

## **The Texture of Capitalism: Industrial Oil Colours and the Politics of Paint in the Work of G.F. Watts**

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# The Texture of Capitalism: Industrial Oil Colours and the Politics of Paint in the Work of G.F. Watts

Article by **Kirsty Sinclair Dootson**

WORD COUNT:8,867



## **Abstract**

This article considers how the industrial production of artists' colours, or oil paint, in the second half of the nineteenth century affected artistic practice. The transformation of paint-making from an artisanal craft into an industrial process did not change the hue or saturation of colours, but radically altered their texture. It was through the materiality of their paints that artists became aware of the impact industrialisation had upon their practice; texture itself became a flashpoint for debates about the effect of capitalist modernity on painting in particular and society more broadly. This article examines how the painter George Frederic Watts mobilised the texture of his paints to articulate an anti-capitalist, moral aesthetic at a time when mass production made oil colours homogenously buttery and smooth, as well as fugitive and unstable.

## Introduction

*An Artists' Colourman's Workshop* (circa 1807), an unfinished painting by J.M.W. Turner, offers a rare glimpse into the craft of colour-making in the early nineteenth century (fig. 1).<sup>1</sup> At the centre of this tenebrous interior, a figure stoops over a slab as he grinds dry pigments and oil to make paint. His head is tilted upwards in conversation with the figure seated beside his workbench, but his hunched posture and firm grip on the muller make clear his physical engagement with the demanding task at hand. Although these pigments have already been ground by the donkey-drawn mill seen in the rear of the workshop, he must refine them even further to transform them into paint. He keeps a cask of oil nearby should he need to add more vehicle to his mixture, as he requires precisely the right amount to ensure the paint is neither too viscid nor too fluid. Jars, bottles, flasks, and cauldrons litter the floor and counters, containing myriad nostrums to add to his paint, perhaps to make it dry more quickly, brush more smoothly, or shine more seductively. A book labelled "Old Masters", perched on the shelf above the door, is close at hand for reference on such material matters. Amid the smoky, golden yellows and the murky, earthy browns that permeate the scene, the vivid red paint streaked across the grinding table makes clear the fruit of the colourman's labours, as its dazzling colour leaps out at the viewer from the centre of the work, imbuing the scene with a sense of alchemical magic, of something precious emerging from the gloom.



Figure 1

J.M.W. Turner, *An Artists' Colourman's Workshop*, circa 1807, oil on wood, 62.2 × 91.4 cm. Collection of Tate (N05503). Digital image courtesy of Tate.

While Turner's painting should not be treated as a documentary record of the colourman's trade in the early nineteenth century, the scene is largely consistent with textual accounts of how colours were made and sold during this period.<sup>2</sup> Some artists certainly continued to make their oil colours fresh in the studio at this time, but many purchased them premixed from their colourman, stored in small animal bladders to keep them moist.<sup>3</sup> It is possible that Turner based this scene on the workshop of James Newman, a London-based colourman supplying the artist with materials at this time, who was known for the high quality of his red lake and Indian red paints.<sup>4</sup>

However, by the end of the nineteenth century, the scene Turner depicts would have been exceptionally rare, as few colourmen still made paints this way.<sup>5</sup> The continued use of the singular term “colourman” elides the fact that many of these colour-makers were no longer small firms run by individuals but were industrial-scale businesses operating factories for mass producing colours. Even within Turner’s lifetime, new technologies transformed colour-making from an artisanal craft into an industrial process, and by the time of the artist’s death in 1851, this transition was well advanced. From the 1840s, steam-powered mills enabled colourmen to grind pigments and paints on a massive scale, storing them in collapsible metal tubes, while scientific advances from the middle of the century also provided the trade with a host of new synthetic pigments, transforming the colourman’s identity from herbalist to industrial chemist. By the closing decades of the nineteenth century, colour-making was largely automated, mechanised, and industrialised, and the range of colours that were commercially available to painters had nearly doubled.<sup>6</sup>

The impact these new machine-made, chemically synthesised, and industrially manufactured colours had on nineteenth century painting is by now a well-rehearsed narrative. In the words of Pierre-August Renoir: “without paint in tubes there would have been no Cézanne, no Monet, no Sisley or Pissarro, nothing of what the journalists were later to call Impressionism.”<sup>7</sup> The increased portability of ready-mixed colours available to buy in tubes enabled artists to work more freely *en plein air*, and a host of new chemical shades meant they were able to enliven their canvases with the brilliant effects of natural daylight, producing the kind of dazzling chromatic effects that became synonymous with the Impressionist movement.<sup>8</sup> Art-historical narratives of this period remain largely obedient to Renoir’s assessment—that by ushering in a new era of convenient, chromatic brilliance, these modern paints helped produce modernist painting.<sup>9</sup> Yet, to suggest that the heightened luminosity of the Impressionist palette was the logical or necessary outcome of these new commercially available colours is to overlook the plurality of responses evidenced by painters at this time. While many remained indifferent or ambivalent towards industrially made colours, some, particularly in Britain, were vocal in their rejection of these modern paints. This was not because artists disliked the look of these new chemical hues—they did not find these synthetic colours too saturated, vivid, or gaudy. As evidenced in painters’ manuals of this period, artists did not believe it was the appearance of colour that had changed with the industrialisation of its manufacture, but rather its texture. These new techniques of manufacturing, processing, and packaging colour radically affected the haptic properties of colour far more than its optical ones, and questions of consistency, fluidity, and viscosity dominated debates about industrial colour at this time.

The changed texture of industrially manufactured paints meant that some painters continued to prefer artisan-made, hand-ground, and organically derived materials; a choice it would be easy to read as a conservative backlash against the onslaught of technological modernity. But what I suggest here is that this disavowal of industrial colours marked a conscious and explicit engagement with the conditions of contemporary life, which had potent ethical and political dimensions at this time, particularly in Britain. As it was through the materiality of their paints that artists became aware of the impact industrialisation had upon their practice, texture itself became a flashpoint for debates about the effect of capitalist modernity on painting in particular and on society more broadly.

To explore how the materiality of colour became a site of critical reflection in Victorian painting, this article focuses on the work of George Frederic Watts, who spurned industrially manufactured paints in his practice. Watts is best remembered as “England’s Michelangelo”, a title that

indicates both his esteemed position in Victorian society and his explicit identification with the art of the past.<sup>10</sup> As a painter of allegorical, symbolic, and mythological subjects, who based his style and technique upon that of Italian High Renaissance models, it is unsurprising that Watts disliked modern, mass-produced colours. However, for Watts, who self-consciously fashioned himself as a living old master painter, the effects of industrial modernity were most acutely experienced through the materiality of his paints. When systems of mass production altered the texture and purity of the colours with which he worked, it was through his materials that he chose to contest the pernicious effects of industrialisation most vociferously. However, Watts also tackled these issues of industrialised colour-making allegorically through the subject matter of his paintings. Therefore, although the subject matter, style, and technique of Watts' work were far from modernist, through the materiality of his colours themselves, Watts critically engaged with some of the most pressing and urgent concerns of contemporary British society.

The larger ambition of this article then, is to demonstrate how questions of materiality could help us re-characterise the connections between British painting and modernity. Bringing together two crucial methodological interventions, I draw upon new materialist approaches to art history, exemplified in the work of Jennifer Roberts, Pamela Smith, and Sarah Gould, that have revived the technical study of art, and use them to engage with the ongoing reassessment of the radical nature of Victorian painting led by scholars such as Elizabeth Prettejohn and Tim Barringer.<sup>11</sup> Acknowledging modernism as only one response among many to the major technological, social, and political upheavals that shaped the Victorian era, such scholarship has demonstrated how historical painting techniques could present a pointedly oppositional critique of the present. I, therefore, suggest that it was not only the iconography of urban life, or formal innovations intended to capture the perceptual ruptures of this accelerated century, but the materiality of paint itself, that offered a platform for artists to negotiate, interrogate, and protest the adverse effects of modernity *qua* industrial capitalism on society at large. By focusing on questions of texture, I propose a different, *haptic* paradigm through which British painters encountered and communicated the experience of modernity.<sup>12</sup>

I begin by examining the technical reasons the mass production of oil paint transformed the texture and purity of colour in the late nineteenth century. I focus on the manufacturing techniques of the firm that supplied paints to Watts; Winsor & Newton, one of the largest industrial colour-makers in Victorian Britain, placing their practices within the larger context of paint-making at this time. I then explore how Watts rejected the greasy texture of industrially made paints and mobilised especially dry, coarse colours to enact the anti-capitalist, anti-industrial politics of his paintings.<sup>13</sup> I focus on *Mammon, Dedicated to His Worshipers* (circa 1885), which I read as an allegorical attack on industrial colour-makers through its damning indictment of capitalist greed.

## **The Texture of Capitalism**

The intimate still life *Mound of Butter* (1875–1885), painted by the French realist Antoine Vollon, may seem an unlikely place to begin assessing the impact that the mass production of oil paint had upon painting in Britain (fig. 2). Yet *Mound of Butter* perfectly encapsulates what was felt by many artists (both British and French) to be the most significant new characteristic of mass-produced oil colours in the nineteenth century.<sup>14</sup> It was not so much that industrially made colours had a distinctive appearance, but rather that they had a very specific material consistency — a new texture, frequently characterised as that of fresh butter.<sup>15</sup> This new texture of industrially manufactured oil colours was produced through a nexus of related technological

advances necessary to make paint on a large scale, from how the paint was ground and stored, to the kind of additives used in its manufacture.

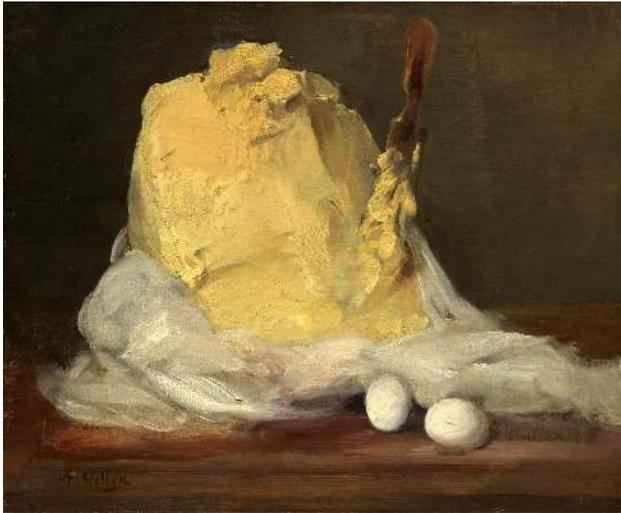


Figure 2

Antoine Vollon, *Mound of Butter*, 1875–1885, oil on canvas, 50.2 × 61 cm. Collection of National Gallery of Art, Washington, DC (1992.95.1). Digital image courtesy of National Gallery of Art.

The conflation in Vollon’s work between paint and butter makes clear the smoothness of this mass-produced substance.<sup>16</sup> The lively diagonal smears of paint created with both paintbrush and knife show the effects possible with this slick new paint. The fluidity of industrially produced paint meant it was pliable enough to work easily under the brush (evidenced here by the brush marks that remain in the surface of the paint, most visibly in the lower left corner of the muslin), but it was also more full-bodied than hand-ground paint and could be applied just as well with a palette knife (which Vollon used liberally to manipulate his paint here, particularly the flat areas of colour on the butter mound itself).<sup>17</sup> We find this painter’s tool echoed in Vollon’s painting with a butter paddle that scoops up gobs of butter in the same way we imagine the artist did with his paints, spreading colour on the canvas in the way he might butter bread.

Yet while Vollon revelled in the new possibilities of buttery, mass-produced paint, other painters disliked this new texture, finding it too homogenous, oily, and slick compared to artisan-manufactured colours. For instance, Frederic Leighton, the president of the Royal Academy in the closing decades of the nineteenth century, complained about the “greasiness and slipperiness” of his paints.<sup>18</sup> This was a problem because many painters understood this greasiness to be injurious to the long-term stability and permanence of their colours, as this excess oil could yellow, crack, or darken, resulting in dramatic changes to a work’s appearance and longevity.<sup>19</sup> The additives used to give paint its pliable, buttery texture were also damaging to the permanence of colour.<sup>20</sup> Furthermore, industrially made colours were frequently less pure than those made by hand, as they were more prone to so-called sophistication, that is, adulteration by the addition of impure and fraudulent substances that would further erode the quality of the colours.<sup>21</sup> The new texture of industrially manufactured paint therefore came to represent some of the other more insidious ways in which the mass production of colour detrimentally affected painting at this time. This homogeneous, oily, buttery consistency, what I call here, the texture of capitalism, was a physical manifestation of the effect of industrialisation upon painting.

