AN ANALYSIS OF EMOTION IN TWO ENGLISH NATURALISTS’ POPULAR SCIENTIFIC NARRATIVES

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Introduction

Independently of one another, Alfred Russel Wallace and Charles Darwin put forth in 1858 and 1859, respectively, publications outlining a theory of evolution by means of natural selection (Farber 66). Darwin’s travels on the H.M.S. Beagle led him to consider animal and plant populations in relation to the availability of natural resources, various geographical features, and geological change over time. During Wallace’s travels between 1854 and 1862 in the Malay archipelago, he, too, became increasingly concerned about the origin of species and the spatial distribution of species (Farber 66). Both Darwin and Wallace found themselves contemplating nature in relation to Thomas Robert Malthus’s essay on *The Principle of Population*, a work positing that human population size changes according to the availability of resources (Farber 66) and that “‘positive checks’ – war, disease, famine, accidents, etc… [which keep] all savage populations nearly stationary… must also act upon animals, and keep down their numbers” (Wallace, “The Wonderful Century” 139).

Additionally, both men read and were influenced by Robert Chambers’ *Vestiges of the Natural History of Creation* (1844), a text that Darwin criticized in spite of its shared features with his own *The Origin of Species*, including the idea of species’ progressive alteration over time.

Upon the emergence of evolutionary thinking, and, particularly, the publication of Darwin’s *The Origin of Species*, a “Darwinian revolution took place
both within science and within Western culture as a whole,” influencing everything from biology to “religion, philosophy, morality, social thought, and even literature and the arts” (Bowler 142). The emergence of evolutionary theory sparked a “scientific revolution” and caused a Kuhnian “paradigm shift” in the sciences (Gould 28; Bowler 1-24). More broadly, evolutionary theory became a defining feature of the Victorian cultural landscape by fostering a perception of instability and change, of slippage between a “modern” present and the “primitive” past, relating progress and degeneration, cultivation and savagery, humanity and other forms of life uncomfortably in the public’s imagination (Glendening 109).

Since the nineteenth century, evolutionary theory has had continuing cultural currency and has continued shaping and transforming biological thinking. In 2001, Stephen Jay Gould wrote that “the theory of evolution by natural selection has not changed at all in its basic principles since it was formulated by Charles Darwin in 1859,” though scientists today debate on whether change occurs in “fits and starts” or on a more gradual basis, as Darwin argued (Gould 32). Even in contemporary America, where evolutionary theory is dismissed by approximately half of the general public, almost all scientists agree that “humans and other living things have evolved over time” (Pew 37), and, moreover, they continue to develop evolutionary theory by advancing new research in molecular genetics, physiology, comparative anatomy, computer modeling, pharmaceutical research, and other fields (Moore 171). Indeed, many Western scientists today continue to side with Theodosius
Dobzhansky’s famous statement that “nothing in biology makes sense except in the light of evolution” (National Center for Science Education, “Project Steve”).

Given evolutionary theory’s fundamental position at the heart of the life sciences, with implications for diverse academic disciplines and applications for industry, it is unthinkable that a discussion of science’s developments since the nineteenth century could fail to refer to evolution. Any investigation into what scholars call the mainstream or “masculine” tradition of science would be likely to take Wallace and Darwin, two “classic heroes of discovery” (Bowler 144), or “great pioneers of evolutionary biology” (Quammen 18-19), into account.

For all its importance in science and literature, evolution *per se* is not the topic of this essay. Instead, my focus rests on first-person narratives written by two men who are remembered for their role in developing evolutionary thinking. This essay’s topic concerns Wallace’s and Darwin’s textual descriptions of their scientific pursuits “in the field,” on their voyages through the Southern Hemisphere. Intended for heterogeneous and not necessarily scientifically-literate audiences, each text describes the intellectual, emotional, and physical experiences of these two British male naturalists as they make sense of new surroundings, attain specimens and study exotic life forms, and interact with local peoples and other travelers. In Darwin’s *Narrative of the Surveying Voyages of His Majesty’s Ships, Volume Three* (1839), more commonly known today as *The Voyage of the Beagle*, and Wallace’s *The Malay Archipelago* (1869), the authors vividly portray for readers at home their
experiences in South America and the Pacific Rim, respectively, using scientific terminology in addition to explanatory prose to educate readers about foreign flora, fauna, habitats, and geological history, and instill in them a sense of the voyaging naturalist’s joys and sorrows.

Natural history was widely, wildly popular during the nineteenth century, as scholars including Lynn Merrill and David Elliston Allen have shown through their analyses of various Victorian “crazes” for flowers, beetles and other insects, ferns, marine life, and microscopic life. While acknowledging widespread amateur enthusiasm for natural history, it is also important to recognize that Darwin’s and Wallace’s texts bridge a wide experiential and knowledge-based gap. This gap exists between the domestic reader and the voyaging naturalist, between the “experts” who command Latin terminology for numerous species of “birds of paradise,” or types of terrestrial and marine iguanas, or exotic species of butterflies, and those readers who have never seen nor discussed these species; between those naturalists who have heard the languages of Timor and Tierra del Fuego and interacted with their speakers, and readers who lack this specialized knowledge.

Wallace and Darwin explicitly address the gap in experience and knowledge existing between themselves and their readers in passages such as when Wallace grieves that “none but a naturalist can understand the intense excitement” felt upon capturing a rare insect. Yet, the effect of his text, The Malay Archipelago, is to communicate to lesser naturalists, and to non-naturalists, his joy upon such
triumphant occasions—and his grief, frustration, and melancholy in other situations. After stating that “none but a naturalist can understand” his feelings, Wallace describes them at length, so that although he gives voice to anxiety regarding his authorial ability to adequately communicate his feelings (and his readership’s ability to relate to them), he puts those feelings into his text. By translating his experiences in the Malay Archipelago into words and publishing these words in a narrative for non-voyagers and non-scientists, Wallace suggests that some kind of sympathy and understanding is possible, and is worth the author’s and the reader’s efforts (258).

Rather than dryly inform and educate readers, Wallace’s *The Malay Archipelago* and Darwin’s *Narrative of the Surveying Voyages of His Majesty’s Ships, Volume Three* utilize emotional and subjective language to represent the authors’ experiences of daily life “in the field.” In Darwin’s and Wallace’s popular writings, I find evidence of what Evelyn Fox Keller calls a “feeling for the organism,” though Keller and others have suggested that this type of “feeling,” an empathic, emotional, non-rational understanding of the object of scientific study, runs counter to the “masculine” manner in which science has been practiced since the late seventeenth century (“Reflections” 7; Hankinson-Nelson 147).

In finding that men of science, including Darwin and Wallace, describe non-rational, imaginative, and emotional ways of understanding the natural world in scientific narratives written decades before the birth of figures such as Barbara McClintock or Evelyn Fox Keller, I seek to challenge the assertion that using
imaginative, non-rational “feelings” as a scientific method constitutes something new, revolutionary, and “feminine.” In the nineteenth century, scientists, including male scientists working in the “masculine” tradition of science, used feeling and imagination in order to push the boundaries of their knowledge and included descriptions of their emotional experiences of nature in the context of their writings about science.
Chapter I: Cultural Contexts

First-person scientific narratives can give readers insight into how scientists view themselves, their work, and their methods for accumulating knowledge. Based on extensive notes taken abroad, and prepared for publication after the author’s return to England, Darwin’s *Narrative of the Surveying Voyages of His Majesty’s Ships, Volume Three* and Wallace’s *The Malay Archipelago* provide readers with a glimpse into lands far from England and European “civilization,” and shed light on what are often the exciting adventures of voyaging naturalists. From the authors’ perspectives, these texts represent the product of extensive reflection and recollection, both during and after the time of voyaging. Additionally, such narratives represent to their creators a means of self-definition, self-representation, and self-promotion. As Janet Browne writes, studying Darwin’s *Narrative* provides a “detailed and personal account of Darwin’s experiences… in which he describes not just the mere facts of the *Beagle’s* travels, the ports of call and inland expeditions, but also his emotions” and a vision of himself (2).

These narratives allowed the authors to gain prestige as intellectuals, world travelers, and professional adult men, firmly establishing them as fully-educated and contributing members of the scientific community. By the fact of their very existence, these texts testify that their authors have specialized knowledge, experience, and expertise. Though it seemed inappropriate to Darwin’s professor,
John S. Henslow, to characterize Darwin as “being a finished Naturalist” prior to his voyage (Browne 6), upon Darwin’s return and his publication of his Narrative, he would have been just that—a “finished Naturalist.”

The publication of popular texts such as Darwin’s Narrative added to, rather than detracted from, the status afforded by the more technical publications (e.g., Fichman 29, 37-47). Darwin’s and Wallace’s popular narratives provide insight into how these two nineteenth-century male naturalists conceptualized themselves, their work, and the broader culture in which they lived and published. In part, Darwin modeled his narrative and himself on examples from books he read earlier in his life, including Alexander von Humboldt’s Personal Narrative (Browne 16). Darwin himself provided an example that inspired Wallace’s writing of Malay Archipelago, a work that Wallace explicitly dedicates to Darwin. Rather than create the genre of natural history narratives, Darwin and Wallace fit into a tradition of earlier authors whose works, including the likes of von Humboldt’s Personal Narrative, were popular in the early decades of the nineteenth century.

