Darwin and Theories of Aesthetics and Cultural History

This book is dedicated to the memory of Chester A. Larson.

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ASHGATE
Darwin, Burke, and the biological sublime

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That the specific term "sublime" occurs numerous times in Darwin's writings aboard the Beagle and later when writing the transmutation notebooks and the Journal of Researches, demonstrates his general familiarity with a Romantic aesthetic category that had become commonplace by the early nineteenth century. Related terms that Darwin often used in his youth like solitude, gloom, grandeur, savage, irregular, and wildness were part of the rhetoric of the natural sublime. Several scholars have acknowledged Darwin's reference to the sublime in his early years: James Paradis, for example, in discussing the importance of the English literary tradition and David Kohn, Phillip Sloan, and Robert Richards emphasizing Germanic sources in his writings, pointing out Darwin's love of Humboldt, whose sublime voice had roots in Goethe and Kant.¹

It is true that Darwin himself listed English poets of the so-called excursion tradition like Coleridge and Wordsworth as among his favorites, claiming to have read Wordsworth's "The Wanderer" twice, for example.² And he spoke with virtual rapture about Humboldt's personal narrative of his travels in South America, several volumes of which accompanied him on board the Beagle.³ However, the specific influence of Edmund Burke's concept of the sublime in nature developed in his A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful in 1757 and its relevance to Darwin's developing ideas on evolution has not been much discussed.

Burke's theories were of interest in intellectual circles around Darwin's evolutionist grandfather Erasmus Darwin and his Wedgwood cousins. Charles Darwin originally read Burke in 1828 while at Cambridge University and returned to the slim volume on aesthetics ten years later, after the Beagle voyage, when mulling over animal behavior and species transformation.⁴ His identification with Burkean ideas such as a rapacious nature, the central drive of self-preservation, and the mind and body relationship in the expression of emotions are the subject of this chapter.
The landscape sublime

Darwin counted Milton's *Paradise Lost* as his favorite volume to take on shore when he left the Beagle for as yet unknown adventures. This work was virtually canonical among theorists of the sublime and was Burke's own favorite poet to quote from. In his analysis of the grand, of magnificence, and of the totality of nature, Burke’s immediate predecessor and direct influence, Joseph Addison, had at first advocated familiarity with this text, before turning later in life to the direct observation of nature as affording the “primary pleasure of the imagination.” Nevertheless, Milton remained “a perfect master in all the arts of working on the imagination” and clearly Addison’s favorite. It may be that in Darwin’s efforts to put together the pieces of shifting ecologies around the world he found the Milton helpful because this important source had by now been long discussed as aiding creative thinking on nature. Speculations on grandeur could engage contemplation on the condition of existence.

Sublime pictures mattered to Darwin as well, although these were elusive truths. For example, in trying to describe the Brazilian rainforest, he fell back upon the memory of two prints. Of one of these he wrote to his mentor John Henslow, “I first saw a Tropical forest in all its sublime grandeur—Nothing, but the reality can give any idea, how wonderful, how magnificent the scene is... Your engraving is exactly true, but underestimates [sic] rather than exaggerates [sic] the luxuriance—I never experienced such intense delight.” He also referred to the contemporary works of the artist John Martin, whose images of a fantastic nature were generally accepted as unreal. Of a view of nature along the coast of Brazil, Darwin recorded, “If faithfully represented...a feeling of distrust [would enter the mind of the viewer] as...is the case in some of [John] Martin’s views.” Whether pictorial representation in the end fell flat or not, Darwin credited a visual source on the sublime in nature read in early childhood—the illustrated *The Hundred Wonders of the World* by C.C. Clarke (Sir Richard Phillips)—in planting the seed that ultimately led to the Beagle voyage. His early years were those in which the landscape sublime in visual culture had reached its apex, with many remarkable views to be seen at the Royal Academy exhibitions.

In Addison’s emphasis on the primary pleasures of the imagination through direct visual evidence, he identified God as Author of nature. This notion characterized much of eighteenth- and nineteenth-century understanding of a spectacular and sublime nature. Darwin at first struggled with that tradition. In his autobiography, he discussed the notion of deity and creation, then stated,

Formerly, I was led by feelings such as those just referred to [on religion] to the firm conviction of the existence of God, and the immortality of the soul. In my Journal I wrote that whilst standing in the midst of the grandeur of a Brazilian forest, it is not possible to give an adequate idea of the higher feelings of wonder, admiration, and devotion which fill and elevate the mind. I well remember my conviction that there is more in man than the breath of his body. But now the grandest scenes would not cause any such convictions and feelings to rise in my mind. He reminds the viewer that there is no worldwide belief in one god and continues,

The state of mind which grand scenes formerly excited in me, and which was intimately connected with a belief in God, did not essentially differ from that which is often called the sense of sublimity; and however difficult it may be to explain the genesis of this sense, it can hardly be advanced as an argument for the existence of God, any more than the powerful though vague and similar feelings excited by music.

