Darwin Among the Novelists: Narrative Strategy and *The Expression of the Emotions*

My concern in this essay is to study Darwin the rhetorician and, more specifically, his use of novels to support his argument in *The Expression of Emotions* (1871) that humans and animals share behavioral traits which indicate similar states of consciousness. In addition I will examine some of Darwin's thoughts on the effects and sources of responses to art and literature, a topic clearly related to the controversies over the special status of humans in the natural world.

Darwin's rather negative published statements concerning fiction make it all the more surprising that he conscripts novels into his scientific writing. In a famous passage of his autobiography, he laments that from middle age, he ceased to enjoy poetry, and claims that a recent attempt to read Shakespeare had "nauseated" him (*Selected Letters* 54). He asserts that reading poetry is, however, a means of enlarging "the moral sentiment," and implies that reading fiction is an inadequate substitute:

> Novels which are works of the imagination, though not of a very high order, have been for years a wonderful relief and pleasure to me [...] A surprising number have been read aloud to me, and I like all if moderately good, and if they do not end unhappily (*Autobiography* 138).

So while he candidly admits that he finds his pleasure and relief in fiction, he accepts the conventional assessment of the aesthetic merits of poetry and fiction. Darwin was a voracious novel-reader by any standards. For much of his married life, he spent several hours each day listening to his wife read fiction aloud (*Life* 1: 113, 121-25). During the 1850s and 60s, his most productive decades, he announced to friends that he had partaken

of "an astounding number of love scenes" and was "becoming quite an abandoned novel-reader," and he claimed that during months of illness he read nothing but fiction (*Correspondence* 12: 211; 5: 161). Earlier in 1864, Darwin wrote to Asa Gray that he had given up reading current affairs in favor of novels, exclaiming "Good Heavens the lot of trashy novels, which I have heard is astounding," and in October reiterated that he read little but "endless foolish novels" (12: 60, 386). In letters and notebooks, he refers to fiction by Richardson, Austen, Scott, Thackeray, Dickens, and Eliot, among many others (4: 461-467, 481, 495). His correspondence with the botanist Joseph Hooker is replete with references to fictional characters and scenes, and to novels lent, borrowed, and recommended.

Given that from the 1860s through to the end of his life, Darwin felt the need to publicly and privately disparage his personal enjoyment of the "foolish" and "trashy" novel genre over "higher" aesthetic forms, it seems surprising that he chose in *The Expression of the Emotions in Man and Animals* (1872) to offer quotes from seven different novels as evidence for his arguments. He uses these quotations from novelists like Dickens, Eliot, and Scott, but also from lesser lights such as Phillip Hamerton and Margaret Oliphant, to support crucial theoretical claims in the book. His decision seems even more surprising when we consider what was at stake for Darwin in publishing *The Expression*. He considered it to be his last chance to persuade readers that humans evolved all of their moral and intellectual (including aesthetic) capacities from animals, without supernatural intervention. The book makes relatively few claims that facial expressions have been naturally selected as a means of communication among humans, but concentrates instead on arguing that the most common human expressions are

inherited from pre-human primate ancestry or are visible side-effects of underlying physiological changes that have been evolved and inherited. The book insists that the major human emotions and their expressions are shared by non-human animals, and that many human expressions "can hardly be understood, except on the belief that man once existed in a much lower and animal-like condition" (*Expression* 19). As I will argue, the fictional examples and novelistic narrative devices in *The Expression* do important work in winning over resistant readers to these still controversial ideas, and some of his comments suggest that he attempted to integrate his ideas about aesthetic responses to the novel into his evolutionary theories.

By 1871, when Darwin wrote *The Expression*, the idea that humans had evolved from other animals had lost some of its shock value. However, Darwin's claim that evolution could account for human moral, intellectual, and aesthetic capacities, with no need for the intervention of any kind of "special creation," was still controversial in both scientific and lay circles. Highly respected evolutionary scientists, most notably Charles Lyell and Alfred Russel Wallace, publicly argued that human moral and intellectual capacities could not have evolved from those of other animals. In 1869, Wallace had taken this stance publicly for the first time, in a review of Lyell's *Principles of Geology* and *Elements of Geology* published in the *Quarterly Review*, in which he argued that natural selection could not account for the human intellect, because the human brain had developed in "primitive man" when there was no need for it (Shermer 160). Darwin was "dreadfully disappointed" by Wallace's apostasy (161). Lyell backed Wallace, giving his claims on this subject more scientific weight (158).

However, by 1871, when he was writing *The Expression*, Darwin was less bothered by respectful disagreements from Lyell and Wallace than he was by the intemperate denunciations from the conservative press and from his erstwhile scientific protégé St. George Mivart. By 1871, Darwin was able to dismiss Wallace's views on the evolution of human morals, made in his review of *The Descent of Man*, as "almost stereotyped," presumably because Wallace had already published several similarly-worded critiques of Darwin's view of human evolution (Moore and Desmond 581). In fact, Darwin seems to have been more rattled by Mivart's attacks of 1870-73 than by any other scientific criticism in the course of his life (Dawson 54). From Darwin's point of view, Mivart's criticisms were much worse than those of Wallace for a number of reasons. While Wallace disagreed strongly with Darwin about human evolution, he always did so in respectful language and continued to correspond amicably with Darwin on the subject; publicly, he staunchly defended other major prongs of Darwin's theory, especially natural selection. Mivart, on the other hand, rejected Darwinism wholesale in *On the Genesis of Species* (1871), arguing against evolution as well as natural selection, because no "intermediate" forms existed to demonstrate the evolutionary development of complex features such as the eye.

Perhaps more unsettlingly, Mivart added a credible scientific voice to the swathe of conservative non-scientists who denounced Darwinian theory on religious and sociopolitical grounds. Mivart's review of *The Descent of Man* asserted that the book's arguments for the evolution of morality led "in the political order to the evolution of horrors worse than those of the Parisian Commune. I refrain from characterizing their tendency in the moral order" ("Evolution and its Consequences" 196). Mivart's

hyperbolic claim assumes that wide acceptance of the idea that human morals had evolved, and were not divinely created, would not only undermine public morality but would also lead to class war and revolution.