The Narrative of the Surveying Voyages and The Malay Archipelago enjoyed immense success, with Wallace’s text going through ten editions during Queen Victoria’s reign, and Darwin’s, dozens (“The Complete Works of Charles Darwin Online;” “West Papua Web”). Darwin’s and Wallace’s texts’ strong sales indicate not only their own unique attractions for readers, but also relate to the widespread enthusiasm for botany and birds that extended throughout the century between 1750
and 1850. Darwin’s and Wallace’s texts fit within a genre of popular natural history that they did not create, but which predates either of their publications. Their success in reaching a wide readership can be credited to at least some degree on the success of beloved earlier natural histories, works such as Gilbert White’s *Natural History and Antiquities of Selbourne* (1789), as well as earlier scientific and navigational accounts from around the world and across the Empire (Pratt 4). Thus, while Darwin and Wallace, through depictions of their travels, their work, and themselves, may have influenced readers’ understandings and conceptualizations of science, scientists, and the “exotic,” it is also certainly true that readers approached Darwin’s and Wallace’s works with specific expectations relating to genre. More than passively receive these texts, readers compared and contextualized Darwin’s and Wallace’s texts with their predecessors, interpreting these works and the author/scientists who produced them.

Having established that natural history texts were part of a highly viable literary genre in the nineteenth century and that many Englishmen and women enthusiastically pursued natural history as a form of recreation, it is worthwhile to discuss why natural history books and pastimes were prevalent and even fashionable. Some explanations for natural history’s popularity emphasize the accessibility of the natural world to people from all social classes, who did not have to travel far, even from London, in order engage in natural history. For example, scholar Lynn Merrill
focuses on natural history’s ability to cheaply and easily offer recreation to all individuals who derive aesthetic pleasure from nature:

[T]here really was no such thing as a professional naturalist—no exams to take, no license to acquire, little money to be made. ‘Anyone could become a naturalist, any time, whatever his age or educational background,’ …and ‘the naturalist might be anyone from Darwin down to the lowliest Sunday bug-hunter.’ (Merrill 38)

One did not need to purchase expensive equipment or attain expensive credentials in order to be a “naturalist.” Though there was little need for formal training to prepare one for great adventures in natural history, many individuals did focus on the didactic potential of the landscape and the its denizens for providing instruction and information to mankind (Merrill 38). Natural history was not taught in schools or universities, but instead represented a financially and geographically accessible, morally acceptable, and affordable pursuit for anyone desiring to become an “amateur” collector of bugs and birds.

Many “Sunday bug-hunters,” such as Darwin was as a young man, valued natural history’s potential to provide spiritual fulfillment. Familiar to many individuals was William Paley’s assertion in his 1802 publication, *Natural Theology*, that one may find evidence of divine creation and God’s presence by observing nature. Darwin himself is said to have “read Paley’s *Natural Theology* voluntarily and with delight. He... [knew it] almost by heart and read it repeatedly, even after he had passed his exams” on topics from Paley’s *Evidences of Christianity* and *Principles of Moral and Political Philosophy* (von Sydow 3).
While remarking on natural history’s affordability and accessibility, Lynn Merrill also suggests that natural history attracted those with an “urge to possess” great collections (Merrill 45). Personal acquisitiveness, she argues, led some individuals to natural history, where they could satisfy this urge at low financial cost relative to other forms of collecting. In addition to acquisitiveness at the individual or personal level, national acquisitiveness in England in the Victorian era can also be suggested as a reason for the popularity of natural history and collecting. From the Ashmolean Museum at Oxford University, which took over the Tradescant’s Ark collection of natural objects, to the Hunterian Museum in London, supported by the Royal College of Surgeons, to the British Museum, established in 1820, England in the nineteenth century was in the process of developing public and private institutions to contain pieces of nature from around the British Empire and around the world (Yanni 15-33). Institutions including Cambridge University, Darwin’s alma mater, expanded their natural history collections in the early to mid-nineteenth century; Cambridge itself relocated and grew its collections in 1836, the final year of Darwin’s voyage. This institution, it should be noted, is one of the direct beneficiaries of Darwin’s voyaging due to its receipt of numerous specimens and biological samples sent by Darwin during and after his travels.

The voyages Darwin and Wallace joined as naturalists were part of their nation’s quest to amass information and riches from regions distant from England. On the scale of the individual, and on the scale of the nation, “many forms of
collection… were practiced during this period” (Pratt 36). Conservatories, libraries, museums, gardens, exhibition halls, and other physical spaces housed materials from all parts of the globe. Nor were these materials limited to minerals, fossils, or dead, preserved and stuffed insects and animals; there was great demand for living specimens (Merrill 31). As Merrill notes, over five thousand foreign species of plants were introduced into England from 1750 to 1850, and there was considerable enthusiasm for bringing live animals and even humans from abroad to museums and marketplaces, as “objects of curiosity.” The Beagle’s transport to England of live tortoises is but one example of a larger practice of translocation and importation, which extended from the realm of plants and animals to the questionably consensual transport of humans such as Jemmy Button and two other Tierra del Fuegians to England and, eventually, back to their homes (Jardine 336).

Scholars such as Mary Louise Pratt situate natural history in relation to international economic and political concerns, as engaging with “many sorts of social and signifying practices,” including, particularly, European economic and political expansionism. Pratt identifies in the eighteenth century and centuries following a “Eurocentered planetary consciousness,” a consciousness of the world surrounding Europe, circumnavigated by Europeans, and understood in reference to Europe (9-38). Pratt describes this consciousness by stating that, “Blanketing the surface of the globe, it specified plants and animals in visual terms as discrete entities… in a finite, totalizing order of European making” (38). The effect of natural
history, she argues, is to create “a utopian, innocent vision of European global authority,” which in spite of appearances is not “innocent” from imperialist agendas and goals, but is part of a larger context of colonial and imperial expansion (39).
Chapter II: Theoretical Considerations

At least since the seventeenth century, practitioners of science such as Sir Francis Bacon have described science as a “masculine,” “objective,” and “impersonal” pursuit. At least since the mid-nineteen eighties, feminist scholars such as Evelyn Fox Keller have been calling for a new, “feminine” approach to science, with an enhanced role for female scientists and an increased perception within science, and by the public at large, of the attributes and abilities that women in particular bring to what has been traditionally a “masculine” science. Through the beginning of the twenty-first century, scholars have debated “the suggestion that there are masculine and feminine scientific methods in science” (“Critical Scientific Realism” 245). For Ilkka Niiniluoto and others, particularly third-wave feminists, “[i]t is no wonder that many feminists have wished to reconsider or denounce such views” on femininity in science as overly simplistic and ultimately detrimental to “the emancipatory potential of the feminist movement” (“The Relativism Question” 139-47).

The following sections of this essay are intended to situate my discussion of Wallace and Darwin in the frameworks of past and present thinking on the nature of science, the gendering of science, and the nature of scientific writing.
Part I: Objectivity in Science

The tension between science as an “objective” endeavor and as human activity is well described by Christine Rosen, who remarks that, “for all its objectivity, and for all the new powers it confers upon us, science is always a partial human enterprise” (44). Nonetheless, from seventeenth-century natural philosophers Sir Francis Bacon and Henry Oldenberg, members of the Royal Society of London, to Victorian George Henry Lewes, to twenty-first century scholar Carol Reeves, many individuals have suggested that a defining characteristic of science is objectivity, not subjectivity, and that a main goal of scientific writing is removing from its language “connotations that reflect or create cultural biases and emotional attachments” (Reeves 9-10).

The impersonal “objectivity” of scientific endeavor and scientific writing is something Lewes praises in his description of science, published in 1878. In his article, Lewes defines science as

simply Knowledge classified, systematised, made orderly, impersonal, and exact, instead of being left unclassified, fragmentary, personal, and inexact… Science is abstract, impersonal, whereas our experiences are concrete and personal. It is systematic, and systemisation is troublesome: our native indolence renders us impatient of labour, and our impatience leads us to prefer the facile method of guessing to the difficult method of observing: we have to be trained into the preference of observing what the facts are, instead of arguing as to what the facts must be… (410-12)
Lewes contrasts “systematic,” “abstract,” and “impersonal” scientific endeavors with “concrete and personal” quotidian experience, as though the practice of science is distinct from, rather than a part of, daily living. By emphasizing that one must be trained to think scientifically and impersonally, and must labor to transcend the “facile methods” of the uninitiated general populace, Lewes situates science as a specialized domain, and scientists as a distinct group of individuals with professional knowledge and status. By writing that scientists observe “what the facts are” rather than what they should be, Lewes suggests that it is within scientists’ ability and, indeed, duty to objectively view the world, and describe it in positive, descriptive terms.

In the century following Lewes’ writings about science, philosophers of science gradually began to challenge the possibility for some, and then all, individuals to transcend their own prejudices and feelings. The nineteenth century witnessed the rising popularity of views of objectivity such as Georg Simmel’s; he claimed that men were more capable of thinking objectively than women (Schiebinger 192-3). Though it is likely that the effect of this kind of theorizing was to promote men in science at the expense of women, nonetheless, as Londa Schiebinger notes, feminist scientist and historian of science Evelyn Fox Keller co-opted Simmel’s statements for feminist purposes in 1985 by declaring that science is traditionally “‘masculine,’ not only in the person of its practitioners but in its ethos and substance,” thereby calling attention to what she perceives as sexist bias in
Rather than aim to hinder female scientists’ participation in the purportedly “masculine” tradition, Keller uses Simmel’s claim to call attention to what she considered uniquely feminine ways of approaching and understanding the world, and to make the case for women to enter and excel in science because of their distinct and different potential, relative to men, for producing valuable scientific insights.

