Facing the Animal:
Physiognomy and Pathognomy in the Long Nineteenth Century

Harriet Newnes

B.A. (Hons) M.A.

Thesis Submitted for the Degree of Doctor of Philosophy at the Department of English Literature, Lancaster University

April 2017

Declaration

I declare that this thesis is my own work. It has not been submitted for the award of a higher degree elsewhere

Harriet Newnes

April 2017

Acknowledgments

Thank you, most of all, to my supervisor, Dr Kamilla Elliott, for her whole-hearted encouragement, boundless generosity, academic rigour, scrupulous feedback, and belief in my project. My thanks also go to the members of the Department of English Literature at Lancaster University, an incredibly supportive department that I am grateful to have been part of. For all their advice given in annual reviews and the upgrade panel, I would like to particularly thank: Dr Michael Greaney, Prof Simon Bainbridge, Prof Sharon Ruston, and Prof Keith Hanley. Thank you to Prof John Schad and Dr Mark Knight for giving me the opportunity to travel to the University of Toronto. Thank you to Dr Andrew Tate for his part in organising the Gladstone Colloquiums, and for always being supportive and encouraging. Thank you to Dr Catherine Spooner, director of graduate studies, and Leila Atkinson for help with my (various and many) administrative queries. I would also like to thank Prof Arthur Bradley and Prof Sally Bushell, who both worked hard to provide teaching for PhD students: this has been a very important part of the process for me, and I am grateful for the opportunities that have been created.

Thank you to Dr Michael Greaney and Professor David Amigoni (Keele University) for reading the thesis, giving generous and helpful advice about how to develop the project further, and for facilitating such a constructive yet enjoyable viva experience.

Thank you to the members of the PhD community at Lancaster and other friends for walks, swimming, food, drinks, and chess. Thank you to my dad, Craig Newnes, for reading the thesis and for everything else. Last but not least, thank you to my partner, Robbie Piper, a man with apparently endless supplies of patience.

Abstract

Facing the Animal:
Physiognomy to Pathognomy in the Long Nineteenth Century

This thesis examines representations of animal and human faces during the late eighteenth and the nineteenth centuries to investigate how animal faces inform, challenge, and extend representations and theories of animality, and of the human face. Two texts that greatly influenced theories of face-reading are Johann Casper Lavater's *Essays on Physiognomy: For the Promotion of the Knowledge and the Love of Mankind* (English translation published in 1789) and Charles Darwin's *The Expression of the Emotions in Man and Animals* (1872). They mark a shift between discourses privileging physiognomy, the immovable features of the face, and those focusing on pathognomy, the expressions of the face in motion. This shift had an immediate effect on the way that faces were viewed and represented both in terms of how species and individuals were classified and identified and how they were seen to mediate aesthetic and affective communication and response.

This thesis argues that literary and scientific treatments of faces in the eighteenth and nineteenth centuries are comprised of various negotiations between physiognomic and pathognomic discourses: for example, bringing about shifts from methods of face-reading that seek to classify, and those that aim to achieve communication with the face under scrutiny. Studying facial identification and interaction between members of the same species and across species boundaries provides a means to access new dimensions of these debates: it is through the animal face that these shifts are exemplified. Identification, classification, and communication with the animal face contributes to analysis of the relationship between observer and observed in face-reading discourse. In addition to Lavater's and Darwin's works, the thesis explores a selection of texts from a variety of disciplines, demonstrating that changing representations of the animal face infiltrate the images and prose of contemporary science, philosophy, fiction, and journalism. The dialogues between these disciplines engage debates surrounding evolution, theology, and the creation of taxonomical hierarchies of man and animals. This thesis is relevant to modern work across a variety of disciplines — science, psychology, and critical animal studies — as well as to criticism on discourses of emotions, morality, and aesthetics.

Table of Contents

List of Illustrations

Introduction

Facing the Animal

In *Evidence as to Man's Place in Nature* (1863), the evolutionary biologist and comparative anatomist Thomas Henry Huxley describes the appearance and structural constitution of the 'man-like apes', and writes that:

> [B]rought face to face with these blurred copies of himself, the least thoughtful of men is conscious of a certain shock due, perhaps, not so much to disgust at the aspect of what looks like an insulting caricature, as to the awakening of a sudden and profound mistrust of time-honoured theories and strongly-rooted prejudices regarding his own position in nature, and his relations to the under-world of life; while that which remains a dim suspicion for the unthinking, becomes a vast argument, fraught with the deepest consequences, for all who are acquainted with the recent progress of the anatomical and physiological sciences.[1]