Meanwhile, Darwin was troubled by very similar accusations in *The Times*' review of *The Descent,* which concluded by speculating that "loose philosophy" and "disintegrating speculations" such as Darwin's were no doubt "a potent element in the disorganization of French society," and might lead to the "wildest and […] most murderous revolutions" (*The Times* 5). For *The Times*' reviewer, T.S. Baynes, as for Mivart, moral and political anarchy were the inevitable results if Darwin's deeply-held belief that the human moral sense evolved from animal instincts gained wide acceptance: "If our humanity be merely the natural product of the modified faculties of the brutes, most earnest-minded men will be compelled to give up those motives by which they have attempted to live noble and virtuous lives, as founded on a mistake" (*The Times* 5). Darwin referred dismissively to Baynes as a "windbag," but it is clear that he was nonetheless deeply concerned by the effect of this kind of negative press, and he expressed concern to his publisher John Murray that the review would hurt *The Descent*'s sales (*Calendar* 337). In fact, Darwin and his publishers had anticipated that *The Descent* would be accused of encouraging immorality and had gone to considerable lengths to preempt it (Dawson 26-81). It may seem odd to us that a scientist would accord such importance to the social effects of his theory, but Darwin did, and this fact helps us to understand why and how he carefully shaped his arguments in his work. Thus when Darwin published *The Expression*, the stakes were high. He wanted to defeat his critics by persuading both lay and scientific readers of his controversial view that the human

intellect and moral sense were produced by evolution, while also convincing the critics that this theory was no cause for moral panic.

Fiction's Empirical and Cultural Authority

Darwin's references to novels in his private writings from the 1830s onward indicate that he viewed fiction as a source of reliable empirical observations, comparable to the ethnological and travel literature on which he also drew heavily in his work on human evolution. In his notebooks of the late 1830s, Darwin cites novels as a source of evidence of expression, emotion, and mental processes, and these novelistic data tend to confirm his developing hypotheses. In his private notebook of 1838, "full of Metaphysics on Morals and Speculations on Expression', Darwin considers incidents in Walter Scott's *Guy Mannering* (1815) and *The Antiquary* (1816) as evidence for hypotheses about the evolution of various instincts. For example, in thinking about the distinction between conscious recall and instinctive memory, he writes, "Miss Cogan's [an acquaintance's] memory of the tune, might be compared to birds singing, or some instinctive sounds. […] Old Elspeth's /in *Antiquary*/ power of repeating poetry in her dotage is fact of same sort. Aunt B. ditto" (*Notebooks on Mind*).[1] In these entries, Darwin places Scott's character Old Elspeth in ontological parity with personal acquaintances, implying a belief that

[1] The notebooks contain three further examples from Scott's fiction that confirm various theories about the evolution of memory and expression:

> Old people (*Antiquary* Vol. II, p. 77) remembering things of youth, when new ideas will not enter, is something analogous to instinct, to the permanence of old hereditary ideas.—being lower faculty than the acquirement of new ideas (*Darwin on Man*, 339).
> Walter Scott (*Antiquary*), Vol. II, p. 126, says seals knit their brows when incensed (ibid.).
> Hensleigh W. says that babies know a frown very early in life. [...] if so this is precisely analogous or identical with bird knowing a cat, the first it sees it.—it is frightened without knowing why—the child dislikes the frown without knowing why—a man as in *Guy Mannering* feels pleasure in seeing the scenes of his childhood without knowing why—had not [been] conscious of recollecting it—this may be nearest approach to such instincts which full grown men can experience (ibid 276).

realist fiction, factual discourse, and personal observation of the world are epistemologically similar, and might offer equally valid empirical evidence. Darwin's use of novelistic data for support in his earliest thinking on human evolution suggests that he was entirely sincere when he claimed, in *The Expression*, that novelists are "excellent observers" of human behavior.

From his extensive daily intake of fiction, Darwin seems to have culled a mental stock of descriptions of human behavior that he viewed as potential evidence for his theories—in the same way that he might draw on travel narratives or works of natural history. *The Expression* includes citations from novels Darwin read from the 1840s up to 1870, which suggests that he was making notes (or mental notes) of fictional "evidence" throughout that period: *Redgauntlet* (1824), *Oliver Twist* (1838), *Adam Bede* (1859), *Mary Barton* (1848), *Miss Marjoribanks* (1866) and *The Brownlows* (1868) by Margaret Oliphant, and *Wenderholme* (1870) by Phillip Hamerton. Darwin's omnivorous consumption of novels made him comfortable in generalizing about the fictional data set: for example, he could say with unusual confidence that "this expression is not even alluded to, as far as I have noticed, in any work of fiction, with the exception of *Redgauntlet* and of one other novel" (*Expression* 183).

Such a use of fictional "data" in a scientific publication today would be seen to undermine its scientific authority, but this was not generally the case in 1872. Even hostile reviews of *The Expression* did not draw negative attention to the book's use of evidence from literary works.[2] On the contrary, the *Athenaeum* review concludes by adducing its own fictional example, from *The Old Curiosity Shop*, in support of one of

[2] See also "The Expression of the Emotions," *Popular Science Review*, 12:46 (1873: Jan) pp. 71-3; *London Quarterly Review* 39:78 (1873: Jan), p. 516 and 40:79 (1873: Apr) pp. 252-7.

Darwin's claims (631), and the *Journal of the Anthropological Institute* recommends that future anthropologists studying facial expression should seek further literary data from "the ancient poets" (445).[3] As the latter review suggests, scientific journals as well as lay reviewers endorsed the use of evidence from fiction. During the 1890s, moreover, psychologists like James Crichton Browne and William James culled descriptions of abnormal mental states from Dickens, Eliot, and Austen (Vrettos 69).[4] These uses of fiction reflect a widespread view of realistic fictional characterization as an unparalleled resource for psychology and medical science, combining unusually acute symptomatic observation with insight into underlying mental states. For Darwin and his conjectured audience, novelists are like anthropological observers, whose observations can be cited in the same way as those of Darwin's ethnological correspondents. This belief in the evidential validity of fictional representation also reflects a wider sense (present also in Hardy's article on "The Science of Fiction," for example) that fictional realism and science were consilient enterprises with the common goal of expanding human knowledge through careful observation and inference.

