about her life must therefore be extracted from her activities as an exhibiting artist and her publications.

Gartside exhibited botanical drawings at the Royal Academy in 1781. It is also known that she exhibited paintings in 1784 at the *Society of Promoting Painting and Design in Liverpool* in 1784 and at the short-lived *Associated Artists in Water-Colours* in London in 1808. Significantly, one of only two female founding members of the Royal Academy, Mary Moser (1744 – 1819) was also a flower painter. Moser might well have known Gartside, taught her or selected her drawings for the exhibition in 1781. The other female founding member of the Royal Academy, Swiss-born Angelica Kauffman (1741 – 1807), was a friend of Moser and coincidentally also of Goethe in her later years. She is referred to by Goethe in the historical section of his *Theory of Colours*.[14]

Gartside's connection with the Royal Academy helps form a picture of her life and career. Although the exhibition dates are the only verified data, general circumstances, associations, and references in her writing suggest that she was influenced by, if not in direct intellectual exchange with, artists and scholars from the Royal Academy over a long period of time. Gartside was unmarried, working as a teacher and, similar to Kauffman in her years in England, would therefore have had the freedom and opportunity to become involved in the intellectual scene in London, perhaps dividing her time between her home near Manchester and London. She was acquainted with a number of scientists and academics in the London area, some of whom she acknowledges in her books. She pays tribute to Sir Joshua Reynolds, who was the President of the Royal Academy when Gartside exhibited there. Reynolds's successor was Benjamin West.

He was President of the Royal Academy at the time Gartside was publishing her books and she might well have attended lectures by both of them and incorporated their ideas on colour into her writing. James Sowerby studied at the Royal Academy and would have been close in age to Gartside. It is likely that they discussed the publication of their respective theories.

Fig. 3. J. M. W. Turner. *Light and Colour (Goethe's Theory) – the Morning after the Deluge*, exhibited 1843. Oil on canvas. Tate Gallery, London.

The National Art Library holds the records of the *Associated Artists in Water-Colours* from 1807 to 1811[15], compiled and bound together in 1850 by the architect and antiquary Wyatt Papworth, himself an exhibitor at the Royal Academy between 1836 and 1851. Gartside exhibited six paintings there in 1808. These records include eleven letters by Gartside, addressed to the secretaries of the society. The first letter was written on 7 March 1807, the last on 23 June 1808, roughly coinciding with the publication or final editing stages of her two later books. Crucially, the letters confirm her connection with the Gartsides from Lancashire, her address on some of the letters being given as "Hope, nr Manchester". Some of the letters were composed and posted in London and bear the address Charles Street, Queen's Elm, Botanical Gardens. The same place is printed next to her name in the list of exhibitors in the exhibition catalogue. This London location can be identified as that of the botanist Sir William Salisbury's home or nursery. Salisbury is one of the scientists Gartside credits in the preface to *Ornamental Groups*, alongside Anthony Todd Thomson, a Scottish surgeon and pioneer in the field of dermatology. This gives an unexpected insight into Gartside's lifestyle and engagement with a circle of scientists and artists in early 19th century London. She appears to have formed friendships with other scientists in related fields of interest, friendships close enough to use their address as her point of contact in London.

Sadly the letters do not deal with matters regarding her writings or research. They 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 adept at promoting her own work. In the earlier letters she is very specific about the dimensions of her pictures and suggests how they should be displayed. In others she discusses the framing and delivery of her work, which she clearly organised herself. The tone of her letters becomes increasingly impatient and her handwriting more illegible and blotchy, suggesting hurried writing, when one of her pictures temporarily goes missing. In the undated letter no. 190 she complains about the delay in receiving a response to an earlier request and asks that her concern for the picture should be taken seriously. She even demands to see one of the heads of the society, the same evening: "Miss G. was in hope that she should have heard from Mr Robinson [sic] before this time about her picture, which she fears she might not see again and should that be the case it will be a serious loss. She wishes to see Mr B. and would call upon him any time after six this evening if he will be at home, which she begs he will if possible." Gartside's irritation is obvious and understandable given the possible loss of a painting and we are left with an image of a woman in early nineteenth-century London who was not afraid to show up at the home of one of the male heads of the association and demand the issue be resolved without further delay.