Published four years after Charles Darwin's *The Origin of Species*, Huxley's text directly applied the hypothesis 'propounded by Mr Darwin' to the evolutionary development of humans, arguing that the 'Anthropini, or Man Family, form a very well defined group of the Primates'.[2] As James Paradis notes, Huxley's consideration of the human 'as an animal' was not, in itself, an extreme proposition: over one hundred years before the publication of *Man's Place in Nature*, the Swedish botanist and zoologist Carl Linnaeus had classified humans (Homo) together with monkeys and apes (Simia) as *Anthropomorpha*.[3] Yet Darwin had intentionally excluded theorisation on the exact

---

[1] Thomas Huxley, *Evidence as to Man's Place in Nature* (New York: Appleton and Company, 1863), pp. 73–74. This quote is taken from the second chapter of Huxley's text; the first chapter provides a survey of prior naturalists' descriptions of encounters with 'man-like apes': these include chimpanzees, orangutans, gorillas, and gibbons.

[2] Huxley, *Evidence*, p. 139

[3] James G. Paradis, *T. H. Huxley: Man's Place in Nature* (Lincoln, Nebraska: University of Nebraska Press, 1978), p. 118. As James Secord demonstrates in his landmark study, *Victorian Sensation*, Darwinian evolutionary science was only one constituent of a much larger shift between Enlightenment cosmologies and scientific naturalism. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago Press, 2000). See also *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spray (Cambridge: Cambridge University Press, 1996). For more on Linnaeus's systematisation of animals and humans, see Laura Brown, *Homeless Dogs and Melancholy Apes: Humans and other Animals in the Modern Literary Imagination* (Ithaca: Cornell University Press, 2010); Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge, Mass.: Harvard University Press, 1997).

mechanisms of human development from *Origin*, and Huxley's radicalism lies in his focus on commonalities and shared attributes to redefine Linnaeus's grouping in terms of evolutionary descent.[4] These shared attributes include embryological development, anatomy, and brain capacity; yet it is through being brought 'face to face' with a 'blurred' human copy that acknowledgment of kinship is instigated. The results and conclusions of scientific endeavour are thus replicated in the dynamic between observer and observed. The recognition of human animality in the animal's face produces an ontological shock, collapsing the evolutionary and temporal space between species. This process also enables the classification and stratification of human life; the 'unthinking' are aware of a 'dim suspicion', while those with some form of scientific knowledge become implicated in a 'vast argument'. Face-reading, in Huxley's account, hence demands interaction between individuals and also prompts an active engagement in the formation of broader discourses and validation of scientific theories.

In the eighteenth and nineteenth centuries, the face's appearance was identified as a taxonomical signifier of soul, character, or mind and therefore constitutes part of much broader ideological and philosophical projects. Face-reading discourses, in their turn, impact on developing ideas of species, evolution, and animal–human relations: they also dispute the extent to which either the observer or observed is granted an autonomous, interactive, or communicative role in the face-reading act. This thesis is about how representations of the animal face, between 1775 and 1896, mediate and forge dialogues between humans and animals and between two different face-reading methodologies: physiognomy and pathognomy. Physiognomy is the reading of character through the fixed, permanent forms/lineaments of the face and pathognomy is the study of moving, transient facial expressions. I address a variety of texts, including fictional literature, scientific texts, and periodical journalism, and I argue that an identifiable shift occurs between these two methodologies as physiognomic analysis gives way to pathognomic over the course of the nineteenth century. This is exemplified via my reading of the animal face and through the assimilation or rejection of the animal face in such discourses; yet, the animal face also enables a means to examine how this shift is not consistently progressively linear or unilateral, and at times works to undermine fixed, exclusive adherence to either model. The two texts that exemplify this shift are Johann Casper Lavater's *Essays on*

[4] Huxley, *Evidence*, p. 125. See Charles Darwin, *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008). Darwin admired Huxley's text, and went on to discuss human evolution and the origin of human language and morality in animal societies, in *The Descent of Man, and Selection in Relation to Sex* (1871) and *The Expression of the Emotions in Man and Animals* (1872).

Physiognomy: Designed to Promote the Knowledge and the Love of Mankind, originally published as 'fragments' in German throughout the 1770s (starting in 1775) and first translated into English in 1789, and Charles Darwin's *The Expression of the Emotions in Man and Animals*, published a century later in 1872.

