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RUSKIN, DARWIN, AND LOOKING BENEATH SURFACES

By Katelin Krieg

> I have lately been reading *Modern Painters* . . . . Hitherto I have only had instinct to guide me in judging of art. I feel now as if I had been walking blindfold – this book seems to give me eyes.
>
> – Charlotte Brontë to W. S. Williams, 1848

> I have always thought that the great merit of the *Principles*, was that it altered the whole tone of one's mind & therefore that when seeing a thing never seen by Lyell, one yet saw it partially through his eyes.
>
> – Charles Darwin to Leonard Horner, 1844

JOHN RUSKIN AND CHARLES DARWIN shared a desire to change the way their readers looked at both nature and art. However, when considering them together, we typically remember their failure to see eye to eye on man's place in nature. Examining Ruskin's responses to Darwin's work, sexual selection in particular, or Ruskin's late dissatisfaction with Victorian science more generally, scholars have emphasized their conflicting worldviews.[1] Yet this tendency to focus on conceptual disagreement fails to consider a shared intellectual background between the two men: the science of geology.[2]

In this essay, I argue that geology, notably Charles Lyell's *Principles of Geology* (1830-33), provides an important intellectual and rhetorical context for both *Modern Painters* (1843, 1846) and *On the Origin of Species* (1859). All three texts are preoccupied with the limits of human perspective and presented Victorian audiences with dramatic new ways of viewing nature and art, as Darwin's and Charlotte Brontë's letters above both suggest. While *Principles* sets the stage by emphasizing the limits of human perspective in the study of nature, *Modern Painters* and the *Origin* employ key rhetorical strategies that Lyell's text does not: both imagine shared visual experiences between author and audience in order to teach readers how to look. The texts also cultivate, albeit in slightly different ways, a distrust of mere appearances in favor of a truth metaphorized as existing beneath or beyond the surface of things. Ruskin and Darwin surely offer different, even oppositional, perspectives in their texts. However, their spatial metaphors for knowledge help promote a shift away from a supposedly non-interpretive empiricism toward an empiricism that acknowledges the limits of our perspective and employs the imagination to transcend them.

Vision and epistemology – seeing and knowing – were tightly linked in the Victorian period, as a wide array of literary scholars and cultural historians have demonstrated.[3] Seeing,

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however, implies a more passive subject than I want to posit here. The distinction between seeing and looking has an important bearing on the construction of both *Modern Painters* and the *Origin*. Ruskin and Darwin both engage with the natural world, which anyone can see. The problem was not that their audiences could not see flowers, rocks, trees, and animals, but rather that they were not looking at them in the right way. Looking implies both the will of the subject and a particular perspective: looking at implies looking from. Housing the discussion under looking rather than seeing acknowledges an interpretive factor for which the notion of brute force empiricism traditionally associated with the Victorians fails to account. On the contrary, for these Victorians, the visible does not always constitute the known, though it always forms a part of it. *Modern Painters* and the *Origin* are ultimately concerned with knowledge culled from observational practices, but despite both texts' tendency toward detailism, they do not only reproduce the experience of observation for the reader.[4] Rather, both mount an argument for, demonstrate the practice of, and encourage engagement in a particular method of looking (Levine, *Darwin* 17; Garratt).

The role of vision in *Modern Painters* has received much attention, but scholars remain divided on whether Ruskinian vision is a product of late-Romantic subjectivity or strives for a realist or objective mode more typically associated with the Victorians. Robert Hewison sees Ruskin's notion of vision as "determinedly non-speculative [and] non-analytical," wherein "the principle of direct observation and resistance to speculation leads to an attitude to nature that rests upon externals. All you need to know can be discovered by simply using your own eyes" (20). Patricia M. Ball maintains that Ruskin harbored a "devotion to fact," though the ability to "see the facts of nature" is, for Ruskin, dependent on a thorough understanding of the object (53, 65–66). George Landow notes a tension between objective and subjective elements in Ruskin's discussion of typical beauty, which he says Ruskin resolves to his own satisfaction (but "not, alas, to ours") by "appealing to an order that is ultimately divine" (113–14). More recently, Rachel Teukolsky has contextualized *Modern Painters* in contemporary aesthetic and scientific discourse, and she, too, highlights Ruskin's "contradictory epistemological allegiances" between "universalist formalism and romantic individualism" (56-57).

Elizabeth Helsinger and Peter Garratt have both helpfully charted this division. In *Ruskin and the Art of the Beholder*, Helsinger argues that the first volume of *Modern Painters* imitates the romantic vision of Ruskin's hero, Wordsworth, but that by the third volume Ruskin has established his own identity as a critic – rather than the amateur "graduate of Oxford" – by distancing himself from the Romantic poets. Ruskin trades the vision of the Romantic poet that is able to take in all of nature in a single glance for the vision of the beholder whose sight is characterized by its excursivity: he changes positions often in order to build a comprehensive view that includes both nature and his responses to it. More recently, Garratt has framed *Modern Painters* in the context of mid-nineteenth century associationist psychology, arguing that "Ruskin's theory of realism locates truthfulness in an originating perspective, in a view from somewhere rather than nowhere, and in doing so it revives the very self who would be annihilated as the occasion of veracious experience" (74).

This essay follows Helsinger's assertion that the rhetoric of *Modern Painters* undergoes an important shift that bears on the kind of looking the text advocates. But rather than that shift occurring during the years while Ruskin was writing *The Stones of Venice* – that is, between volumes two and three of *Modern Painters* – I maintain that the shift occurs between volumes one and two and is not a product of Ruskin's changing self-conception as

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a critic, but rather a strategy purposefully employed in relation to his audience. Instead of focusing, as Helsinger and Garratt do, on the dramatization of perception through sensuous description, I want to shift our attention toward the epistemological effects of particular rhetorical strategies Ruskin employs that encourage a new way of looking. *Modern Painters* is less an example of vicarious or dramatized visual experience than a use of rhetoric that actively changes the way the reader looks at nature and art and, in consequence, defines truth.