The *Associated Artists in Water-Colours* papers include a list of people who received an invitation to the private view on 16 April 1808, which further supports my theory of strong Royal Academy connections. 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 (most likely to be identified with J.M. 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) and Mr. Beechey (most likely William Beechey).

Based on the confirmed exhibition dates Gartside's year of birth probably preceded 1761. There is no other documentation between the 1780s exhibitions and the cluster of her publications in 1805 and 1808. She must have been at least 47 years of age in 1808, and was still referring to herself as Miss Gartside, suggesting she remained unmarried and probably childless. The first major national census in Britain was carried out in 1841 and does not list a Mary Gartside that would have fitted our author. It is surprising that after a prolific and busy period between 1807 and 1808 she left no further trace. The sudden lack of confirmed exhibitions or publications could indicate a sudden death in or just after 1809.

Gartside in the context of 18th and 19th century colour theory

Most of Gartside's contemporaries and immediate predecessors in the field of colour research see themselves indebted to Isaac Newton's groundbreaking *Opticks* from 1704. Theories published in England just after Gartside's are numerous, and some are worth investigating in comparison to her, such as James Sowerby (1809), Charles Hayter (1826) and George Field (1817), but this would go beyond the scope of this paper. I will instead comment on a few similarities in her writings to Harris and Goethe, as this may be indicative of a pan-European shift in attitudes towards colour.

Gartside's first book, privately published in London in 1805, 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 her students and thus appearing to stay within what was acceptable and achievable for a woman to publish. It comprises fifty-four pages, two plates, two tables and eight coloured etchings, the latter being the abstract blots of colour mentioned earlier.

The dedication and introduction to *An Essay on Light and Shade* reveal the potential readership of the treatise. Gartside dedicated this first book to Lady Sophia Grey, presumably her mentor or patron. Lady Sophia Grey reappears in the list of subscribers to her second book in 1808. Gartside's cautious and at times self-deprecating writing style was perhaps a necessary and calculated means of securing the patronage and support of people who were instrumental in the publication of her book. Elsewhere in the dedication and introduction much emphasis is given to her pupils and her role in teaching, guiding and supporting them, shedding light on Gartside's working life as a teacher of drawing to young ladies. In the introduction she emphasizes that she is "not presuming to offer [her] opinion unasked."[16] She also modestly refers to her book as "this little work."[17]

In 1808 a second edition of the book was published, now sixty-two pages long plus illustrations. Significantly, Gartside changed the title to *An Essay on a New Theory of Colours*. The change to the title highlights not only major editorial changes but also the author's increased confidence. She now boldly calls it a *Theory of Colours*, elevating it from the status of a drawing manual to a more serious scholarly work, while crucially still stressing that it can be applied to painting and hence be useful to a general readership.

Gartside's third book, *Ornamental Groups*, was published just before the new edition of her *Theory of Colours*. It is a lavishly produced folio and forms an illustrative application of her colour theory to watercolour painting. Though the text does not add much to her proposed theory, the book is invaluable in

providing us with what appear to be some of the paintings she mentions in her letters, as well as information about her friends and readers.

Like Gartside's earlier book, it is dedicated to Lady Sophia Grey, but it is the Royal connection that is of particular interest here. Queen Charlotte heads the list of subscribers, followed by the Princess of Wales (also Charlotte) and her sister Princess Elizabeth. Queen Charlotte's well known interest in botany aside, it is intriguing to know that both Moses Harris' treatise on colour theory (from King George III's library), as well as at least one of Gartside's books were in the possession of the Royal couple.