Lavater's insistence on the pervasive and inflexible truth of his physiognomic ascriptions has ensured that, in the two and a half centuries following the publication of his work, he has been subject to frequent dismissal as a pseudo-scientist and cultural oddity. Nevertheless, Thomas Holcroft's three-volume English translation (1789–93) of *Essays* was reissued more than eighteen times in the eighty years following its first publication, a testament to the considerable impact that Lavater's physiognomic ideals continued to have on nineteenth-century scientific and non-scientific texts: even texts that disagree with Lavater's conclusions continue to evoke and challenge him. The fact that Lavater has less scientific credibility than Darwin today should not affect either historical scholars or scholars of discourses who are not attempting to pursue or valorise scientific truth. Through using these two highly influential authors as benchmarks by which to guide my project, I not only contribute to a rehabilitation of Lavater in critical discourse, but also provide a new and illuminating means to access Darwin's text.

Darwin is a prominent figure in literary criticism and even retains his relevance in recent scientific publications.[5] Critical interest in Lavater has been somewhat reinvigorated

[5] I refer to critical literature on Darwin throughout the thesis; certain areas of research have proven particularly productive in recent years, such as the relation between Darwin, science, and ideals of sympathy/emotional development (see Chapter Three). Gillian Beer's and George Levine's work has been absolutely crucial to the development of 'Darwin studies'. See Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction*, 3rd edn (Cambridge: Cambridge University Press, 2009); Beer, *Open Fields: Science in Cultural Encounter* (Oxford: Oxford University Press, 1996). Beer has published numerous articles and book-chapters on Darwin, including '"The Face of Nature": Anthropomorphic Elements in the Language of *The Origin of Species*', in *Languages of Nature: Critical Essays on Science and Literature*, ed. by Ludmilla Jordanova (London: Free Association Books, 1986), pp. 207–43. See also George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Cambridge, Mass.: Harvard University Press, 1988); Levine, *Darwin Loves You. Natural Selection and the Re-enchantment of the World* (Princeton: Princeton University Press, 2006). Other crucial texts (limited to those published post-2000) include David Amigoni, *Colonies, Cults, and Evolution: Literature, Science and Culture in Nineteenth-Century Writing* (Cambridge: Cambridge University Press, 2007); *Charles Darwin's The Origin of Species: New Interdisciplinary Essays*, ed. by David Amigoni and Jeff Wallace (Manchester: Manchester University Press, 2005); Gowan Dawson, *Darwin, Literature, and Victorian Respectability* (Cambridge: Cambridge University Press, 2007); *Darwin and Theories of Aesthetics and Cultural History*, ed. by Barbara Larson and Sabine Flach (Surrey: Ashgate, 2013); *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013); Virginia Richter, *Literature after Darwin: Human Beasts in Western Fiction, 1859–1939* (Basingstoke: Palgrave, 2011); Jonathan Smith, *Charles Darwin and Victorian Visual Culture* (Cambridge: Cambridge University Press, 2006); *Unmapped Countries: Biological Visions in Nineteenth Century and Culture*, ed. by Anne-Julia Zwierle (London: Anthem Press, 2005). Darwin also remains of interest in scientific disciplines: *Expression of the Emotions in Man and Animals* is particularly pertinent in this regard as an area in which scientific research is flourishing. See Paul Ekman, 'Darwin, Deception and Facial Expression', *Annals New York Academy of Sciences*, 1000

since the 1980s, particularly in publications that focus on how Lavaterian physiognomics impact on nineteenth-century cultural narratives and imaginative literature.[6] Graeme Tytler's 1982 monograph, *Physiognomy in the European Novel*, remains a significant study of the continued effect that the publication and proliferation of Lavater's theories had on the nineteenth-century literary community and its reading public.[7] As Tytler indicates, there is a conflict that emerges, frequently within the same text, in which physiognomy is implicitly invoked as a means to assess and quantify character, even as the figure of the observing physiognomist is identified as petty, simple, or provincial; post-Tytler, many works of criticism have continued to focus on this tension between overt rejection and tacit acceptance of Lavaterian ideals.[8] Yet although Tytler's work has set the standard for a re-evaluation of Lavater's influence, he remains dismissive about the value of animal faces, charging authors who present animal physiognomies as merely adhering to metaphoric convention or utilising a shallow means of characterisation: he considers, for instance, that George Eliot evokes the animal 'purely [for] visual interest'.[9] I argue that depictions of the animal face do far more than provide 'visual interest', and that they instead provide a means to challenge and renegotiate 'time-honoured theories' and

---

(2003), 205–21; Peter J. Snyder, and others, 'Charles Darwin's Emotional Expression 'Experiment' and his Contribution to Modern Neuropharmacology', *Journal of the History of the Neurosciences*, 19 (2010), 158–70.