That is not to say that Darwin ever lost his interest in the validity of the sublime as an emotive category, or his awareness of the popular application of the sublime to landscape. In his autobiography, though he felt compelled to reduce the Beagle voyage to under six pages because, he said, he had written about it elsewhere, in those few paragraphs he summarized his most crucial memories: “The glories of the vegetation of the Tropics rise before my mind more vividly than anything else—though the sense of sublimity—which the great deserts of Patagonia and the forest-clad mountains of Tierra del Fuego excited in me, has left an indelible impression on my mind.” That he carefully considered what constituted sublime sensations is recorded in an incident by his follower George Romanes. In a conversation regarding ancestral habitation in sublime terrain which produces awe, Darwin had recounted that his most sublime feelings came from standing on top of the Cordillera Mountains. But an hour after retiring for the night, he reappeared in his robe and slippers to say that he had been wrong; that instead he felt it even more so in the forests of Brazil. “I am sure now that I felt most sublime in the forests.”

Burke and self-preservation

The landscape sublime is perhaps the best-known category of that aesthetic within visual culture, but Burke’s ideas as developed in his treatise were applied principally to physiology, and he dwelled on responses of the body one feels when threatened. The application of Burke’s ideas on the sublime to landscape was an extrapolation by Romantic Burke enthusiasts and not a central pursuit of Burke himself. As Burke noted in his introduction, he pursued a “diligent examination of our passions in our own breasts; from a careful survey of the properties of things which...influence those passions; and from a sober and attentive investigation of the laws of nature, by which those properties are capable of affecting the body, and thus exciting our passions.” Burke was deeply engaged in a psychological and neuropsychological explanation—
the specifics of how sense impressions affect the nervous system; in the case of the sublime this involved "unnatural tension of the nerves."

Burke's ideas developed as part of "the culture of sensibility" in the eighteenth century, when a science of the senses was being formulated and applied to many areas of society, from manners and morality to aesthetics. Although he himself was not a scientist, Burke had a lifelong interest in medicine and was influenced by George Cheyne's theories of nerve tensions and vibrations to explain sensibility, and by his friend and mentor the physician Christopher Nugent, who, interested in pathologies of the nervous systems (and the vibration, pulsation, and oscillation of bodily fluids and solids), espoused therapeutic regimes of exceedingly strong forces (such as through hydrotherapy) applied to overtaxed nervous systems. Despite his focus on threat and danger, for Burke a paradoxical aspect of the sublime was its positive benefits. There was a "heathful" and even a necessary side to the experience of the sublime when direct danger was avoided or at a distance; it strengthened the nervous system and exercised "delicate organs." The sublime was an active principal that countered lethargy.

For Burke, the sublime rested on self-preservation, excited by thoughts of pain and danger. In his section on power, added to the second edition of 1759, Burke wrote:

besides these things that directly suggest the idea of danger...I know of nothing sublime which is not some modification of power. And this branch rises...from terror, the common stock of every thing that is sublime...the idea of pain, in its highest degree, is much stronger than the highest degree of pleasure....pain is always inflicted by a power in some way superior, because we never submit to pain willingly. So that strength, violence, pain and terror, are ideas that rush in upon the mind together. Look at a man, or any other animal of prodigious strength...the emotion you feel is...rapine and destruction.

Addison had emphasized sight, but Burke believed that all the senses were important. It was his physiological approach to danger and pain, both real and imagined, and the overriding idea of self-preservation that Darwin ultimately sought out after his voyage, rather than the popularized notion of the sublime applied to awe in light of a spectacular landscape.

Burke ventured to compare humans to other species and found physiological and expressive similarities, ideas that would be further developed by Darwin. Burke wrote:

...a man in great pain has his teeth set, his eyebrows are violently contracted, his forehead is wrinkled, his eyes are dragged inwards, and rolled with great vehemence, his hair stands on end...the whole fabric totters...Fear or terror, which is an apprehension of pain or death, exhibits exactly the same effects, approaching in violence to those just mentioned in proportion to the nearness of the cause, and the weakness of the subject. This is not so only in the human species, but I have [witnessed this] in dogs, under an apprehension of punishment that they have writhed in their

bodies, and yelped, and howled, as if they had actually felt the blows...I conclude that pain, and fear, act on the same part of the body...though somewhat differing in degree.

Darwin made similar comparisons between species and, by the time of the publication of The Expression of the Emotions in Man and Animals (1872), had developed three principles he felt were at work in the expression of the passions in all living creatures: habits "to gratify some desire or relieve some sensation" that become fixed in a population; oppositional behaviors, for example, submissive postures in dogs in opposition to aggressive ones; and closest to Burke's explanations—actions of the overly stimulated nervous system in times of perceived distress.