Instead of focusing on the differential ability of men and women to achieve an objective viewpoint in the manner of Simmel and, later, Keller, W. V. O. Quine and Thomas Kune’s twentieth-century scholarship closely scrutinizes the human potential—that is, both men and women’s potential—for being truly objectivity, including in the context of science. Together, Quine and Kune undermine the assumption that individuals’ personal and cultural interests, biases, and values can ever be distinct from intellectual processes of scientific inquiry (Haely 13, 16). Quine's legacy in particular has been to encourage scholars to appreciate that “if we want to know about scientific knowledge, we must look at what scientists actually do to generate such knowledge” (Haely 15).

During the twentieth century, Karl Popper also moved in the direction of “looking at what scientists actually do to generate knowledge.” Like Quine and Kune, Popper rejects traditional conceptions of scientific objectivity; he believed that there are “no ‘pure’ facts available. All observation-statements are theory-laden, and are as much a function of the observer’s interests, expectations, and wishes as they
are a function of what is objectively real (Thornton online). According to Popper, it is not the objective eye that generates knowledge, but is the active imagination. Scientists generate knowledge, he believed, by facing problems and then making a “leap of the imagination” in their attempts to solve them, as Thornton describes:

[For Popper,] the growth of human knowledge proceeds from our problems and from our attempts to solve them. These attempts involve the formulation of theories which, if they are to explain anomalies which exist with respect to earlier theories, must go beyond existing knowledge and therefore require a leap of the imagination. For this reason, Popper places special emphasis on the role played by the independent creative imagination in the formulation of theory.

A scholarly appreciation for the individual, imaginative processes by which scientists acquire knowledge thus can be traced to and through Popper.

Following Popper, more recent scholars such as Archie J. Bahm have written on the distinction between scientists’ typical assumption of an “attitude of objectivity” and the impossibility of an actual state of objectivity. Bahm writes, “The scientific attitude involves a willingness to be objective. But many falsely assume… that such willingness implies being completely value-free. Actually, scientific research is value-saturated… Not a single aspect of science is completely value-free” (391).” Today, it is widely believed that scientists cannot escape their own biases, perspectives, and inclinations. Perhaps that is why Richard Holmes, author of The Age of Wonder has stated that what is

most important, right now, is a changing appreciation of how scientists themselves fit into society as a whole, and the nature of the particular creativity they bring to it...We need not only a new history of science, but a more enlarged and imaginative
biographical writing about individual scientists... We need to understand how science is actually made; how scientists themselves think and feel and speculate. We need to explore what makes scientists creative, as well as poets or painters, or musicians.” (Holmes 468-9)

By understanding individual scientists’ experiences and the nature of their “particular creativity,” as well as “how scientists themselves think and feel and speculate,” we, the public, gain insight into “how science is actually made” and how we know what we know.

Part II: A Tradition of Masculine Science

Science has been called “masculine” in the sense that historically, the (often male) practitioner is thought to “dominate” “feminine” nature by rationally developing a body of knowledge that is untainted by personal inclinations, impressions, or emotions (Nelson 24, Keller “Reflections” 7). Indeed, as scholars such as Susan Bordo note, the Royal Society of London in the seventeenth century explicitly aimed to “raise a masculine philosophy,” a virile domain of knowledge whose masculinity rests in its “clearer, purer, more objective, and more disciplined epistemological relation to the world” relative to earlier investigations and other, non-scientific pursuits (67).

Sir Francis Bacon celebrated knowledge as power over nature, a topic he discussed in his “Speech in Praise of Knowledge” (Schiebinger, “Has Feminism
changed science?” 67, coquillette 32).” rather than constitute the original source or fountain-head of these beliefs, bacon is understood as one of several members of the Royal Society and other bastions of the scientific profession who called for domination of nature by “masculine” inquiry and investigation: other vocal and influential practitioners of science, including henry oldenberg, also promoted these views (bordo 66).

Though “masculine” and “feminine” connote issues of gender and sexuality, londa Schiebinger warns contemporary historians of science to be mindful of the fact that “masculinity and femininity are not characteristics inherent to men or women that have universal meanings above and beyond historical contexts. These terms mean very different things at different times and in different places” (“philosopher’s beard” 193). According to Schiebinger, the “much-trumpeted ‘masculine philosophy’” was, for the founders of the royal society, something distinctively English, not French; empirical, rather than speculative; and practical, rather than purely rhetorical. “‘masculinity’ served in this case as a term of approbation and attached only tangentially to men,” she argues (“philosopher’s beard” 193). According to this view, English science preceding the nineteenth century is “masculine” primarily in its opposition to the science practiced by members of the French Academy of Sciences.

For other scholars, including Keller, science is “masculine” in that not only women themselves, but also a “feminine” way of thinking, have been excluded from
what is considered the scientific mainstream. She writes that “science—the province
par excellence of the impersonal, the rational, and the general—has been the
preserve of men,” and has been a discipline in which women, the “guarantors and
protectors of the personal, the emotional, the particular,” have been largely excluded
or marginalized (“Reflections” 7). Certainly, Keller is correct in saying that for
centuries, “[Western] science has been produced by a particular subset of the human
race—that is, almost entirely by white, middle-class men... [and it] evolved under
the formative influence of a particular ideal of masculinity” (“Reflections” 7).

In addressing claims about the “masculine” and “sexist” characteristics of
science since the Enlightenment, Ilkka Niiniluoto remarks that

> science at it is practiced and applied today, as well as the scientific
community within academic institutions, is still a stronghold of
’sexist’ attitudes and structures and thereby serves ‘regressive’ social
tendencies. Therefore, the whole of science, including its methods and
institutions, should be radically changed by a critical feminist
science” (144-145).

Yet, as Niiniluoto points out in later passages of her essay, “The Relativism Question
in Feminist Epistemology,” the solution to the problem of “sexist” attitudes and
“regressive social tendencies” in science may not be “radical gender relativism,”
which distinguishes facts as they are discovered and known from the male viewpoint,
versus facts discovered and known from the female viewpoint.

To distinguish between male and female forms of epistemology and
knowledge would be to deny objective standards of truth and falsity; scholars such as
Niiniluoto argue that such a stance renders the concept of male or “androcentric” bias meaningless, thereby denying a concept that is or should be widely acknowledged by feminists (146). Calling for a “feminist epistemology” and attempting to prove “that there is a feminine language, mind, and thinking different from the masculine” is not the only way, or the best way, to promote women in science or to enhance science’s ability to generate knowledge, Niiniluoto writes (153-154).

Part III: A Feeling for the Organism

Scientists in the generations following Sir Francis Bacon have consciously attempted to take an objective stance in their scientific endeavors as a way to create bodies of knowledge about the natural world and natural phenomena. Though scientists, philosophers, and historians of science seemingly agree that emotion motivates scientists’ labor, many scholars, like Eveyln Fox Keller, maintain that mainstream Western science has long been “premised on a radical dichotomy between subject and object,” between the investigator and that which is investigated (“Reflections” 85).

For Keller, a critical component of the Western scientific tradition’s “masculine” heritage is scientists’ “impulse” toward impersonality. Western science “has been premised on a radical dichotomy between subject and object, and where
all other (non-objective, or emotive) experiences are accorded secondary, ‘feminine’
status” (“Reflections” 87). Explicitly and intentionally, the “founding fathers of
modern science” aimed to remove what was socially constructed as “effeminate” in
their own language and endeavors, writes Keller:

For the founding fathers of modern science, the reliance on the
language of gender was explicit: They sought a philosophy that
deserved to be called ‘masculine,’ that could be distinguished from its
ineffective predecessors by its ‘virile’ power, its capacity to bind
Nature to man’s service and make her his slave (Bacon).
(“Reflections” 7)

More than merely criticize scientists’ suppression of emotion in their research and in
their writing by suggesting that such suppression is restrictive, disadvantageous, and
ultimately futile (“Reflections” 77, “Feeling for the Organism” 197-203), Keller
“[outlines] for us a conception of objectivity in science that is based on... intimacy,
open-mindedness and love” (Haely 45). Acknowledging that personal and cultural
interests, biases, and values cannot be distinct from scientific inquiry, Keller
encourages scientists to embrace non-rational (emotional, intuitive) thought in
scientific research, rather than fight or hide their emotions in the context of their
professional activities.

In A Feeling for the Organism, a biography of twentieth-century geneticist
Barbara McClintock, Keller counters the claim that emotion should be antithetical to,
or divorced from, science. She acknowledges that “[g]ood science cannot proceed
without a deep emotional investment on the part of the scientist. It is that emotional
investment that provides the motivating force for the endless hours of intense, often grueling, labor” (“Feeling for the Organism” 198). She does not, however, equate a passion for rational investigation with research based on passionate, insightful emotion, or what she calls a “feeling for the organism.” This “feeling,” which is beyond the “deep emotional investment” of the scientist, is at the heart of Keller’s text and at the heart of her demands for the creation of a new, revolutionary science.

To illustrate what constitutes a “feeling for the organism,” Keller describes how twentieth-century female geneticist Barbara McClintock cultivates an intuitive “feeling for” her chosen subject, maize, by carefully familiarizing herself with every plant growing in the research fields. This getting-to-know-you process, combined with McClintock’s willingness to trust her intuitions, subsequently allows McClintock to make accurate genetic predictions; Keller suggests that these predictions were groundbreaking and would not have been possible using more “typical” research approaches. To have “feeling for the organism” is to understand “how it grows, understand its parts, understand when something is going wrong with it” (198).