[6] For recent publications on Lavater and physiognomy, see Sibylle Erle, *Blake, Lavater and Physiognomy* (London: Legenda, 2010); Richard T. Gray, *About Face: German Physiognomic Thought from Lavater to Auschwitz* (Detroit: Wayne State University Press, 2004); *Physiognomy in Profile: Lavater's Impact on European Culture*, ed. by Melissa Percival and Graeme Tytler (Newark: University of Dellaware Press, 2005); *The Faces of Physiognomy: Interdisciplinary Approaches to Johann Casper Lavater*, ed. by Ellis Shookman (Columbia: Camden House, 1993). On physiognomy more generally, see Lucy Hartley, *Physiognomy and the Meaning of Expression in Nineteenth-Century Culture* (Cambridge: Cambridge University Press, 2001); Sharrona Pearl, *About Faces: Physiognomy in Nineteenth-Century Britain* (London: Harvard University Press, 2010); Daniel Pick, *Faces of Degeneration: A European Disorder, c.1848–c.1918* (Cambridge: Cambridge University Press, 1989); Judith Wechsler, *A Human Comedy: Physiognomy and Caricature in Nineteenth-Century Paris* (London: Thames and Hudson, 1982).

[7] Graeme Tytler, *Physiognomy in the European Novel: Faces and Fortunes* (Princeton, NJ: Princeton University Press, 1982).

[8] For instance, in Emily Brontë's *Wuthering Heights* (1847), Nelly Dean's adherence to a broad physiognomic code (she remarks to Heathcliff, "a good heart will help you to a bonny face, my lad"), indicates, in Tytler's words, her 'conventional outlook' and 'simple hearted pious nature'. Tytler, *Physiognomy in the European Novel*, p. 282. Reviving critical interest can be seen in articles published on the relation between physiognomic discourse and fictional texts. Two examples are Josh Epstein, '"Neutral Physiognomy": The Unreadable Faces of *Middlemarch*', *Victorian Literature and Culture*, 36.1 (2008), 131–48; Taylor M. Scanlon, 'The Face of the Crowd: Reading Terror Physiognomically in Charles Dickens's *A Tale of Two Cities*', *The Victorian*, 2.3 (September 2014), 1–12. In her seminal text on Charlotte Brontë and Victorian psychology, Sally Shuttleworth includes a chapter on physiognomy and phrenology: I return to phrenology, and my exclusion of it, at the end of this Introduction. See Shuttleworth, *Charlotte Brontë and Victorian Psychology* (Cambridge: Cambridge University Press, 1996).

[9] Graeme Tytler, '"The Lines and Lights of the Human Countenance": Physiognomy in George Eliot's Fiction', *George Henry Lewes Studies*, 37.37 (September 1999), 29–58 (p. 32). Recent Eliot scholars would certainly dispute that her utilisation of animals is as cursory as this: I return to Eliot in my Conclusion.

'strongly-rooted prejudices' (cf. Huxley). There remains a discrepancy between the amount of critical attention that Lavater receives and the sheer scope and range of his influence throughout the nineteenth century: my focus on the animal face as an active agent that directs theorisations and subsequent scientific and non-scientific responses enables a way to redress this imbalance.

Materials and Methodology

The animal is central to human society and, for millennia, has been used for food and domestic labour, in medicine, as a symbolic figure upon which to construct myths and fables, sometimes worshipped as gods, and for company. The signification of the animal and the human *as* animal is continually in flux: the two define each other by opposition and confluence.[10] As Richard Tapper argues:

> Sometimes certain animals are idealized and used as models of order and morality, in animal stories and myths. The animals are treated as agents and social beings, with motives, values and morals; and differences between them and people are implicitly denied […] By contrast animals are sometimes represented as the Other, the Beast, the Brute, the model of disorder or the way things should not be done. Animals are ideal for both of these purposes.[11]

Recent developments in post-humanist thinking and critical animal studies have led to increased interest in the role of the animal and constructions of animality in literature and in society.[12] Interest in animal emotion now penetrates almost every part of the public