Ornamental Groups also 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 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.[18]

This crucial paragraph highlights Gartside's 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 considers them a theory in their own right, based on serious scientific research and sources. She remarks that she does not oppose Newton's prismatic order, the colour sequence of the rainbow, but argues that colours should be arranged according to their level of brightness, thus making changes to the natural order of colours. She places Newton's order opposite Herschel's, which states that "the highest degree of illumination lies between Bright Yellow, and Pale Green; next Orange, then Red, and Blue equally with

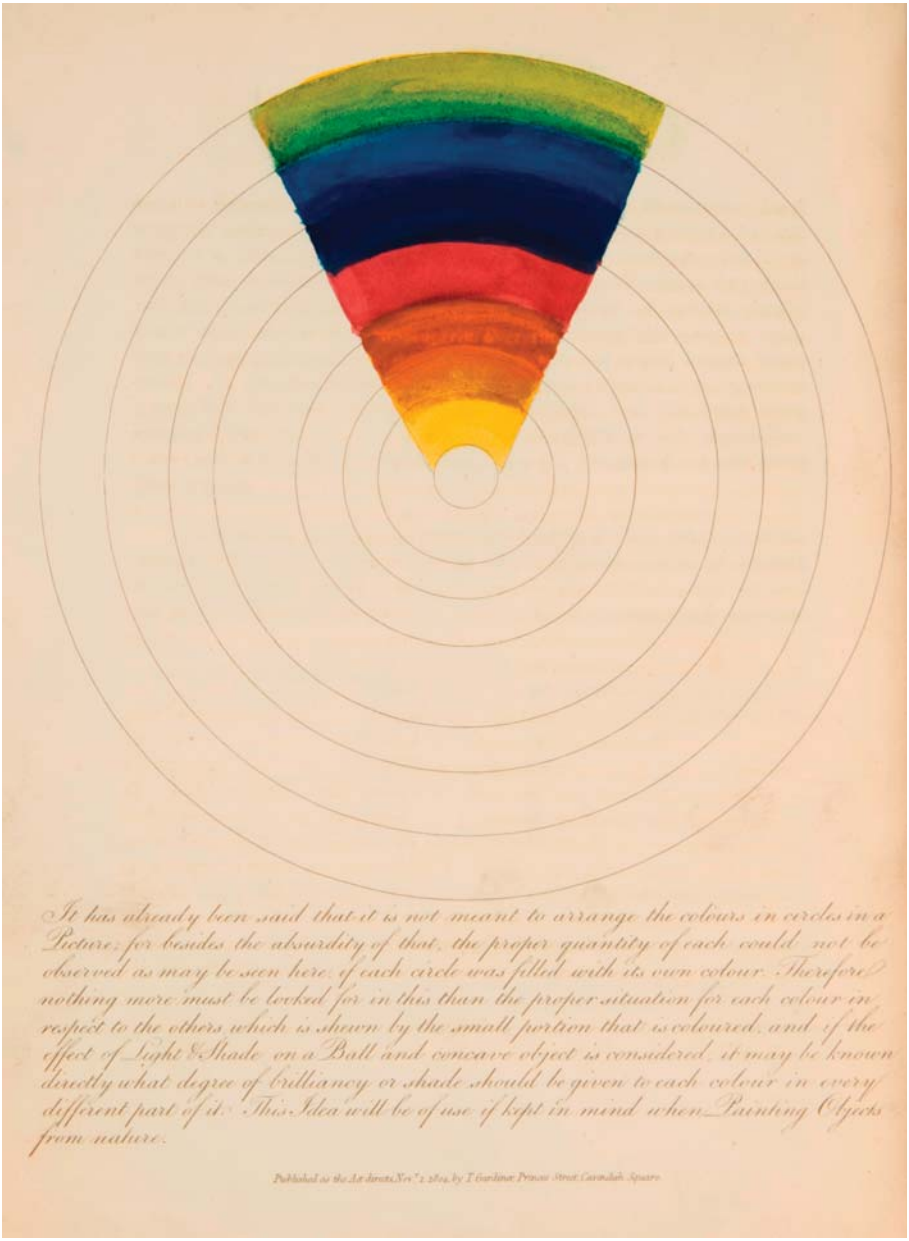

Fig. 4. Mary Gartside. *Colour Circle*, 1808. Originally published in *An Essay on a New Theory of Colours*. Image courtesy of the Colour Reference Library, Royal College of Art, London. Photo: Dominic Tschudin.