Concerns about the purity and stability of colour were particularly acute in nineteenth-century Britain. After the establishment of the National Gallery in 1824 and the expansion of its collection in the 1840s, visitors could directly compare paintings executed by the previous generation of British academicians with those by Old Masters, as well as paintings by Italian and Netherlandish artists of the fourteenth and fifteenth centuries.<sup>22</sup> It was widely noted that the colours of early Netherlandish oils and Italian temperas seen in the National Gallery were much fresher, brighter, and altogether more sound than more recent works by Joshua Reynolds and Turner, perhaps the nation's most famed colourist.<sup>23</sup> In particular, Jan van Eyck's *Arnolfini Portrait* (1434), acquired by the National Gallery in 1842, was considered the paragon of durable, vivid colour, and his technique was much discussed in technical manuals at the time.<sup>24</sup> If we look again at the warm patina on Turner's *Artists' Colourman's Workshop*, we might suspect that this was not an intentional evocation of the Golden Age of Dutch painting, but rather the results of an unintentional darkening and yellowing of the painting's surface. Although Turner was famed for the stunning brilliance of his works, like many painters of his generation, he experimented widely with the contents of his colours, adding unstable substances such as beeswax, megilp, and bitumen to improve the handling qualities of his paints.<sup>25</sup> By the mid-nineteenth century then, faults were already emerging in paintings by the most celebrated artists of the previous century.<sup>26</sup> These paintings began to wrinkle, darken, yellow, crack, fade, and flake, precisely because of these material experimentations with colour.

Perhaps, rather than reading Turner's small painting as a nostalgic reverie for the lost craft of colour-making, we should understand it as an illustration of the material experimentations that produced such catastrophic effects in subsequent centuries. After all, it was in imitation of the Old Masters that painters like Turner experimented with their colours, in attempts to replicate the chromatic effects of painters like Titian.<sup>27</sup> Although Turner was considered one of the most original and inventive colourists of his age, his material craft was shaped by these historical precedents.<sup>28</sup> Perhaps the book we see on the colourman's shelf contains such misguided advice regarding old master technique, and the vessels scattered about the room are filled with volatile additives that would result in the overall gloominess of the picture. To put it another way, perhaps the painting records the means of its own demise.

The demonstrable material decline of academic paintings from the previous century and the enduring brilliance of medieval and early Renaissance works seen in the National Gallery, provoked Victorian painters to think more seriously about the quality of their own colours, a particularly acute problem at a time when painters had less and less control over their materials. The rise in academic training for painters and the decline of the apprenticeship system meant that by the mid-nineteenth century, artists knew little about colour grinding or mixing, and increasingly relied upon commercially available, ready-made paints.<sup>29</sup> This combination of new technologies for making colour, with unease regarding the permanence and purity of colour, and a lack of technical knowledge among painters, produced a unique set of cultural circumstances into which modern, industrial colours emerged in Britain. These various anxieties, about purity, stability, and control, all converged on the question of texture.

It was Watts' colourman, Winsor & Newton, that helped transform the texture of paint in Britain at this time. Established in 1832, the firm owned industrial-scale factory premises for manufacturing and processing many of the raw pigments used in their paints and were responsible for two major technological shifts in colour-making in the 1840s: they introduced mechanical pigment and paint grinding and, although they did not invent collapsible metal tubes, were responsible for commercialising this invention and enabling its widespread adoption.<sup>30</sup>

Grinding was necessary to reduce pigments to a powdery consistency and to combine that powder with oil to make paint (although rarely did paints solely comprise oil and pigment). As evidenced in *An Artists' Colourman's Workshop*, pigments were traditionally ground by hand using a slab and muller of stone or glass, although a horse or donkey mill might suffice, if fine grinding was not required.<sup>31</sup> This laborious activity of grinding pigments required a sound knowledge of every colour's material properties, because each required a different degree of grinding: dense pigments needed extensive grinding, while others were inherently soft; some could be ground endlessly fine, while others dulled through overgrinding; some were extremely absorbent, mixing well with oil to produce a glossy sheen, while others were gritty and non-absorbent, producing more matte colours.<sup>32</sup> The resulting texture, finish, and hue of the colour depended to a large extent upon how it was ground.

Ideally, artists wanted paints that were the correct consistency for sitting on a palette—fluid enough to apply with a brush but not so thin they would run. When made by hand, each paint would have a different consistency depending upon the grinding requirements of its pigments.<sup>33</sup>

But this individuated treatment became difficult when manufacturers began grinding pigments and paints on an industrial scale. The steam-powered grinding equipment introduced to Britain by Winsor & Newton in 1844 economised on the cost of skilled labour and enabled manufacturers to grind much larger volumes of pigments into much, much finer particles.<sup>34</sup>

One problem was that the intensity of certain colours could be severely compromised by overgrinding. Therefore some firms, like Charles Roberson & Co., the primary colour supplier to the Pre-Raphaelite painters, continued to hand-grind their pigments and paints well into the twentieth century.<sup>35</sup> A catalogue for the firm published around 1907 noted that colours “ground by hand under the muller give superior results over those ground by machinery; [we] therefore continue to retain the old and more costly system, and are thus able to give direct attention to the requirements of each colour.”<sup>36</sup> This continued artisanal approach to grinding colours therefore produced numerous distinct textures in contrast to the homogenised smoothness of mass-produced paints all ground to the same, fine consistency.

Once paints were no longer made fresh in the studio immediately before use but were ground in large volumes at commercial factories, it became vital to increase their shelf life so they did not dry prematurely.<sup>37</sup> Bladders were of limited use as the paint frequently dried, separated, and hardened inside, especially once pierced with a tack to release the paint.<sup>38</sup> Although glass syringes were briefly used by Winsor & Newton, they were costly and prone to breaking.<sup>39</sup> The invention of collapsible metal tubes in London in 1841 by the American painter John Goffe Rand significantly retarded premature drying, and Winsor & Newton purchased this patent from the artist, selling their own paint in tubes and licensing the technology to other colourmen.<sup>40</sup> But tube storage further homogenised the texture of paint and threatened its purity.

While some pigments naturally produced colours that were dense, gummy, or thick, this storage system demanded a standardised consistency that was easily squeezable from the tube but not so fluid that it would drip from the palette. Although mechanical grinding helped make the paint smooth, it could also make some paints too liquid, so colourmen restored body to the paint using additives like wax, tallow, and petroleum jelly, as well as adding extra oil to enhance brushability.<sup>41</sup> These additives and extra oil gave industrially made colours the necessary standardised texture and prolonged shelf life that were demanded by tube storage, but also made it more greasy and slick.

The smeary, oily homogeneity of these paints frustrated many artists, who habitually squeezed their colours onto blotting paper before use to absorb excess oil.<sup>42</sup> One painter's manual from

1892 complained that industrially manufactured colours were “overloaded with oil”, speculating that because oil was cheaper than pigment, manufacturers used an unfavourably high oil-to-pigment ratio to cut costs.<sup>43</sup> He mockingly suggested that manufacturers might push this economising logic to its limit and eliminate the pigment altogether, simply using synthetic dyes to “tint a kilogramme of gluten made from wax and oil and have superbly tinted colours of a very consistent paste.”<sup>44</sup>

The use of additives to give the paint body and prevent drying severely eroded the purity and permanence of these colours.<sup>45</sup> For instance, Winsor & Newton’s scientific director, John Scott Taylor was puzzled to discover other colourmen used additives in their white lead paint to prevent it from hardening in the tubes, but would also inherently darken the colour over time. He suggested that “if an artist finds his white lead go hard in the tubes, let him by all means treasure the brand; it will be the best, perhaps, he can get in these degenerate days.”<sup>46</sup>

### “Viley Sophisticated”

Manufacturers did not only use additives to improve the shelf life of paint. The increasing separation of labour involved in colour-making in the nineteenth century, combined with artists’ growing ignorance about their paints, created possibilities for manufacturers at any point in the long supply chain to tamper with materials without painters realising.<sup>47</sup> This was a problem for a small firm like Roberson. The company prided themselves on their artisanal approach—not only hand-grinding their colours but also using traditional recipes from the esteemed British herbalist and colour-maker George Field.<sup>48</sup> However, as a small-scale firm without the resources to manufacture their own raw ingredients, they relied upon wholesale suppliers for many of their materials (not just pigments, but varnishes and oils), only grinding and mixing colours in-house.<sup>49</sup>

Roberson’s reliance on wholesalers made them vulnerable to the widespread culture of adulteration and substitution that thrived upon lengthening supply chains, as dispersed responsibility for the purity of materials made it hard to pinpoint precisely where adulteration had occurred.<sup>50</sup> Manufacturers might use “extenders” to dilute the purity of colours and economise on production costs (for instance, brick dust was added to madders for this purpose), or colour-makers could bulk out the weight of paint using cheap materials like sand and chalk.<sup>51</sup> One of the most serious problems was the substitution of genuine, expensive pigments with cheaper, less stable alternatives.<sup>52</sup>

The increased availability of synthetic pigments (both organic and inorganic) in this period exacerbated this problem.<sup>53</sup> The Victorian era was certainly not the first time painters could access synthetic or artificial pigments, as methods for manipulating colours were known since antiquity, and new chemical colours such as Prussian blue had been available since the eighteenth century.<sup>54</sup> But a combination of developments in inorganic chemistry with the industrial infrastructure to manufacture and distribute these substances made it appear as though the market was flooded with new chemical colours in the nineteenth century.<sup>55</sup> As Arthur Church—the first professor of chemistry appointed to the Royal Academy—noted in his 1901 artists’ manual:

during the nineteenth century the progress of synthetical [*sic*] chemistry placed at the disposal of the picture-maker a long series of pigments—good, bad and indifferent—so that the chances of introducing dangerous and fugitive colours have been enormously increased. It is to this increase in the number of pigments, and to their greatly extended range of composition ... that one should attribute in great part the frequent deterioration of modern

paintings.<sup>56</sup>

Paint-making was also significantly affected by concurrent technological advances in the dye industry in the nineteenth century.<sup>57</sup> The development of synthetic alizarin, the dyeing agent in madder roots, quickly replaced organic madder in a huge range of artists' colours after its discovery in 1868, decimating the European madder-farming tradition.<sup>58</sup> Similarly, the synthetic aniline dyes derived from coal tar, an industrial waste-material in abundant supply, revolutionised the textile dyeing industry after their discovery by British scientist William Henry Perkin in 1856.<sup>59</sup> These dyes soon migrated from the textile industry into the colourman's trade and were incorporated into artists' oil colours.<sup>60</sup> These brilliant dyes fostered a new era of dazzling artists' colours but were extremely prone to fading.<sup>61</sup> One painters' manual from the late nineteenth century described how these aniline colours "are merely stains, and although very bright and fascinating, are totally unfit for the painting of pictures, and soon fade away altogether."<sup>62</sup> Although some colourmen explicitly advertised their colours as aniline-derived, others would illicitly lace their paints with coal-tar dyes to (temporarily) enhance their saturation but leaving them prone to deterioration over time.<sup>63</sup>

Although the burgeoning use of synthetic colour is often characterised as a brightening of the artist's palette because some of these dyes were notoriously garish, in many cases, it was difficult to distinguish organic and synthetic colours by sight alone.<sup>64</sup> This proved problematic when unscrupulous colourmen either replaced stable, costly pigments with less permanent and untrustworthy colourants or used aniline dyes in place of organic materials, with catastrophic effects for the longevity of painted colour.<sup>65</sup>

This practice of tampering with the contents of paint, the so-called sophistication of colour, was not necessarily new in the nineteenth century but was understood by artists to be the result of surrendering control of their colours to a commercial trade invested in profiteering rather than quality.<sup>66</sup> From the moment oil colours could be purchased in bladders, painters worried that manufacturers might adulterate their paints to save costs, or in the words of one painters' manual from 1795, that commercial colours "are either not genuine, or are vilely sophisticated".<sup>67</sup>

An aversion to industrially manufactured oil paints was therefore far from a simplistic rejection of technological modernity but demonstrated a deep awareness of how the increased scale of paint manufacture had wide-reaching effects upon both the purity and texture of paint. Watts was particularly concerned about these links between the commodification of paint manufacture and the resulting damage caused to the longevity, stability, and consistency of colour—concerns that intersected with his political and moral objections to industrialisation more broadly. For Watts, it was the new texture of industrially made colours that offered the most palpable evidence that processes of mass production negatively affected the art of painting, and it was through texture that Watts chose to tackle this issue most explicitly, cultivating a distinct consistency to his paints in order to enact a moral objection to the texture of capitalism.