[10] Of course, humans are animals too. I elaborate further on this in Chapter One.
[11] Richard Tapper, 'Animals, Humanity, Morality, Society', in *What is an Animal?*, ed. by Tim Ingold (London: Routledge, 1994), pp. 47–62 (p. 51).
[12] As Jed Mayer has pointed out, 'animal studies' as an area of critical interest incorporates within it two major approaches: that which is primarily concerned with animal ethics and advocacy, and that which examines discourses surrounding symbolic representations of the animal. Mayer, 'Ways of Reading Animals in Victorian Literature, Culture and Science', *Literature Compass*, 7 (2010), 347–57. For a reflection on the direction of animal studies, see Kimberly W. Benston, 'Experimenting at the Threshold: Sacrifice, Anthropomorphism and the Aims of (Critical) Animal Studies', *PMLA*, 124 (2009), 548–56. See also Philip Armstrong, *What Animals Mean in the Fiction of Modernity* (Abingdon: Routledge, 2008); John Gray, *The Silence of Animals: On Progress and Other Modern Myths* (London: Penguin, 2013); Susan McHugh, *Animal Stories: Narrating across Species Lines* (Minneapolis, MN: University of Minnesota Press, 2011); Mario Ortiz Robles, *Literature and Animal Studies* (Oxon: Routledge, 2016); *Humans and Other Animals in Eighteenth-Century British Culture: Representation, Hybridity, Ethics*, ed. by Frank Palmeri (Aldershot: Ashgate, 2006); *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture*, ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005);

domain — from debates about how the architecture of zoos affect the emotional life of its inhabitants, to the seemingly endless videos on the internet site, Youtube, that claim to show animals exhibiting human emotions.[13] These approaches demonstrate varying amounts of critique, from very little to explicit awareness of the anthropocentricism implicit in all human relations with other species, even when motivated by benevolence and apparent empathy: for example, the assertion that the promotion and creation of the 'natural zoo' primarily serves to ease human anxiety about keeping animals in captivity.[14]

I take as my key sources portrayals of animality and humanity from the late eighteenth and nineteenth centuries, when firm biological boundaries between species were becoming frighteningly or, from a different perspective, enticingly malleable. This is not to say that the period under scrutiny is historically unique in terms of cultural or popular acceptance of human–animal categorical similitude.[15] Yet during this time, scientific law and practice strived to formalise links between species that were, to some degree, recognised throughout many previous centuries of human and animal co-existence: conversely, the impulse to recognise certain animals as more human than other humans did not dissipate as emphasis on quantitative scientific classification grew.[16] This period has consequently proved a fruitful and illuminating area of enquiry in the growing field of critical animal studies. Harriet Ritvo's seminal text, *The Animal Estate*, explicates diverse examples of animal–human interaction in the nineteenth century, from legacies of cattle breeding to the colonised 'animals of Empire', while recent important studies by Christine Ferguson, Christine Kenyon Jones, and Tess Cosslett have demonstrated how animal

---

Representing Animals, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002); Kate Soper, *What is Nature? Culture, Politics, and the Non-Human* (Oxford: Blackwell, 1995); Cary Wolfe, *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010). Some of this work is also classed under the broader definition of 'eco-criticism' (e.g.: Soper). Other texts that have been influential, if not directly cited, include Jonathan Bate, *The Song of The Earth* (London: Macmillan, 2000); Helena Feder, *Ecocriticism and the Idea of Culture: Biology and the Bildungsroman* (Surrey: Ashgate, 2014); Greg Garrard, *Ecocriticism* (Oxon: Routledge, 2004); *Ecocritical Theory: New European Approaches*, ed. by Alex Goodbody and Kate Rigby (Charlottesville, Virginia: University of Virginia Press, 2011).

[13] See for example, 'Dogs welcoming soldiers home compilation', video, *Youtube* <https://www.youtube.com/watch?v=RKBcs9tNWg8> [Accessed 4 October 2014] ; 'The Happy Elephant', video, *Youtube* <https://www.youtube.com/watch?v=m90jeBPaBio> [Accessed 4 October 2014]

[14] Tom Dyckhoff, 'Animal Architecture', radio broadcast, BBC Radio 4 (30 June 2014).

[15] See Erica Fudge, *Brutal Reasoning: Animals, Rationality, and Humanity in Early Modern England* (Ithaca: Cornell University Press, 2006); Fudge, *Perceiving Animals: Humans and Beasts in Early Modern English Culture* (Basingstoke: Macmillan, 2000). See also: Richard Nash, 'Joy and Pity: Reading Animal Bodies in Late Eighteenth-Century Culture', *The Eighteenth Century*, 52.1 (Spring 2011), 47–67; Keith Thomas, *Man and the Natural World: Changing Attitudes in England 1500–1800* (London: Penguin, 1983).