McClintock’s employment of “feeling” in the context of science is something that Keller suggests is fundamentally related to her femininity, and is something at odds with “masculine” science and the scientific mainstream of twentieth-century America. Yet Keller’s description of McClintock in the corn fields is not dissimilar from how Darwin and Wallace describe themselves carefully, intuitively, and
imaginatively attending to animate and inanimate objects of their studies in order to envision processes, predict structural components, or speculate upon potential contents hidden at the interior of an object and invisible to the physical gaze (Darwin 186-7, “Malay Archipelago” 178-9).

At one point, McClintock tells Keller that she could “see… through the mind’s eye” the processes taking place on a molecular level (“Feeling for the Organism” 91, 117), which is similar to Darwin’s reference to using imaginative powers in order to “see” mechanisms and processes invisible to the human eye, such as slow geological changes occurring over thousands of years. While discussing how the imagination can lead to insights about a region’s geological composition and history, Darwin concludes, “[t]he limit of man’s knowledge in any subject possesses a high interest, which is perhaps increased by its close neighbourhood to the realms of imagination” (345). Without question, creative and innovative scientific minds have long made use of feeling, insight and imagination in their explorations at the boundaries of scientific knowledge.
Part IV: Concerning Form

Feeling and imagination seem alien to the scientific literature of the past two to three centuries because of the adoption and persistence of conventions preferencing “objective” language at the expense of emotional or personal language, at least since the Royal Society of London’s founding in 1660. At this time, the Royal Society emphasized that scientific language should describe nature concretely and concisely, with emphasis on the scientist’s responsibility to propose and test hypotheses through reason and experimentation, rather than write eloquently and evocatively about their observations (Reeves 9). Influenced for centuries by the Royal Society’s motto “Nullius in Verba,” or “nothing in words,” scientists tend to divest their technical works of personal, emotional language, subscribing to (or at least following) custom. Even today, “the goal of scientific language is to be as free as possible from connotations that reflect or create cultural biases and emotional attachments,” writes scholar Carol Reeves (10). Similarly, in 2001, historians of science Lorraine Datson and Katharine Park wrote that scientists “now reserve expressions of wonder for their personal memoirs, not their professional publications. They may acknowledge wonder as a motivation, but they no longer consider it part of doing science” (15).

Yet “wonder” and other emotions pervade popular natural history texts from nineteenth century England. These texts are themselves rich repositories of
emotional language through which professional scientists sought to depict themselves feeling profoundly in response to nature, as “part of doing science.” By presenting themselves in personal and emotional terms, scientists writing in the tradition of von Humboldt crafted texts allowing their readers to imagine the scientist/explorer/narrator as a receptive Englishman with heightened sensitivities and special knowledge, engaging in elevated and learned activities.

Darwin created enthralling depictions of the animal, mineral, and vegetable productions found in South America, and, rather than claim any strictly objective stance, wrote of his personal and emotional reactions to his findings. He draws connections between his own impressions, the progress of his scientific understandings, and the workings of the human imagination more generally (e.g., 345, 604). Other nineteenth-century writers, including Wallace and his contemporary Philip Henry Gosse, similarly portray their own subjective experiences in nature in their narratives and make use of what they call “poetic” language to communicate to others their feelings in studying and observing nature (“Malay Archipelago” 339-40; Gosse iii-iv).

In the nineteenth century, scientists presented versions of themselves, their experiences of their research, and their observations and opinions to a broad audience of readers, whose demand for such works is attested by the commercial success of Darwin’s Narrative and Wallace’s The Malay Archipelago. Non-professional scientists gained insight into the experience of fieldwork and scientists’
excitement in their pursuits of animals, plants, and knowledge itself through the medium of popular scientific texts. Whether called “natural philosophers,” “naturalists,” or “scientists,” individuals have long written evocatively about science from an emotionally engaging, first-person perspective. It is important to recognize that well before E.O. Wilson and Stephan Jay Gould, Robert Sapolsky, and Brian Greene entered the market, scientists wrote non-technical scientific texts as a way to tell “true” – that is, “nonfictional” – stories about science and themselves.

These texts can be considered in relation to the genres of memoir and travel-narrative, but they are first and foremost direct descendents of the scientific notebooks from which they are derived. Both Darwin and Wallace compiled, edited, and arranged their notes for publication after their return to England from abroad. In the process of preparing their texts, the authors imaginatively relive past emotions and circumstances, choosing what to include in their published texts and determining how to style content for others to read. For Darwin, mere months separate his return from voyaging and his completion of his Narrative. For Wallace, the lapse in time between his return home and his publication of The Malay Archipelago was no less than six years.

Thus, Wallace begins the preface of the first edition of The Malay Archipelago with a brief passage intended to explain the time lapse between his return from voyaging and his narrative’s publication. From the outset, he describes the emotional challenges of organizing and interpreting his collection. In his
description of “three thousand bird-skins, … [and] twenty thousand beetles and butterflies,” he suggests that his scientific and literary projects were not easy and may indeed have been overwhelming to him, especially given his “weak state of health” and his admission that “a large proportion of these [items] I had not seen for years”:

My readers will naturally ask why I have delayed writing this book for six years after my return; and I feel bound to give them full satisfaction on this point. When I reached England in the spring of 1862, I found myself surrounded by a room full of packing-cases, containing the collections that I had from time to time sent home for my private use. These comprised nearly three thousand bird-skins, of about a thousand species; and at least twenty thousand beetles and butterflies, of about seven thousand species; besides some quadrupeds and land shells. A large proportion of these I had not seen for years; and in my then weak state of health, the unpacking, sorting, and arranging of such a mass of specimens occupied a very long time. (i)

By giving the reader a glimpse of the chaos and disorder preceding his organization of the specimens in his collection, and by referencing his own imperfect health, the author frames his delay in publishing in a way that promotes sympathy in the reader and that enhances the reader’s perception of his difficulties in managing such a collection, and his industriousness in the years between his arrival back in England and his publication of the text.

*The Malay Archipelago* and the *Voyage of the Beagle* are neither autobiographies nor biographies in the strict sense, yet, as first-person accounts, they allow the reader to imagine settings and situations from the scientist’s perspective, promoting the reader’s identification with the scientist and positioning the scientist
as an individual with feelings, a particular viewpoint, and a variety of tendencies and characteristic responses or opinions. Though life-writing is often chronological (Larson 11) and its purpose is typically “to set the historical record straight,” Wallace’s *The Malay Archipelago* is not written chronologically, but instead is ordered thematically, with sections of text dedicated to each of the various locations and environments that Wallace that aims to describe. Like Darwin, his purpose is to comment upon what he has seen, to pose questions and seek answers, to share with others his impressions of particular places and people, and to present himself as a “man of science.”
Chapter III: Emotions in Darwin’s Narrative and Wallace’s The Malay Archipelago

This chapter begins with an examination of Wallace’s expressions of emotion in passages of The Malay Archipelago relating to his activities collecting butterflies. Following this “case study” is a broader discussion of the role of emotional language in Wallace’s and Darwin’s personal narratives.

Part I: Collecting Butterflies: A Case Study

In The Malay Archipelago, Wallace depicts his emotions in observing and collecting numerous species of animals, birds, and insects from the islands he visits in his journeys. In this section of my essay, I will track Wallace’s depictions of his interactions in taking captive, and being captivated by, butterflies. This focus on butterflies will allow me to explore the complexity of his emotional engagements with a subset or branch of insect life, and to demonstrate, in a sustained fashion, his “feeling for the organism(s)” he studies by bringing to my discussion references to the specific understandings Wallace develops of individual butterfly species’ habitats, their “habits” and tendencies, their anatomical structures, and what Wallace suggests is the “poetic” effect of some species’ movement, color, and light as they flit through forests and other island ecosystems (328-9).
Wallace’s response to this species is at times so emotional as to affect him corporeally and quite involuntarily, resulting in the manifestation of symptoms including his body’s “trembling with excitement.” In one passage, he is moved mentally and, indeed, physically, as a result of his experience seeing the butterfly’s “fresh and living beauty” in juxtaposition to the “silent gloom of a dark and tangled forest”:

I trembled with excitement as I saw [the great bird-winged butterfly, *Ornithoptera poseidon*] coming majestically towards me, and could hardly believe I had really succeeded in my stroke till I had taken it out of the net and was gazing, lost in admiration, at the velvet black and brilliant green of its wings, seven inches across, its golden body and crimson breast. It is true that I had seen similar insects in cabinets at home, but it is quite another thing to capture such one’s self—to feel it struggling between one’s fingers, and to gaze upon its fresh and living beauty, a bright gem shining out amid the silent gloom of a dark and tangled forest. The village of Dobbo held that evening at least one contented man. (328-9)

The beauty of the butterfly is so great as to momentarily convince the author that it cannot be real: the author states that when viewing the bird-winged butterfly, he could “hardly believe I had really succeeded in my stroke” of luck in observing such a “majestic” gem of an insect. Wallace admires its life and freedom in its natural habitat, even as he contemplates its death and eventual preservation in the “cabinets” of his collections. He writes of himself in the environs of Dobbo as simultaneously rejoicing in his ability to possess and preserve the butterfly, and dejected in his knowledge, from studying “similar insects in cabinets at home,” that the process of taking the butterfly out of its natural context will strip it of its majesty and its quasi-
magical ability to spellbind its viewer. In this passage, Wallace shows himself thrilling in the insect’s life and, equally, in his ability to own it, to cause it to struggle “between [his] fingers,” and finally to capture it as an object of conquest.