Erasmus Darwin, Stubbs, and Fuseli

One artist of the sublime who was almost immediately influenced by Burke's treatise was George Stubbs. From the early 1760s on, he created images of fear and pain in nature. One of his favorite scenes to repeat was that of a traumatized white horse attacked by a lion. It is perhaps of some interest that the first such scene and one of the largest was created for the Marquess of Rockingham (Charles Watson-Wentworth), who appointed none other than Edmund Burke to be his private secretary in 1765 when he became prime minister of Great Britain (Figure 1.1)

Despite Stubbs' unsubstantiated account of actually having seen a horse attacked by a lion in northern Africa, the horse, a creature revered by the British and associated with civilization—agriculture, sports, or even heroic deeds—is hardly expected in an entanglement with a lion. Although the horse in its original state might have sublime dimensions according to Burke, he could also be identified as a symbol of culture "fit for the plough, the road, the draft...[while] the sublime...comes upon us in the gloomy forest, and in the howling wilderness, in the form of the lion, the tiger, the panther, or rhinoceros." Whereas with Milton a wild creature would have implied Satan and sin, the irrational forces of the natural world began to take center stage by the middle of the eighteenth century.

Stubbs was close to the Wedgwood side of Darwin's family and painted Charles Darwin's grandfather Erasmus Darwin's likeness on Wedgwood pottery. Stubbs stayed at the Wedgwood estate from August to October 1780, experimenting with the pottery and painting Wedgwood's family. Among works of these months is a recreation of one of his horse and lion scenes in blue and white jasperware.

Stubbs and Erasmus Darwin, evolutionist, poet of fantastic nature, and medical practitioner, had many naturalist friends in common, such as Sir Joseph Banks. It was around 1780 that Banks took Stubbs to the home of
Marmaduke Tunstall to draw his tiny “mouse lemur,” where he focused on its active digits. Stubbs’ exotica extended to moose, rhinoceros, baboons, and cheetahs. His carefully recorded Portrait of a Monkey (later identified as a southeast Asian macaque) was first depicted in 1774 and copied again in 1798 (Walker Art Gallery, Liverpool). It sits on a stone while gathering peaches and stops for a moment to regard the viewer nervously, showing the anthropomorphism of the horse. In this case, awareness suggests a simian intelligence that not only foreshadows Charles Darwin’s observations of orangutans Tommy and Jenny in Regent’s Park several decades later, but demonstrates shared ongoing concerns of the period with Erasmus Darwin, who, at the end of the eighteenth century, was working on his evolutionist poem The Temple of Nature, published posthumously in 1803, which included a discussion of human descent. In The Temple of Nature, Darwin connected humans with quadrupeds. Coleridge and Wordsworth, who in many ways had emulated earlier poetry by Darwin, found this territory for contemplation. Coleridge wrote to Wordsworth in 1815 that Darwin’s speculations on evolution in terms of orangutans and man was “contrary to religion and possibility.” At this time, Stubbs was himself involved in a project of direct comparison between humans and beasts, an ambitious series of anatomical studies of human, tiger, and bird muscular and skeletal systems (1795–1806). He dared to show a human skeleton in a crouching and crawling position, an obvious allusion to similarities with the tiger (Figure 1.2). Included in these drawings is the skeleton of a monkey, upright in a human-like position. Stubbs also created busts of human “passions” in the late eighteenth century, reproduced as a series of prints around 1800; these indicate the dynamic movement of small muscle groups underlying the skin.

Erasmus Darwin befriended another artist who was a reader of Burke, Henry Fuseli. He greatly admired that most sublime of paintings, Fuseli’s The Nightmare (1781; Figure 1.3). When it was engraved and published in January of 1783 it was accompanied by verses by Darwin that would appear in his The Botanic Garden. Both men deeply admired Milton, and Fuseli’s dreadful painting with its squat, horrific incubus is reminiscent of Burke’s comments in his section on obscurity followed by a quote from Milton. Burke writes, “...night adds to our dread, in all cases of danger, and how much the notions of ghosts and goblins, of which none can form clear ideas, affect minds, which give credit to the popular tales concerning such sorts of beings.” Burke then brings up Milton and his brilliant use of obscurity, quotes him, and continues, “In this description all is dark, uncertain, confused, terrible, and sublime to the last degree.” Fuseli was a painter of Miltonic subjects, spending much of the decade of the 1790s creating dozens of works inspired by his writings. His Milton Gallery opened in 1799.

While Fuseli’s Nightmare may seem to have little to do with the sublime from an evolutionary perspective, the smug, monstrous incubus atop its potential victim is not unlike Stubbs’ natural, yet equally dangerous, creatures that are out of reach of their victims. It is perhaps of some interest that Erasmus Darwin interpreted the incubus as ape-like. His verses that appeared with the print are: “On her fair bosom sits the demon ape / erect and balances his bloated shape / Rolls in their marble orbs his Gorgon-eyes / And drinks with leathern ears her tender cries.” Fuseli’s own conviction that apes and humans were much alike must have been another source of discussion between Darwin and Fuseli. Fuseli had defended Jean-Jacques Rousseau’s conjecture that orangutans might be semi-human and not a distinct creation and that, moreover, their “society” and very constitutions were not unlike that of humans. Erasmus Darwin was clearly attracted to Fuseli’s monstrosities and employed the artist to illustrate his poems of nature’s creative and destructive forces in The Botanic Garden.