Darwin's use of fiction as a source of data suggests that he considered novels to have more in common with scientific description than they do with other forms of art. He does not seem to have considered the novel as an aesthetic form in the same way as poetry, music, or painting, since he declared that he could enjoy novels in spite of having lost his "higher aesthetic tastes" (*Life* 41). When he explains the human aesthetic sense in *The Descent of Man*, his explanations are based on visual art and music (with poetry

[3] Another reviewer of *The Expression* asserts that novelists are better observers of emotional expression than are scientists, quoting Eliot's *Middlemarch* to make the point (*The Saint Paul's Magazine* 205).
[4] See also James Sully's celebration of Eliot's contribution to psychology; and the *British Medical Journal*'s Dickens obituary, which eulogized certain of his fictional descriptions as contributions to medical research and standard examples in medical reference books (*Dickens: The Critical Heritage* 514.)

subsumed within the category of song), which he conjectures developed as outcomes of sexual selection. However, this view of novels as less aesthetic than other art forms made them, for Darwin, a better source of evidence, and explains why he cites novelists rather than referring to painting and sculpture as the previous major writers on expression had done (including Darwin's main antecedent and adversary, Charles Bell). Visual high art does not accurately represent facial expression, Darwin explains, because "in works of art, beauty is the chief object; and strongly contracted facial muscles destroy beauty" (*Expression* 21). In short, Darwin thought that representations of expression that pursue aesthetic goals tend to be inaccurate, but he clearly felt no such qualms about the fictional representations of expression he selected.[5]

Darwin also may have chosen to quote from novels for reasons other than their value as evidence. It was a literary form that straddled high and low culture, and would be familiar to as wide a range of readers as possible. His publishing decisions around this time suggest that he had become interested in reaching a wider audience. Early in 1871, before he finished *The Expression*, Darwin was also preparing a new edition of *The Origin* that would be affordable for working people, six shillings a copy rather than the fifteen-shilling price of previous editions (Moore and Desmond 582, 592). Clearly Darwin was interested in reaching those whom Mivart called "our half-educated classes"—those whose morals, Mivart claimed, would be affected for the worse by Darwin's theories.

[5] Darwin's citations of fiction in *The Expression* marked a change in practice from his allusions to poetry in previous books. *The Expression* does cite examples from poetry, including those from Shakespeare and Homer, but it is the only published work in which Darwin makes use of examples from fiction. Gowan Dawson has argued that in *The Descent*, Darwin quoted ultra-respectable contemporary poets such as Tennyson for their moral as well as cultural authority, to mitigate the book's potentially scandalous arguments (Dawson 52-3). This attempt was not wholly successful, since Baynes linked both *The Descent* and *The Expression* to the poetry of Swinburne, claiming that Darwin, as much as Britain's most indecent poet, promoted immoral sensualism (Dawson 47-8).

Democratizing his literary references by citing novels in addition to canonical poetry was, of course, not without risks, since Darwin was aware that he was under attack for his aesthetic deficiencies by adversaries ranging from journalists like Baynes to influential scientific writers like the Duke of Argyll (Smith, "Evolutionary Aesthetics" 242-3).[6] Yet in *The Expression* he appears to court such criticism by explicitly declaring his rejection of the cultural expectation that he would turn to visual "high" art for evidence: "I had hoped to derive much aid from the great masters in painting and sculpture, who are such close observers [...] but, with a few exceptions, have not thus profited" (14). As Jonathan Smith argues, in *The Expression* Darwin explicitly distances himself from "from the tradition in expression studies of using and assessing works of Renaissance painting and classical sculpture, and was much more willing to have *The Expression* linked with the contested aesthetic domains of photography and melodrama than with high aesthetic culture." Yet he was also concerned to "mute" any connections this might create "with aesthetic and political radicalism" (*Visual Culture* 42).

However, while Darwin was perhaps taking aesthetic or political risks by using unconventional visual materials, his use of fiction was considered neither socially nor aesthetically controversial. Critics who shouted loudly about Darwin's moral and aesthetic deficiencies spoke warmly of his use of novels in *The Expression*. Baynes, for example, laments at length that Darwin did not make greater use of literary data, and writes of fiction as though it is of equal value to the works of Shakespeare or Shelley:

[6] Perhaps the most influential critique of Darwin's aesthetic sense came later, from Ruskin, in his 1875 botanical work *Proserpina*, a "thorough but unsystematic rejoinder" to Darwin's botany, in which he railed against Darwin's "ignorance of good art" (Smith, "Evolutionary Aesthetics," 240-3). See also Smith, *Charles Darwin and Victorian Visual Culture*.

> Many writers of imaginative prose, too, are gifted with such a spirit of minute observation that their pictures of human nature possess a kind of photographic truth, distinctness, and reality. [...] Mr. Darwin has derived a few illustrations from this source, but they might with advantage have been greatly multiplied. Indeed, from the works of George Eliot alone there might easily be selected felicitous descriptive touches embracing almost every kind of human emotion and desire" (Baynes 265).

Darwin may even have been responding to Baynes when he added a quotation from *Adam Bede* to his second edition of *The Expression*.[7] Acknowledging Eliot in this way, may also have seemed a good rhetorical strategy because she was pre-eminent among novelists of the early 1870s as an authority on human emotion. In fact, throughout *The Expression*, the cultural cachet of the novelists cited seems to have determined the extent to which Darwin drew attention to their presence. Scott, Dickens, and Eliot are all named within the body of *The Expression*'s text, but the other authors are introduced with the anonymizing fanfare "an excellent observer" and are only named in footnotes, suggesting that Darwin regarded the three most prestigious novelists as better sources of cultural authority.

In *The Expression*, then, Darwin used fiction both for evidence to support his argument and for the cultural authority and respectability it offered to the larger audience he hoped to persuade. He also took measures both subtle and clear to hedge potentially

[7] The citation from *Adam Bede* describes another incident in which facial recognition misfires: arguing that infants instinctively recognize and respond to expressions of grief in adults, and do not merely cry out of fear of a strange facial expression, he mentions as counter-evidence "the case of Chad Cranage, the blacksmith in *Adam Bede*, at whom, when he had his clean Sunday face, his little granddaughter used to cry" (*Expression* 354). Presumably Darwin chose this passage because he wished to produce in his readers a sense of pleasurable recognition.

unsettling material with the conventional and the familiar. For example, he combined engravings and photos in *The Expression* in such a way as to ease his readers from the familiarity of conventional natural history engravings to the novelty of photos capturing transient facial expressions (Prodger 158). *The Expression*'s references to fiction represent another such strategic deployment of representational forms, for what could be more reassuringly familiar than novels such as *Oliver Twist*, *Mary Barton*, and *Adam Bede*? In buttressing his arguments with emotive scenes from highly-regarded, popular novels and locating his explanations for human evolution within contexts that were at once familiar, emotionally resonant, and morally acceptable to many of his readers, Darwin hoped the moral and sentimental capital of enormously popular novelists such as Dickens and Scott would offset the invidious associations drawn by critics such as Mivart between his theory and social radicalism. By quoting these novelists at key moments in his argument, Darwin domesticates the idea that humans share expressions of emotion such as anger, jealousy, and grief with animals, and appropriates fiction's special authority in speaking of human emotion.