It seems likely that Evelyn Fox Keller would point to this passage as an example of Wallace following Sir Francis Bacon and others in the “masculine” tradition of science in his attempt to “dominate” nature; I, too, acknowledge this reading of the passage. Like a groom describing his consummation of marriage with a beautiful virgin bride, Wallace admires the “body” and “breast” of what he has pursued and finally captured, he watches the butterfly struggle ineffectually in his grasp, he gazes upon its “beauty,” and finally he ends the passage with a hint of his satisfaction that evening in the village of Dobbo. Possessively, he describes the experience of “[having] the good fortune to capture one of the most magnificent insects the world contains” (328), gloating in his success and his acquisition.

Though, in some respects, this passage shows Wallace, a male scientist, “dominating” nature, I argue that this short excerpt is not representative of the extent of his emotional responses and aims in collecting butterflies, much less does it encapsulate or represent his feelings and goals in relation to the activity of collecting. Furthermore, this passage does not exhibit the impersonal, objective language that Keller sees as integral to the goals and especially the practice of “masculine” science. The language Wallace uses is scientific in its Latin references and its precise description of the butterfly’s dimensions in inches. Simultaneously, this language is
emotional, in the author’s employment of words like “excitemen,” “admiration,” and the verb, “to feel.”

Instead of emphasizing the element of domination that is present in this passage, at the expense of other aspects and elements in the narrative, I seek to explore Mary Louise Pratt’s claim that, generally, the naturalist-collector, in “comparison with the navigator or the conquistador… is a benign, often homely figure,” a figure which “often has a certain androgeny about it” and whose “production of knowledge has some decidedly non-phallic aspects” (33). Indeed, I argue that Wallace’s goal in collecting butterflies in general in *The Malay Archipelago* seems to be not to “dominate” them in the manner of a conquistador, but instead to admire them and to “fully to understand” the way in which they are constructed and survive in the wild (“Malay Archipelago” 100).

There are many moments in the narrative during which Wallace expresses his enjoyment in developing an understanding the habits of butterflies and his satisfaction in entering them into his lists of “known” species. In one such episode, Wallace sees a butterfly that is “large, handsome, and quite new to me” during a stroll along one of his favorite roads through the forest. Observing it land on a heap of dung expelled by “some carnivorous animal,” Wallace returns to the same place in the forest the next day in order to see it and capture it for his scientific collection (22). He derives great pleasure in cataloging it in his list of “species of great beauty,”
and particularly cherishes this experience in hindsight, writing later that he never again observes this species in nature.

The impression that Wallace gives the reader of his biological list-making activities is of his sense as a contributor to a shared, collaborative project that organizes Western knowledge of the natural world. At times, Wallace communicates to his reader the pride he takes in the knowledge that few other Anglo-Saxon individuals could have discovered species like the *Nymphalis calydonia*, since only one individual other than himself reached this part of country along the trails he crossed, during a period of roughly a dozen years (23). Rather than position himself in opposition to other European naturalists, however, Wallace suggests he finds fulfillment in announcing findings like the aforementioned butterfly to other scientists; for example, he mentions that one of his colleagues, a Mr. Hewitson, eventually names the species *Nymphalis calydonia*. A spirit of discovery, rather than of conquest, drives him to find new species for his lists and for the communities of scientists waiting at home.

Consider Wallace’s description of his acquaintance with the *Kallima paralekta* butterflies, of the same family as the “Purple Emperor.” In his chapter on the flora and fauna of Sumatra, Wallace states that he feels “fortunate” merely to witness this difficult-to-spot species of butterfly, which “closely resembled a dead leaf attached to a twig” (100). By attending to the *Kallima paralekta* butterflies’ unique appearance and observing its tendencies to maintain a “position of repose …
almost certainly to deceive the eye even when gazing full upon it” (100), he develops a familiarity with their methods of self-protection. From his careful observation, he discovers that *Kallima paralekta* individuals most often spend time in dry woods and thickets, where their appearance assists them in blending in with dried twigs and leaves. Once aware of the methods by which they attempt to hide themselves, Wallace becomes able to “outsmart” their instinctive behaviors and the protection afforded by their coloring and appearance. He reports to his readers that upon capturing several, he did not gloat over them as objects or as conquests, but instead rejoiced in the opportunity to study the ways in which their wings are constructed. In his narrative, he praises their camouflage as a disguise “that is so complete and marvelous as to astonish every one who observes it” and celebrates how these insects’ behavioral “habits” protect them from their “enemies” (102), a much more emotionally-laden term than the more scientific term, “predators.” Here, Wallace is like Barbara McClintock in his development of a “feeling” for, and an identification with, the object of his study.

Not all of Wallace’s experiences collecting butterflies have a positive emotional effect upon him. In one passage later in his narrative, the author describes how he became excruciatingly frustrated during his residence in Batchian from his efforts to capture a species of bird-winged butterfly. This passage is remarkable for its expression of intensely negative emotions intermixed with the characteristic joy he finds in nature. It begins with Wallace describing how he watched one day “an
immense butterfly of a dark colour marked with white and yellow spots… a new species of Ornithoptera or ‘bird-winged butterfly,’ the pride of the Eastern tropics” (257). Subsequently, during a period of two months, he glimpsed only one female and one male of the species. In describing the butterfly to his readers, Wallace expresses his own sense of the butterfly’s desirability by describing its “gorgeous” colors. Moreover, he characterizes it as “perfectly new and most magnificent,” a heretofore unknown and novel variety of a familiar type of insect whose habitat, Wallace notes, ranges from the exotic Malay Islands to the British Isles.

Recollecting how he felt during the months when he was able to capture neither the male nor the female, Wallace describes in *The Malay Archipelago* how his anxiety gradually gave way to “despair of ever getting a specimen”:

I was very anxious to get [the female] and to find the male, which in this genus is always of extreme beauty. During the two succeeding months... I had begun to despair of ever getting a specimen, as it seemed so rare and wild; till one day, about the beginning of January, I found a beautiful shrub with large white leafy bracts and yellow flowers, a species of Mussaenda, and saw one of these noble insects hovering over it, but it was too quick for me, and flew away. The next day I went again to the same shrub and succeeded in catching a female, and the day after a fine male. I found it to be as I had expected, a perfectly new and most magnificent species, and one of the most gorgeously coloured butterflies in the world. (257)

The butterfly’s “nobility” relates to its beauty as well as its freedom: its resistance to capture lends it an appearance of sovereignty or independence. The butterfly’s “extreme beauty,” rarity, and “nobility” contribute to Wallace’s apprehension during the period in which his attempts to capture the insect prove futile.
It is significant that even in describing his despair prior to his catching the bird-winged butterfly, Wallace does not stop himself from noting the remarkable aesthetic appeal of a shrub, “a species of Mussaenda.” He presents a shrub as remarkable in its own right in addition to being memorable for its position near the “noble” insect he sought for so long. More than merely provide a verdant backdrop in which to find bugs and birds, Wallace describes plants such as this one as a source of aesthetic pleasure and demonstrates his scientific commitment to exactitude in his observations. Years later, he remembers the plant for having “large white leafy bracts and yellow flowers” and, in telling the story of his experience with the butterfly, he takes care to identify the shrub in visual terms and scientifically, by its genus’ name. In his account of the bird-winged butterfly, he tells of how returning to a particular location, in this case the Mussaenda shrub, leads to his capture of a “treasure” of nature (257). By identifying the shrub by name and describing its bracts and flowers, Wallace shows that he uses visual cues to remember which plants to return to in his pursuit of particular insects. He suggests that his understanding of the butterfly’s habits and his botanical knowledge together allow him to predict the behaviors of the butterfly in the context of the plant-filled environment.

As he does in other passages, Wallace vividly describes an ambivalent emotional reaction upon attaining the object of his desire. Wallace writes of appreciating the “beauty and brilliancy” of the bird-winged butterfly as a source of pleasure as well as pain. The opening of its wings is, to Wallace, a sublime and
“indescribable” experience that in its force causes him to feel more than merely uneasy. Here, he struggles with feeling acutely physically ill:

On taking it out of my net and opening the glorious wings, my heart began to beat violently, the blood rushed to my head, and I felt much more like fainting than I have done when in apprehension of immediate death. I had a headache the rest of the day, so great was the excitement produced by what will appear to most people a very inadequate cause. (257-8)

Wallace thoughtfully describes his feeling of “intense excitement” upon viewing the “glorious wings” of the butterfly he labored to attain, and uses metaphor to compare the discomfort and terror that he felt it to the experience of facing imminent death. He depicts himself with his heart beating “violently” in his chest and succumbing to vertigo, feeling “like fainting” as his blood rushes into his head.