**“The *slimy* qualities I so much hate”**

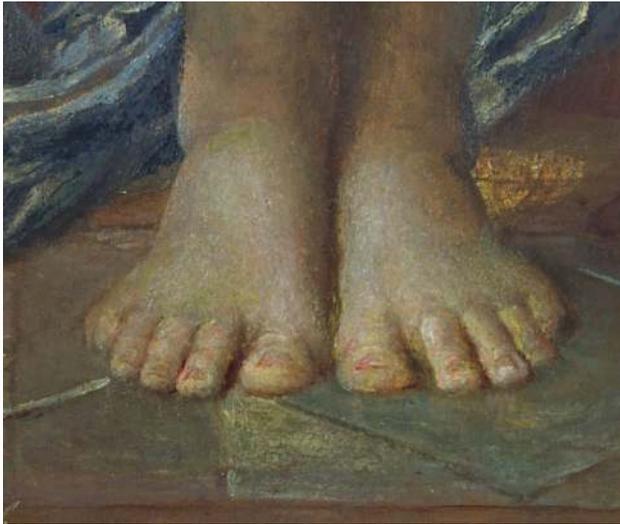


Figure 3

George Frederic Watts, *Psyche* (detail), 1880, oil on canvas, 59 × 18 cm. Collection of Tate (N01585). Digital image courtesy of Tate.



Figure 4

George Frederic Watts, *Psyche*, 1880, oil on canvas, 59 × 18 cm. Collection of Tate (N01585). Digital image courtesy of Tate.

The unusual texture of Watts's paintings puzzled and fascinated contemporary viewers. Critics variously described his strange surfaces as “rocky, dry, and crumbled”, “heavily forged”, and “corrugated”.<sup>68</sup> Repeatedly, critics noted that the physical qualities of Watts' paintings were atypical for the period, a departure from the “smooth consistency of ordinary oil-paint”, as the *Pall Mall Gazette* put it.<sup>69</sup> Some struggled to find a suitable vocabulary to describe the odd materiality of Watts' painting. George Moore found himself unable to capture its effects in words, claiming, “I can think of nothing else but the rind of Stilton cheese,” and wondering “why should so beautiful a material as oil paint be transformed into a crumbly material substance?”<sup>70</sup>

In part, it is the great variety of surface textures in Watts' paintings that makes it difficult to characterise their effects. Comparing enlarged details of Watts' paintings, the complexity and diversity of these textures becomes apparent.<sup>71</sup> Some, like *Psyche* (1880) are gritty and rough like sandpaper or cement (figs. 3 and 4). Others, like *Hope* (1891) are powdery and dry, almost resembling pastel or chalk (figs. 5 and 6), while others have surfaces coated in solid, thick, and hard paint that sits proud of the canvas, piled up in clotted mounds, as we find in *Progress* (1888–1904; figs. 7 and 8) and *She Shall be Called Woman* (circa 1875–1892; figs. 9 and 10).



Figure 5

George Frederic Watts, *Hope* (detail), 1891, oil on panel, 66 × 48.3 cm. Collection of Yale Center for British Art, Gift of Claire and Albert J. Zuckerman (B2011.32). Digital image courtesy of Yale Center for British Art.



Figure 6

George Frederic Watts, *Hope*, 1891, oil on panel, 66 × 48.3 cm. Collection of Yale Center for British Art, Gift of Claire and Albert J. Zuckerman (B2011.32). Digital image courtesy of Yale Center for British Art.



Figure 7

George Frederic Watts, *Progress* (detail), 1888–1904, oil on canvas, 218.9 x 142.2 cm. Collection of the Watts Gallery—Artists' Village (COMWG 139). Digital image courtesy of Yale Center for British Art.



Figure 8

George Frederic Watts, *Progress*, 1888–1904, oil on canvas, 218.9 x 142.2 cm. Collection of the Watts Gallery—Artists' Village (COMWG 139). Digital image courtesy of Yale Center for British Art.



Figure 9

George Frederic Watts, *She Shall Be Called Woman* (detail), circa 1875–1892, oil on canvas, 257.8 x 116.8 cm. Collection of Tate (N01642). Digital image courtesy of Tate.



Figure 10

George Frederic Watts, *She Shall Be Called Woman*, circa 1875–1892, oil on canvas, 257.8 x 116.8 cm. Collection of Tate (N01642). Digital image courtesy of Tate.

This overall coarseness and dryness of surface was the result of Watts' idiosyncratic painting technique—an attempt to eradicate oil almost entirely from his practice.<sup>72</sup> He applied very absorbent grounds to his canvases to suck oil from the paints applied on top and would use especially lean paints (that is, pigments bound in very little oil), to avoid excess grease.<sup>73</sup> Sometimes he applied these paints thinned down with benzene, allowing the weave of the canvas to permeate the surface of the painting, but elsewhere he worked up dense layers of thick impasto.<sup>74</sup> Insisting on each layer drying completely, he left paintings to dry in direct sunlight for weeks in a purpose-built greenhouse in his garden.<sup>75</sup> Once dry, he would rub each layer with potato or onion to eradicate remaining oiliness, and burnish the paint with a rhinoceros-horn palette knife to make it hard, before beginning his work again.<sup>76</sup> Watts arrived at this unusual system through a combination of historical revivalism and technical prudence. He had not received rigorous academic training but worked as an assistant in a sculptor's studio from an early age and attended the Royal Academy Schools sporadically before an extended stay in Italy in his 20s, a period he considered his true artistic education.<sup>77</sup> This time between 1843 and 1847, spent principally in Florence, sparked his lifelong engagement with the Italian Renaissance, enabling him to study Italian painting and sculpture first hand.<sup>78</sup> Historical frescoes fascinated Watts and he studied the technique intensely, but the Venetian school of oil painting also entranced him.<sup>79</sup> His own methods were principally derived from his studies of Renaissance painting and painting technique, facilitated by a newly available body of technical information on historical painting methods.<sup>80</sup>

Watts' travels in Italy in the 1840s confirmed for him that the most enduring works of art were those displaying little gloss or sheen: monumental frescoes with their matte surfaces and sixteenth-century Venetian painting, particularly the late work of Titian, with its dry, open brushwork.<sup>81</sup> His close friend and biographer Emilie Isabel Barrington described how the painter intentionally modelled his practice on Titian's late style, which he studied through a translated account of the painter's technique.<sup>82</sup> Many elements of Watts' practice are indeed attributable to his reverence for Titian: his slow pace, allowing the weave of the canvas to enliven the surface, the dryness of the paints skimmed across the canvas, and the ambiguous degree of finish.<sup>83</sup> But as conservator Carol Willoughby describes, his method was also a kind of fresco executed in oil paint, as he (mistakenly) believed his absorbent grounds would operate like the wet plaster in fresco, binding the colours permanently to the support.<sup>84</sup>

It would, therefore, be easy to resolve the material idiosyncrasy of Watts' paintings by suggesting these surfaces are symptomatic of his nostalgic, historicising style, evidence of his desire to emulate the works of the Italian Renaissance he most admired.<sup>85</sup> However, the appearance of Watts' paintings cannot simply be understood as historical revivalism, and scholars primarily understand his use of especially coarse, dry colours as an attempt to ensure the material safety of his painting.<sup>86</sup> Watts regarded oil as the enemy of stable painting because it was often responsible for both the physical deterioration of paintings (evidenced in the cracking of the paint surface) or the discolouration of artworks through the yellowing or darkening of the oil.<sup>87</sup> Watts had direct experience of these problems when his early works suffered extensive craquelure due to paint drying insufficiently between layers (figs. 11 and 12).<sup>88</sup>



Figure 11

George Frederic Watts, *A Wounded Heron* (detail), 1837, oil on canvas, 91.4 x 71.1 cm. Collection of the Watts Gallery—Artists' Village (COMWG 64). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.



Figure 12

George Frederic Watts, *A Wounded Heron* (detail), 1837, oil on canvas, 91.4 x 71.1 cm. Collection of the Watts Gallery—Artists' Village (COMWG 64). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.

Through these early technical problems and his failed attempts at durable frescoes, Watts became particularly attentive to the durability of his materials.<sup>89</sup> He would only use colours he believed were absolutely stable, frequently enquiring about the suitability of certain pigments with his supplier Winsor & Newton. He corresponded regularly with Henry Newton, the artist who co-founded the firm, and subsequently with Scott Taylor, their scientific director.<sup>90</sup> Watts requested that Winsor & Newton should only offer him colours that were “quite pure and permanent” noting “if I ask for any that are not in this category never send them”.<sup>91</sup>

Watts was not alone in such concerns however, as this cautious approach was partially informed by his friendship with the Pre-Raphaelite painter William Holman Hunt.<sup>92</sup> After discovering that colours supplied to him by Roberson had been laced with synthetic dyes, or in Hunt’s words “adulterated with 10 per cent of villainy”, Hunt launched a public campaign to raise awareness about the deleterious effects of industrialisation upon the materials of art, which resonated strongly with Watts.<sup>93</sup> Through a series of letters to *The Times* and a lecture delivered at the Society of Arts, Hunt spread the word about the “pestilential aniline dye” and the need “to found a society for looking after the material interests of painting”.<sup>94</sup>

Watts was deeply aware of the culture of substitution and adulteration rife in the colour trade, and explicitly avoided colours prone to fading or tampering.<sup>95</sup> In one instance, Scott Taylor had to convince Watts about a sample of rose madder, noting that “it is so pure and vivid that had I not made it myself from Pure Madder Root I should have felt convinced that it had been doctored up with an aniline dye.”<sup>96</sup> However, Watts was most concerned about the oily character of industrially manufactured paints. From 1871, he began to request colours of “a stiffer or at least more solid nature” than those he typically received from the firm, insisting that the “colour should be ... as dry as may be convenient”.<sup>97</sup> He hoped for colours “free from the slimy qualities I so much hate”, qualities that were the direct result of machine-grinding and tube storage.<sup>98</sup> Newton tried to highlight the benefits of more moist, pliable paints to Watts, explaining that when

*pigments are very, very finely ground in oil till they assume the smoothness of butter, the oil is not so likely to leave the pigments and float ... which was the case before the powerful grinding machinery used by Winsor & Newton was invented.*<sup>99</sup>

Yet Watts insisted his pigments must be ground to an especially coarse consistency, with very little oil.