Erasmus Darwin was deeply engaged in the sublime, both in terms of its Romantic cultural associations and in the application of its physiological dimensions. His poetry was often compared to Milton and it included cataclysmic tales of creation, with an explosive universe. In Economy of Vegetation (1792),
lightning, fireballs, and volcanoes are included in the energies that initiate a spinning world—Horace Walpole referred to Erasmus Darwin’s verses as the most sublime he had ever read. But even at his most Miltonic, Darwin thought of himself as based in science. His description of the origins of the universe, which he expanded upon in related notation, was a reference to what today we might refer to as the big bang theory of creation.

Burkean sources in Stubbs and Fuseli that would reverberate in the scientific physiological writings of Erasmus Darwin include the attachment of passions such as dread, fear, and anger to threat or self-protection, but equally close to Burke was Darwin’s controversial emphasis on sex or “generation” and its pleasures as a passion leading to survival. Pain and pleasure are as central to Erasmus Darwin’s theories as they were to Burke, although he adapted a greater associationist program such as that followed by Locke or Hume, in which attraction and revulsion are learned during the course of one’s lifetime through the association of images or ideas arising from sensory input, rather than being innate.
He wrote in his treatise on natural history and medicine, *Zoonomia; or the Laws of Organic Life* (1794):

As the sensations of pleasure and pain are originally introduced by the irritations of external objects; so our desires and aversions are originally introduced by those sensations...when the objects of our pleasures or pains are at a distance; and we cannot instantaneously possess the one, or avoid the other, then desire or aversion is produced, and a voluntary exertion of our ideas or muscles succeeds.\(^{30}\)

He speculated on adaptive structures that have importance in survival, including those that aided in escape from predators. However, it was the “joy” in sexual reproduction that ensured the continuity as well as the evolutionary potential of the species.\(^{30}\) His sensual approach to the object of “love” as integrated with notions of beauty in humans was one he shared with Burke. Of a general attraction to smoothness and curves in consideration of beauty, Burke had written:

> Observe that part of a beautiful woman where she is perhaps the most beautiful, about the neck and breasts; the smoothness; the softness; the easy and insensible swell; the variety of the surface, which is never for the smallest space the same; the deceitful eye slides giddily, without knowing where to fix, or whither it is carried.\(^{31}\)

In his acknowledgement of this passage, Erasmus Darwin responded, “the sentiment of Beauty or Loveliness [is] suggested by easy-flowing curvatures of surface, with smoothness; as is so well illustrated in Mr Burke’s Essay on the Sublime and Beautiful.”\(^{32}\) However, for Burke that which we find beautiful may well have been innate to begin with, whereas for Erasmus Darwin it was learned. Darwin continues, “The sentiment of Beauty appears to be attached from our cradles...in the form of the female bosom...”\(^{33}\)

**Erasmus and Charles Darwin and Burke**

Erasmus Darwin foreshadowed his grandson in many ways. As an early evolutionist he was originally inspired by fossil evidence. Charles Darwin would later recall how important fossils had been for his own developing views. In *Zoonomia* Darwin’s poetry, natural laws over god are paramount. Sexual selection, a mechanism that would be expanded upon by Charles Darwin, with male use of weapons of combat was a mitigating factor. In *Zoonomia*, Erasmus had written that the outcome of rivalry was that “the strongest and most active animal should propagate the species, which should thence be improved.”\(^{34}\) Variation among species was recognized, and there was struggle for survival in a rapacious nature. The origin of even the most complex of living beings came from rudimentary forms. He believed that plants could feel—the basis for his poems *The Loves of the Plants* (1789)—and he shared a common fascination with that most sublime of plants, the insectivorous *Drosera*. The importance of biological drives like lust and hunger in order to promote survival were observed. Erasmus Darwin seems to have read Malthus’ *An Essay on the Principle of Population*, published in 1798, which would prove so instrumental for his grandson in terms of natural selection or “survival of the fittest.” In *The Temple of Nature* Darwin wrote, “So human progenies, if unrestrain’d / by climate friendled and food sustaint’d / o’er seas and soils, prolific hordes would spread / Erelong, and deluge their terraqueous bed / but war, and pestilence, disease and death / sweep the superfluous myrids from the earth.” *The Temple of Nature* was originally intended to be entitled *The Origin of Society*, which remains the running head across all the interior pages.

When Charles Darwin opened his first “transmutation of species” notebook (B) in the summer of 1837, he entitled it *Zoonomia*.\(^{35}\) Following Erasmus Darwin, Charles Darwin focused on questions of generation, adaptation, variability, and inheritance. He took extensive notes from his grandfather’s publications. He read Lamarck, Lyell, and Cuvier; then he turned to the writings of many other thinkers less engaged in theories of evolution that might prove helpful in his quest to understand animal and human behavior and changes in species. Of these, perhaps the most notable event, even by Darwin’s own account, was his reading of Malthus. Darwin read *An Essay on the Principle of Population* in the sixth edition (1826) between September 28 and October 2, 1838, and 40 years later observed of this moment,

> In October 1838, 15 months after I had begun my systematic enquiry, I happened to read for amusement Malthus on *Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved, and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here then I had at last got a theory by which to work.\(^{36}\)

Beginning on October 2, Darwin initiated a new transmutation notebook (E) along with one labeled “Expression” (N) and within the week had mentioned Bucke (whom he had been rereading since July), Malthus, and the orangutans Tommy and Jenny from the Zoological Gardens—Jenny with her child-like antics, who plucked hidden ears of corn from straw then brought them to Darwin, and Tommy, who was ill, with an expression of languor and suffering. While Malthus represented on the one hand a solution to speculations on species transformation under the pressure of overpopulation, interspecies struggle, and environmental circumstances which Darwin explored in his transmutation notebooks, on the other hand, he, along with Burke, offered ideas on the implications of the passions in terms of survival that could be
considered as Darwin pondered human descent. While he makes no direct reference to his grandfather's "Orang-outang theology of the human race" (Coleridge) this could not have been far from his mind at this time or even as early as April 1838, when Darwin had written.