Whereas vision in *Modern Painters* has garnered much critical attention, less attention has been paid to its role in Darwin's *Origin of Species,* in part because literary critics have tended to approach the *Origin* as a conceptual node, exploring the influence of the concepts of natural and sexual selection on the literary and artistic imagination.[5] When considering the language and structure of the *Origin* in its own right, literary critics highlight the text's ability to function beyond strict generic boundaries and read it in literary terms.[6] Yet, the focus on the *Origin* as just that – a point of conceptual origin which Victorians, and novelists in particular, sought to "assimilate and resist" (Beer 2) – highlights the ornamental or emotionally expressive role of rhetoric. David J. Depew notes that the former strips rhetoric of all epistemic significance and the latter relegates it to a "merely heuristic role in the process of scientific discovery" (382). Here I follow Depew in taking Darwin's classification of his book as "one long argument" seriously, emphasizing its role as a rational argument presented to an audience of rational readers (382). Darwin's text was addressed to a "general naturalist public" and construed that public as devoted to the "argument from design, but [simultaneously] as willing, because they saw themselves as honest truth-seekers, to adopt an evolutionary view if that is where the evidence pointed" (Depew 382–83). In contrast to literary scholars who are often more interested in the aesthetic or emotional effects of Darwinian rhetoric, Depew emphasizes its epistemic significance and the text itself as a rational exchange between author and audience.

I do not mean to suggest that the affective nature of the *Origin* is not important, but rather that rhetoric can make both affective and epistemic claims at once. Reading Ruskin and Darwin for rhetorical common ground rather than conceptual dissimilarity can shed light on elements of *Modern Painters* and the *Origin* that have presented critical conundrums, including the status, in both texts, of imagination and observation. In so doing, we may be able to gain a more nuanced understanding of the epistemological and aesthetic stakes of empiricism during the Victorian period.

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RUSKIN'S FIRST TWO PUBLISHED ESSAYS – at age fourteen, no less – appeared in *Loudon's Magazine of Natural History* and concerned the color of the Rhine and the strata of Mont Blanc. Ruskin had, from an early age, been interested in mineralogy and geology (Hewison 19–24). While at Oxford, he regularly attended the geological lectures of William Buckland, who was also a mentor of Lyell's, and it was at Buckland's home that he first met Darwin in 1837 (Burd 299–304). Despite the fact that Ruskin does not explicitly mention having read Lyell in his early-published work, his attendance at Buckland's geological lectures and the meetings of the Geological Society (to which he later belonged) during Lyell's presidency, as well as selected letters from his personal correspondence, suggest an ongoing familiarity with Lyell's work (36: 9–11, 481). Darwin, too, encountered Lyell as a young man, reading *Principles* aboard the *Beagle* and subsequently describing himself as a "zealous disciple

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of Mr. Lyell's views" ("To W. D. Fox"). Darwin was so influenced that in 1844 he wrote to Leonard Horner, "I always feel as if my books came half out of Lyell's brains" ("To Leonard").

Geologists before Lyell, beginning roughly with Saussure at the turn of the century, emphasized firsthand field observation, and this rhetoric – if not diligent practice – carries over in the rhetoric of *Principles* (Rudwick 74; Gould 99–113).[7] Martin Rudwick argues that emphasis on direct observation led to a problem particular to the geological sciences: how to make that experience "real and convincing to those who had in fact *not* witnessed what was being described" in geological texts (74). Without communicating that "sense of veracity . . . any conclusions based on fieldwork would be convincing only to the savant who had been in the field, and no wider consensus . . . might ever be formed." Geological texts like Saussure's enabled readers to become "virtual witnesses" of phenomena through detailed description and visual illustrations (75-84).

From the first, then, geology as we know it was underpinned by both the value of visual evidence and problems particular to seeing. What was at the turn of the century a problem of communicating firsthand observations to those who could not travel to observe for themselves became by the 1830s a different kind of visual problem that rested on the issue of perspective. Not just firsthand observation but a minimally interpretive form of observation became the hallmark of good science in the early nineteenth century. One needs look no farther than Georges Cuvier's work on fossils as they pertained to earth's history. Cuvier postulated that because certain fossils were only found in specific strata of the earth, that these stratigraphic lines marked catastrophic upheavals. He was, as Stephen Jay Gould puts it, a promulgator of "empirical literalism":

> Read literally, then and now, the geological record is primarily a tale of abrupt transitions, at least in local areas. If sediments indicate that environments are changing from terrestrial to marine, we do not usually find an insensibly graded series of strata . . . . The world of dinosaurs does not yield gradually to the realm of mammals . . . . Faunal transitions, read literally, are almost always abrupt . . . . The catastrophists tended to accept what they saw as reality: abrupt transitions of sediments and fossils indicated rapid change of climates and faunas. The defense of catastrophism was rooted in the most direct (or minimally 'interpretive') reading of geological evidence. (133)

Cuvier, whose views were extremely popular in Britain, offered a "minimally interpretive" assessment of geological strata and the fossils they contained, which meant capitalizing on what appears to be abrupt transitions between strata. *Principles* contradicts this view, arguing instead for gradual and uniform change over vast stretches of time. This position almost by definition requires a more interpretive assessment of the evidence than that of Cuvier. However, Lyell frames his argument not as an issue of interpretation, but rather of perspective.

The complications of geological observation have everything to do with our human point of view. "The first and greatest difficulty" of geological investigation, writes Lyell, "consists in our habitual unconsciousness that our position as observers is essentially unfavourable, when we endeavor to estimate the magnitude of the changes now in progress" (1: 81; ch. 5). Whereas Saussure and Cuvier had emphasized accurate fieldwork and minimally interpretive observation, Lyell calls attention to the compromised status of human observation itself. As humans, we are restricted temporally to the present and geographically to "about a fourth part

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of the surface" of the earth, that fourth being the "theatre of decay and not of reproduction" (Lyell 1: 81; ch. 5). Geological change is, effectively, invisible to us; while "we know . . . that new deposits are annually formed in seas and lakes, and that every year some new igneous rocks are produced in the bowels of the earth . . . we cannot watch the progress of their formation" (1: 81; ch. 5). On the contrary, holding these facts up to our consciousness via reflection "requires an effort both of the reason and the imagination" (1: 81; ch. 5).