This depiction of illness is like some of the “best-known texts in the nineteenth-century autobiographical canon” in that it reports “episodes of nervous and mental collapse and recovery in the author’s life” (Micale 109). In the book *Hysterical men: the Hidden History of Male Nervous Illness*, Mark Micale remarks not only on Romantic Era depictions of “vulnerable emotional states,” such as De Quincey’s and Coleridge’s, but also on Victorian portrayals of mental exhaustion and breakdown written by Mill, Ruskin, and Darwin. Though hysteria and mental illness are often thought of as “feminine” diseases in the Victorian context, Micale argues that men of all classes suffered from these diseases and that the “information we do have about this subject comes to us … from letters, diaries, memoirs, novels, and autobiographies” (6).
In the experience of capturing the butterfly, Wallace becomes overcome by discomfort, and suffers for the rest of the day from headache. His symptoms match with recorded symptoms of other “hysterical men,” whose complaints included some or all of the following: “headaches, …rapid pulse, chest palpitations (“hysterical heart”), chest pain (“hysterical angina”), trembling of the hands and legs,” and more (Micale 150). In the medical parlance of the nineteenth century, one might apply Thomas Trotter’s words in his 1803 publication, Medica Nautica to Wallace as well as to Darwin, who also suffered from “fits” in his travels: both authors are of “a body of men, by education and habit accustomed to adventure, braving danger in every hideous form, and surpassing hardship… and fatigue in every shape,” who suffers like a “tender female” from nervous symptoms caused by physical and mental or emotional over-taxation (qtd. In Micale, 80). Emotions, and emotional exhaustion, are part of Wallace’s and Darwin’s experience of science.
Part II: Pleasure and Gratitude

Throughout Darwin’s and Wallace’s narratives, one finds descriptions of the pleasures associated with being a naturalist in regions rarely explored by other Europeans. Darwin and Wallace imply feeling gratitude for the opportunities they enjoy as naturalists in their descriptions of the pleasure they derive from their official duties and activities during their voyages. At several points in his Narrative, Darwin informs readers that he has profoundly enjoyed visiting regions distant from England.

In one passage, Darwin shares with his readers his memories of a day spent viewing mountainous scenery in Chile:

We spent the day on the summit [of a mountain], and I never enjoyed one more thoroughly. Chile, bounded by the Andes and the Pacific, was seen as in a map. The pleasure from the scenery, in itself beautiful, was heightened by the many reflections which arose from the mere view of the grand range…. Who can avoid admiring the wonderful force which has upheaved these mountains … (314)

Darwin remembers feeling intense “pleasure” in viewing the mountains and in contemplating their geological development. Depicting a scene that his readers may never see in their lives, he encourages his readers to share in his admiration of the “wonderful force which has upheaved these mountains.”

Later, at the conclusion of his Narrative, Darwin again refers to the pleasure of viewing novel scenery, this time in a celebration of a scene without trees, animals,
or birds. This barren scenery of “stillness and desolation” is bleak without being unpleasant to the viewer, writes Darwin.

There was not a tree, and …scarcely an animal or bird. All was stillness and desolation. One reflected how many ages the plain had thus lasted, and how many more it was doomed thus to continue. Yet in passing over these scenes, without one bright object near, an ill-defined but strong sense of pleasure is vividly excited. (198)

For Darwin, there is pleasure for the naturalist in seeing a variety of environments. At the end of his narrative, he writes, “the pleasure derived from beholding the scenery and the general aspect of the various countries we have visited, has decidedly been the most constant and highest source of enjoyment” (604). In passages such as these, Darwin acknowledges that his ability during his voyages to see “various countries” and a wide variety of forests, plains, mountains, and other vistas rewarded him not only professionally, but also personally.

Similarly, Wallace presents himself as grateful for the opportunities and the pleasures afforded to the travelling naturalist. Even when remarking on the difficulties of his travels, he makes clear to the reader that he feels fortunate to have the ability to explore unspoiled, dense forests, muddy mountainous paths, and bridge-less streams. Even in the midst of his portrayals of what he calls “annoying” circumstances, such as being covered with leeches during treks through streams and mud, or, worse, finding a leech that only nearly missed draining blood from his jugular vein, a circumstance which could have ended his life, he nonetheless finds himself desiring to remark upon the vibrant coloring and beauty of living beings.
around him, including the leeches (24). The author does more than encourage the reader to suppose his feelings of gratitude: he shows himself as willing to endure the difficulties of travel because he finds even in life-threatening circumstances much to appreciate and admire. In such passages, he praises the foliage and “fine” scenery, and relishes the opportunity of travelling on paths used by visitors like himself only two times in over a decade (23-5).

Elsewhere, Darwin and Wallace even more explicitly describe their deeply-felt contentment in their chosen career. For example, at a point relatively late in *The Malay Archipelago*, Wallace reveals his appreciation for his opportunities as a travelling naturalist by recollecting his feelings of happiness upon waking in the early morning hours in his makeshift camp in the Aru Islands. In his portrayal of himself reclining in bed and listening to his employees prepare the camp for a new day, Wallace shares his “private” thoughts about “the wonderful and beautiful things which I am daily encountering”:

As I lie listening to these interesting sounds, I realize my position as the first European who has ever lived for months together in the Aru Islands, a place which I had hoped rather than expected ever to visit. I think how many besides myself have longed to reach these almost fairy realms, and to see with their own eyes the many wonderful and beautiful things which I am daily encountering. But now Ali and Baderoon [his assistants] are getting up and getting ready their guns and ammunition, and little Baso has his fire lighted and is boiling my coffee, and I remember that I had a black cockatoo brought in late last night, which I must skin immediately, and so I jump up and begin my day’s work very happily. (341)
In this passage, Wallace expresses thanksgiving that he has seen “fairy realms” and “many wonderful and beautiful things” that many other men and women from his native country only dream of visiting. He demonstrates an awareness of his fortunate, privileged status not only in reference to other English citizens who will never see these “fairy realms,” but also in relation to the other men in the camp. Wallace portrays himself as the one man who is allowed to sleep later than his assistants, who is served by them, and who receives specimens brought in especially for his collections. The passage is rich in its portrayals of the naturalist’s awareness of his position of authority and superiority in the camp, and his enjoyment of the activities and the “day’s work” of being an English naturalist abroad.

Wallace’s joy in collecting emerges again in other passages, such as the following description of his time in Celebes:

[W]hat delightful hours I passed wandering up and down the dry river-courses, full of water-holes and rocks and fallen trees, and overshadowed by magnificent vegetation! I soon got to know every hole and rock and stump, and came up to each with cautious step and bated breath to see what treasures it would produce. (178-9)

Here, Wallace’s language is ecstatic and his punctuation, exclamatory. What delights Wallace is not the beauty of the river winding through the landscape, per se, but is the biological diversity and richness that he finds hidden in the nooks and crannies made by the “water-holes and rocks and fallen trees” and covered by “magnificent vegetation.” Wallace depicts a setting in which the hours delightfully “pass” and portrays himself as an observer paying rapt attention to his surroundings, perhaps
even forgetting himself and the petty concerns of everyday living in his natural pursuits.

Yet, even as he turns his attention from quotidian concerns, losing himself and his perception of time in his perusal of the “magnificent vegetation” surrounding him, he shows himself maintaining an incredible degree of self-awareness: he listens to the noises of his own steps and consciously regulates his breathing so as to avoid alerting other living creatures of his presence. Though he has lost a perception of the passage of time, he is hyper-aware of himself and the noise he makes, and, also, extremely aware of the surrounding habitat and its denizens. What emerges from this description is a portrait of Wallace enthralled by his surroundings and held in suspense by the possibility of finding “treasures” in what he considers a rich, rewarding, exciting environment.

Like Darwin, Wallace portrays himself as discovering and accumulating specimens and information to be brought home to England. Orange and “cinnabar-red” butterflies, “little tiger beetle[s],” and “rare and beautiful leaf-beetles of the families Hispidae and Chrysomelidae” are the “treasures” Wallace uncovers in enshrouded places. He writes that “at one place I would expect to find a little crowd of the rare butterfly Tachyris zarinda,” whereas at another location he would “expect to find a grand Ornithoptera,” or, in yet another locale, a “curious little tiger beetle” (179). These “treasures” motivate Wallace to return to specific locations and landscape features day after day for a period of weeks, so that he may turn over each
rock, look into each hole, and closely examine each stump to observe and appreciatively extract what riches may be contained there (178-9).

In passages such as the one reproduced above (“What delightful hours…”), Wallace makes clear to the reader how much he enjoys his duties as a naturalist. Certainly, part of his delight relates to the satisfaction of making accurate predictions about which species rest or reside in particular locations. Like any scientist, Wallace takes pleasure in developing a sense of potentially productive “paths” of inquiry. In describing his successes to his readers, Wallace portrays himself relishing the verification of his own predictive capabilities. Because his eyes and ears are constantly seeking evidence of life, spotting an elusive species comes as a victory after hours or even days spent searching.

Part III: Surprise, Curiosity, and Wonder

In addition to enjoying finding life in the places and spaces he has previously identified as likely repositories, Wallace suggests that he derives joy from being continually surprised by what he finds, and by the beauty of what he finds. Though one might imagine a naturalist to approach “with cautious step and bated breath” a mysterious, unfamiliar place, Wallace tells the reader that this was his feeling approaching places well-known to him. The reader appreciates the complex multiplicity of emotions coloring his experience of intimately knowing a place and
its inhabitants, and still finding himself astonished by what may be found there. Pride in his knowledge is combined with sustained feelings of curiosity resulting from being unable to always predict what he will uncover and see. The more Wallace knows, the more it seems he encounters surprises.