Let man visit Orang-Outang in domestication, hear expressive whine, see its intelligence when spoken; as if it understood every word said—see its affection—to those it knew—to see its passion & rage, silliness, & very actions of despair; "let him look at savage, roasting his parent, naked, artless, not improving yet improvable & then let him boast of his proud preeminence." 37

It may have been that looking back at his grandfather's work brought Malthus to Darwin's attention along with reminding him of Burke, still fresh in his memory. The specific passage from Burke he cited in early October was one his grandfather had already acknowledged in Zoönomia regarding expression, its continued action on the body, and its usefulness to society. Erasmus Darwin had written the following:

...when we put ourselves into the attitude that any passion naturally occasions, we soon in some degree acquire that passion; hence when those that scold indulge themselves in loud oaths, and violent actions of the arms, they increase their anger by the mode of expressing themselves; and on the contrary the counterfeit smile of pleasure in disagreeable company soon brings along with it a portion of the reality as is well illustrated by Mr. Burke (Essay on the Sublime and Beautiful)... From this our aptitude to imitation, arises what is generally understood by the word sympathy... 38

Focusing on the physiological implications of imitation, Charles Darwin noted, "Burke... says on mimicking expression of emotions, he has felt the passions of a face & mind sympathetic with internal organs, as actions of the heart." 39

In Malthus, Darwin found significance in reading about the passions and their usefulness and hindrance to mankind—this ranged from intemperance in eating and drinking leading to disorders of health or multiplying too fast, leading to death from poverty. However, Malthus's beliefs that "natural and moral evils" were instruments of god was not in keeping with Darwin's developing speculations. In Malthus, instant gratification like drinking too much or sex out of wedlock led to degenerate states, and repression of this, what Malthus referred to as "obstacles thrown in the way very early" as in being taught manners and restraint by one's parents, actually produced greater passions—thus, passions and civilization paradoxically work hand in hand. In this way, Malthus maintained a tidy cultivated world. Burke did not provide Darwin with such supernatural stumbling blocks. And, unlike certain moral philosophers he was then reading, such as James Macintosh or Adam Smith, who followed an associationist program on learned social behavior, Burke's text offered in many places innate explanations which were more in keeping with Charles Darwin's speculations.40 As Burke himself noted, "Some things must have been originally and naturally agreeable or disagreeable, from which the others derive their powers; and it would be, I fancy, to little purpose to look for the cause of our passions in association, until we fall of it in the natural properties of things." 41 Burke was interested in the natural workings of the mind beneath learned responses. Although god or "providence" was never completely removed from his program, Burke believed in an innate and uniform organization of mind, a biological basis to behavior. 42 Neither Burke nor Darwin rejected associationism, but the tabula rasa theory of behavior of Locke or Erasmus Darwin which relied entirely on learning through experience, with each organism beginning the process anew was of little appeal to Charles Darwin. 43

Darwin's first entries on the Philosophical Enquiry in his Notebook M are from July 1838.44 Burke initiated his volume by laying out the development of the human mind and the origins of the expression of the passions. He identified curiosity as the first and simplest emotion; here he was referring to early childhood, essentially a state of wonder over novelties. His discussion is not entirely unlike Darwin's delighted observation in early October that Jenny, when discovering ears of corn, "just like a child not knowing what to do with them, came several times & opened my hand, & put them in—like a child." 45 Burke quickly passed on to "people advanced in life" and the twin passions revolving around pleasure and pain. Burke identified pleasure, along with pain, as being among the strongest of the emotions, though pain was by far stronger. Yet pleasure was connected to society and sex (as Erasmus Darwin concurred). Without moralizing, he wrote about the significance in humans of the use of reason in pursuing their beloved, while with other species lust was predominate in light of urgency during specific mating seasons. Burke argued that since humans have reason or a greater sense of sociability, they pause to seek out beauty; that is, men seek out beauty in women. Charles Darwin, of course, was interested in the concept of perceived beauty in women by men, though this would be developed only in his later work. 46 However, unlike Burke (and like Addison), Darwin would go on to propose an underlying sense of beauty in all creatures that in turn affects mate choice.