Principles is an exercise in imaginative vision aimed at lessening the liability of our current point of view, which causes us to "imperfectly estimate the result of observations invisible to us" (1: 82; ch. 5). Lyell encourages readers to imagine alternative points of view of geological phenomena. If, for example, we were sea creatures as opposed to land-dwellers, we would be able to see far more of earth's actions, in turn lessening the philosophical difficulties of geology:

> There can be little doubt, although the reader may perhaps smile at the bare suggestion of such an idea, that an amphibious being, who should possess our faculties, would still more easily arrive at sound theoretical opinions in geology, since he might behold, on the one hand, the decomposition of rocks in the atmosphere, and the transportation of matter by running water; and, on the other, examine the deposition of sediment in the sea, and the imbedding of animal remains in new strata. He might ascertain, by direct observation, the action of a mountain torrent, as well as of a marine current. (1: 82; ch. 5)

Lyell's suggestion reveals that validity in the context of early nineteenth-century natural history depended primarily on direct visual observation. Because all phenomena with which it dealt were not directly observable, geology faced a philosophical impasse that Lyell here dramatizes with the imagined perspective of amphibious beings with human faculties. This being would presumably overcome the difficulties we humans face simply because he would be able to see what we cannot.

Yet, even if we imagine a race of humanoid sea-dwellers for whom much would be directly observable, still other geological phenomena would remain invisible to them. One of these amphibious beings "would be liable to fall into the greatest error when endeavoring to reason on rocks of subterranean origin. He would seek in vain, within the sphere of his observation, for any direct analogy to the process of their formation" (1: 82; ch. 5). As a result, he would erroneously attribute them to a "primeval state of nature." Lyell, however, does not stop with amphibious humanoids, but rather posits another alternative perspective that would aid with the problem of subterraneous rock formation:

> But if we may be allowed so far to indulge the imagination, as to suppose a being, entirely confined to the nether world – some "dusky melancholy sprite," like Umbriel, who could "flit on sooty pinions to the central earth," but who was never permitted to "sully the fair face of light," and emerge into the regions of water and of air; and if this being should busy himself in investigating the structure of the globe, he might frame theories the exact converse of those usually adopted by human philosophers.

Whereas the amphibious being falls short in his ability to gather direct observational evidence of rocks formed beneath the surface of the earth, the subterranean sprite also encounters limitations. Though the suggestion of such a creature seems far-fetched (and may explain why Lyell turns to Pope's already-established character from *Rape of the Lock*), it perfectly

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encapsulates the core problem of geological investigation: the "limited range of our vision" (1: 83; ch. 5). Perspective is everything: while the subterranean sprites would have access to the earth's inner workings, they would lack visual access to the surface, resulting in theories directly contrary to our own.

Principles is, as James Secord notes, "a book about seeing" (138). Adelene Buckland, too, calls attention to the "dazzling array of perspectives," though "each is of limited range" (129). Yet, *Principles* does more than emphasize the difficulties inherent in a method that depends upon directly observable causes. Lyell's method rested on the assumption that observable causes can (or, rather, should) be extended to the causes we cannot observe. *Principles,* therefore, is not just about the limitations of our vision, but the possibilities of extending it to make the invisible visible.

Lyell often painted critics of uniformitarianism – his two-fold doctrine that earth is a steady-state system and that we can use observable causes in the present to reason about causes of phenomena in the past – as "catastrophists" and "speculators" who ignored field evidence (Secord 146; Gould 99–113). Yet, Lyell differed from his colleagues not because he was a better field geologist – Gould has suggested, in fact, that he was rather worse – but because *Principles* offered a different method of viewing evidence. Those Lyell labeled catastrophists, when they looked at geological strata, saw breaks and gaps. *Principles*, on the other hand offered a "distinctive method of probing behind appearances" in direct contrast to the "empirical literalism" of those deemed catastrophists, even if Lyell framed it as being more empirically accurate (Gould 133).[8]

Our human perspective allows us to see, in the first place, a world that appears unchanging except through massive upheaval, and in the second place, a fossil record that demonstrates large gaps between organic forms. *Principles* offers a different way of looking at the same phenomena that assumes knowledge existing beyond, or in contradiction to, visible appearances. Given Ruskin and Darwin's familiarity with Lyell's work, it is not surprising that his rejection of empirical literalism in favor of perspectives extended through the imagination shapes some of the rhetorical strategies they employ in their own texts that encourage readers to look at the natural world in imaginative new ways.[9]

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ONE MIGHT GET THE IMPRESSION from *Modern Painters* that all England had rejected the paintings of J. M. W. Turner, but many critics praised him, too. The general criticism did however hold in common a perception of Turner's work as non-representative of the natural world, and this criticism structures Ruskin's defense in *Modern Painters I* (Ball 60). Like Lyell's vociferous attacks on catastrophists as poor empiricists, Ruskin attacks Turner's critics for failing to see what is before their eyes. In order to shift thinking about Turner, Ruskin spends the majority of *Modern Painters I* teaching readers how to look at nature by encouraging them to engage in their own visual experiments and explaining what they will observe. Yet, *Modern Painters II* marks a shift that Ruskin only hints at in the first volume: imitating the natural world does not make for satisfactory art. In order to reach a more essential truth, Ruskin spends the second volume explaining the role of the imagination and the theoretic faculty in the perception of beauty and the creation of art. He cultivates a distrust of surface appearances because they are not comprehensive, and opts for spatial metaphors of depth and breadth to describe the truth he wants readers to find in nature and art.

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The premise of *Modern Painters I* is that Turner's critics and the classical painters alike are blind to nature. Ruskin so persistently maintains Turner's fidelity to nature that the line of argumentation becomes almost comically predictable. Ruskin takes a natural feature – typically water, sky, or mountains – and begins by demonstrating the failures of classical painters to capture these faithfully, due to inadequate observation or a desire to improve nature. He then goes on to demonstrate Turner's absolute superiority in his attempt to capture the same features. Ruskin often relies on the eyes of the reader to judge the similarities and differences between nature and art under his guidance. Visual imperatives pepper the text: "Look at the bars of your window-frame"; "look at Westminster Abbey"; "look at the large Cuyp in the Dulwich gallery"; "Observe your friend's face"; "Observe the shadows on the trunk of the tree"; "Look at the round things about the sun in the bricky Claude" (Ruskin 3: 320, 336, 349–50, 328, 307, 375). Often these imperatives set up extended and detailed visual experiments in which Ruskin expects the reader to engage:

> Go out some bright sunny day in winter, and look for a tree with a broad trunk, having rather delicate boughs hanging down on the sunny side, near the trunk. Stand four or five yards from it, with your back to the sun. You will find that the boughs between you and the trunk of the tree are very indistinct, that you confound them in places with the trunk itself, and cannot possibly trace one of them from its insertion to its extremity. But the shadows which they cast upon the trunk, you will find clear, dark, and distinct, perfectly traceable through their whole course, except when they are interrupted by the crossing boughs. And if you retire backwards, you will come to a point where you cannot see the intervening boughs at all, or only a fragment of them here and there, but can still see their shadows perfectly plain. Now, this may serve to show you the immense prominence and importance of shadows where there is anything like bright light. They are, in fact, commonly far more conspicuous than the thing which casts them, for being as large as the casting object, and altogether made up of a blackness deeper than the darkest part of the casting object, (while that object is also broken up with positive and reflected lights,) their large, broad, unbroken spaces, tell strongly on the eye, especially as all form is rendered partially, often totally invisible within them, and as they are suddenly terminated by the sharpest lines which nature ever shows. (3: 303–04)

Ruskin posits himself as an experienced observer; he knows what readers will see on a "bright sunny day in winter" because he has performed experiments like these himself. The perspective from which one should look is physically specific, even measurable ("four or five yards"). Not a tree in the mind's eye, Ruskin's is a specific tree on a specific day meant to be observed for a specific effect. He guides readers' attention to the features we would otherwise miss because we assume we already know what shadows look like. We are, however, poor observers because of just such an assumption, and volume one is a lesson in observation: "The first great mistakes that people make," writes Ruskin, "is the supposition that they must *see* a thing if it be before their eyes" (3: 141). Yet, while Ruskin attempts to revise our observational habits, his argument does not rest exclusively on his own authority. Instead, he encourages readers to "go out . . . and look" for ourselves.

In *Modern Painters I*, Ruskin is not fully enacting what I have described as "looking"; this is still simply "seeing." There is a difference for Ruskin, however, in seeing nature and looking at (and producing) art that bears on the structure of *Modern Painters*. For Ruskin, the greatest painter goes directly to nature for his materials, and his notion of the artistic eye is absolutely dependent on habitual, patient observation of the natural world. As with the command to "go out" and look at shadows, Ruskin repeatedly exhorts his audience to go look

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at nature as he maintains that Turner does, but the classical painters do not. Yet, producing and being a competent judge of great art both require more than just empirical accuracy. Only hinting at this difference in *Modern Painters I* with his deprecation of imitation, Ruskin does not fully flesh out these ideas until *Modern Painters II*. There appears to be an attitudinal shift regarding accurate empirical observation as the measurement of good art. Whereas accurate observation appeared to demarcate truth in the first volume, Ruskin spends the second volume advocating for the role of the imagination and the theoretic, or moral, faculty in accessing truth. While these may seem contradictory, Ruskin explains the apparent shift himself: "It is the habit of most observers to regard art as representative of matter, and to look only for the entireness of representation . . . and it was to this view of art that I limited the arguments of the former sections of the present work, wherein having to oppose the conclusions of a criticism entirely based upon the realist system, I was compelled to meet that criticism on its own grounds" (4: 165). Ruskin rejects the "realist system" by the second volume, not because it is wholly wrong, but because it is incomplete, as his discussion of imitation suggests.

"Imitation" for Ruskin is an attempt to perfectly copy the material world, and our pleasure in it rests on an experience of deception: "Whenever anything looks like what it is not, the resemblance being so great as *nearly* to deceive, we feel a kind of pleasurable surprise, and agreeable excitement of mind" (3: 100). Not the idea of the thing represented, but the dexterity with which the artist renders his image accounts for our satisfaction. Because Ruskin defines the greatest art as that "which conveys to the mind of the spectator . . . the greatest number of the greatest ideas," artistic dexterity is a necessary skill, but not the end of art (3: 92). Imitation makes dexterity in copying the empirical elements of the natural world the goal of art, but this can never represent truth for Ruskin because it must appear to be what it is not. Truth is founded on, but not fulfilled by, empirical accuracy and artistic dexterity, as Ruskin goes on to explain in the second volume.

Truth depends on an emotional and moral sensitivity in excess of empirical accuracy. Yet because he chooses to meet Turner's critics on their own ground (i.e., upholding a direct correspondence between the real world and the artistic representation), it is easy to misread Ruskin as advocating that same strict empirical accuracy, or a form of what I outlined above as "empirical literalism." Empirical accuracy is certainly an element of truth, but it is not truth in its entirety, and it is in this sense that Ruskin moves beyond literalism. Ruskin champions a more comprehensive perspective, one that values artists beyond their ability to copy what they see and promotes a style of looking sensitive to the moral nature of things. Truth requires the viewer to transcend surface appearances, and one accomplishes this through the lens of moral feeling.

In Ruskin's estimation, the perception of artistic truth depends on the theoretic faculty. While aesthetic philosophy before him had emphasized sensual experiences of beauty (aesthesis), Ruskin "wholly [denies] that the impressions of beauty are in any way sensual, – they are neither sensual nor intellectual, but moral." (4: 42). He replaces aesthesia with theoria, the former connoting a capacity for sensation and the latter contemplation. The theoretic faculty "is concerned with the moral perception and appreciation of ideas of beauty," whereas imagination combines ideas from nature in order to transmit new objects for theoretic perception by the minds of others. The purpose of the second volume, as Ruskin puts it, is to "explain [the] power and define [the] sphere" of the theoretic faculty and the imagination, and "to vindicate . . . their true place for the intellectual lens and moral retina by which and

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on which our informing thoughts are concentrated and represented" (4: 36). The theoretic faculty offers a better way to look at art and nature than the aesthetic, because it combines accurate observation with moral sensitivity, and only by considering both do we access truth.

In order to enact this epistemological shift, Ruskin cultivates a distrust of surface appearances as a comprehensive representation of the world. To this end, he turns to spatial metaphors. In his discussion of the distinction between imagination and fancy, Ruskin represents the imagination under the rubric of "deep" truth. Similarly, when distinguishing between typical and vital beauty, he frames his discussion of vital beauty under the rubric of breadth. Truth is not a quality of surface appearance alone, but is predicated on a comprehensive vision metaphorically represented as looking into the depths of things.