These hand-ground paints became known as Watts’ “Special” or “Stiff” colours, which helped the painter produce the rough surfaces contemporary viewers found so noteworthy.<sup>100</sup> Scott Taylor described how he prepared these colours by hand with “a small model-mill” in his laboratory, writing to Watts to endorse this technique:

I quite agree with what you say about grinding colours too finely ... modern colours, in many cases, have all the life taken out of them by being ground perfectly smooth and buttery and that in this way the most precious qualities of pigments are now lost; but I can never get anybody to listen to

me! I feel quite sure that the Venetians knew the value of rough colour in giving richness and glow by the play of light round small particles of pigments not crushed out of existence beneath an Artists’ colourman’s juggernaut car!<sup>101</sup>

He further agreed with Watts about the “monotony and insipidity” of mechanical grinding that did not account for the “certain grain” of each colour, which he noted “varies of course immensely with different pigments”.<sup>102</sup>

Watts' demands that his colours be ground ever more coarsely and with decreasing amounts of oil meant they eventually became so intractable he could not work them on the canvas, admitting in a letter that "we have a little over shot the mark".<sup>103</sup> He found conventional paintbrushes ineffectual when faced with these recalcitrant paints, and was forced to deploy alternative instruments (palette knives, paper knives, toothbrush handles, and his fingers) or use brushes worn down to rigid stumps, writing to Winsor & Newton asking for brushes "as stiff as if made of wire".<sup>104</sup> According to Barrington, Watts even claimed that, of all the tools for applying paint, he believed "the best of all ... was the finger", and his habit of applying these stiff paints with his hands betrays his dual identity as a painter-sculptor.<sup>105</sup> Indeed, Watts explained to Scott Taylor that he wanted to use his colours "almost like modeling clay".<sup>106</sup>

Watts' painting *The Sower of the Systems* (circa 1902) renders visible his painting practice, whereby artistic creation is presented as physical work done with the hands (fig. 13). Through this dynamic figure, draped in robes not unlike the artist's own painting smock, Watts parallels God's fabrication of the universe with his own act of pushing paint manually around the canvas. Watts uses the muscular stance of the body, whose torso twists dramatically in an exaggerated lunge that spans almost the entire width of the canvas, to highlight the bodily effort required to marshal his materials into a semblance of order and meaning.<sup>107</sup> With fingers outspread and taut, and arms at full extension, the figure summons every ounce of strength to drag and push the stuff of creation in looping orbits through the air with his hands. Paint is treated here as a physical substance, a raw material that must be manipulated and modelled with the hands in much the same way as Watts worked with clay in his sculptural practice.<sup>108</sup>



Figure 13

George Frederic Watts, *The Sower of the Systems*, 1902, oil on canvas, 122.6 × 91.4 cm. Collection of the Art Gallery of Ontario, Toronto (L70.7). Digital image courtesy of Art Gallery of Ontario.

G.K. Chesterton saw this link between the density of Watts' paints, his sculptural practice, and the act of godly creation, perspicaciously noting that "one could guess at something about Watts

from the mess on his palette ... like forces in chaos before the first day of creation,” paralleling the myth of Adam’s fabrication from clay with Watts’ deployment of his paints. Like God “the Eternal Potter”, Chesterton imagines Watts conjuring life through the manipulation of his thick, clay-like paints.<sup>109</sup> But Chesterton saw in this metaphorical association between, clay, paint, and divine creation a larger moral and spiritual meaning, claiming “there is nothing in the world that is really so thoroughly characteristic of Watts’ technique as the fact that it does almost startlingly correspond to the structure of his spiritual sense.”<sup>110</sup>

Indeed, the fabrication of this work from heavy impasto and dry scumbled paint does not simply literalise the act of physical creation, but speaks to a wider ethics and politics of materiality in the late nineteenth century. These dry paints, harder to produce and apply than industrially made colours, put Watts’ practice into dialogue with broader concerns about the relationship between art, labour, and morality in Britain at this time.

### **The Moral Aesthetics of *Mammon***

At the moment Watts began requesting his stiff colours in the 1870s, John Ruskin was involved in a very public dispute about the liquidity of paint. Of course Ruskin’s notorious accusation, that Whistler’s painting *Nocturne in Black and Gold: The Falling Rocket* (1875) was akin to charging “two hundred guineas for flinging a pot of paint in the public’s face”, is not typically understood as a tirade against thin paints in themselves (fig. 14). This comment, which provoked the infamous libel trial of 1878, was an invective aimed at a market-driven culture in which artists minimised effort and maximised profits, earning sums disproportionate to the labour expended on their paintings.<sup>111</sup> However, the liquidity of the paint in Ruskin’s metaphor—so runny it must be stored in pots not tubes, so thin it can be thrown like water—is vital to his argument.<sup>112</sup> For Ruskin, the ease with which Whistler’s paints could be manipulated spoke to the debasement of painting, as to Ruskin, a work of art which involved no “work” could never truly be art at all.<sup>113</sup> This link between texture and the morality of labour is vital for understanding Watts’ use of coarse paints. For Watts, the greater labour his colourman invested in grinding his colours was replicated in the extra effort required to work them on the canvas, endowing his materials with a moral potency he leveraged to reinforce the political messages of his paintings.



Figure 14

James Abbott McNeill Whistler, *Nocturne in Black and Gold, the Falling Rocket*, 1875, oil on panel, 60.3 × 46.7 cm. Collection of the Detroit Institute of Arts (46.309). Digital image courtesy of Detroit Institute of Arts.

Watts' understanding of artistic labour as a moral and ethical issue was profoundly informed by his social and intellectual circle. Although he claimed "I am not a socialist by any means", he counted leftist political activists, social reformers, and socialists proper among his friends and sitters, including William Morris, Walter Crane, Thomas Carlyle, and Ruskin himself.<sup>114</sup> The impact of these thinkers upon Watts was noted by contemporary critics who described how "echoes of Carlyle ... of Ruskin, seem to haunt all his work".<sup>115</sup> Watts was deeply committed to their shared belief in the dignity of labour and its potential for spiritual nourishment, and was similarly troubled by the danger posed to these values by the dehumanising culture of work under industrial modernity. Watts, like these contemporaries, was particularly concerned about the industrialisation of manufacturing, believing that purely in the name of profit, mechanisation, and automation both eroded the quality of the resulting products, as well as the workers' pleasure and pride in their work. Watts expounded these views through a series of essays he published in the 1880s, making explicit his belief that artisanal labour served the spiritual well-being of workers, while mechanisation, in the service of financial gain, eroded their humanity.<sup>116</sup> In particular, his 1889 essay "The National Position of Art" demonstrates Watts' indebtedness to Ruskin's values, where he decries the fact that beauty and human decency are consistently sacrificed to convenience and profit. He protests against the displacement "of the skilled workman's eye and hand" by "mechanical aid", claiming that "machinery is the most deadly foe to art and beauty".<sup>117</sup> His insistence that "heart and conscience, is never absent from hand-work, however rude, and is never found in machine-work, however perfect" begins to illuminate the political and moral significance of his insistence upon stiffly hand-ground paints that were so arduous to apply.<sup>118</sup>

Undoubtedly, *The Stones of Venice* (1851–1853) tied together the ethics of labour and the aesthetics of colour for Watts, as Ruskin's volumes both expounded the beauty of Venetian colouring through ekphrastic prose, but also exalted the nobility of the labour that produced them, contrasting the dignity of the gothic Venetian craftsman with the "signs of slavery" found in industrial England.<sup>119</sup> For Watts, Ruskin politicised his existing love of Venetian colour, moving his appreciation of Titian out of the purely aesthetic sphere and into a moral and ethical realm.

Watts' conviction in Ruskin's principles of ethical labour encouraged him to support the establishment of The Guild of St George, a school Ruskin founded to teach traditional craftsmanship in opposition to the onslaught of mass-produced, factory-made goods. Offering Ruskin one-tenth of his annual income for the project, Watts described his support as a "protest against Mammon worship".<sup>120</sup> Mammon, a personification of wealth and greed described in the New Testament, appeared frequently in Watts' writing, as he saw Mammon as the new god of a contemporary, wealth-obsessed nation.<sup>121</sup> Indeed, in "The Position of Art", Watts laments that under the present conditions of industrialisation in Britain, "material prosperity has become our real god".<sup>122</sup> His wife recalled that Watts once joked he should sculpt a statue of Mammon in Hyde Park, where "he hoped his worshippers would be at least honest enough to bow the knee publicly to him."<sup>123</sup>

Watts' description of Ruskin's project as a protest against Mammonism, underscores his belief that the moral production of art and the accumulation of material wealth were mutually exclusive. Watts maintained that:

*while Mammon, the deity of the age ... cold and unlovely, without dignity or magnificence, the meanest of the powers to whom incense has ever been offered, sits supreme, [then] great art, as a child of the nation, cannot find a place; the seat is not wide enough for both.*<sup>124</sup>

Watts' *Mammon, Dedicated to his Worshippers* (1884–1885), held in the collection of the Tate Gallery (fig. 15), and the smaller work by the same name (fig. 16) at the Watts Gallery in Compton (circa 1885), literalise this sentiment through their subject matter, but the smaller canvas also enacts a potent critique of Mammonism through the very coarseness of its colours.



Figure 15  
George Frederic Watts, *Mammon, Dedicated to His Worshippers*, 1884–1885, oil on canvas, 183 × 106 cm. Collection of Tate (N01630). Digital image courtesy of Tate.



Figure 16  
George Frederic Watts, *Mammon, Dedicated to His Worshippers*, circa 1885, oil on canvas, 53.3 x 30.5 cm. Collection of the Watts Gallery—Artists' Village (COMWG 49). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.

Modelled on Renaissance papal portraits, the painting depicts Mammon seated in glory upon his skull-topped throne.<sup>125</sup> Cradling money purses in his lap, a common attribute found in allegories of avarice, he crushes humanity beneath his hefty feet and monstrous hands.<sup>126</sup> With a meaty neck, heavy brow, and indifferent frown, his gargantuan proportions give him a demonic presence. Mammon wears a golden crown decorated with coins and sprouts ass' ears like those of King Midas, whose wish to transform everything he touched into gold rapidly became a curse. Apollo punished Midas with these unsightly ears because the king preferred the sound of Pan's pipe to the music of the god's lyre, and was therefore evidently deaf to the true beauty of art, preferring the earthly and coarse to the heavenly and transcendent.<sup>127</sup>

This unusual conflation of Mammon and Midas undoubtedly alludes to Thomas Carlyle's 1843 tract *Past and Present*, where the author rails against "Midas-eared Mammonism", comparing the present condition of industrial England to that of the cursed, avaricious king: "full of wealth in every kind, yet dying of inanition".<sup>128</sup> He calls for "giant LABOUR ... noble LABOUR" to take its rightful place as "King of this Earth" upon "the highest throne" thereby "leaving Mammonism ... on the lower steps".<sup>129</sup> Watts inverts this hierarchy to reflect his dismal view of contemporary British society, showing Mammon triumphant, while the bodies of innocent humanity litter the steps below. Although the location of the painting is indistinct, a theatrical, red curtain lifts to reveal the fires of hell burning in the distance, further imbuing the work with a religious didacticism.<sup>130</sup>

The smaller painting initially appears to be a preparatory sketch for the larger canvas due to its loose handling, unfinished quality, and the small difference in composition: the bound foot. This detail reveals Mammon suffers from gout, an ailment precipitated by gluttonous over-indulgence,

often represented as a bloated man with bandaged feet recumbent in an armchair.<sup>131</sup> However, the smaller work has frequently been exhibited as an autonomous painting, and art historians have recently suggested it delivers a more biting critique than the larger Tate version.<sup>132</sup>

Watts worked on several versions of the same painting simultaneously, selecting one for exhibition but continuing to work on the others endlessly, considering each a different experimental solution to the same formal and conceptual problems.<sup>133</sup> The pamphlet accompanying the painter's 1884 exhibition in New York advised viewers that "among these [paintings] are some which are far from being finished ... which, in all probability, he will continue to retouch and endeavor to improve as long as he is able to work."<sup>134</sup> Indeed, Watts' wife recorded in her diary that the artist was still "piling up the hideousness of *Mammon*" a year after he first exhibited the larger work.<sup>135</sup> The distinctive handling of paint in the Compton *Mammon* is therefore not as a sign of its preparatory status but is integral to its meaning. In comparison to the Tate canvas, the plasticity of the Compton painting is remarkable, as Watts pushes the expressive potential of his stiff colours to the limit. Mammon's gold brocade convulses with dense brush marks where the paint is raised into blunt ridges, replicating the effect of folds in the fabric through its weightiness (fig. 17). The knee of Mammon's outstretched leg is a maelstrom of thick, uneven colour, piled up in heavy clots (fig. 18). Watts creates the impression of swirling drapery at Mammon's feet by skimming a brush loaded with dry colour across the canvas, leaving behind broken dashes of green paint (fig. 19). The highlights of the crown are picked out in scumbled areas of white, like beads resting on the canvas' surface (fig. 20). The female figure's skin is rough and caked, evidently the uppermost application of many layers of paint beneath (fig. 21).