In discussing the passions, Burke was most taken with the sublime, and this would provide Darwin with important insights. Burke devoted Part II of his book to the sublime. Aspects of the sublime include among others astonishment, power, privation, infinity, terror, and obscurity (which we can understand literally as darkness or metaphorically, as a lack of comprehension of the workings, the shape of nature). Vastness, another characteristic, might have been of some interest to Darwin in his dilemma over biological clarity. Burke defined vastness as magnitude and brought up what was invisible to us in biology. He uses the microscope by way of example and wrote,
When we attend to the infinite divisibility of matter, when we pursue animal life into these excessively small yet organized beings,...when we push our discoveries yet downward...the still diminishing scale of existence, in tracing which the imagination is lost as well as the sense, we become amazed and confounded....

These concepts of extension and infinity might offer parallels with the invisible and confounding nature of evolution.

Darwin puzzled over the physiology of fear, with its attendant aspects of pain, in the summer and fall of 1838; he became increasingly convinced that the expression of fear was based in ancestral histories of survival. Sensations of fear had become to some degree instinctive; they were accompanied by a beating heart and trembling muscles, which implied running away from the source that produced fear. One "starts" over a loud noise because the brain sends a mandate to the nerves and muscles. Disagreeable thoughts can result in the action of the brain creating the sensation of pain on muscles, for example, through twitching. Darwin was drawing implications that these physiological responses to external sources were based on actual actions to move away from or repel the source of fear in ancient populations. Twitching muscles, shaking (in the deep past literally shaking off a predator), and rapid breathing had now become hereditary responses as opposed to an actual course of action. The very expression of the passions was dependent on this history. He noted, "Expression is an hereditary habitual movement consequent on some action, which the progenitor did, when excited or disturbed by the same cause, which 'now' excites the expression."44 When Darwin addressed the history of the passions as found in humans today in *The Expression of the Emotions*, fear was among the most ancient:

...fear was expressed from an extremely remote period, in almost the same manner as it now is by man; namely by trembling, cold perspiration, pallor, widely opened eyes, the relaxation of most of the muscles and by the whole body covering down or held motionless. Suffering, if great, will from the first have caused screams or groans to be uttered, the body to be contorted and the teeth to be ground together. But our progenitors will not have exhibited those highly expressive movements of the features which accompany screaming and crying until their circulatory and respiratory organs, and the muscles surrounding the eyes, had acquired their present structure.45

Burke did not venture in the direction of ancestral populations, but his focus on physiological response to the idea of terror and pain as central to survival and as largely inherent was in keeping with Darwin's general speculations on the struggle for life.

While the sublime was attached to preservation of the self, there was also society to consider and here Burke stressed pleasure. His two-fold approach addressed the positive and central passions associated with sex and reproduction or "generation" (which Erasmus Darwin applied to the very transformation of species), and the passions that led to "general society."

Charles Darwin was drawn to Burke's thoughts on our interest in the concerns of others and to his analysis of how aiding others in distress was often accompanied by delight in not being in dire circumstances oneself (which was, paradoxically, an aspect of the sublime).

Darwin's first marginalia in his personal copy of *Philosophical Enquiry* begins with Section XIII of Part I, "Sympathy," and here Burke writes of engagement in the emotions of others wherein if the emotion is distressing, it would be attached to the sublime or if pleasant, it would then be a source of "social affection." Through sympathy "we are put into the place of another man, and affected in many respects as he is affected." Burke then brings up the common misunderstanding that when we see or read of a tragic incident in painting or literature and feel sympathy, it is because we are supposedly relieved by its fiction, contemplating the distant evils therein, but that the real event would "shock." Darwin bracketed the following passage in Burke:

I am afraid it is a practice much too common in inquiries of this nature, to attribute the cause of feelings which merely arise from the mechanical structures of our bodies, or from the natural frame and constitution of our minds, to certain conclusions of the reasoning faculty on the objects presented to us; for I should imagine, that the influence of reason in producing our passions is nothing so extensive as it is commonly believed.46

Burke continues, "...I am convinced we have a degree of delight, and no small one, in the real misfortunes and pains of others."47 Darwin's earliest notes in Notebook M from *A Philosophical Enquiry* (July 22, 1838) come from the next section, Section XIV of Part I, "The effects of sympathy in the distresses of others." Here Darwin contemplated the tendency to take pleasure in the distress of individuals who suffer. Burke believed that the "delight" experienced was a motivating factor that "[hindered] us from shunning scenes of misery."48 In fact, this quality of delight, which Burke was at pains to distinguish from pleasure, was central to the sublime experience. According to Burke, "When danger or pain press too nearly, they are incapable of giving any delight, and are simply terrible; but at certain distances, and with certain modifications, they may be, and they are delightful, as we every day experience."49 Crucially for Burke, sublime delight in situations of distress to others is a motivating factor: "...the pain we feel prompts us to relieve ourselves in relieving those who suffer." For Burke the reasoning behind the twinning of delight and pain in this situation could be found in providence: "As our Creator has designed we should be united by the bond of sympathy, he has strengthened that bond by a proportionate delight; and there most where our sympathy is most wanted; in the distress of others."