[16] The philosopher Mary Midgley discusses 'pseudo-speciation', the tendency to regard other human cultures as if they are a non-human species, and not necessarily a highly regarded one. See Midgley, *Animals and Why They Matter* (Athens: University of Georgia Press, 1983), p. 109.

studies illuminate, respectively, language theory, Romanticism, and children's literature.[17] Children and animals have frequently been aligned in literary, cultural, philosophical, and scientific narratives: the twentieth-century philosopher Mary Midgley argues that children and animals find commonality through shared play instincts and recognition of the other as playmate, which she claims, 'has the quite important consequence that hardly any of us, at heart, see[s] the social world as an exclusively human one'.[18] I do not focus on children's literature, although Charles Dickens's *Oliver Twist*, the final fictional text under discussion, does feature an animalised child.

Despite the invigoration of debates surrounding the literary animal, specific focus on the animal face as a site of enquiry has been neglected in literary criticism. Erica Fudge deserves mention here as a historian who has prioritised the animal face as a productive and provocative site of investigation, although her primary focus is on neglected historical documents, such as the accounts of stockmen in the early-modern period.[19] By contrast, the literature that I address is more overtly popular, in that the texts have been written in order to address a broad audience of non-specialists. There is a necessary interplay between wide ranges of influences in writings on the face, and many of the texts I treat are interdisciplinary in form: philosophy interacts with burgeoning psychological theories, psychology with evolutionary biology and comparative anatomy, science with art-history and fictional literature. These disciplinary interactions are used to promote or exemplify the methodologies of face-reading discourses and allow for further investigation of discursive negotiations between idealisation of scientific objectivism and recognition of the subjective observer.[20]

---

[17] Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University Press, 1987); Tess Cosslett, *Talking Animals in British Children's Fiction, 1786–1914* (Hampshire: Ashgate, 2006); Christine Kenyon Jones, *Kindred Brutes: Animals in Romantic Period Writing* (Aldershot: Ashgate, 2001); Christine Ferguson, *Language, Science and Popular Fiction in the Victorian Fin-de-Siècle: The Brutal Tongue* (Aldershot, Hants: Ashgate, 2006).

[18] Midgley, *Animals*, p. 119. Jim Cronin, the owner of 'Monkey World' in Dorset, has testified that eight- or nine-year old children are more successful at predicting chimpanzee behaviour and deciphering their complicated and dynamic social structures, than adult humans. Cited in Jonathan Cole, *About Face* (Cambridge, Mass.: The MIT Press, 1998), p. 64.

[19] Fudge argues that these sources allow for 'a level of complexity — symbolic, ethical, economic, religious — that is absent in the philosophies of Descartes, Milton, and Bacon, where animals are figured, in different ways, as simply bodies without minds'. Erica Fudge, 'The Animal Face of Early Modern England', *Theory, Culture & Society*, 30.7/8 (2013), 177–98 (p. 190). See also Fudge, 'The Human Face of Early Modern England', *Angelaki*, 16.1 (2011), 97–110; Fudge, 'A Left-Handed Blow: Writing the History of Animals', in *Representing Animals*, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002), pp. 3–18.

[20] Issues of objectivity as related to scientific endeavour recur throughout the thesis. See, for instance Lorraine Daston and Peter Galison, *Objectivity* (Brooklyn: Zone Books, 2007). Thomas Nagel's pivotal 1974 essay, 'What Is It Like to Be a Bat?' concludes that full knowledge of another's consciousness, requiring

In addition to my two key scientific works, I pay particular attention to three nineteenth-century novelists: Mary Shelley, Dickens, and H. G. Wells. I make no claims to comprehensiveness in the selection of my fictional texts; animal faces are rife in literature of the period, and it is a difficult task to find writers who do *not* occasionally evoke the animal face. I have selected works that best support the themes and arguments brought to light by non-fiction texts, and that chart developing and fluctuating attitudes to the animal face. The fictional texts demonstrate interest in the overall research questions of the thesis — some are commonplace in their approach to animal faces, some revolutionary — and also those that are of particular interest to Lavater and Darwin. While Wells is the only author in this thesis whose writing is post-Darwinian, his inclusion provides an illuminating perspective on how face-reading discourses continue to develop in line with evolutionary theory. To supplement and further elucidate my study of these canonical authors, I address a variety of cultural commentators, scientists, and theorists whose names may not be as widely recognised, but who are incorporated into the debate because they too exemplify and inform the particular shifting patterns and themes that this thesis traces in representations of the animal face.[21]