In *The Expression*, then, Darwin made strategic uses of both novelistic narrative techniques and fictional quotations to favorably shape his readers' emotional responses, and to appeal at strategic moments to his audience's sense of pleasure through fictional portrayals of emotion. In using examples of dramatic or domestic scenes from well-known novels, Darwin offers his readers familiar narratives of emotion alongside claims that were profoundly disquieting and controversial to many of his readers.

Channeling Reader Response

In his use of fictional examples, Darwin is perhaps drawing on his own experience that fictional narratives offered an antidote to unsettling experiences. His voracious novel-reading has been described by George Levine as a way of escaping the anxiety produced by his own science (165-6). Such escapism has been identified by Mary Poovey as a typical property of the Victorian novel, which supposedly offers a retreat to "a literal or imaginative hearth where anxiety and competition subside" (Poovey 122), a description that makes the novel a refuge from the various pressures of life. The fictional scenes to which Darwin refers, however, are typically sensational or climactic moments of grief and anger, and therefore scarcely seem to offer the kind of "imaginative hearth" Poovey describes. But although Darwin himself made famous statements about the escapism of fiction, other records of his reading indicate that his personal enjoyment of fiction did not rely on an outright escape from human suffering, but on his enjoyment of representations of suffering in narrative, or what he refers to in *The Expression* as the "pleasure" of sympathy with "the imaginary distresses of a heroine in a pathetic story" (214-5). I suggest that Darwin's appreciation for and use of fiction relies on fiction's capacity to represent pain in a way that can be experienced pleasurably by readers. Spectacles of real grief and anger are disturbing, but in fiction these emotions offer a kind of dramatic pleasure. Using fictional examples of "imaginary distresses" in *The Expression* offered Darwin a way of representing negative emotions that would be pleasurable for his readers.

The Expressions' fictional citations are thus a means of representing painful emotion in a form that might render it less painful, or even pleasurable to his readers.

Notably, all of *The Expression*'s fictional examples describe negative or painful emotions. There are no novelistic citations in his sections on "Joy, High Spirits, Love, Tender Feelings, Devotion," but novels furnish data on "Suffering and Weeping," "Low Spirits, Grief, Anxiety, Dejection, Despair," "Hatred and Anger," and "Surprise, Astonishment, Fear, Horror." We might infer that Darwin found fiction a convenient source of evidence about how people behave in private under great stress, in situations rarely available for scientific observation. Yet it is unlikely that Darwin cites fiction for lack of other evidence on expressions of grief or suffering: he could, for example, have drawn on his personal life, as he does so often elsewhere in the book. He refers obliquely to his own experience, for example, when discussing which muscles around the eye contract during vomiting (*Expression* 160, 166). However, referring to a real-world individual's intense grief might evoke too much readerly distress for Darwin's purposes, whereas readers are accustomed to representations of painful emotion in fiction and associate it with the overall pleasures of the text.

It may be useful at this point to look carefully at an example of Darwin's use of a quotation from *Oliver Twist* (1838). Darwin uses the citation as supporting evidence of his immediate point, bolsters it with references to other evolutionary ideas, and uses it to represent negative emotion in a reassuring way. It appears in the chapter on anger, and is situated amid ethnological anecdotes and personal observations of animals and babies, creating a spectrum of examples that is typical of Darwin's strategies for closing evidentiary gaps between the human and animal realms. He supports evolutionary theory in *The Expression* and his other writing by using examples of children and contemporary "primitive cultures," which he, like most scientists at the time, believed represented

intermediate stages of evolutionary development. It is, for Darwin, supporting evidence of his immediate point about the similarity of human and animal emotions demonstrated by similar physical actions. When animals are angry, Darwin writes,

> The lips […] are […] commonly retracted, the grinning or clenched teeth being thus exposed. […] The appearance is as if the teeth were uncovered, ready for seizing or tearing an enemy, though there may be no intention of acting in this manner. Mr. Dyson Lacy has seen this grinning expression with the Australians, when quarrelling, and so has Gaika with the Kafirs of South America. Dickens, in speaking of an atrocious murderer who had just been caught, and was surrounded by a furious mob, describes 'the people as jumping up one behind another, snarling with their teeth, and making at him like wild beasts.' Everyone who has had much to do with young children must have seen how naturally they take to biting, when in a passion. It seems as instinctive in them as in young crocodiles, who snap their little jaws as soon as they emerge from the egg. (*Expression* 238-9).

The quotation of *Oliver Twist*, and Darwin's gloss, support his argument that expressions of anger in humans are vestigial features of animal behavior that were once directly useful but are so no longer. Humans still bare their teeth when overcome with rage, Darwin suggests, because although they no longer fight with their teeth, the association between rage and snarling has been inherited as an instinct from pre-human ancestors who would have bared their teeth preparatory to biting (*Expression* 240).

By invoking a memorably horrible scene—Dickens's description of the crowd's murderous response to Fagin after his arrest—Darwin harnesses the descriptive and

emotive power of Dickens's scene to support his argument. He subtly alters the effect of the scene and its meaning by quoting selectively to emphasize the vestigiality of human snarling. That is, Darwin omits parts of the passage and so suppresses the countervailing impression that Dickens gives—that the mob are in fact quite prepared to use their teeth on Fagin, and are only prevented from doing so by the police. He reinforces the impression of the essential harmlessness of snarling by referring to babies biting and baby crocodiles innocuously snapping their "little jaws."

Darwin's quotation also delimits the moral ambiguity of Dickens's scene, by describing Fagin as "an atrocious murderer," although Fagin's role in *Oliver Twist* is more ambiguous, since he has not murdered anyone himself, but had incited Bill Sykes to murder Nancy. The line Darwin quotes is part of a longer inset narrative, a story told by Fagin's crony Tom Chitling, who is sympathetic to Fagin and fears meeting a similar fate himself:

> "The officers fought like devils, or [the crowd would] have torn him away. […] I can see 'em now, not able to stand upright with the pressing of the mob, and draggin' him along amongst 'em; I can see the people jumping up, one behind another, and snarling with their teeth and making at him; I can see the blood upon his hair and beard, and hear the cries with which the women worked themselves into the centre of the crowd at the street corner, and swore they'd tear his heart out!" (*Oliver Twist* 445)

The description invites some sympathy for Fagin, and generates a horrifying sense of a mob's subhuman vindictiveness, suggesting they are like wild beasts aroused by the sight of blood. Darwin's abridgement of the scene strips Fagin of the sympathy provided by

Tom Chitling's narration, and suppresses the horror of the crowd's inhuman bloodthirstiness, to suggest that humans manifest animal-like aggressive traits in morally appropriate situations. Dickens's scene, by contrast, depicts Londoners who seem atavistic and irrationally bloodthirsty, kin to the kind of insurrectionary mob that *The Times* had claimed might result from reading Darwin's works. Darwin's emphasis on the mob's legitimacy and Fagin's villainy means that his snarling crowd (unlike Dickens's) is not a threat to the social fabric. As he presents it, the excerpt supports his theory within a reassuring emotional context.