Darwin recalled Burke on sympathy once again several weeks later on August 16: "[Remember] Burke's idea of Sympathy being real pleasure at pain of others, with rational desire to assist them—otherwise as he remarks
sympathy could be barren & lead people from scenes of distress..."54 Without citing providence, Darwin found this to be a far more logical explanation than that offered by Adam Smith, noting "Adam Smith...says 'sympathy' we can only know what others think by putting ourselves in their situation, & then we feel like them—, hence sympathy very unsatisfactory because it does not like Burke explain pleasure."55 On August 16 Darwin also wrote extensively about shared passions among various species and brought up the orangutans at the Zoological Gardens, noting, "He who understands baboon will do more towards metaphysics than Locke." More than 30 years later, while exploring the concept of sympathy in The Descent of Man (1871), which he argued was of central importance to group survival, Darwin stressed its origins in animal society. In turning to the issue of coming to the aid of others in humans (though he had discussed this in animals as well), he brought up the speculations of physiological psychologist Alexander Bain: "Instinctive sympathy would also cause [man] to value highly the approbation of his fellow-men, for as Mr Bain has clearly shown, the love of praise and the strong feeling of glory, and the still stronger horror of scorn and infamy are due to the workings of sympathy."56 In turn, from Darwin's perspective, this would become a hereditary tendency.57 The evolutionary trajectory might be as follows:

...the social instincts, which must have been acquired by man in a very rude state, and probably even by his early ape-like progenitors, still give the impulse to many of his best actions; but his actions are largely determined by the expressed wishes and judgment of his fellow-men, and unfortunately still oftener by his own strong, selfish desires. But as the feelings of love and sympathy and the power of self-command become strengthened by habit, and as the power of reasoning becomes clearer so that man can appreciate the justice of the judgments of his fellow-men, he will feel himself impelled, independently of any pleasure or pain felt at the moment, to certain lines of conduct. He may then say, I am the supreme judge of my own conduct....58

Although Darwin does not mention Burke in this important section in The Descent on "moral sense," and "approbation," the philosopher may have helped provide the underlying premise to pursue sympathy from this perspective. Burke had written that the "three principal links in [the chain of society in general] are sympathy (discussed above), imitation (as in entering into a similar state of mind as others, also discussed above), and ambition." Ambition, according to Burke, was "a satisfaction arising from the contemplation of...excelling [over one's] fellows in something deemed valuable amongst them."59 This could be interpreted as generous and singular acts of aid to others. As necessary as it was to society, ambition had a sublime side and could engage with the "selfish" passions concerned with self-preservation. Here Burke invokes that great early author on the sublime, Longinus, and the importance he credits to "glorifying and sense of inward greatness."60

The relevance of considering Burke on ambition is reflected in Darwin's notations on the front and back covers of his copy of Philosophical Enquiry. On the front cover Darwin had written, "The morality & Metaphysics of ambition?" and "Sublimity?" On the back cover he wrote, "Simple Ambition instinct of excellence over other men satisfied (1)." The attendant emotions of approbation are outlined: Pride, Fame, Vanity, Arrogance, and Conceit. He continues, "The feeling of Sublimity akin to feeling of pure (1) gratified ambition."61 In this case, Darwin has connected the sublime to the individual and to grand acts that effect the self (e.g. through praise and admiration), though its roots from Burke's perspective and ultimately from his own were in society.

At the end of Part II on the sublime in Philosophical Enquiry, Burke summarized the biological sublime, concluding, "Having thus run through the causes of the sublime with reference to all the senses, my first observation...will be found to be nearly true; that the sublime is an idea belonging to self-preservation. That it is therefore one of the most affecting we have."62 Burke's Enquiry provided speculations on the underlying nature and expression of the passions in regard to individual survival and "society" that lack the socially disapproving tone of Malthus or certain influential moral philosophers during a critical juncture in Darwin's development. Such passions were not entirely antithetical to those of animals as observed by Stubbbs. In addition, Burke presented an argument in keeping with the unity of mankind and underlying mental faculties without relying on the associationism so popular among Erasmus Darwin's generation. Sympathy, for example, arises from "the mechanical structure of our bodies, or the natural constitution of our minds." And while Burke did not venture into ancestral discussions, his ideas on the physiology of pain, delight, and pleasure and its personal and social implications provided observations that were close to the interests of the Charles Darwin.

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Notes


4. Darwin’s annotated copy of Burke’s Enquiry is in the rare books collection of the Cambridge University Library (Add 6.79.21) and, as of this date, not housed with the collection at the Darwin Library there. thank Elizabeth Varens for bringing it to my attention. Published by Thomas McLean in 1823, the edition was presented to Darwin in 1825 and inscribed: “G. V. Jackson to Charles Darwin Christ Coll April 1823.” References to the Burke appear in notebooks M and N, which investigate the general topic of the origins of behavior. Notebooks M contains notes from July 15, 1838 to October 2, 1838, many of which refer to conversations with his father. Robert on human thought and behavior. Robert was a medical practitioner, as had been the case with Erasmus Darwin and both the theories Darwin drew from medical to broader philosophical and behavioral speculations. Notebooks N contains largely from October 2, 1838 to July 20, 1839, with a few later additions (up to April 28, 1840). The notebook entries are published in Charles Darwin’s Notebooks, 1830–1844: Geology, Transmutation of Species, Metaphysical Enquiries, transcribed and ed. Paul Humphrey, Roderick Campbell, Simeon, Herbert Kohl, and Sydney Smith, (Chica: NY: Cornell University Press, 1997).