Figure 17

George Frederic Watts, *Mammon, Dedicated to His Worshippers* (detail), circa 1885, oil on canvas, 53.3 x 30.5 cm. Collection of the Watts Gallery—Artists' Village (COMWG 49). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.



Figure 18

George Frederic Watts, *Mammon, Dedicated to His Worshippers* (detail), circa 1885, oil on canvas, 53.3 x 30.5 cm. Collection of the Watts Gallery—Artists' Village (COMWG 49). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.



Figure 19

George Frederic Watts, *Mammon, Dedicated to His Worshippers* (detail), circa 1885, oil on canvas, 53.3 x 30.5 cm. Collection of the Watts Gallery—Artists' Village (COMWG 49). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.

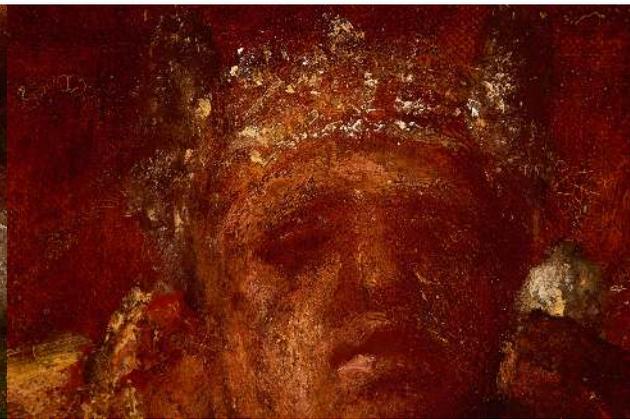


Figure 20

George Frederic Watts, *Mammon, Dedicated to His Worshippers* (detail), circa 1885, oil on canvas, 53.3 x 30.5 cm. Collection of the Watts Gallery—Artists' Village (COMWG 49). Digital image courtesy of Watts Gallery—Artists' Village | Photo: Christopher Chard.



Figure 21

Cesare Ripa, *Iconologia, of uytbeeldingen des verstands*, (Amsterdam: Pers, 1644), 169.  
Collection of the Sterling and Francine Clark Art Institute Library. Digital image courtesy of Sterling and Francine Clark Art Institute Library.

Varnishing has unfortunately lent the painting precisely the glossy finish Watts wanted to avoid, a common trait across his works.<sup>136</sup> Watts was ambivalent about varnish, valuing its protective capacity but loathing its sheen, and he experimented with additives to reduce its reflective qualities.<sup>137</sup> It is therefore difficult to ascertain if Watts planned the varnishing of the Compton Mammon, yet unlike many of his other paintings, which are coated in thick homogenising layers of varnish by subsequent collectors and restorers, by no means does the varnish here detract from the painting's overall crustiness, an almost unpleasantly haptic quality.<sup>138</sup> The cragginess and crumbliness of these paints, which so perplexed contemporary viewers, seem to find their true meaning here, as the crude, unrefined surface of the painting heightens the grotesqueness of the subject. The texture of these paints imparts an affective power to the work, as Mammon seems all the more repugnant for his rough handling, offering a true rebuke to the idealised, beautiful effects possible with glossy, slick, commercial oils.<sup>139</sup> While Watts certainly exploited the decidedly unappealing consistency of his paints to convey Mammon's "unloveliness", he also enabled his materials to enact the anti-capitalist argument of the painting.

By showcasing the very stiffness of his artisan-made paints in a work that critiques the evils of industrial capitalism, Watts made clear the link between his aesthetics and his ideology. Here, the coarseness, dryness, and density of these colours render visible the labour involved both in their manufacture and their application. They manifest both the demanding, time-consuming technique of hand-grinding the pigments and the taxing work of applying them to the canvas. Some painters squeezed their colours directly from the tube or exploited their paints' pliability to work in a quick, spontaneous manner, producing a lively impasto (as demonstrated in Vollon's *Mound of Butter*), but the plasticity of Watts' work imparts a very different temporality to his painting.<sup>140</sup> These colours evidence the dignified labour of applying colour slowly, carefully, and arduously, thereby activating the political agenda of the painting's subject.

corrupting effects of capitalism upon society in general, and of the malignant effects of industrial modernity upon painting more specifically. To do so makes a more nuanced and historically precise reading of its iconography possible. The double valence of Mammon as Midas is a particularly fitting critique of the contemporary colour trade, as it pointedly highlights the perils

of alchemical desire. Watts parallels Midas' ruinous cupidity with that of unscrupulous colourmen, who also wished to transform base materials into more expensive substances. Watts suggests that just as Midas starved from lack of food or drink as he turned everything he touched into gold, colourmen too would bring about similarly disastrous effects in their attempts to turn coal tar into ultramarine, brick dust into madders, and sand into pure white paint. The fate of Midas operates as a warning here to those who similarly seek wealth through a debased form of transubstantiation. The fact that the painting is dedicated to Mammon's worshippers makes clear its mode of address as a cautionary tale to those who do not heed its message.

The moneybags in Mammon's lap, as previously noted, are a long-standing feature of allegories of avarice found throughout the history of Christian art, typically signalling the bearer's miserly spirit as well as the immorality of materialism (fig. 22). The purses here, of course, demonstrate Mammon's sinful accumulation of wealth through the sacrifice of virtue and innocence. Yet, these plump purses also bear a striking resemblance to bladders of paint, which were similarly tied with string at the neck (fig. 23). This visual slippage between paint and money invites us to imagine further ways in which the painting could reflect upon the corrupting influence of capitalism upon art. Because bladders marked the first moment when painters surrendered control of their materials to a commercial industry, the money-purse-as-paint-bladder suggests a damning equivalence between colour and capital. We are reminded of the avaricious colour-makers, who treated paint as a means to riches, rather than improving its production for the benefit of art, which Watts understood as a crucial tool for social progress. This richly suggestive parallel evocatively counsels against the conflation of paint and profit, upon which Mammon's kingdom is based.



Figure 22

Cesare Ripa, *Iconologia, of uytbeeldingen des verstands* (Amsterdam: Pers, 1644), 169. Collection of the Sterling and Francine Clark Art Institute Library. Digital image courtesy of Sterling and Francine Clark Art Institute Library



Figure 23

Illustration of a paint bladder from Pierre Louis Bouvier, *Manuel des jeunes artistes et amateurs en peinture*, 2nd edn (Paris: F.G. Levrault, 1832), Plate III, Figure M. Collection of the Getty Research Institute. Digital image courtesy of Getty Research Institute

The physicality of the painting, its grotesque plasticity worked as much with the fingers as the brush, invites us to wonder whether Watts considered the work as a kind of sculpture made in paint. Perhaps Watts viewed this smaller canvas, which is much more corporeal than the larger work of the same name, as the public monument to Mammon he quipped he would erect, a physical testament to Mammon's growing cult in modern Britain. If modern oil paints embodied the texture of capitalism, then Watts' painting here embodied something altogether different, a moral aesthetics, rendered visible and physical through the very materiality of his paints.<sup>141</sup>

## **Conclusion**

As critical as Watts is to our understanding of the relationship between materiality and modernity in Victorian painting, he should not be read as symptomatic of British approaches to industrial colour. Indeed, it was his very fascination with materials and techniques that betrayed his position as an eccentric outsider. But idiosyncratic as his practice was, anachronistic it was not. Just as the Pre-Raphaelites had weaponised the art of the past as a means of critiquing the ills of the present, Watts also found in historical painting techniques a means of negotiating some of the most urgent and pressing social issues of his day. What this case study of Watts' practice has enabled then, is a different means of assessing the ways in which nineteenth century painters responded to and addressed the experience of modernity in their work. As my reading of *Mammon* demonstrates, the radical social and technological upheavals that characterised the nineteenth century did not simply transform the subject matter and style of painting during this period, but its effects were also registered tactically, texturally, and haptically.

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1. This title was retrospectively given to the work, which was previously known as *The Faker's Studio*. See Martin Butlin and Evelyn Joll, *The Paintings of J.M.W. Turner*, Studies in British Art (New Haven, CT: Paul Mellon Centre for Studies in British Art and the Tate Gallery by Yale University Press, 1984), 115.
2. The conservator Leslie Carlyle has amassed an indispensable survey of information on colour-making from nineteenth-century artists' manuals, colourmen's handbooks, and other technical sources. On grinding and storage materials in particular, see Leslie Carlyle, *The Artist's Assistant: Oil Painting Instruction Manuals and Handbooks in Britain 1800–1900 with Reference to Selected Eighteenth-Century Sources* (London: Archetype, 2001), 147–162.
3. Carlyle notes that information on grinding colours no longer appeared in artists' manuals from the 1850s, suggesting this task had been almost entirely relinquished to the colourman by this time; see Carlyle, *The Artist's Assistant*, 148. The use of pig, sheep, or oxen bladders for storing paint was first commercialised in England in 1794 by the colourman George Blackman. On bladders, see James Ayres, *Art, Artisans and Apprentices: Apprentice Painters & Sculptors in the Early Modern British Tradition* (Oxford: Oxbow Books, 2014), 115–117.
4. This thesis is proposed by James Hamilton in *Turner and the Scientists* (London: Tate, 1998), 51. On Newman's reputation, see the entry in Jacob Simon's online encyclopaedia of artists' suppliers hosted by London's National Gallery, *British Artists' Suppliers, 1650–1950*, 3rd edn, 2011, last updated September 2017, <https://www.npg.org.uk/research/programmes/directory-of-suppliers/n>.
5. Newman was one exception. Simon notes that the firm maintained artisanal approaches to colour-making well into the twentieth century, citing an article of 1934 that described how at

Newman's firm "every process necessary to the preparing of artists' colours was being done by hand", "Grinding Colours by Hand", *Times* (London), 24 August 1934. See Newman's entry in Simon, *British Artists' Suppliers, 1650–1950*.

6. Carlyle notes that although the number of colours for sale doubled between 1800 and 1900, this may have resulted from a lack of standardised nomenclature, rather than an actual expansion of choice; Carlyle, *The Artist's Assistant*, 159.
7. Jean Renoir, *Renoir My Father* (London: William Collins, 1962), 73.
8. On the relationship between the Impressionist palette and a host of new chromatic technologies in nineteenth-century France, see Laura Anne Kalba, *Color in the Age of Impressionism: Commerce, Technology, and Art*, *Refiguring Modernism* 22 (University Park, PA: Pennsylvania State University Press, 2017).
9. This conventional link between modern paints and modernist painting is summarised in David Bomford, "The History of Colour in Art", in Trevor Lamb and Janine Bourriau (eds.), *Colour: Art & Science* (Cambridge: Cambridge University Press, 1995), 23. Anthea Callen's work remains a crucial exception. For her nuanced rebuttal to the simplistic link between modern paints and Impressionism, see Anthea Callen, *The Art of Impressionism: Painting Technique & the Making of Modernity* (New Haven, CT: Yale University Press, 2000), 98–111.
10. Frederic Leighton, a close friend of Watts, dubbed him with this moniker. See Chloë Ward, "England's Michelangelo in the Metropolitan Museum of Art: The G.F. Watts Exhibition, 1884–1885", *Comparative American Studies an International Journal* 14, no. 1 (2 January 2016): 64
11. In particular, see Jennifer L. Roberts, *Transporting Visions: The Movement of Images in Early America* (Berkeley, CA: University of California Press, 2014); Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago, IL: University of Chicago Press, 2004); Sarah Gould, "Making Texture Matter: The Materiality of British Paintings, 1788–1914" (PhD diss., Université Paris Diderot, Sorbonne, 2016). For a critical re-evaluation of Victorian painting's radical intent, see, for instance, Tim Barringer, Jason Rosenfeld, and Alison Smith, *Pre-Raphaelites: Victorian Avant Garde* (London: Tate, 2012); and Elizabeth Prettejohn, *Modern Painters, Old Masters: The Art of Imitation from the Pre-Raphaelites to the First World War* (New Haven, CT: Yale University Press, 2017).
12. Such an approach is by no means limited to art history. See, for instance, Lucy Fife Donaldson, *Texture in Film* (Basingstoke: Palgrave Macmillan, 2014).
13. I borrow this notion of paints "enacting" the meaning of their works from Christopher J. Nygren, whose work on Titian's use of slate to animate theological concerns has profoundly shaped my understanding of the link between materials and meaning in nineteenth-century painting, see Christopher J. Nygren, "Titian's *Ecce Homo* on Slate: Stone, Oil, and the Transubstantiation of Painting", *Art Bulletin* 99, no. 1 (2 January 2017): 36–66.
14. Anthea Callen offers a close reading of the painting in relation to contemporary paint technologies in *The Work of Art: Plein Air Painting and Artistic Identity in Nineteenth-Century France* (London: Reaktion, 2015), 117.
15. "Buttery" is the term uniformly used in current technical scholarship to describe the consistency of modern, tubed oil paints. For instance, see Tom Learner, "Modern Paints", in Joyce Hill Stoner and Rebecca Anne Rushfield (eds.), *The Conservation of Easel Paintings* (New York: Routledge, 2012), 248.
16. Although little is known about Vollon's materials, and conservators at the National Gallery in Washington, DC, have not analysed the paints used in *Mound of Butter*, the homogenous