Ruskin contrasts the imagination, producer of moral truth, with the fancy, the lesser of the faculties that perceive beauty. Fancy is the faculty of the imitator: it enables the reproduction of surface appearances, but remains deceptive because it cannot do more. Imagination, on the other hand, facilitates moral feeling and elucidates a more essential truth than what is visible. "The fancy sees the outside," writes Ruskin, but "the imagination sees the heart and inner nature, and makes them felt" (4: 253). Ruskin consistently represents fancy and imagination as surface and depth or outside and inside, and feeling is the key difference:

> Fancy, as she stays at the externals, can never feel. She is one of the hardest hearted of the intellectual faculties, or rather one of the most purely and simply intellectual. She cannot be made serious, no edge-tools but she will play with; whereas the imagination is in all things the reverse. She cannot be but serious; she sees too far, too darkly, too solemnly, too earnestly, ever to smile. There is something in the heart of everything, if we can reach it, that we shall not be inclined to laugh at. The ἀνήριθμον γέλασμα [innumerable laughter] of the sea is on its surface, not in the deep. And thus there is reciprocal action between the intensity of moral feeling and the power of imagination; for, on the one hand, those who have keenest sympathy are those who look closest and pierce deepest, and hold securest; and, on the other, those who have so pierced and seen the melancholy deeps of things, are filled with the most intense passion and gentleness of sympathy. (4: 257)

The truth that Ruskin is after in this volume is moral truth, and while it cannot be divided from material truth, it is of a different type. Moral truth is not strictly visible on the material surfaces of objects, but is rather felt by the viewer, and Ruskin metaphorizes this truth as existing deep within "the heart of everything." While fancy and imagination may appear to be opposites, Ruskin maintains that looking at things through the lens of moral feeling is different from, but also dependent on, the realism he advocates in the first volume. He is explicit about the functions of the imagination, which reaches "by intuition and intensity of gaze, (not by reasoning . . .) a more essential truth than is seen at the surface of things" (4: 284). To capture and represent this truth beyond the empirically visible, Ruskin employs depth as a metaphorical location for truth.

Depth, however, is not the only spatial metaphor Ruskin employs. When discussing imagination, Ruskin consistently speaks of penetrating to the "heart" of things to perceive their moral truth, but he also conceptualizes moral truth – particularly in relation to living things – under the rubric of breadth. Indeed, one of his critiques of fancy is that because it keeps to externals, it "cannot see them all at once, but runs hither and thither . . . bounding merrily from point to point, glittering here and there, but necessarily always settling, if [it]

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settle at all, on a point only, never embracing the whole" (4: 258). The depths accessed by the imagination give a more comprehensive view, and truth only arises from comprehensiveness, as is evident in the discussion of "vital" beauty.

For Ruskin, "typical" beauty denotes classic aesthetic elements such as unity, symmetry, and purity, and is restricted to the "external quality of bodies" (4: 64). "Vital" beauty he defines as "the appearance of felicitous fulfillment of function in living things," and it is predicated on a "call for sympathy" between the viewer and the object similar to his assertion that the imagination's ability to plumb the depths of things results in "keenest sympathy" (4: 64, 257). This is not sympathy in the sense of self-identification with the object, which Ruskin later terms the "pathetic fallacy" (see *Modern Painters III*). Rather, sympathy is a contemplative method of looking predicated on both a "rightly tuned" heart and a "clearly and surely sighted" mind (4: 147).

Ruskin associates breadth of vision with the perception of vital beauty. Seeing living organisms piecemeal, rather than comprehensively, actively prevents us from experiencing vital beauty:

> But still clearer evidence of its being indeed the expression of happiness to which we look for our first pleasure in organic form, is to be found in the way in which we regard the bodily frame of animals . . . whenever we dissect the animal frame, or conceive it as dissected, and substitute in our ideas the neatness of mechanical contrivance for the pleasure of the animal; the moment we reduce enjoyment to ingenuity and volition to leverage, that instant all sense of beauty disappears. Take . . . the action of the dorsal fin of the shark tribe. So long as we observe the uniform energy of motion in the whole frame, the lash of the tail, bound of the body, and instantaneous lowering of the dorsal, to avoid the resistance of the water as it turns, there is high sense of organic power and beauty. But when we dissect the dorsal, and find that its superior ray is supported in its position by a peg in a notch at its base, and that when the fin is to be lowered, the peg has to be taken out, and when it is raised put in again; although we are filled with wonder at the ingenuity of the mechanical contrivance, all our sense of beauty is gone, and not to be recovered until we again see the fin playing on the animal's body, apparently by its own will alone, with the life running along its rays. (4: 154–55)[10]

While this passage would seem to suggest a Wordsworthian disdain for scientific knowledge, Ruskin is positing something different. He does not reject dissection outright, but rather sees the knowledge it offers as something inferior to a comprehensive view of the organism characterized by a sensitivity to its life and happiness as well as its status as a living thing. The notion of organic parts as "mechanical contrivance[s]" disables us from sympathetically observing the organism, and as such from being able to make sense of it through the lens of moral feeling. It is not that one method of looking leads to observations that are more or less true in and of themselves, but comparatively, Ruskin sees a more essential truth in a comprehensive, broad view of the organism. Piecemeal sight trades beauty for a lesser experience: wonder.

Modern Painters is preeminently concerned with teaching readers how to look at nature and art and relentlessly emphasizes the importance of comprehensive vision. Turner's critics fail on two fronts: first, they see nature through the veil of habit, seeing what they think they know rather than what is actually there. They fail by their own standard that emphasizes direct correspondence between nature and art because their perception of nature is faulty to begin. Secondly, Ruskin discards this empirical literalism as a valid method of comprehensively understanding art or even nature. Empirical accuracy is important for Ruskin because it is

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the first step toward the more essential truth he sees extant in both art and nature, but it is only that first step. One can dexterously and perfectly copy the external features of nature and still fail artistically. Moral truth, which is evident in but not completely captured by the surfaces of objects, can only be accessed through sympathetic vision, which Ruskin represents metaphorically with depth and breadth.