7. Ibid., 91.

8. Ibid., 30.


12. On the two ideas of Burke and Burke, see Arts Sarasohn, “In The Contrivance of Burke’s Sublime and Horrid Theories in Medicine and Art,” in Journal of the History of Ideas, 69, 1 (January 2008), 23–45 and her “Pain, Labour and the Sublime: Medical Gymnastics and Burke’s Aesthetics,” Representations 91 (Summer 2005), 38–83. Sarasohn has also pointed out the influence of Burke’s schoolmate and friend Edward Bredley, whose experiments on animals in pain led his conclusion that skin and nerves were sensitive but immobile while muscle fibers and membranes were imperceptible. She argues that Burke extrapolated from this physiological division of pain and sensibility on pain and pleasure. Pleasure was associated with the beautiful and pain with the sublime (“Pain, Labour, and the Sublime,” 65).


14. Burke, A Philosophical Enquiry, 99–60. The principles of pleasure and pain had long been considered central to the passions and aesthetics, developed in the writings of Locke. Locke had posited that they were necessarily intertwined, pleasure being produced by a lessening of pain and vice versa, but Burke’s position is that they were often independent. A Philosophical Enquiry, he maintained that a lessening of pleasure often leads to indiscrimination and a lessening of pain to “carnalisation” or “sobriety.”

15. Ibid., 119.

16. Burke, Enquiry, 60–61. Over the years, Burke’s Enquiry appears to have been somewhat controversial and perhaps the setting of the essay. The Wedgewood Museum, where the portrait resides, continues to identify it as Erasmus Darwin.


19. Fuseli was an amateur anatomist and frequent medical circles in the 1760s on, where he may have met Erasmus Darwin, The Nightmares, though its appearance was inspired by the first published medical theories; nightmares in this context were also of interest to Erasmus Darwin.

20. An engraved version of Fuseli’s Nightmare appears in certain editions of The Loves of the Plants (1789), which is first published as beautiful. The second part.


22. Rousseau had originally written this in his Discourse on Equality (1755) and elsewhere. Christopher Frylling does so far as to suggest that the major figure of the novel is a complex one, one aspect of potential relationships that Rousseau had suggested. See his essay, “Fuseli’s The Nightmare: Somewhere between the Sublime and the Ridiculous,” in Gothic Nightmares: Fuseli, Blake and the Romantic Imagination, Martin Myrone, ed. (London: Tate Publishing, 2006), 9–20.


27. This is written in Notebook C. See Notes, 264.

39. Notebooks, 566. On October 4, 1838, Darwin had recorded this comment after reading Lavater (_ Essays on Physiognomy_, 2nd ed., 1804, III, 37–38), but he may well have been reminded of his grandfather's interest in it.

40. On the development of conscience in Darwin's thinking and his reading in the late 1830s, see Robert Richards, _Darwin and the Emergence of Evolutionary Theories of Mind and Behavior_ (Chicago: University of Chicago Press, 1987), especially 185–242.

41. Burke, _Enquiry_, 118.

42. Burke's interest in the innate is related to the Scottish school of mind, which posited that innate mental faculties like curiosity, attention, and perception exist prior to sensory input. See James McCosh, _The Scottish Philosophy: Biographical, Expository, Critical, from Hutcheson to Hamilton_ (New York: AMS Press, 1980), and Louis Schneider, ed., _The Scottish Moralists on Human Nature and Society_ (Chicago: Chicago University Press, 1967).

43. On Darwin's early use of associationism conjoined with habitual behavior to form a theory of inherited unconscious instinct, see Robert Richards, "Influence of Sensationalist Tradition on Early Theories of the Evolution of Behavior," _Journal of the History of Ideas_ 40, 1 (January–March 1979), 85–106. Later this would be modified to accommodate natural selection, wherein instincts like structures are subject to selection.

44. Notebooks, 551.

45. Ibid., 567.

46. Burke related Addison on the importance of the concept of beauty in mating among non-human species, but it would be accepted and central to Darwin's theory of sexual selection.

47. Burke, _Enquiry_, 66.

48. Notebooks, 545.


50. Burke, _Enquiry_, 41.

51. Burke, _Enquiry_, 42.

52. Burke, _Enquiry_, 43.


54. Notebooks, 540.

55. Notebooks, 546.


57. Ibid., 161–7.

58. Ibid., 86.

59. Burke, _Enquiry_, 46. The concept of approbation had also been mentioned by Smith in his _The Theory of Moral Sentiments_ (1759). Burke felt that such a theory was in keeping with his own program. His review of Smith's book in _The Annual Register_ is discussed in Daniel O'Neill, _The Burke-Wollstonecraft Debates: SentGENCY, Civilization, and Democracy_ (College Park, PA: Penn State University Press, 2007), 63–6.

60. Burke, _Enquiry_, 46.


62. Burke, _Enquiry_, 79.