consistency of the paint and its extremely fluid handling give no reason to suspect these are not mass-produced, tubed paints. Furthermore, canvas stamps on the reverse of other Vollon paintings, for instance, *Eggs in a Pan* (1885–1890), held at the National Gallery of Victoria in Australia, reveal the painter bought his canvases from the French colourman Hardy-Alan, where he possibly also sourced his paints. The firm owned a small factory in the suburbs of Paris, manufacturing both pre-prepared canvases and oil paints. See the entry for Hardy-Alan in *British Artists' Suppliers, 1650–1950*. My thanks to Jessica David, Associate Conservator of Paintings at the Yale Center for British Art, and Ann Hoenigswald, Senior Conservator of Paintings at the National Gallery of Art, Washington, DC, for their observations on Vollon's paint.

17. Callen describes how frequently brush and knife work are conflated, noting that Vollon's painting is an ideal demonstration of the different effects possible with these tools; see Callen, *The Work of Art*, 118–119.
18. Leighton to Professor Arthur Church, 16 October 1894, cited in Mrs Russell Barrington, *The Life, Letters and Work of Frederic Leighton*, Vol. 3 (London: G. Allen, 1906), 297.
19. Carlyle notes that the yellowing and darkening of oil was one of the key concerns of nineteenth-century technical manuals in Britain and was often cited as the source of colour degradation in paintings; Carlyle, *The Artist's Assistant*, 258.
20. On the additives used in oil paint manufacture and their effects on the durability of colour, see Carlyle, *The Artist's Assistant*, 154.
21. Leslie Carlyle, "Authenticity and Adulteration: What Materials Were 19th Century Artists Really Using?", *Conservator* 17, no. 1 (1 January 1993): 56–60; Joyce H. Townsend, Leslie Carlyle, Narayan Khandekar, and Sally Woodcock, "Later Nineteenth Century Pigments: Evidence for Additions and Substitutions", *Conservator* 19, no. 1 (1995): 65–78.
22. The National Gallery opened in 1824 but expanded to the larger Trafalgar Square site in 1838. The collection initially contained no works by so-called Italian "primitives" and when Jan van Eyck's *Arnolfini Portrait* (1434) entered the collection in 1842, it was a century older than any other work in the collection. It was only from 1848 that the National Gallery began acquiring Italian paintings executed before 1500. Pettejohn, *Modern Painters, Old Masters*, 100–101.
23. As Hackney, Townsend, and Ridge note, the cleaning and restoration of old master works at the National Gallery in the 1840s dramatically altered understandings of colour in these paintings, as they now appeared brighter than ever before, further exaggerating the difference between the dark and faded works of the eighteenth century and those painted centuries earlier; see Stephen Hackney, Joyce Townsend, and Jacqueline Ridge, "Background, Training and Influences", in Joyce H. Townsend, Jacqueline Ridge, and Stephen Hackney (eds.), *Pre-Raphaelite Painting Techniques* (London: Tate, 2004), 21–25.
24. Of particular importance was the technical volume published by Charles Eastlake. Eastlake was the keeper of the National Gallery from 1843 to 1847, and his influential *Materials for a History of Oil Painting*, published in 1847 (with a second volume published posthumously in 1869), treated the question of van Eyck's technique at length. On the impact of Eastlake's publication, see Carlyle, *The Artist's Assistant*, 15. On Eastlake's influence on Pre-Raphaelite practice, see Pettejohn, *Modern Painters, Old Masters*, 69–73. For a broader discussion of Victorian attitudes to van Eyck, see Jenny Graham, *Inventing van Eyck: The Remaking of an Artist for the Modern Age* (New York: Berg, 2007).

25. Joyce Townsend, "Painting Techniques and Materials of Turner and other British Artists 1775–1875", in Arie Wallert, Erma Hermens, and Marja Peek (eds.), *Historical Painting Techniques, Materials, and Studio Practice: Preprints of a Symposium* (Marina Del Rey, CA: Getty Conservation Institute, 1995), 176–186.
26. For details of these material experimentations in the eighteenth century and the technical faults that began appearing in these works in the nineteenth century, see Anne Southall, "Some Materials and Practices in British Painting, 1750–1850", in Sue-Anne Wallace, Jacqueline Macnaughtan, and Jodi Parvey (eds.), *The Articulate Surface: Dialogues on Paintings between Conservators, Curators and Art Historians* (Canberra: National Gallery of Australia, 1996), 117–136; Joyce Townsend, Stephen Hackney, and Rica Jones (eds.), *Paint and Purpose: A Study of Technique in British Art* (London: Tate, 1999), 12–13; Erma Hermens and Joyce Townsend, "Pigments in Western Easel Painting", in Joyce Hill Stoner and Rebecca Anne Rushfield (eds.), *The Conservation of Easel Paintings* (New York: Routledge, 2012), 212–213.
27. This desire among painters to learn the material "secrets" of the Old Masters, particularly Titian, culminated in the infamous hoax instigated by Thomas and Anne Provis. In 1797, the pair rented out a fake manuscript to painters in London that proclaimed to divulge the material mysteries behind Titian's colour and handling of paint. For details on the "Venetian Secret" hoax and its impact on contemporary British painting, see Angus Trumble, Mark Aronson, and Helen Cooper (eds.), *Benjamin West and the Venetian Secret* (New Haven, CT: Yale Center for British Art, 2008), and J.B. Bullen, "Whoring after Colour: Venetian Painting in England", in *Continental Crosscurrents: British Criticism and European Art 1810–1910* (Oxford: Oxford University Press, 2005), 120–143.
28. For an extended discussion of Turner's chromatic practice, see John Gage, *Colour in Turner: Poetry and Truth* (New York: Praeger, 1969).
29. On changes in artistic training at this time, see Leslie Carlyle, "Design, Technique and Execution: The Dichotomy between Theory and Craft in Nineteenth Century British Instruction Manuals on Oil Painting", in Erma Hermens (ed.), *Looking through Paintings: The Study of Painting Techniques and Materials in Support of Art Historical Research* (Baarn: de Pron, 1998), 19–28. The emergence of amateur painting also had a significant impact on the increased demand for ready-made materials at this time. See Pete Staples, "The Manufacture of Artists' Colour", in *Paint & Painting: An Exhibition and Working Studio Sponsored by Winsor & Newton to Celebrate Their 150th Anniversary* (London: Tate, 1982), 36–42.
30. On the foundation and development of the firm, see Don Pavey and Peter J. Staples (eds.), *The Artists' Colourmen's Story* (Wealdstone: Reckitt & Colman Leisure, 1984), 18–19. The intricacies of patenting and licensing tube storage are traced in Margarita San Andrés and Silvia García Fernández-Villa, "Patents as a Source of Documentation for Studying Art Technology", in Stefanos Kroustallis (ed.), *Art Technology: Sources and Methods: Proceedings of the Second Symposium of the Art Technological Source Research Working Group* (London: Archetype, 2008), 64–74.
31. On the various materials used in slabs and mullers, see Carlyle, *The Artist's Assistant*, 149. Horse-operated colour mills are shown on trade cards from the eighteenth century (for instance, the British Museum holds trade cards for Emerton & Manby, Oil & Colourmen, dating from 1760 and showing horse-drawn mills). However, these animal-operated mills were more likely to have been used for grinding decorators' paint rather than artists' colours,

- as they could not grind pigments to a fine enough consistency. The first patent for a hand-operated mill in Britain is 1804. Carlyle, *The Artist's Assistant*, 150.
32. My thanks to Jessica David, for assisting me with information on the grinding properties of various pigments.
  33. On tailoring grinding to the requirements of specific pigments, see Carlyle, *The Artist's Assistant*, 148–151.
  34. Various trade catalogues for Winsor & Newton claim that “grinding artists’ colours by machinery was first commenced by Winsor & Newton in 1844, special apparatus being invented by them for this purpose.” For example, see *Winsor & Newton's Catalogue of Colours and Materials for Oil Colour Painting* (London: Winsor & Newton, 1884), 61, and *Winsor & Newton's Catalogue of Colours and Materials for Oil Painting &c.* (London: Winsor & Newton, 1894), 3.
  35. Roberson did not install powered grinding machines until 1919, and they continued to sell hand-ground colours until 1926; see Sally Woodcock, “The Roberson Archive: Content and Significance”, in Arie Wallert, Erma Hermens, and Marja Peek (eds.), *Historical Painting Techniques, Materials, and Studio Practice: Preprints of a Symposium* (Marina Del Rey, CA: Getty Conservation Institute, 1995), 34.
  36. Roberson Retail Catalogue, circa 1907, Roberson Archive, Hamilton Kerr Institute, HKI. MS.867-1993, cited in Carlyle, *The Artist's Assistant*, 150.
  37. Carlyle, *The Artist's Assistant*, 151–153.
  38. Carlyle, *The Artist's Assistant*, 148.
  39. William Newton patented glass syringes in 1840; see San Andrés and García Fernández-Villa, “Patents as a Source of Documentation for Studying Art Technology”, 72.
  40. San Andrés and García Fernández-Villa, “Patents as a Source of Documentation for Studying Art Technology”, 72–74.
  41. Carlyle, “Authenticity and Adulteration”, 56–60; Townsend *et al.*, “Later Nineteenth Century Pigments”, 65–78.
  42. Carlyle notes this was common advice in artists’ manuals at the time, see Carlyle, *The Artist's Assistant*, 155.
  43. Jehan Georges Vibert, *La science de la peinture* (Paris: Paul Ollendorf, 1893), 116–118. Vibert’s influential manual was translated into English a year after its publication in France as *The Science of Painting* (London: Percy Young, 1891) and was one of the few texts that discussed the contents of industrially manufactured paints in depth. Carlyle, *The Artist's Assistant*, 11.
  44. Vibert, *La science de la peinture*, 118.
  45. Townsend *et al.*, “Later Nineteenth Century Pigments”, 58–59.
  46. John Scott Taylor, *Modes of Painting Described and Classified* (London: Winsor & Newton, 1890), 40.
  47. On the lengthening supply chain and the use of wholesale suppliers, see Townsend *et al.*, “Later Nineteenth Century Pigments”, 71, and Carlyle, “Authenticity and Adulteration”, 55–60.
  48. On Field’s reputation as a colour-maker, see Ruth E. Bubb, “The Life and Work of George Field Colourmaker (1777–1854)”, in Heinz Althöfer (ed.), *Das 19. Jahrhundert und die Restaurierung: Beiträge zur Malerei, Maltechnik und Konservierung* (Munich: Callwey, 1987), 238–247, and John Gage, *George Field and His Circle: From Romanticism to the Pre-Raphaelite Brotherhood* (London: Christie’s, 1989), 35.