Like Ruskin, Darwin attempts to guide readers toward a new way of looking at nature, but rather than positing visual experiments, he begins the first chapter of the *Origin* with a shared visual experience between author and reader: "When we look to the individuals of the same variety or sub-variety of our older cultivated plants and animals, one of the first points which strikes us, is, that they generally differ much more from each other than do the individuals of any one species or variety in a state of nature" (Darwin 7; ch. 1). Unlike Ruskin's hierarchical construction in which he knowingly guides readers toward a superior observational practice, this opening establishes author and reader on equal intellectual footing and acknowledges that the reader is no amateur observer of nature. "When we look" implies a habitual engagement and a familiarity with this state of affairs on the part of the speaker and his audience. It also implies a shared way of looking: the same features strike "us" both. Thus, unlike Ruskin or even Lyell who both criticize the failures of their critics to see material reality, Darwin implicates himself in failed observational methods. This alignment between author and audience is not an empty rhetorical platitude meant to assuage readers' egos. Rather, Darwin recognizes that by definition, the human perspective that takes empirical reality literally is inadequate because it only reveals partial truths. While Ruskin defines comprehensive vision through a fuller human feeling for the moral nature of things via the imagination, Darwin sees comprehensive vision as knowledgeable vision or remaining cognizant of what we know while we observe. Yet Darwin, too, sees a place for the imagination, particularly in extending our existing knowledge to new fields.

Natural selection is, for Darwin, a matter of perspective. Its visibility depends on a temporally long-range perspective. In a natural world governed by the struggle for existence and natural selection,

> Battle within battle must ever be recurring . . . yet in the long-run the forces are so nicely balanced, that the face of nature remains uniform for long periods of time . . . . Nevertheless so profound is our ignorance, and so high our presumption, that we marvel when we hear of the extinction of an organic being; and as we do not see the cause, we invoke cataclysms to desolate the world, or invent laws on the duration of the forms of life! . . . We see nothing of these slow changes [of natural selection] in progress, until the hand of time has marked the long lapse of ages, and then so imperfect is our view into long past geological ages, that we only see that the forms of life are now different from what they formerly were. (Darwin 73, 84; ch. 3, 4)

Inadequate human perspective is the source of our blindness to organic developmental changes in the same way that it was the source of our blindness to geologic changes. In both cases, change only becomes evident after long stretches of time. And even then, what is self-evident from our "imperfect . . . view" is only the difference between past and present. We cannot see the process of natural selection at work – only its results. Unlike Lyell and Ruskin who accuse their opponents of missing the (easy-to-see) facts, Darwin freely admits that we all see the same uniformity. He implicates himself in a failed way of looking, thus creating an ethos that posits him as both companion and guide. He criticizes the inability to

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move beyond the visual – the failure to see causal forces has led a collective "us," because of "our" narrowness, to reach faulty conclusions.

In order to make his case for a process whose visibility is perspective-dependent, Darwin follows this passage with a slew of shared visual experiences and a lens through which to understand them: "When we see leaf-eating insects green, and bark-feeders mottled grey; the alpine ptarmigan white in winter [he extends the list of examples] . . . we must believe that these tints are of service to these birds and insects in preserving them from danger" (84; ch. 4). In coupling visual experiences ("when we see") with modal verbs like "must" (in "we must believe"), Darwin advocates a particular method of looking reliant on a knowledgeable subject. "Must" here functions in a deontic modality, implying that the current state of affairs (what I would deem the "way of looking") does not meet the speaker's expectations or desires. That is, "we must believe" functions not only as an imperative, but also as a projection for how we ought to look in the future because the present way of looking is subpar.

The *Origin* is dedicated to informing our perspective in order to shift it. Darwin accomplishes this by framing the problem metaphorically as an issue of visibility and surfaces. By framing surfaces as misleading, Darwin interrupts the one-to-one correspondence that underlies empirical literalism. He calls attention to how our perspective may be obscuring our view; a perspective built on ignorance and bounded by the human lifetime necessarily inhibits our vision. Discussing the struggle for existence, Darwin writes, "Nothing is easier than to admit in words the truth of the universal struggle for life . . . Yet unless it be thoroughly engrained in the main, I am convinced that the whole economy of nature . . . will be dimly seen or quite misunderstood" (62; ch. 3). The problem is not with admitting the empirical reality of the struggle for life, but rather with the inability to remain cognizant of it.

The struggle for life functions in the same way uniformitarianism and gradualism function for Lyell: it serves as a lens through which connections take on more certain or even different meanings. Darwin goes on to dramatize the potential blindness or lapse in memory that lets us forget about the struggle for existence:

> We behold the face of nature bright with gladness, we often see superabundance of food; we do not see, or we forget, that the birds which are idly singing round us mostly live on insects or seeds, and are thus constantly destroying life; or we forget how largely these songsters, or their eggs, or their nestlings, are destroyed by birds and beasts of prey; we do not always bear in mind, that though food may now be superabundant, it is not so at all seasons of each recurring year. (62; ch. 3)

Darwin again aligns himself with the dim vision of his audience with the communal "we," and posits a collective tendency to look at the (sur)face of nature, which conceals with the appearance of harmony and fecundity the constant battle between animals, the destruction of creatures by others, and the scarcity of resources. It is not that what we see is not what we get, but rather that we have not been looking the right way. We fail to use our existing knowledge as a lens that rejects the first impression of nature as "bright with gladness." True knowledge allows us to reject uninformed impressions. Surfaces here are framed as a veneer we can dispel with an educated, but also expansive, perspective. "Bearing in mind" the struggle for existence disrupts the appearance of gladness and would reveal a nature dictated by violence and chaos. Darwin himself recognizes this, ending the chapter with a (perhaps failed) reassurance that "we may console ourselves with the full belief, that the war of nature is not incessant, that no fear is felt, that death is generally prompt, and that

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the vigorous, the healthy, and the happy survive and multiply" (79; ch. 3). The discovery of order beneath this perceived chaos goes on to be even more reassuring. Darwin dispels the orderliness of the first layer, the "face of Nature bright with gladness," and trades it instead for the chaotic struggle for existence. It, in turn, becomes a sort of surface that he rejects as the organizing principle for interactions between organisms. Natural selection offers another layer beneath the struggle for existence that is predicated on, if not gladness, certainly order.