Darwin was, of course, not averse to the idea that humans behave like animals, since a major aim of *The Expression* is precisely to prove their kinship. But he typically emphasizes their positive shared behaviors, and thus accommodates readers who would be happier to recognize kinship with animals who are affectionate and faithful, for example, than with animals who are straightforwardly bloodthirsty.

In his chapter on "Suffering and Weeping," Darwin's comments on an example from Elizabeth Gaskell's *Mary Barton* (1848) also channel and delimit the emotional effect of the scene he quotes from: "An excellent observer, in describing a baby crying whilst being fed, says, 'it made its mouth like a square, and let the porridge run out at all four corners'" (*Expression* 153). The quotation is again essential to Darwin's argument, since this is his only source supporting the conflicting evolutionary adaptations registered in a crying baby's "mouth like a square," which occurs because of muscle contractions that protect the baby's eyes while maximizing the volume of screaming. It is unlikely that Darwin expected his readers to recall in detail the scene he alludes to, a highly emotive

inset narrative.[8] He probably assumed his readers would share a common knowledge of such a poignant fictional scene of domestic life. Invoking this domestic context, depicting attempts to feed a distressed and loved baby, offers readers a sense of familiarity and comfort, and softens the impact of Darwin's arguments for the shared evolution of human and animal expressions of emotion.

In his use of Margaret Oliphant's novel *Miss Marjoribanks* (1866) in the section on "Grief," Darwin again invokes and contains the emotional effects of a scene of domestic drama—indeed, the only obtrusively emotive episode in Oliphant's novel (399-400)—in order to argue that a particular expression had evolved in animals and been transmitted to humans. The quotation is essential to Darwin's argument, as it is his sole example of how grief expresses itself in altruistic impulses, which Darwin regarded as inherited "habits." According to Darwin, the scene represents a girl's thwarted desire to act serviceably. He writes,

> An excellent observer, in describing the behaviour of a girl at the sudden death of her father, says she "went about the house wringing her hands like a creature demented, saying "It was her fault;" "I should never have left him;" "If I had only sat up with him,'" &c. With such ideas vividly present before the mind, there would arise, through the principle of associated habit, the strongest tendency to energetic action of some kind (*Expression* 85).

This quotation is in some ways typical of Darwin's use of evidence in the *Expression*: a person or animal is described experiencing a strong emotion, and the text moves swiftly

[8] In *Mary Barton*, this description is part of a particularly emotive story told by Gaskell's working-class amateur naturalist, Job Legh, about how he cared for his baby granddaughter Margaret after both of her parents died. She "makes her mouth like a square" because she is crying for her dead mother, and the moment is particularly anxious for Job because she is not taking in any food and might die too (102-110).

from physical description to identification of a mental state. Using only brief fictional examples serves Darwin's immediate purposes by keeping the example simple, avoiding a more diffuse, complex, and intense empathy that might be evoked over several pages in long fictional narratives. This deliberate suppression of fiction's ambiguity thus better serves his argument. Yet Darwin's examples of emotional expression do evoke reciprocal emotions in readers. The descriptions of pain and grief are affecting, and so are the depictions of embarrassment, as Janet Browne remarks (318).

The use Darwin makes of fiction in *The Expression* seems designed not only to minimize the anxiety or resistance of his readers, but also to reinforce a sense that physical expressions reveal emotional states in relatively uncomplicated ways. That is presumably why he chose to ignore the suggestion made by Ellen Lubbock, the wife of scientist Sir John Lubbock, to include a passage on facial expression from Eliot's *Adam Bede* in which Eliot emphasizes the difficulties of inferring emotion from facial expression. This passage begins, "Nature has her language, and she is not unveracious; but we don't know all the intricacies of her syntax just yet, and in a hasty reading we may happen to extract the very opposite of her real meaning" (*Adam Bede* 132). While Eliot affirms that physical behavior reveals states of consciousness, she expresses a characteristic distrust of premature inference. She also implicitly criticizes a ubiquitous novelistic convention, the narrator's claim to know the relationship between an outward expression and an inward emotion.

Darwin's Narrative Technique and Readers' Sympathy

This novelistic convention was appropriated by Darwin when he began to write on humans in *The Descent of Man* (1871).[9] *The Descent* and *The Expression* are full of vignettes, or micro-narratives, that confidently imagine the emotional state underlying a particular facial expression. In 1891, Thomas Hardy asserted that this strategy was the heart of successful realist fiction, arguing that "the true means towards the 'Science of fiction'" consist in successfully imagining the emotional experience that underlies a facial expression—for example, the "true novelist" will be able to see the "ghost" of a long-lost son in a woman's face (856). Concluding the first chapter of *The Expression*, Darwin gives a brief autobiographical account of an experience that qualifies him as a practitioner of the "science of fiction" in Hardy's sense. Darwin writes that,

> An old lady with a comfortable but absorbed expression sat nearly opposite to me in a railway carriage. Whilst I was looking at her, I saw that her *depressores anguli oris* became very slightly, yet decidedly, contracted; but as her countenance remained as placid as ever, I reflected how meaningless was this contraction, and how easily one might be deceived. The thought had hardly occurred to me when I saw that her eyes suddenly became suffused with tears almost to overflowing, and her whole countenance fell. There could now be no doubt that some painful recollection, perhaps that of a long-lost child, was passing through her mind (*Expression* 193).

[9] George Levine and Ruth Bernard Yeazell have shown that the discussions of sexual selection in *The Descent* draw on other novelistic conventions, relating to representations of courtship. See Levine, "'And if it be a pretty woman all the better': Darwin and Sexual Selection," *Darwin Loves You*, 129-201 and Yeazell, *Fictions of Modesty*.