49. Woodcock, "The Roberson Archive", 31.
50. Carlyle, "Authenticity and Adulteration", 57.
51. Carlyle, "Authenticity and Adulteration", 57.
52. Townsend *et al.*, "Later Nineteenth Century Pigments", 68.
53. It should be emphasised that "inorganic" is not a term synonymous with "synthetic". Broadly speaking, organic pigments are those derived from living substances (plants, animals, insects, etc.), while inorganic pigments derive from minerals and metals. My thanks to Jessica David for her insights on these distinctions. In the nineteenth century, it became possible to chemically synthesise both organic and inorganic pigments. On the relationship between developments in industrial chemistry and pigment technology, see Hermens and Townsend, "Pigments in Western Easel Painting", 202–206.
54. Hermens and Townsend, "Pigments in Western Easel Painting", 205. On synthetic colours in the eighteenth century, see Sarah Lowengard, *The Creation of Colour in Eighteenth-Century Europe* (New York: Columbia University Press, 2008).
55. On developments in inorganic chemistry in the nineteenth century, see David Bomford, Jo Kirby, and Ashok Roy (eds.), *Impressionism* (London: National Gallery in association with Yale University Press, 1990), 51.
56. Arthur Church, *The Chemistry of Paints and Painting* (London: Seeley, 1901), 296.
57. Among the large body of literature dedicated to the emerging industrial synthetic dye trade in the nineteenth century, see especially Agustí Nieto-Galan, *Colouring Textiles* (Dordrecht: Springer, 2001); and Anthony Travis, *The Rainbow Makers: The Origins of the Synthetic Dyestuffs Industry in Western Europe* (Bethlehem, PA: Lehigh University Press, 1993), 92–96.
58. Natural alizarin was used to make colours including permanent violet, purple lake, burnt lake, crimson lake, burnt carmine, and Indian lake. Madder was also used for madder carmine, scarlet madder, pink madder, rose madder, crimson madder, and madder lake. The most detailed account of alizarin's synthesis is found in Travis, *The Rainbow Makers*, 163–205.
59. Perkin did not discover aniline, but was the first chemist to successfully extract the substance from coal tar and mass produce it as a dye for commercial exploitation. Perkin's research rested upon previous experiments done by German chemists Otto Unverdorben (who had had first isolated aniline from indigo plants in 1826), Friedlieb Runge (who had extracted blue aniline from coal tar but had been unable to successfully transform the substance into a dye in 1833), and August Hoffman (Perkin's tutor at the Royal College, who had been working on aniline-based research himself for some years). W.H. Perkin, "Cantor Lectures: The Aniline or Coal-Tar Colours", *Journal of the Society of Arts* 17, no. 841 (January 1869): 97–108.
60. It is difficult to pinpoint precisely when coal-tar colours were incorporated into artists' paints. Broadly speaking, by the 1880s, there were several colours in colourmen's catalogues that we can confidently identify as coal-tar derived. For instance, in 1892, we find "Geranium lake (aniline)" among the colours sold by the firm Reeves & Sons, while by 1896 Winsor & Newton confirmed that their colour "Magenta" was indeed an "Aniline Lake". Carlyle, *The Artist's Assistant*, 159, 506.
61. As one dye manual from 1874 described, new fashion colours did not need to be permanent as: "dyers have much less inducement to study fastness than was formerly the case, as the rapid changes of fashion leave consumers no time to discover the fugitive character of the shades", William Crookes, *A Practical Handbook of Dyeing and Calico-Printing* (London: Longmans, Green, 1874), 349.

62. William Muckley, *A Handbook for Painters and Art Students on the Character and Use of Colour* (London: Bailliere, Tindall and Cox, 1893), 124.
63. For examples of aniline-based colours advertised as such, see note 74. On the use of aniline dyes to lace paints, see Carlyle, “Authenticity and Adulteration”, 58.
64. As the various patent disputes between dye makers in the 1860s demonstrate, it was hard to tell how a colour was made simply by its appearance. As chemical analysis wasn’t developed to the stage where courts could test dyes to distinguish between different processes of manufacture, it was very difficult to ascertain (by sight alone) whether dyes were synthetic. See Travis, *The Rainbow Makers*, 104–138.
65. Carlyle, “Authenticity and Adulteration”, 56–60; and Townsend *et al.*, “Later Nineteenth Century Pigments”, 65–78.
66. Marjolin Bol notes that nineteenth-century German treatises cite Pliny’s complaints that contemporary colours were less reliable and pure than those of the ancients; see Marjolin Bol, “Technique and the Art of Immortality, 1800–1900”, *History of Humanities* 2, no. 1 (March 2017): 192.
67. Anon., *A Practical Treatise on Landscape Painting in Oil Colours* (London: B. and J. White, 1795), 26.
68. Roger Fry described Watts’s work as “rocky, dry, and crumbled” in “Watts and Whistler”, *Quarterly Review* 202 (1905): 607–623, while the description of his paintings as “heavily forged” and “corrugated” comes from Rose Esther Dorothea Sketchley, *Watts* (London: Methuen, 1904), 178.
69. See *Pall Mall Gazette* “Extra”, 1886, included as an Appendix in Jacqueline Ridge and Joyce Townsend, “G.F. Watts in Context: His Choice of Materials and Techniques”, in Ashok Roy and Perry Smith (eds.), *Painting Techniques: History, Materials and Studio Practice: Contributions to the Dublin Congress, 7–11 September 1998* (London: International Institute for Conservation of Historic and Artistic Works, 1998), 223–28.
70. George Moore, *Modern Painting* (London: W. Scott, 1893), 113.
71. The inconsistent approach to varnishing across Watts’ paintings also lend further complexity and diversity to these surfaces. As discussed earlier, Watts was deeply ambivalent towards varnish, understanding its importance in protecting paintings and saturating his colours but also loathing its gloss. Even his varnished canvases can appear inconsistent in appearance however, as the varnish would sink unevenly into his paintings because of his use of extremely dry paints that would absorb the varnish at different rates. See Carol Willoughby, “The Search for Permanence: The Materials and Methods of G.F. Watts” (MA diss., Courtauld Institute of Art, 1983), 52, held in the collection of the Courtauld Institute Conservation Library (CICL).
72. A first-hand account of Watts’ technique is found in the biography of the painter written by his wife, Mary Seaton Watts, *George Frederic Watts*, 3 vols, (London: Macmillan, 1912), Vol. 3, 56–79. Subsequent assessments of Watts’ technique by conservators, who have assessed his claims against the physical evidence of his works, can be found in Jacqueline Ridge, “G.F. Watts: *Sic Transit*”, in Joyce Townsend, Stephen Hackney, and Rica Jones (eds.), *Paint and Purpose: A Study of Technique in British Art* (London: Tate, 1999), 94; Ridge and Townsend, “G.F. Watts in Context”, 223–228; and Carol Willoughby, “The Search for Permanence: Materials and Methods of G.F. Watts (1817–1904)”, in Heinz Althöfer, *Das 19. Jahrhundert und die Restaurierung: Beiträge zur Malerei, Maltechnik und Konservierung* (Munich: Callwey, 1987), 203–216.

73. On Watts' absorbent grounds, see Watts, *George Frederic Watts*, Vol. 3, 60; Ridge and Townsend, "G.F. Watts in Context", 223–224; and Willoughby, "The Search for Permanence", (Althöfer), 205–206.
74. Watts, *George Frederic Watts*, Vol. 3, 58.
75. Watts, *George Frederic Watts*, Vol. 3, 57.
76. Watts, *George Frederic Watts*, Vol. 3, 62.
77. Watts, *George Frederic Watts*, Vol. 1, 6–36.
78. Watts, *George Frederic Watts*, Vol. 1, 44–84.
79. Although Watts had worked in fresco proper, his various attempts in this medium proved unsuccessful. Watts' wife recalled that "his first attempts in this medium [at the Casa Feroni] have quite disappeared from the walls"; Watts, *George Frederic Watts*, Vol. 1, 52. The frescoes he completed at Lincoln's Inn in 1859 had deteriorated rapidly by 1890 and needed intense restoration within his own lifetime; see Watts, *George Frederic Watts*, Vol. 2, 188–189.
80. A growing number of technical manuals on historical painting methods published in the nineteenth century gave painters unprecedented access to information on the materials and techniques of the past. In addition to Eastlake's volume, perhaps the most significant was Mary Merrified's translation of Cennino Cennini's fifteenth-century handbook *Il libro dell'arte* (published as *A Treatise on Painting* in 1844). For an overview of the kind of technical literature available to painters in the nineteenth century, see Bol, "Technique and the Art of Immortality", 179–199. Watts owned a copy of Cennini and amassed a large collection of technical information, including traditional recipes for paints and vehicles; see Willoughby, "The Search for Permanence", (Althöfer), 203.
81. Watts' first impressions of Venetian art are recoded in a letter to Ruskin, where he describes how "Titian, Giorgione, and all the most glowing and gorgeous translations of the Venetian School have rendered Nature as I feel her." This letter is reproduced in Watts, *George Frederic Watts*, Vol. 1, 144.
82. It was Mrs Barrington who translated for Watts Marco Boschini's famous account of Titian's technique from 1674, *Le ricche minere della pittura veneziana*. Mrs Russell Barrington, *G.F. Watts: Reminiscences* (London: Macmillan; G. Allen, 1905), 98.
83. On the characteristics of Titian's late style, see Jill Dunkerton and Marika Spring, "Titian after 1540: Technique and Style in His Later Works", *National Gallery Technical Bulletin* 36 (2016): 6–39. On Watts' application of these tropes, see Mrs Russel Barrington, *Catalogue of Paintings, by G.F. Watts, R.A., of London, on Exhibition at the Metropolitan Museum of Art, New York* (New York: Metropolitan Museum of Art, 1884), 8–9.
84. Willoughby describes how Watts' attempt to reproduce the effects of fresco using oil paint was predicated on a fundamental misunderstanding of how fresco worked, which perhaps also contributed to the many technical faults in his work in fresco proper; see Willoughby, "The Search for Permanence", (CICL), 75–77.
85. For instance, Tate conservator Jacqueline Ridge contextualises Watts' working method within the painter's broadly historicising lifestyle, from his nickname "signor" to his explicit imitation of Titian through self-portraiture, to which we might add his sartorial habits of dressing in Renaissance clothing; see Ridge, "G.F. Watts: *Sic Transit*", 90.
86. Most recently, Nicholas Tromans, *The Art of G.F. Watts* (London: Paul Holberton, 2017), 64. Tromans largely follows Willoughby, Ridge, and Townsend in reading Watts' unusual technique as a kind of insurance against material change and damage.