Red, then Green, Indigo, Violet."[19] Gartside produced her own colour circle [Fig. 4], in which she adjusts Herschel's and Newton's orders to serve her own argumentation. The circle aims to visualise the prismatic spectrum and brightness noted by degrees and is not vastly different from many other visualisations of colour order, often based on circular or two superimposed triangular shapes. It is, however, interesting that she refers to it as a colour ball. The idea of a sphere might have been on her mind and thus her circle could be seen as a precursor of German painter Philip Otto Runge's three-dimensional drawings of a colour sphere (*Farbenkugel*) from 1810. Influenced by intellectual exchange with Goethe, Runge chose a three-dimensional image to visualise the level of brightness in colours.

By 1808 Gartside clearly sees herself in a tradition of colour theorists. The announcement of a *new* theory of colour was surely meant to be slightly ambiguous, as it could refer both 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."[20]

An instructive portion preceding the sections on colours and their arrangement in groups in both editions deals with foreshortening effects and the shading of circular objects in painting, accompanied by two soft-ground etchings illustrating the perception of round objects such as a coin, the head of a flower or a teacup. 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 circle 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 eye of the artist or beholder as the main gauge in colour arrangement.

Gartside produced the abstract blots mentioned earlier to illustrate her views on the arrangement of harmonising and contrasting tints, these being white, yellow [Fig. 2], orange, green, blue, scarlet, violet and crimson [Fig. 1]. The different tonal areas in each blot are marked with letters, which allowed her students to apply them to the arrangement of a group of flowers. The tints roughly follow Newton's prismatic spectrum of red, orange, yellow, green, blue, indigo, and violet, with the addition of white, which Gartside places first in the sequence of plates. Since in Newton's scheme all prismatic colours combined produce white or the colour of sunlight, Gartside's inclusion should not be interpreted as a deviation from Newton. On the contrary, she uses white as a starting point in the same way that Newton places it at the heart of all colours in his representation of a colour system. Gartside defines white 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."[21]

It is important to bear in mind that the basis of Newton's research was additive colour, or coloured light, whereas Gartside's treatise focuses on subtractive colour, or pigments for painting, which as a mixture do not produce a white but a muddy brown or black. She considers white a colour in its own right within the context of painting.

Harris's short treatise initially pays tribute to Newton's prismatic spectrum but then moves on to subtractive colour mixtures. He includes two colour circles, one for *prismatic* colours and another one for *compounds*. His prismatic circle reduces Newton's seven colours to six, omitting indigo. Harris, like Gartside, has painters in mind when visualising his proposed colour system. He does not specify particular pigments that correspond to colours but is aware of the difficulties artists face when using pigments: "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."[22]

In her introduction to *A New Theory of Colour* Gartside also uses a triangle to illustrate the relation of the *primitives* yellow, blue and red, and *compounds* (Harris's *mediates*) green, orange and violet (Harris's purple). Their tint charts show a remarkable resemblance, strongly suggesting that Gartside was influenced by Harris in the presentation and structure of her theory. Also like Harris, she creates her own colour circle with reference to Newton but adapts it slightly to suit her theory and its practical applicability to painting.

Both theorists' aim is 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) arrangement and, most importantly, perception. Harris says he wants to "direct the eye,"[23] reminiscent of Gartside's concerns with the effect of colour, shapes, light and shadows on the eye, as illustrated in her first edition by an etching in which she shows a human eye looking at various round objects.