The purpose of this passage is to argue that seemingly meaningless facial expressions are, in fact, signs of specific emotional states. The "narrator" here is not precisely like the omniscient narrators of Victorian fiction, since he is self-conscious about his act of inference in a way that is rare in nineteenth-century fiction. (It is much more typical in Victorian fiction for narrators simply to assert the meaning of their characters' facial expressions.) This micro-narrative nonetheless serves Darwin's larger purpose. He claims to accurately read not only the inward emotional causes of outward behavioral manifestations, but also perhaps the story behind the emotion ("some painful recollection [...] of a long-lost child")—a claim that was potentially very persuasive to a readership conditioned by continual encounters with such claims in realist fiction. As in a novelistic narrative, Darwin's story evokes the reader's trust in the narrator and sympathy for an imagined individual, and so solicits support for the larger purposes of his book. The narrative evokes sympathy for the woman on the train, serving as a persuasively emotive note on which to conclude *The Expression*'s introductory chapter, and supports the chapter's thesis by recounting a personally-experienced revelation of the connection between facial expression and a state of consciousness.

Darwin also writes in the style of a more straightforwardly omniscient narrator, at the many moments in *The Descent* and *The Expression* at which he simply takes for granted that inward emotion can be read from outward behavior. Such moments convey an epistemological assurance about the relationship between expression and underlying emotion that now seems more characteristic of a narrator of fiction than an inductive scientist. For example, he writes that "A baboon at the Cape of Good Hope, as I have been informed by Sir Andrew Smith, recognised him with joy after an absence of nine

months" (Darwin, *Descent* 95). Such moments recur throughout *The Descent* and *The Expression,* inviting readers to identify with the experiences and reactions of, for example, crocodiles, cats, and dogs. This project of inducing trans-specific identification is analogous to the project of novelists such as Dickens, Eliot, and Gaskell, of enlisting empathy across class, gender, national, and racial boundaries by situating readers in the perspectives of characters from alien walks of life. Darwin's descriptions of animal behavior rely on both close observation and imaginative self-projection into the mental lives of other species. Inviting his readers so frequently to identify with non-human animals produces an impression of the likeness and continuity of human and animal emotions, which supports Darwin's overall argument that human morals evolved from animal emotions.

Pain, Sympathy, and the Pleasure of Fiction

So far I have examined Darwin as a practical rhetorician. He used fiction to persuade a rather conservative audience to accept his radical materialist thesis about the evolution of human consciousness. In this next section I will focus on Darwin's attempts to clarify his thoughts about human responses to fiction, literature, and art. He was particularly interested in a related problem concerning human consciousness—the apparent paradox that fictional representations of pain would give his readers pleasure.

As the above examples indicate, Darwin turned to fiction for his examples of some of the most painful emotions he represents among "civilized" humans, suggesting that he thought fictionalized representations of pain would be more attractive to his readers than accounts of genuine suffering experienced by other people recognizably like

themselves. The idea that fictional suffering produces pleasure is not new, but recognizing that Darwin enjoyed this aspect of fiction is an interesting complication of the notion that he read fiction in an "escapist" way. A number of Darwin's own comments suggest that he read fiction to escape physical suffering: for example, during an illness in 1864, he writes to Joseph Hooker that "the douche & Adam Bede have together done me a world of good" (*Correspondenc*e 7: 300). In an early notebook, he expresses scientific interest in the fact that fiction could engulf his attention in a way that alleviated his bodily as well as his psychological distress: he records that reading Comte gave him a headache that Dickens dispelled, and wonders why (Darwin, *Metaphysics* 20). George Levine argues that Darwin's preference for novels over Shakespeare was not due to a loss of "higher" aesthetic sensibilities but because fiction offered an escape from pain, while Shakespeare's tragedies made more vivid the painful aspects of reality (*Darwin Loves You* 165-8). Levine's claim suggests that literature that represents suffering would not have provided Darwin with the escape he required; or perhaps, that literature that ends tragically could not provide such an escape, as Darwin himself suggests with his autobiographical assertion that he likes novels "if they do not end unhappily" (*Selected Letters* 54). Francis Darwin writes similarly that his father "could not enjoy any story with a tragical end, and for this reason he did not keenly appreciate George Eliot, though he often spoke warmly in praise of *Silas Marner*" (*Life* 124-5). This statement, however, seems contradicted by Darwin's strong liking for *Adam Bede*, evinced in letters (*Correspondence* 15: 330-1). Notably, *Adam Bede*'s conclusion subjects a female protagonist to a trial for infanticide and death on a convict ship, and is therefore one of the most qualified "happy endings" among Eliot's works.

In any case, a preference for happy endings does not rule out an enjoyment of fictional representations of suffering, and perhaps such enjoyment even constituted part of the escapism Darwin sought in reading novels. Darwin confirms this in his statement about the pleasures of sympathy with the sufferings of fictional heroines: "Sympathy with […] the imaginary distresses of a heroine in a pathetic story," which "readily excites tears," is of "a pleasurable nature" (*Expression* 214-5). He includes this statement in his chapter on expressions of joy and happiness, suggesting the sympathy felt for fictional distress is a wholly positive experience. In his autobiography, Darwin makes direct reference to the idea that represented pain could produce pleasure, in his phrase "pleasure like a tragedy," with which he evokes his pleasure in inventing and telling fantastic stories as a small child (*Autobiography* 4). Darwin's correspondence with Joseph Hooker about *Mary Barton* is also instructive in regard to the relationship between fictional representations of suffering and readerly pleasure. Hooker had borrowed the novel, on Darwin's strong recommendation, in July 1867. He writes to Darwin that

> *Mary Barton*…is the most horrible story I have read—I got through the first 1/3d of the book of deaths of all classes & ages of starvation, fever, & consumption spiced and garnished with Paralysis and blindness—when poor Esther came on the scene and floored me—I took therefore a sip or two of the last chapter, and being somewhat revived thereby, I managed to struggle through the rest. Esther is the blunder of the book—there was no occasion to serve her hopeless helpless misery through the whole story & thus leave a most painful impression of the whole book—a regular poisoning of the tale (*Correspondence* VI: 351).

Hooker's letter sheds light on Victorian reader responses to both fictional misery and happy endings. He experiences sympathetic pain that is not enjoyable; he is able to continue reading once he assures himself that the ending will not be unhappy for *all* of the main characters; but the "painful impression" of the tale is not effaced by this ending, and continues after Hooker has finished the novel. Darwin replied a little defensively that "I do not think you do justice to *Mary Barton*" (*ibid*. 364) from which we might infer that he approved of the novel's aesthetic or moral effects and viewed the novel's portrayal of suffering, as described by Hooker, favorably.[10]

Darwin's acknowledgement of the pleasure of sympathy for the distresses of fictional heroines reflects his commitment to the theory that sympathy is pleasurable in itself, and that this pleasure is inherited as an instinct. In this respect he opposes Adam Smith's influential argument that sympathy involves consciously remembering our own pain, which is itself a painful experience that we wish to alleviate by helping the person whose suffering has elicited our painful memory.[11] Darwin argues instead that sympathy gives pleasure in a much more immediate way: "if, as appears to be the case, sympathy is strictly an instinct, its exercise would give direct pleasure, in the same manner as the exercise, as before remarked, of almost every other instinct" (*Descent* 130). In an 1838

[10] Darwin is also said to have disapproved of Hooker's strategy of skipping forwards to the novel's end, which he called a "feminine vice" (*Life* 125), suggesting that part of his pleasure might have been in the special form of anxiety induced by narrative uncertainty. Like a number of male novel-readers of this era, Darwin "masculinized" his own novel-reading by constructing a denigrated feminine mode of reading that he claimed to eschew (see Flint, "*Vanity Fair*" passim).