Like Wallace, Darwin expresses pleasure in being surprised by unanticipated treasures hidden in the landscapes and marine environments in which he finds himself. During one expedition, he finds himself seventeen miles off Cape Corrientes, where to his astonishment he dredges up with his nets not only ocean-dwelling specimens, but also an unexpectedly large quantity of beetles. Darwin writes of this pleasant surprise as a highly “interesting circumstance”:

I had a net overboard to catch pelagic animals. Upon drawing it up, to my surprise I found a considerable number of beetles in it, and although in the open water, they did not appear much injured by the salt water. I lost some of the specimens, but those which I preserved, belonged to the genera, colymbetes, hydroporus… At first, I thought that these insects had been blown from the shore; but upon reflecting that out of the eight species, four were aquatic, and two others partly so in their habits, it appeared to me most probable that they were floated into the sea, by a small stream which drains near a lake near Cape Corrientes. On any supposition, it is an interesting circumstance to find insects, quite alive, swimming in the open ocean… (186-7).

Darwin expresses pleasure and curiosity in discovering living beings in places where he least expects to find them. Enthusiastically, he explores hypotheses to explain how these beetles arrived in the salt-water environment of the open ocean. Rather than cause consternation, the discovery of beetles in his nets causes him to react with curiosity and leads him to imagine potential paths that might bring such insects from
the shore to the pelagic environment. Darwin takes on the perspective of the beetles, envisioning their “habits” and hypothesizing their voyages from land, to a stream, to a lake, to the sea.

“Curiosity” is one of the primary emotions expressed in Wallace’s and Darwin’s narratives of scientific exploration and discovery. The nature of curiosity as an emotional state is described by Henry Home, alias Lord Kames, in his *Elements of Criticism* (1762) as “a principle implanted in human nature for a purpose extremely beneficial, that of acquiring knowledge”; it is distinct from wonder in that “the emotion of wonder, raised by new and strange objects, inflames our curiosity to know more about them” (qtd. in Leask 25). Kames’ description of curiosity had, and continues to have, an influence on how this emotion is understood. In particular, contemporary scholar Nigel Leask uses Kames’ work to discuss the sequential relationship between novelty, curiosity, and wonder: novelty ‘invariably raises’ wonder, which in turn ‘inflames’ curiosity to know more; this affective chain converts the pains into the pleasures of travel as otiose wonder is converted into a desire for knowledge. But wonder/novelty, the motivating impulse of travel… is marked by the ‘shortness of [its] duration’ as novelty ‘degenerates’ into familiarity. In this respect wonder differs from the sublime. (Leask 25)

Throughout Darwin’s *Narrative* and Wallace’s *The Malay Archipelago*, the authors describe experience of becoming increasingly familiar with exotic species, their “habits,” and their habitats. Each author finds himself repeatedly making observations that stimulate wonder and curiosity.
The slippage or “degeneration” that Kames references between the novel and the familiar is manifested in Wallace’s account of the Ke islands, where Wallace writes of a species of beetle that is similar to another species found in Britain, “our green tiger beetle.” In so doing, Wallace places the Ke beetle in relation to a familiar English insect and, also, maintains it as something distinctly foreign and novel in its association with the Ke islands. The beetle’s foreign aspect is enhanced when Wallace informs the reader of his discovery that unlike most English beetles, the Ke beetle emits “a very pleasant odour, like otto of roses” (325). That a beetle should smell like “otto of roses,” expensive perfumery, seems to be the kind of knowledge that Wallace expects would surprise and excite the curiosity of his readers. By suggesting that this smell contrasts with the “usual fetid odour of the ground beetles” in a quite marvelous, wonderful way, Wallace gives voice to his own feelings of surprise, enjoyment, wonder, and curiosity in his consideration of this novel species (325).

In each of his descriptions of the two beetles of the Ke Islands, Wallace uses his understanding of that which is “typical” and familiar to his audience and himself in order to remark upon that which is “curious.” Notably, what is initially deemed “curious” rapidly becomes “familiar” to the naturalist. Wallace gains enough confidence in his familiarity with these beetles’ habits to remark, for example, that one of the two beetle species is “always found upon foliage, generally of broad-leaved herbaceous plants, and in damp and gloomy situations” (324-325). To make
such an absolute pronouncement about its habits is to show a repeated experience of the species and a body of knowledge about its tendencies.

Part IV: Poetics and the Sublime

The emotions Darwin and Wallace express in response to nature are not limited to “curiosity” and “wonder.” At times, each naturalist describes his experiences in an environment or region in relation to spirituality and the sublime. Wallace relies on what he calls his own “poetic” feeling, and that of his readers, when relating extraordinary, emotionally rife experiences in his narrative. For example, in relating his experience collecting birds in the Aru Islands in *The Malay Archipelago*, Wallace calls on his “poetic faculty” to describe his emotions:

> The emotions excited in the mind of a naturalist, who has long desired to see the actual thing which he has hitherto known only by description, drawing, or badly-preserved external covering—especially when that thing is of surpassing rarity and beauty—require the poetic faculty fully to express them (339-40)

The ability to feel in response to natural beauty is not merely something that Wallace attributes to himself: it is integral to his study of nature as an English scientist exploring the tropics. Wallace’s description of his emotional “transport” relates in a very literal way to his physical transport to the remote Aru Islands. Because he states that he previously studied birds of paradise such as the “Burong raja,” or “King Bird of Paradise,” only through the medium of illustrated books and poorly-preserved
specimens, he allows his reader to understand that his physical translocation to the Aru Islands provided an opportunity for him to watch these birds alive, and examine them immediately after being killed, when their shape and plumage is as close as possible to those of living birds. His opportunity to see the “King Birds of Paradise” in their own environmental context transforms the naturalist’s perception of the birds as being merely “things of beauty” in cabinets, to vibrant, living beings that are most remarkable in their “wild, tropical… rude, uncultured” environment.

Nature provides for Wallace instances of suffering and beauty to which he may respond, and the natural history text he produces expresses traces or evidences of his moral, social, and emotional development as a “sentimental” and sensitive Englishman. Writing in the generations following the Romantic Era, Darwin and Wallace depict themselves responding “poetically” to sublime aspects of life as encountered by travelling naturalists. Romantic feeling is a capability integral to Wallace’s conception of what it means to be an educated, intellectual, “sensitive” European, for it is this capability in readers that he depends upon as an author to explain to them what he feels in gazing upon soul-stirring “things of beauty.”

Poetic language is presented by Wallace as a means of broaching the gap in experience between European naturalists and European non-professional naturalists, or non-naturalists. Even if his readers do not understand some details of his life in the Malay Archipelago, he suggests that they will be able to comprehend the emotional, “poetic” aspects of his experiences. Wallace draws upon his own, and his
readers’, “poetic faculties” to communicate feelings that otherwise seem to him difficult to explain to those who have not themselves lived through similar experiences (e.g. 257).

Both Darwin and Wallace find themselves responding strongly to “untouched” forests and to sublime visions of life shining out amidst death and decay. Darwin, in describing Brazil’s “primeval forests undefaced by the hand of man” and Tierra del Fuego’s forests, writes of how nature elicits spiritual awareness. These forests awaken within him an awareness of something within himself that is beyond the “mere breath of his body,” something that connects him and mankind in general to the natural world and the “productions of the God of Nature.” In these places of solitude, Darwin the naturalist stands in reverence and awe.

Among the scenes which are deeply impressed on my mind, none exceed in sublimity the primeval forests undefaced by the hand of man; whether those of Brazil, where the powers of Life are predominant, or those of Tierra del Fuego, where Death and Decay prevail. Both are temples filled with the varied productions of the God of Nature: -no one can stand in these solitudes unmoved, and not feel that there is more in man than the mere breath of his body… I can scarcely analyze these feelings: but it must be partly owing to the free scope given to the imagination (604).

“Primeval forests” produce an emotional and imaginative effect on Darwin that resists his attempts at intellectual analysis, not only at the moment of his experience of the forest but months afterwards, when he finishes his Narrative.

Wallace, too, is moved by his experiences in remote, untouched forests. In a passage previously discussed in this analysis, Wallace depicts himself trembling with
excitement in seeing the great bird-winged butterfly, *Ornithoptera poseidon* “coming majestically towards me, writing that it appeared as “a bright gem shining out amid the silent gloom of a dark and tangled forest” (328-9). He describes his reaction to seeing the bird-winged butterfly as so intense an experience as to corporeally agitate him, causing his body to tremble involuntarily and uncontrollably (329). In considering this passage in terms of the sublime, one notes the strength of Wallace’s emotional response as well as the simultaneity of his admiration of the butterfly’s “fresh and living beauty” and his awareness of the “silent gloom” of the untouched forest.

Part of the power inherent in Wallace’s observation of the butterfly relates to the insect’s juxtaposition against a wild, untamed, dark, and “primeval” forest, against which the butterfly appears as a gem and a beacon of “fresh and living beauty.” Similarly, like isolated stars shining in the night, or glints of gold gleaming in a bleak and dusty mine, birds of paradise stand out from their setting, revealing their beauty to Wallace’s eye (339-40). According to Wallace, the “King Birds of Paradise,” or “Burong raja,” have “the most exquisite beauty of plumage, [rendering] this one of the most perfectly lovely of the many lovely productions of nature” (339). After testifying to the bids’ beauty in his text, he recalls how his real-life, in-the-field “transports of admiration and delight quite amused my Aru hosts, who saw nothing more in the ‘Burong raja’ than we do in the robin or the goldfinch” (339). Rather than feel embarrassment over his overflowing emotions, Wallace chooses to present
them in his narrative in addition to a description of his Aru hosts’ reactions, showing himself as a sensitive observer of living beings in what are, to him, “foreign” locales.