Ruskin praises the imagination's ability to access the deeper truth of things, to extend our vision beyond surface appearances. Darwin, too, uses the imagination in the *Origin* in this fashion. James G. Lennox and Alan C. Love have both discussed Darwin's use of imaginary illustrations in the *Origin*, tracing the practice back to Lyell. Darwin's goal was not to use these illustrations as empirical evidence, but rather to test the plausibility, verify the intelligibility, and demonstrate the explanatory potential of the theory of natural selection (Love 86; Lennox 223–24). The following passage is only one of Darwin's imaginary illustrations, but is fairly representative:

> Let us now turn to the nectar-feeding insects in our imaginary case: we may suppose the plant of which we have been slowly increasing the nectar by continued selection, to be a common plant; and that certain insects depended in main part on its nectar for food. I could give many facts, showing how anxious bees are to save time . . . Bearing such facts in mind, I can see no reason to doubt that an accidental deviation in the size and form of the body, or in the curvature and length of the proboscis, &c., far too slight to be appreciated by us, might profit a bee or other insect, so that an individual so characterised would be able to obtain its food more quickly, and so have a better chance of living and leaving descendants. (Darwin 94; ch. 4)

These imaginary illustrations posit plausible situations in which natural selection might be at work, and demonstrate the ways in which the theory explains the facts Darwin presents (which I have omitted here in the interest of space). At the same time, imaginary illustrations also demonstrate the kind of educated looking that Darwin has been advocating. Looking while "bearing such facts in mind" leads us to the conclusion, beyond any doubt, that changes so minute that they are "too slight to be appreciated" by humans could occur (and likely are). Darwin links this imaginary reasoning directly to Lyell, admitting that the "same objections" that were once urged against his views could potentially be urged against Darwin's theory, as well. But in the same way that readers had accepted gradualism in geology, he projects, they will accept natural selection in the creation and modification of living things.

The imaginary instances Darwin uses throughout the *Origin* help extend our vision in the sense that these instances enable us to think beyond the constraints of empirical literalism. As Lennox puts it, "Darwin wants to show people that what they think is impossible is perfectly possible" (238). We might even say that Darwin wants to make what would otherwise be invisible visible by training readers in how to look through imaginary illustrations like this.

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DESPITE THEIR DISTANCE CONCEPTUALLY, Ruskin and Darwin are more like than unlike in the rhetorical strategies they employ. Their use of imagined and often shared visual experiences between author and reader recall the "virtual witnessing" of early nineteenth-century geology, but their post-Lyellian emphasis on the shortcomings of a strictly literal

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empiricism undergirded by the limits of perspective is distinct, manifesting in a distrust of surfaces in favor of evidence gained through imaginative extension, typically metaphorized in spatial terms. Both reject a brute force empiricism that has become a critical caricature of Victorian thought. *Modern Painters* and the *Origin* highlight the ways in which the Victorians could simultaneously value empirical accuracy and view it as an insufficient measure of truth.

Examining *Modern Painters* and the *Origin* together does more than provide a better understanding of what we might think of as a range of Victorian empiricisms. These texts also demonstrate the importance of both imagination and feeling (in addition to vision) as sources of empirical truth. Where Ruskin emphasizes sympathy and moral feeling, Darwin offers intellectual interest, satisfaction of curiosity, and even aesthetic pleasure:

> When we no longer look at an organic being as a savage looks at a ship, as at something wholly beyond his comprehension; when we regard every production of nature as one which has had a history; when we contemplate every complex structure and instinct as the summing up of many contrivances, each useful to the possessor, nearly in the same way as when we look at any great mechanical invention as the summing up of the labour, the experience, the reason, and even the blunders of numerous workmen; when we thus view each organic being, how far more interesting, I speak from experience, will the study of natural history become! (Darwin 485–86; ch. 14)

Like Ruskin, Darwin emphasizes comprehensive vision as the avenue to a more interesting and fulfilling natural history. Understanding, a sensitivity to temporality, and a sense of objects as composite structures underlie Darwin's notion of comprehensiveness. In particular, his discussion of machines as a "summing up" of the labour, experience, reason, and blunders of individual workmen seems to echo another of Ruskin's works (*The Stones of Venice*, 1851–53), but also recalls Ruskin's hesitancy to see, for example, the shark's fin in isolation. Whereas previously Darwin had associated himself with the blindness of his audience, here he has passed beyond, "speaking from experience" and inviting us to partake in the new natural history.

The *Origin* closes with the famous image of the entangled bank. Interdependence, we might say, is the theme. But it is worth noting that we are not seeing but contemplating this entangled bank with its organisms and its laws alike. We have a mental vision of it that accounts both for what we could be able to see and those things that we cannot immediately see but surely know. Thus, along with interdependence, we have comprehensiveness, and as Darwin writes, "there is grandeur in *this* view of life" (490; ch. 14, emphasis mine).

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Appendix

Despite his insistence later in life that he had ceased to find pleasure in "poetry of any kind, including Shakespeare" and that artistic taste was "not natural to" him, it would be amiss to take this as definitive evidence that Darwin had little aesthetic sensibility (*Autobiography* 43–44, 61).[11] In fact, during his time at Cambridge, Darwin frequented the Fitzwilliam Gallery and discussed the paintings with the curator. "My taste must have been fairly good," he remarks in his *Autobiography*, "for I certainly admired the best pictures" (61).

Darwin was acquainted with the standard aesthetic vocabulary of his day, as well. *The Voyage of the Beagle* (1839) is replete with descriptions of natural landscapes as "picturesque," "sublime," and "beautiful." The picturesque, which appears most often of these three terms, "finds its characteristic mode of expression

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in the language of sight," positing an observer who views scenes "according to compositional rules abstracted from painting" (Costelloe 167). In addition to the vocabulary of the picturesque, Darwin adopts its method of viewing natural landscapes. In letters from this period, he directly compares landscapes he encountered during his voyage with engravings by landscape painters, John Martin and Joachim Mortiz Rugendas in particular (Kohn 15–17).[12]

Beyond admiring visual art and adopting an aesthetic vocabulary, Darwin had a sustained interest in aesthetic sensibility. He read "with much interest Sir J. Reynolds' book," *Discourses* (1778), while he was at Cambridge, and upon returning from his voyage aboard the *Beagle,* he returned also to Reynolds's text (*Autobiography* 61). Darwin documents his engagement with Reynolds in three of his personal notebooks dating from 1837 to 1839.[13] In his reflections on Reynolds's *Discourses* and Lessing's *Laocoon* (1766), Darwin's primary concern is whether our sense of the beautiful is instinctual or learned. However, he also muses on aesthetic perception in more traditional terms and can be seen working out his own views in these notebooks, toggling between Reynolds and Lessing ("Old" 10–2, 22–4). In an 1838 notebook, he considers the relation between imagination and pleasure: "I remember my pleasure in Kensington Gardens has often been greatly excited by looking at trees [as] great compound animals united by [a] wonderful & mysterious manner. – There is much imagination in every view" (*M notebook*). Seeing plants metaphorically as animals is useful for generating knowledge and pleasure alike. Given Darwin's fond remembrance of – and implied ongoing engagement in – a form of metaphoric vision, it is unsurprising that Lyell's encouragement to imagine alternative perspectives would resonate with him.