My methodology not only reflects the interdisciplinary nature of face-reading discourses in the period under discussion, it also pays deference to recent work in the flourishing interdisciplinary field of literature and science. Prompted by the publication of seminal texts during the 1980s, this has become a rich and stimulating area of research, doing much to establish an alternate narrative to the now infamous 'two cultures' model proposed in C. P. Snow's critique of the literary establishment in 1959.[22] Discussing the formation of the *British Society for Literature and Science* in 2006, Gowan Dawson praises recent facilitation of New Historicist or constructivist approaches to the study of literature and science as one of the most exciting developments in Victorian studies. He writes:

---

both simultaneous subjective (inside) and objective (outside) knowledge, can never be fully attainted. Nagel, 'What Is it Like to Be a Bat?', *The Philosophical Review*, 83.4 (October 1974), 435–50.

[21] As Ralph O'Connor has pertinently warned, 'there is a risk of perpetuating the old polarities if we continue to treat scientific writing purely as a vehicle for communicating scientific facts and ideas, while treating "literature" purely as a space for their subjective expression': this polarisation becomes more acute when only 'canonical' authors from either discipline are considered. O'Connor, *The Earth on Show: Fossils and the Poetics of Popular Science, 1802–1856* (London: The University of Chicago Press, 2007), p. 13.

[22] Snow's central argument is that literary intellectuals are backwards-looking 'natural luddites' (p. 22), lacking practical awareness or expertise and ineffectually paralysed in the face of mounting global problems. C. P. Snow, *The Two Cultures and the Scientific Revolution* (1959) (Cambridge: Cambridge University Press, 1993).

> literature and science are now viewed as similarly constituted practices embedded in particular culturally and historically contingent formations, with neither privileged epistemologically as necessarily objective, rational or true […] the interaction between literature and science is very much a reciprocal process.[23]

The nineteenth century is often seen as the archetype for the 'one-culture' model, a time during which the boundaries between disciplines were not yet definitively drawn, and in which both subject matter and methodologies could be shared by those on either 'side'. As Gillian Beer argues, because of their shared discourse, 'metaphors, myths, and narrative patterns' could move freely between nineteenth-century scientists and non-scientists.[24]

Yet this unifying vision is not unproblematic: as George Levine points out, the collapse of literature and science to the point where distinction is obliterated and 'everything becomes fiction' is flawed and anachronistic.[25] Snow's lecture, along with the scathing response of the literary critic F. R. Leavis resurrected a dispute concerning the definition of 'literature' that had already occurred between Thomas Huxley and Matthew Arnold in the 1880s.[26] Tensions concerning disciplinary definitions are evident in my chosen texts: for instance, Lavater vehemently defends *Essays* as scientific, while subsequent theorists dispute this claim. The 1832 edition of the *Edinburgh Encyclopaedia*

---

[23] Gowan Dawson, 'Literature and Science under the Microscope', *Journal of Victorian Culture*, 11 (Autumn 2006), 301–15.

[24] Beer, *Darwin's Plots*, p. 5. Again, Beer's work has been of seminal importance to the field of literature and science. See also Beer, 'Translation or Transformation? The Relations of Literature and Science', *Notes and Records of the Royal Society of London*, 44.1 (Jan., 1990), 81–99; Beer, 'Travelling the Other Way', in *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spray (Cambridge: Cambridge University Press, 1996), 322–37. Other important texts not otherwise cited in this Introduction, include *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004); *Nature Transfigured: Science and Literature, 1700–1900*, ed. by John Christie and Sally Shuttleworth (Manchester: Manchester University Press, 1989); *Science and Religion: New Historical Perspectives*, ed. by Thomas Dixon, Geoffrey Cantor, and Stephen Pumfrey (Cambridge: Cambridge University Press, 2010); *Culture and Science in the Nineteenth-Century Media*, ed. by Louise Henson and others (Aldershot: Ashgate, 2004); John Kucich, 'Scientific Ascendancy', in *A Companion to the Victorian Novel*, ed. by Patrick Bratlinger and William B. Thesing (Oxford: Blackwell, 2002), pp. 119–36; George Levine, *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002); Bernard Lightman, *Victorian Popularizers of Science: Designing Nature for New Audiences* (Chicago: University of Chicago Press, 2007); Sharon Ruston, *Literature and Science* (Woodbridge: Brewer, 2008); James Secord, *Visions of Science: Books and Readers at the Dawn of the Victorian Age* (Oxford: Oxford University Press, 2014); Robert M. Young, *Darwin's Metaphor: Nature's Place in Victorian Culture* (Cambridge: Cambridge University Press, 1985).