Part V: Emotionally-Rife “Contact Zones”

Though Wallace concedes that native people are surrounded by stunningly beautiful flora and fauna, for which they have developed their own names and bodies of knowledge (339-40), he suggests that they lack the capacity to understand and appreciate natural history and nature’s beauty in the “poetic” fashion. Wallace writes,

The remote island in which I found myself situated, in an almost unvisited sea, far from the tracks of merchant fleets and navies; the wild, tropical forest, which stretched far away on every side; the rude, uncultured savages who gathered round me—all had their influence in determining the emotions with which I gazed upon this ‘thing of beauty.’ (340)

Reading this passage, both the Victorian and the modern reader witness Wallace emotionally and intellectually coming to terms with his place in what Mary Louise Pratt calls a “contact zone,” a colonial encounter in which “disparate cultures meet, clash, and grapple with each other, often in highly asymmetrical relations of domination and subordination” (4). From Wallace’s viewpoint, “poetic” responses to nature are “asymmetrically” distributed in the human population: they are the special accomplishment of white Europeans. Wallace distinguishes between himself and the “savage” or “barbaric” peoples who fail to exhibit emotions like his when
responding to the surrounding environment. In distinguishing between the peoples native to the islands and Europeans, Wallace suggests that all Europeans, even those who are less well-educated and less privileged than himself, are capable of more sensitive reactions to natural beauty than the indigenous peoples he encounters in the Aru Islands. Even the decidedly commercial and militaristic European men in “merchant fleets and navies” would express a sensitivity to the sublime in nature but for the distance of the merchant ships from wild, “remote” places like the Aru Islands, he suggests (340).

In his text, Wallace insinuates that poetry is his race’s own superior intellectual and emotional possession, and is absent in the peoples surrounding him who do not seem to him to notice the beauty of their islands (340). That Wallace expresses doubt that the “savage” men would lack the “poetic feeling” or sophistication to appreciate natural beauty surrounding them is a circumstance that can be related to the Victorian cultural climate and pervasive conceptions of racial differentiation. According to English and American anthropological thinking of the mid to late-nineteenth century, members of Anglo-Saxon races, such as Wallace, were considered at the pinnacle of a progression of human evolution. Human evolution was described by the theory of “orthogenesis” as moving in unidirectional progression through distinct stages ranging from “savagery,” or so-called “Stone Age” ways of life, to “barbarism,” a “violent” state of affairs, to peaceful
“civilization,” a stage characterized by laws, social institutions, and specialized forms of labor and expectations for men and women (e.g., Bederman 25).

Faced with the impression or belief that much of nature’s beauty is unappreciated by humans “unable” to comprehend its scientific and aesthetic value, Wallace describes feeling overwhelmed by melancholy when he considers how many beautiful living beings have existed for centuries, unknown to Western science and unseen by European eyes that “could” be conscious of their worth:

I thought of the long ages of the past, during which the successive generations of this little creature had run their course… with no intelligent eye to gaze upon their loveliness; to all appearance such a wanton waste of beauty. Such ideas excite a feeling of melancholy. It seems sad that on the one hand such exquisite creatures should live out their lives and exhibit their charms only in these wild, inhospitable regions, doomed for ages yet to come to hopeless barbarism; while on the other hand, should civilized man ever reach these distant lands, and bring moral, intellectual, and physical light into these recesses of these virgin forests, we may be sure that he will so disturb the nicely-balanced relations of organic and inorganic nature as to cause the disappearance, and finally the extinction, of these very beings whose wonderful structure and beauty he alone is fitted to appreciate and enjoy. (340)

The modern reader is struck by the hubris of Wallace’s imagining that he and other Europeans are the only bearers of “intelligent” eyes to gaze upon natural loveliness. Yet the Victorian English reader would be more likely to read this passage in sympathy with Wallace, lauding his anti-imperialistic grief over the inevitability that “civilized man” would disturb the natural “balance” of nature, causing widespread extinctions of the “beings whose wonderful structure and beauty he alone is fitted to
appreciate and enjoy.” Wallace’s sadness regarding the “wanton waste of beauty” hidden in remote islands is tempered only by his belief that, should such beauty be discovered by Europeans, it would certainly be destroyed.

Emotionally, this passage resonates with frustration and perhaps even guilt over what it means to be a European, particularly in his “knowledge” that his race “surely” disrupts the “relations of organic and inorganic nature,” bringing destruction along with civilizing influences everywhere it goes. I argue that the Victorian reader would view this passage as a “narrative of ‘anti-conquest,’” in stark contrast with narratives of navigation or conquest (Pratt 28-33). Wallace’s argument against destruction and domination of ecosystems untouched by “civilized” men counters rather than corroborates with demands for colonial expansion and domination of non-European ecosystems.

Darwin, too, writes of his experiences in “contact zones,” often with the effect of undermining rhetorics of colonization, expansion, domination, and conquest. One such episode recounted in his narrative occurs when he is made aware of the impending separation of slave families by their colonial masters; this event spurs Darwin to write of “the inhumanity of separating thirty families, who had lived together for many years… It may be said there exists no limit to the blindness of interest and selfish habit” of slave-owners (28). As an Englishman whose family members were active in the abolitionist movement, Darwin expresses outrage and disgust in his descriptions of coming face-to-face with the horrors of slavery. Though
he is a naturalist whose primary duties are to study the flora and fauna of the places to which he travels, Darwin follows many of his predecessors in reporting on the political realities of the lands in which he travels as part of his professional activities and “duties” (Pratt 86), just as Wallace, too, remarks upon the people and institutions he finds in the Malay archipelago.

In addition to expressing outrage about slavery in general terms, Darwin expresses “feelings of surprise, disgust, and shame” upon gaining additional firsthand experience of the degradations of individuals when they are made into slaves. For example, he describes crossing a ferry with a negro, who was uncommonly stupid. In endeavouring to make him understand, I talked loud, and made signs, in doing which I passed my hand near his face. He, I suppose, thought I was in a passion, and was going to strike him; for instantly, with a frightened look and half-shut eyes, he dropped his hands. I shall never forget my feelings of surprise, disgust, and shame, at seeing a great and powerful man afraid even to ward off a blow, directed, as he thought, at his face. (27-8).

This depiction of crossing the ferry with the “great and powerful” “negro” man is something Darwin depreciates as “one very trifling anecdote,” yet he writes that it “at the time struck me more forcibly than any story of cruelty” (27). Darwin expresses intense emotion in his descriptions of slavery and, particularly, the outrages he sees in the relations between free and slave populations. He writes of his interactions with the people and societies of the lands he visits in addition to writing of natural “scenes which are deeply impressed on my mind” (604) because both
types of scenes are integral to his experience as a naturalist encountering the world, and both types of scenes fit into the tradition of natural history writing as established in earlier centuries (Pratt 86).

Perhaps knowing that human institutions do not last in the world on the same timescale as geologic processes empowered Darwin to call for them to change. Certainly, he describes in his Narrative how he learns to question the power wielded by self-important men through his witnessing the vastness and power of nature, and the smallness and “insignificance” of man relative to the power and scale of oceans, mountains, forests, and events including earthquakes (606). Darwin questions the “boasted power” of individuals who build great and beautiful edifices, or plantations, colonies, or even empires, and suggests that these achievements lose meaning when one considers the vast scale of geological time and the overwhelmingly greater power of natural phenomena. Earthquakes in particular allow Darwin to feel the “insignificance” of mankind’s “boasted power” (606).
Chapter IV: Conclusions

Masculinity and feeling are not mutually exclusive in the context of Victorian science. My analyses of Darwin and Wallace's narratives seeks to challenged the claim that practitioners considered in the mainstream of the “masculine” tradition of science lacked empathy or emotion in their responses to the natural world. In this assertion, I follow Merrill's suggestion to scholars: to acknowledge the origins of nineteenth century science in the tradition of natural history, a discipline in which the observer engages emotionally and aesthetically with other living beings (12).

In the course of this essay, I have mentioned that scholars like Carol Reeves believe that a main goal of scientific writing is removing from its language “connotations that reflect or create… emotional attachments” (Reeves 9-10). Given widespread acknowledgement that science and scientists are never “objective,” perhaps what is needed is not a “revolutionary,” “new,” or “feminine” “conception of objectivity in science that is based on... intimacy, open-mindedness and love” (Haely 45), so much as a new and broader understanding of what constitutes scientific writing, so that texts with a human, first-person perspective are not immediately dismissed as unscientific, as unrepresentative of “masculine” science, or as somehow outside the mainstream Western tradition. Though they are not technical works, Darwin’s Narrative of the Surveying Voyages of His Majesty’s Ships, Volume Three (1839) and Wallace’s The Malay Archipelago (1869) are valuable as scientific
texts precisely for their ability to shed light on the process by which their authors
created knowledge about the natural world.

Hesitatingly, Keller admits that, “to some extent,” McClintock’s descriptions
of her “understanding” of maize in a non-rational, imaginative fashion “recalls what
might be called the ‘naturalist’ tradition” (“Feeling for the Organism” 101). I see no
reason for this hesitation. In my analysis of the naturalist tradition, I have attempted
to show the ways in which Darwin and Wallace think and react with feeling to the
objects of their study, and to demonstrate that emotions pervade the language and the
content of their narratives of exploration and scientific discovery. My goal has been
to convince the reader that there exists a tradition of male naturalists who portray
themselves in their popular narratives as responding emotionally to other living
beings in nature. These men are claimed by modern science as “founding fathers”
and should be considered predecessors of contemporary biologists such as Barbara
McClintock, E.O. Wilson, and others.
BIBLIOGRAPHY