[11] Darwin outlines this aspect of Smith's theory in *The Descent of Man*:

> Adam Smith formerly argued […] that the basis of sympathy lies in our strong retentiveness of former states of pain or pleasure. Hence, "the sight of another person enduring hunger, cold, fatigue, revives in us some recollection of these states, which are painful even in idea." We are thus impelled to relieve the sufferings of another, in order that our own painful feelings may be at the same time relieved (*Descent* 129).

notebook entry, Darwin approvingly records a rather starker expression of the relationship between sympathy, personal pleasure and the pain of others:

> Sympathy is based as Burke maintains on pleasure in beholding the misfortunes of others […] Burke's idea [is that] Sympathy [is] real pleasure at pain of others with rational desire to assist them.—Otherwise as he remarks sympathy could be barren, & lead people from scenes of distress (*On Evolution* 79).

If sympathy is an instinct, Darwin claims, then it must by definition give pleasure, and the pleasure will be felt whether or not it leads to helping others. This is clearly the case when, as Darwin notes, readers feel sympathy for the distresses of fictional heroines. Thus one pleasure of reading novels would be the exercise of the evolved instinct of sympathy (although Darwin does not explicitly make this connection).

Darwin clearly recognized a difference between the sympathy generated by fictional pain and by real pain, since in *The Expression*, he discusses sympathy with fictional distress as a pleasure, whereas he notes in the section on horror that "witnessing a man being tortured" in actuality would produce "horror" or "fear" owing to "the power of [...] sympathy" (306).

Darwin's sense that sympathy with fictional pain is "of a pleasurable nature" was by no means a central plank of Victorian theories of sympathy in the novel. However, Darwin did share with novelists and critics the widespread belief that narrated suffering would stimulate readers' sympathy for alien groups. Darwin wanted to convince readers of the common emotions shared across the entire animal kingdom and so used fictional modes of eliciting sympathy in order to shift readers' ideological convictions in favor of

his own theories. However, whereas novelists and other defenders of fiction felt the need to explicitly claim that the readerly sympathy generated by fictional characters would improve readers' morals and society in general, Darwin makes no such claims.[12] The view of many novelists in this respect is well expressed in an early essay by George Eliot. She writes,

> The greatest benefit we owe to the artist, whether painter, poet, or novelist, is the extension of our sympathies. […] A picture of human life such as a great artist can give, surprises even the trivial and the selfish into that attention to what is apart from themselves, which may be called the raw material of moral sentiment ("Natural History" 54).

Eliot's statement suggests that the sympathy generated by fictional characters might permanently contribute to the reader's "moral sentiment." While Darwin never explicitly makes this claim about the effects of fiction, it is implicit in his writing on the evolution of sympathy.[13] He shares Eliot's view that spectacles of pain can permanently enlarge the capacity for sympathy: "the social instinct, together with sympathy, is, like any other

[12] From the "condition of England" novels of the 1840s to the 1870s and beyond, it was widely believed that fiction could indirectly promote social good by generating sympathy between members of different social groups. Gaskell, for example, conceived of her aesthetic portrayal of suffering as not merely generative of readerly pleasure but also as a persuasive political strategy: in her preface to *Mary Barton* (1848), she explains that suffering is portrayed in order to evoke sympathy among her readers for the "work-people," to alleviate "the agony of suffering without the sympathy of the happy," and she hopes thereby to contribute to social cohesion between "the employers and the employed" (*Mary Barton* 3-4). Gaskell suggests that her fiction generates sympathy in middle-class readers for her representations of the working class, and that such sympathy will lead to charitable action on the part of her readers and so diminish social unrest in the real world. Later writers would claim that the sympathy generated by fiction might benefit not only social relations between different social groups, but also the moral nature of the sympathizers themselves. For recent perspectives on this question, see Martha Nussbaum and Lynn Hunt, who both suggest that fiction can produce empathy with others that leads to altruism or civic virtue. Their positions have much in common with theories articulated by Victorian writers and critics, and have been critiqued by Suzanne Keen, who usefully assesses the scholarship on this topic in *Empathy and the Novel*.

[13] Like Eliot, Darwin thought of sympathy as embodied and more-or-less unconscious: as Eliot describes it, sympathy is a "sense" that can be developed through exertion "like a muscle," implying that emotional habits produce permanent physical changes in the brain, which constitute what humans perceive as personal moral development. For a more detailed exposition of Eliot's thinking on mental habits, moral development, and the body, see Davis, 29-30.

instinct, greatly strengthened by habit" (*Descent* 122). One implication of this is that practicing the "habit" of sympathy with fictional characters will have a strengthening effect upon one's "moral imagination." However, Darwin never states this explicitly, and in his autobiography he implies that fiction does not share poetry's capacity to enlarge the "moral sentiment."

By tracing certain strands of Darwin's claims about sympathy and ethics, then, we may conclude that Darwin felt, in agreement with influential novelists and critics including Dickens, Eliot, and Gaskell, that narrated emotion stimulates imaginative identification with the joys and pains of represented characters, who may belong to groups towards whom one ordinarily feels no sympathy. When Darwin marshals narrative empathy in his own writing, however, one suspects that he was not especially interested in generating the moral effects often attributed by his contemporaries to fictional works. What we see instead is Darwin attempting to understand human literary response from an evolutionary perspective. He argues that humans have evolved to enjoy sympathy, and I would add, he exploits this evolved human pleasure in his own writing, using fiction to enlist the emotional identification of his readers in support of his arguments.

WORKS CITED

Anon. "Mr. Darwin on The Descent of Man." *The Times* (April 7-8, 1871).

Anon. "The Expression of the Emotions in Man and Animals." *Atheneaum* 2351 (Nov 1872): 631.

Anon. "The Expression of the Emotions in Man and Animals. by Charles Darwin." *The Journal of the Anthropological Institute of Great Britain and Ireland* 2 (1873): 444-446.