87. Watts primarily used linseed oil but preferred poppy oil as it yellowed less over time. On Watts's choice of oils, see Ridge and Townsend, "G.F. Watts in Context", 225.
88. Willoughby, "The Search for Permanence", (Althöfer), 204.
89. On the technical faults with Watts's frescoes, see Willoughby, "The Search for Permanence", (Althöfer), 203.
90. A transcription of this correspondence is reproduced as an unpaginated Appendix in Willoughby, "The Search for Permanence" (CICL). All subsequent references to letters, unless otherwise stated, are to that Appendix. Copies of Watts' letters are also held in the archives of the National Portrait Gallery in London and The Watts Gallery in Surrey.
91. Watts to Scott Taylor, 28 November 1893. Emphasis in original.
92. Watts and Hunt first met in 1856 and they shared a mutual admiration for one another's work and a lifelong friendship. Hunt describes their first meeting in his autobiography, *Pre-Raphaelitism and the Pre-Raphaelite Brotherhood* (London: Macmillan, 1905), Vol. 2, 92.
93. William Holman Hunt, "The Present System of Obtaining Materials in Use by Artist Painters, as Compared with that of the Old Masters", *Journal of the Society of Arts* 28, no. 1431 (1880): 495.
94. Hunt's letters to *The Times* were published on 28 April 1880, 4 May 1880, and 2 June 1880. His lecture was reprinted as "The Present System of Obtaining Materials in Use by Artist Painters, as Compared with that of the Old Masters", *Journal of the Society of Arts* 28, no. 1431 (1880): 491–492. For a broader account of how this affected Hunt's practice, see Joyce Townsend and Jennifer Poulin, "Painting: Materials and Methods", in Katharine Jordan Lochnan and Carol Jacobi (eds.), *Holman Hunt and the Pre-Raphaelite Vision* (Toronto: Art Gallery of Toronto, 2008), 161–168.
95. For instance, Watts wrote to Winsor & Newton in 1903 proclaiming: "I have heard a doubt thrown on the trustworthiness of Verona Brown! I should be sorry to find it the case for it is a colour I find very useful. Is there any way of preparing Van Dyke Brown to make it safe to use?" Watts to Scott Taylor, 27 January 1903.
96. Scott Taylor to Watts, 14 June 1901.
97. Watts to Winsor & Newton, 6 July 1871, and 5 August 1878.
98. Watts to Scott Taylor, 16 June 1901. Emphasis in original.
99. Newton to Watts, 21 August 1878.
100. Remarkably, the firm later marketed these colours as a special range of paints available for sale at three times the price of their regular colours, sold in specially designed wide-mouth tubes that enabled them to be forced from their casing. Advertisements for these paints appeared in the 1901 Winsor & Newton Retail Catalogue, included as an Appendix in Willoughby, "The Search for Permanence", (CICL).
101. The description of the mill comes from Scott Taylor to Watts, 26 July 1898; the discussion of industrial grinding comes from Scott Taylor to Watts, 10 June 1901.
102. Scott Taylor to Watts, 10 June 1901.
103. Watts to Scott Taylor, 17 October 1901.
104. Barrington, *G.F. Watts: Reminiscences*, 66; Watts to Scott Taylor, 29 October 1898.
105. Barrington, *G.F. Watts: Reminiscences*, 66.
106. Watts to Scott Taylor, 9 November 1900. Tromans uses the term "paint-sculpture" to describe the extreme plasticity of Watts' works; Tromans, *The Art of G.F. Watts*, 64.
107. On the spiritual connotations of this work and the links between physical and metaphysical meaning in the painting, see Matthew Potter, "Materialism and the Mark of Modernity in the

- Work of G.F. Watts”, *British Art Journal* 7, no. 3 (2006): 70–78.
108. On Watts’ sculptural materials, see Veronica Franklin Gould, “Watts, Pioneer Sculptor”, in Veronica Franklin Gould (ed.), *The Vision of G.F. Watts, 1817–1904* (Guildford: Watts Gallery, 2004), 42–44.
  109. G.K. Chesterton, *G.F. Watts* (London: Duckworth, 1904), 58–59.
  110. Chesterton, *G.F. Watts*, 58.
  111. The place of this trial in debates over the role of labour in Victorian art and culture can be found in Tim Barringer, *Men at Work: Art and Labour in Victorian Britain* (New Haven, CT: Yale University Press, 2005), 314–321.
  112. On Whistler’s practice of thinning down his paints, see Steven Hackney, “Art for Art’s Sake: The Materials and Techniques of James McNeill Whistler (1834–1903)”, in Arie Wallert, Erma Hermens, and Marja Peek (eds.), *Historical Painting Techniques, Historical Painting Techniques, Materials, and Studio Practice: Preprints of a Symposium* (Marina Del Rey, CA: Getty Conservation Institute, 1995), 186–190; and David Peters Corbett, *The World in Paint: Modern Art and Visuality in England, 1848–1914* (University Park, PA: Pennsylvania State University Press, 2004), 112–114.
  113. On Ruskin’s central role in Victorian debates regarding art and labour, see Barringer, *Men at Work*, 2.
  114. Watts’ comment on his socialism comes from Hulda Friederichs, “An Interview with Mr. G.F. Watts, R.A.”, *The Young Woman: A Monthly Journal and Review* 39 (1895): 73–82; quoted in Wilfred Brunt, *England’s Michelangelo: A Biography of George Frederic Watts* (London: Hamilton, 1975), 213. Watts painted Carlyle in 1868—see Watts, *George Frederic Watts*, Vol. 1, 249–250; Morris in 1870—see Veronica Franklin Gould, *G.F. Watts: The Last Great Victorian* (New Haven, CT: Yale University Press, 2004), 98–99; and Crane in 1891—see Watts, *George Frederic Watts*, Vol. 2, 200. For a close study of Watts’ relationship to Carlyle in particular, see David A. Stewart, “Reality, Artifice, and the Politics of Evolution: Watts and Carlyle in the Earnest Age”, *Victorian Poetry* 33, nos 3–4 (1995): 476–498.
  115. Julia Mary Cartwright, “G.F. Watts, Royal Academician, His Life & Work”, *The Art Journal*, Extra Number: Easter Art Annual (London: Virtue & Co., 1896), 8
  116. Chief among these is the 1880 essay “The Present Conditions of Art”, reprinted in Watts, *George Frederic Watts*, Vol. 3, 147–190, and his 1888 essay “Aims of Art”, reprinted in Watts, *George Frederic Watts*, Vol. 3, 228–234.
  117. Watts, “The National Position of Art”, reprinted in Watts, *George Frederic Watts*, Vol. 3, 257–272.
  118. Watts, “The National Position of Art”, reprinted in Watts, *George Frederic Watts*, Vol. 3, 264.
  119. The discussion of industrial labour as “slavery” comes from John Ruskin, *The Stones of Venice*, Vol. II, in E.T. Cook and Alexander Wedderburn (eds.), *The Works of John Ruskin*, Vol. 9 (London: George Allen, 1903–1912), 193. In the most famous passage of *The Stones of Venice*, titled “The Nature of the Gothic”, where Ruskin potently expounds his belief on the ethics of labour, he explicitly mentions colour-making, noting that “the painter should grind his own colours; the architect work in the mason’s yard with his men; the master-manufacturer be himself a more skillful operative than any man in his mills”, Ruskin, *The Works of John Ruskin*, Vol. 9, 201.
  120. Watts, *George Frederic Watts*, Vol. 1, 263.
  121. Matthew (6:24) and Luke (16:3) both proclaim “Ye cannot serve God and Mammon.” For a detailed etymology of Mammon and his appearance in various other poetic and literary

works, see Mark Bills and Barbara Bryant, *G.F. Watts: Victorian Visionary: Highlights from the Watts Gallery Collection* (New Haven, CT: Yale University Press in association with Watts Gallery Compton, 2008), 232\*.\*

122. Watts, "Present Conditions of Art", in Watts, *George Frederic Watts*, Vol. 3, 166.
123. Watts, *George Frederic Watts*, Vol. 2, 149. Mary Watts recalls that her husband initially made this remark to the artist Briton Riviere upon a visit to Watts' studio.
124. Watts, *George Frederic Watts*, Vol. 3, 268.
125. Watts had already used this format in his portrait *Henry Edward Manning* (1882). While the most obvious model for this painting would be Raphael's *Portrait of Pope Julius II* (1511), which Watts could have seen frequently at the National Gallery in London, Watts claimed there to be a "coldness in the line" in Raphael that he disliked; Watts, *George Frederic Watts*, Vol. 2, 80. It seems more likely that Watts would have modelled the work on Titian's *Portrait of Pope Paul III* (1543).
126. Watts described these figures as general "types of humanity", M.H. Spielman, *The Works of Mr G. F. Watts RA* (London: Pall Mall Gazette Office, 1886), 15. My thanks to Paul Taylor, Curator at the Warburg Institute Photographic Collection in London, for his assistance locating allegories of avarice for comparison with Watts' *Mammon*.
127. On the various interpretations of Midas' ass' ears, see Maya Vassileva, "King Midas' Ass's Ears Revisited", *Ancient West and East* 7 (2008): 237–247.
128. Thomas Carlyle, *Past and Present*, The Norman and Charlotte Strouse Edition of the Writings of Thomas Carlyle (Berkeley, CA: University of California Press, 2005), 295. This link between Carlyle's text and Watts' painting is commonly acknowledged in scholarship on the painting. For instance, see Bills and Bryant, *G.F. Watts*, 232.
129. Carlyle, *Past and Present*, 163–164. Emphasis in original.
130. The smoke has alternatively been understood as an allusion to the description of Mammon's cave in Edmund Spenser's sixteenth-century poetic work *The Faerie Queene*. Spenser describes how Mammon's "face with smoke was tand". See Andrew Wilton and Robert Upstone (eds.), *The Age of Rossetti, Burne-Jones & Watts: Symbolism in Britain 1860–1910* (London: Tate, 1997), 169–170.
131. This motif recurs throughout eighteenth- and nineteenth-century images of gout held catalogued by the Wellcome Collection, London. See, for instance, James Gillray, "Punch Cures the Gout, -the Colic, -and the 'Tisick", 1799, hand-coloured etching, 25.8 x 34 cm, British Museum.
132. Gould describes how the Compton Mammon is "more grotesque than the Tate version" and "illustrates Watts' point even more strongly" (Gould, *Vision of G.F. Watts*, 74), while Bills and Bryant note that in the smaller work "Mammon is perhaps even more brutal in conception" (*G.F. Watts: Victorian Visionary*, 232). The smaller canvas was exhibited in *George Frederic Watts, 1817–1904*, Tate Gallery, London (9 December 1954–16 January 1955), cat. no. 69; *G.F. Watts: A Nineteenth Century Phenomenon*, Whitechapel Art Gallery, London (22 January–3 March 1974); *The Vision of G.F. Watts, 1817–1904*, Watts Gallery, Compton, Surrey (2 July–31 October 2004), cat. no.70.
133. On Watts' practice of working on different versions of the same subject, see Potter, "Materialism and the Mark of Modernity", 72. Watts would also execute large-scale drawings of the same subjects he painted, which were similarly mistaken for preparatory works rather than experiments in different media. See Chloë Ward, *The Drawings of G.F. Watts* (London: Watts Gallery in association with Philip Wilson, 2016), 85.

134. Barrington, *Catalogue of Paintings*, by G.F. Watts, 3.
135. The larger version was first exhibited in Birmingham in 1885. Mary Seaton Watts, *The Diary of Mary Watts 1887–1904: Victorian Progressive and Artistic Visionary*, edited by Desna Greenhow (London: Lund Humphries, in association with Watts Gallery, 2016), 167. Although Mary Watts does not specify which canvas he continued to labour over, her language here suggests he was working on the smaller canvas as the larger Tate version entirely lacks the impasto seen in the Compton version and is far more wash-like in terms of its surface.
136. My sincerest thanks to Sally Marriott, the de Laszlo Conservation Fellow at the Watts Gallery, for her detailed observations on the varnishing of this painting and in Watts' varnishing practice in general. Varnishing was clearly a fraught issue for Watts. Varnishing provided crucial protection from environmental damage and exposure to oxygen, which would dull his colours and damage his surfaces, but he also despised its sheen, noting that: "Titian abhorred varnishes with his very soul", Watts, *George Frederic Watts*, Vol. 3, 304. Watts' practice of continually reworking his paintings also meant he was reluctant to varnish his works (and thereby admit they were completed).
137. Marriott informed me that adding wax to varnish to reduce gloss was a practice common among painters at this time.
138. Ridge and Townsend note that Watts certainly advocated collectors should varnish his paintings in order to protect them, but many have often been over-varnished, resulting in a "uniform gloss" unintended by the painter; Ridge and Townsend, "G.F. Watts in Context", 227. Marriott similarly notes that, although Watts may have advocated protective varnishing, it is extremely difficult to ascertain how glossy or matt these surfaces would have been, especially if the works have been re-varnished or had varnish removed.
139. On Watts' handling as a repudiation of academic idealisation, see David Stewart, "Of Angst and Escapism: George Frederic Watts and Frederic, Lord Leighton", *Victorian Institute Journal* 12 (1994): 33–53.
140. Although impressionist painters certainly used paint squeezed straight from the tube, often their works were less spontaneous than has previously been supposed; see Bomford *et al.*, *Impressionism*, 91–98; and Callen, *The Art of Impressionism*, 156–176. On the use of this technique by Vincent Van Gogh, see Paolo Cadorin, "Colour Fading in Van Gogh and Gauguin", in Cornelia Peres, Louis van Tilborgh, and Mette Marie Bang (eds.), *A Closer Look: Technical and Art-Historical Studies on Works by Van Gogh and Gauguin* (Zwolle: Waanders, 1991), 26–31.
141. My thanks to Edward Cooke for suggesting the term "moral aesthetics" in relation to Watts' work.

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