Furthermore, it is telling that these reminiscences of metaphoric vision follow a parenthetical note to view "Wordsworth about science being sufficiently habitual to become poetical" (*M notebook*). In the Preface to *Lyrical Ballads*, Wordsworth draws a parallel between poetic and scientific knowledge, but he ultimately distinguishes science from poetry on the basis of its failure facilitate "habitual and direct sympathy connecting us with our fellow-beings" (106). Poetic imagination is, on the other hand, rooted in habitual engagement with nature by which we can sing "a song in which all human beings join" (106).[14] Interestingly, Lyell, Darwin, and Ruskin revise this Wordsworthian version of imaginative vision, framing it as a process of overcoming habitual – and therefore insufficiently imaginative – methods of looking at nature and at art (Teukolsky 34).

NOTES

1. For studies emphasizing Ruskin and Darwin's differences, see Prodger; Levine, "Ruskin and Darwin"; Birch; and Smith, "Domestic Hybrids." Some scholars have cast Ruskin as more sympathetic to science, though in his own idiosyncratic fashion. See O'Gorman, Frost, and Weltman.
2. Burd and Hewison have both addressed Ruskin's early interest in geology, but have tended to restrict their discussion to geologists in the generation preceding Lyell, such as Horace-Bénédict de Saussure (*Voyages dans les Alpes*, 1779-1796) and William Buckland (Hewison 18-29; Burd). Both frame their discussion in theological terms, as well.
3. The scholarly literature concerning the role of vision in Victorian epistemology and imagination is vast, but for studies relevant to this essay, see Crary, Flint, Armstrong, Shires, Morus, Christ, Willis, and Buckland.
4. Levine frames Darwin's prose in these terms (*Darwin* 4-18). Dolk notes that early reviewers of *Modern Painters* praised Ruskin's "extraordinarily accurate observation of natural phenomena described with unusual vividness" (623).
5. For studies of Darwin's influence on the visual arts, see Smith, *Charles Darwin*; Donald and Munro; and Kort and Hollein.
6. For representative readings of the *Origin* in literary terms, see especially Beer and Levine, *Darwin.* Smith has discussed Darwin's influence on Victorian visual culture (see *Charles Darwin*) and Krasner

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has discussed his influence on perception, arguing that Darwin's theories brought about "a self-consciousness about perception that causes nature to disappear into the human mind" (4).

7. While natural theology is another influence on the intellectual landscape in which Lyell, Ruskin, and Darwin wrote, I focus here on strategies of observation as they relate to problems unique to geology, rather than the sciences more broadly. It is indeed true that under the auspices of natural theology nature was read as a sign of divine intelligence and goodness; Ruskin continues this tradition in many ways (see Wheeler). However, I want to draw attention to tendencies among these writers' preoccupation with the limits of human perspective and the role of individual imagination (rather than Biblical typology) in overcoming those limits. For studies of natural theology in relation to geology and Victorian culture, see: Klaver, Gillispie, Knight. For an account of natural theology in relation to Victorian science and literature, see Dewitt (esp. ch. 1). For natural theology as it relates particularly to Ruskin, see Burd and Teukolsky (esp. 40–47).
8. Buckland, following Secord, has framed *Principles* as "anti-narrative" (110). She argues that Lyell used the parodic language of mock epic to distance his work from geology's "epical dimension" under natural theology (120).
9. Early-nineteenth century geology is not the only shared discourse between these two men. While my focus remains on the geological context for their rhetorical moves, Darwin did have a sustained engagement with the visual arts, which I detail in the Appendix.
10. Ruskin later thought this an "ill-chosen example" and wished he had used the Venetian seahorse instead. See f.n., dated 1883, 4: 154.
11. Darwin's son, Francis, reflects at some length on Darwin's tendency to see himself as "an ignoramus in all matters of art" and to speak of the "small worth of portraits" in contrast to photographs. He notes that his father's "love of pictures as a young man is almost proof that he must have had an appreciation of a portrait as a work of art, not as a likeness" and that we might account for his disparaging comments regarding portraiture as an attempt to "persuade [his children] to give up the idea of having his portrait painted" (F. Darwin 90–91).
12. Kohn argues that the *Origin* was stylistically and cognitively shaped by Romantic aesthetics, traceable through the developmental history of two of Darwin's most famous metaphors: the "entangled bank" and the "wedge." He provides a helpful overview of Darwin's engagement with Romantic art and letters.
13. Darwin lists Reynolds's *Discourses*, along with (notably) Lessing's *Laocoon*, Lyell's *Principles*, and Malthus's *Essay on Population*, under "Books to be Read" and "Books Read" in an 1838 notebook. While some of the notes were later collected into a single parcel and labeled "Old and useless notes about the moral sense & some metaphysical points written about the year 1837 & earlier," similar notes are scattered throughout the M and N notebooks (1838-39). The M and N notebooks were labeled "private" and composed during the same years as the transmutation notebooks (C, D, and E). However, it is easy to identify aspects of the M and N notebooks that eventually came to shape Darwin's discussions of the aesthetic sense as it relates to sexual selection in the *Descent of Man* (1871). Lastly, though Darwin recalls reading Reynolds's *Discourses* during his time at Cambridge (1828–31), the dating of these personal notebooks suggests he re-read or revisited Reynolds some years later (1837–39).
14. Darwin here elides any imaginative distinction between visual art and poetry in a way that recalls the innovative aspects of *Modern Painters I* that Helsinger identifies (see esp. ch. 1).

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