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 whole new range of possible uses, interpretations and related sciences as well as adding metaphysical and philosophical dimensions. Goethe places the gaze (*das schauen*) and 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. Goethe begins the 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 examines 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, which is in relation to the scope of his writings on colour, the total encompassing around two thousand printed pages.

While Gartside does not share Goethe's critical and at times negative attitude to Newton, they both emphasise subjective perception and effect of colour. Both have an affinity for circular shapes with regards to colour and colour theory, often choosing circles or spherical objects as examples or visualisations for their concepts. Gartside begins her argumentation and explanation of optical foreshortening by using objects such as coins, the head of a flower and teacups, before moving on to arrangements of flowers in round or oval shapes, perhaps mirroring the shape of the human eye. She also provides her readers with organic round colour blots of colour to assist with those compositions and eventually presents a colour sphere/circle.

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. As mentioned earlier, Turner interpreted Goethe's colour theory as circular in his paintings, perhaps an indication that artists tend to visualise colour and light as circular or concentric structures.

The extent to which Goethe applied sensual and moral values to colours, such as *good*, *powerful* and *gentle*, can perhaps be attributed to his exchange and friendship with many contemporary Romantic artists. Gartside's argumentation, though emphasising individual perception and the effect of colour composition, does not follow in this Romantic vein and does not attribute moral values to colours. She does 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. Both theorists explain the principle of contrasting and opposing colours, based on their interpretations of the prismatic spectrum, and discuss the effect of seeing contrasting colours in compositions. Gartside, within the aims of her treatise, strictly applies these principles to painting, while Goethe, without the intention of presenting a theory for application to painting, describes the effects in much more general terms.

Mary Gartside's publications on colour might not have had the critical acclaim and lasting influence of those of some of her contemporaries, but she

deserves to be examined within her historical and social context. Her writings are of no less scientific and practical value than Harris's or Sowerby's, but it appears that she was restrained by her gender and genre with regard to a wider readership. However, it is precisely these known constraints that make her case worth investigating in an art historical context. Her theory of colours can be assigned a distinct place in the development of colour theory in Europe. While her predecessor Harris was proposing a theory heavily based on Newton's highly scientific prismatic scheme, Goethe's substantial work relies in large parts on phenomenological descriptions, observations and subjective perception. It is frequently overtly anti-Newton and moves away from scientific verifiability, embracing instead symbolism and mysticism. Gartside's clear, factual and restrained writing style reflects a theory bridging those two approaches. Partly out of necessity, her theory does not embrace the romanticism and spiritualism of Goethe's often impressionistic writing, but expands and reinterprets Newton, Harris and others, while taking into consideration the effects and aesthetic values of colour. The lack of biographical data for Gartside is regrettable, but my aim was to reconstruct the intellectual and artistic circles she moved in by closely examining her writings and her own references to literary and scientific sources. Though not all connections can be verified and some are speculative, the overall picture of a highly educated and perceptive woman begins to form, one who succeeded in not only carving out a career as a painter and teacher, but also in publishing at least three books on colour theory, long before any other recorded publication on the subject by a woman.

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12 Bermingham, *Learning to Draw*, 215-227.
13 Ibid., 217, 223.
14 Goethe, Farbenlehre. Historischer Teil – Konfession des Verfassers. The historical part is not included in Eastlake's translation from 1840, but John Gage assesses the Kauffman reference in Colour and Culture, (London, Thames & Hudson, 1995) 202.
15 *Associated Artists in Water-Colours Records*, mss. and printed ephemera, National Art Library, V&A, London, pressmark 86.AA.18
16 Gartside, *Essay on Light and Shade*, 1.
17 Ibid., 36.
18 Gartside, *Ornamental Groups*, 7.
19 Gartside, *Essay on New Theory of Colours*, 27.
20 Gartside, *Essay on Light and Shade*, 37.
21 Ibid., 15.
22 Harris, *Natural System of Colours*, 8.
23 Ibid.