Baynes, T.S. "The Expression of the Emotions in Man and Animals." *Edinburgh Review* 137: 280 (Apr 1873): 492-529.

Beer, Gillian. "Darwin's Reading and the Fictions of Development." *The Darwinian Heritage.* Ed. David Kohn. Princeton: Princeton University Press, 1985. 543-588.

Browne, Janet. "Darwin and the Expression of the Emotions." *The Darwinian Heritage.* Ed. David Kohn. Princeton: Princeton University Press, 1985. 307-326.

Burkhardt, Frederick, Sydney Smith, David Kohn, Charles Darwin. *A Calendar of the Correspondence of Charles Darwin, 1821-1882*. Cambridge: Cambridge University Press, 1994.

Collins, Phillip, ed. *Charles Dickens: The Critical Heritage*. London: Routledge, 1995.

Darwin, Charles. *The Autobiography of Charles Darwin*. Ed. Nora Barlow. New York: Norton, 1993.

_____. *The Correspondence of Charles Darwin*. Ed. Frederick Burkhardt and Sydney Smith. 15 vols. Cambridge: Cambridge University Press, 1985-

_____. *Darwin On Evolution*. Ed. Thomas Glick and David Kohn. Indiana: Hackett, 1996.

_____. *The Descent of Man, and Selection in Relation to Sex.* Ed. James Moore and Adrian Desmond. Harmondsworth: Penguin, 2004.

_____. "Early Writings of Charles Darwin." Ed. Paul H. Barrett. *Darwin on Man.* Ed. and introd. H.E. Gruber. London: Wildwood House, 1974.

_____. *The Expression of the Emotions in Man and the Animals*. Ed. Paul Ekman. Oxford: Oxford University Press, 1998.

_____. *Metaphysics, Materialism, and the Evolution of Mind: Early Writings of Charles Darwin*. Ed. Paul Barrett. Chicago: University of Chicago Press, 1974.

_____. *Selected Letters on Evolution and Origin of Species*. New York: Dover, 1958.

Darwin, Francis. *The Life and Letters of Charles Darwin*. 3 Vols. London: John Murray, 1887.

Davis, Michael. *George Eliot and Nineteenth-Century Psychology: Exploring the Unmapped Country*. Aldershot: Ashgate, 2006.

Dawson, Gowan. *Darwin, Literature and Victorian Respectability*. Cambridge: Cambridge University Press, 2006.

Desmond, Adrian, and James Moore. *Darwin: the Life of a Tormented Naturalist*. New York: Warner Books, 1991.

Dickens, Charles. *Oliver Twist*. Harmondsworth: Penguin, 1985.

Eliot, George. *Adam Bede*. 3 vols. Edinburgh: Blackwood & Sons, 1867.

_____. *Daniel Deronda*. 3 vols. Edinburgh: Blackwood & Sons, 1876.

_____. "The Natural History of German Life." *Westminster Review* 66 old series, 10 new series (July 1856): 51-79.

Flint, Kate. "The Victorian Novel and Its Readers," *The Cambridge Companion to the Victorian Novel*, ed. Deirdre David. Cambridge: Cambridge University Press, 2001.

_____. "Women, Men, and the Reading of *Vanity Fair*, in James Raven, Helen Small, and Naomi Tadmor, *The Practice and Representation of Reading in England*. Cambridge: Cambridge University Press, 1996. 246-62.

Gallagher, Catherine. *The Body Economic: Life, Death and Sensation in Political Economy and the Victorian Novel*. Princeton: Princeton University Press, 2005.

Gaskell, Elizabeth. *Mary Barton*. Harmondsworth: Penguin, 1996.

Hardy, Thomas. "The Science of Fiction." *The Eclectic Magazine of Foreign Literature, Science, and Art*. Volume 53 (June, 1891): 854-6.

Holbeach, Henry. "Mr. Darwin on Expression in Man and Animals," *The Saint Paul's Magazine* 12 (Feb 1873): 190-211.

Hooker, Joseph. Letter to Charles Darwin. 29 July 1867. Darwin Collection, Cambridge University Library. Dar 94: 143.

Keen, Suzanne. *Empathy and the Novel*. Oxford: OUP, 2007.

_____. "A Theory of Narrative Empathy." *Narrative* 14, No. 3, Oct 2006: 207-236

Levine, George. "Darwin and Pain: Why Science Made Shakespeare Nauseating" and "'And if it be a pretty woman all the better': Darwin and Sexual Selection." *Darwin Loves You*. Princeton: Princeton University Press, 2006. 129-201.

Lubbock, Ellen. Letter to Charles Darwin. 1867-8. Darwin Collection, Cambridge University Library. Dar 104: 227(8).

[Mivart, St George], "Darwin's *Descent of Man*", *Quarterly Review* 131 (1871), 47-90.

__*_____*. "Evolution and its Consequences: A Reply to Professor Huxley." *Contemporary Review* 19 (January 1872): 168-197.

Oliphant, Margaret. *Miss Marjoribanks*. Harmondsworth: Penguin, 1998.

Poovey, Mary. *Uneven Developments: The Ideological Work of Gender in Mid-Victorian England*. Chicago: University of Chicago Press, 1988.

Prodger, Phillip. "Illustration as Strategy in Charles Darwin's *The Expression of the Emotions in Man and Animals*." *Inscribing Science: Scientific Texts and the Materiality of Communication*. Ed. Timothy Lenoir. Stanford, CA: Stanford University Press, 1998.

Shermer, Michael. *In Darwin's Shadow: the Life and Science of Alfred Russel Wallace*. Oxford: Oxford University Press, 2002.

Smith, Jonathan. *Charles Darwin and Victorian Visual Culture*. Cambridge: Cambridge University Press, 2006.

_____. "Evolutionary Aesthetics and Victorian Visual Culture." *Endless Forms: Charles Darwin, Natural Science, and the Visual Arts*. New Haven: Yale University Press, 2009.

Stephen, Leslie. "Art and Morality." *The Cornhill Magazine* 32 (July, 1875): 91-101.

Sully, James. "George Eliot's Art," *Mind*, Vol. 6, No. 23 (Jul., 1881): 378-394.

Vrettos, Athena. "Victorian Psychology," *A Companion to Victorian Novel*. Ed. Patrick Brantlinger and William B. Thesing. Oxford: Blackwell, 2002. 67-83.

Yeazell, Ruth Bernard. *Fictions of Modesty: Women and Courtship in the English Novel*. Chicago and London: University of Chicago Press, 1991.