[25] George Levine, *Realism, Ethics, and Secularism: Essays on Victorian Literature and Science* (Cambridge: Cambridge University Press, 2008), p. 171.

[26] Leavis responded to Snow in 1962, with his lecture, 'The Two Cultures? The Significance of C. P. Snow'. Cambridge University's Rede Lectures were the occasion for both the Huxley/Arnold and Snow/Leavis controversies. See Elinor S. Shaffer, 'The Third Culture: Negotiating the "Two Cultures"', in *The Third Culture: Literature and Science*, ed. by Elinor S. Shaffer (Berlin: Walter de Gruyter, 1998), pp. 1–11.

confirms the ambivalence that pervades discussion of Lavater: it states that while, on the one hand, Lavater's theory 'wanted consistency', and is 'founded on no just or certain principles', it also 'exhibits much delicate feeling […and…] contains undoubtedly many ingenious and interesting observations, which shew [*sic.*], that the author possessed much delicate knowledge of the human heart'.[27] Inconsistent logic combined with shaky epistemological grounds is here juxtaposed with local observation and psychological insight; throughout this thesis, these characteristics are revealed to be not solely the preserve of either scientific or literary discourses.

While divisions between scientific and non-scientific texts remain in flux and contention, a distinction that does operate in this thesis occurs between fictional and nonfictional texts. I use a variety of nonfiction texts; some of these are nominated science, while others are not, but nevertheless, like scientific texts, they present a hypothesis that aspires to establish a universal claim: it is analysis of these hypotheses and the relative (in)consistency of the logic on which they depend that have been most productive in establishing my own arguments. As Thomas Khun's influential work demonstrates, it is moments of inconsistency or anomaly that generate 'scientific revolutions'; 'crisis' in the performance of 'normal science' produces a paradigm change. This inconsistency may not be immediately accepted as revolution, 'the decision to reject one paradigm is always simultaneously the decision to accept another, and the judgement leading to that decision involves the comparison of both paradigms with nature and with each other', although the provocative ferment of ideas that arise from such crises instigates revolution.[28] As such, my analysis of consistency and inconsistency functions less as an overt critique of my authors under logical, empirical, or discursive lenses than as a methodological tool that opens up insights into conflicting epistemologies and ideologies — for instance, collisions between theological and scientific epistemologies/ideologies that seek to create distance between members of different species and between members of the same species.

The fictional novels that I examine are not, however, critiqued on the same grounds, as they do not make claims to consistency in their treatment of the animal face. Nevertheless, they share ideologies with the overtly scientific and philosophical texts and there they are treated similarly. In this and other ways, my methodology does not pursue a strictly linear or primary-secondary textual relationship, in which nonfiction pursues ideas

[27] 'Johann Casper Lavater', *The Edinburgh Encyclopaedia*, ed. by David Brewster,18 vols (Edinburgh: Blackwood; Philadelphia: Joseph and Andrew Parker, 1832), pp. 746–47 (p. 747).
[28] Thomas Kuhn, *The Structure of Scientific Revolutions* (1962) (Chicago: University of Chicago Press, 2012), p. 78.

and fiction merely illustrates them: indeed, my arguments do not depend on fictional texts' capacity to faithfully replicate nonfiction arguments. Instead I read fiction to illustrate ways in which issues revealed through my readings of non-fiction texts are exemplified, extended, and challenged. For instance, Dickens's *Oliver Twist* features not only because of its interest in human and animal faces, but also because it is a text cited by Darwin himself to support his evolutionary argument in *The Expression of the Emotions*: commonalities and thematic congruence across fictional and scientific (and non-fiction) texts are not solely the product of unconscious and unintentional intertextuality, but are frequently overtly and didactically recognised by their authors.

What is a Face? Defining the Animal via the Human, and vice versa

Huxley's act of looking taps into a lengthy and diverse tradition of face-reading, from the Ancient Greek *Physiognomics*, continuing through the Renaissance, most famously with Giambattista della Porta's *De Humana Physiognomia*, to the present day.[29] Discursive representations of faces vary in their methods and intentions; faces are assessed and judged according to systems of signification that attribute internal or interior meaning to external manifestations, themselves taxonomized further by three systems of signification: aesthetic, moral, and emotional values. The animal face typically serves these broader discourses as a means to analogically demarcate human types: Huxley emphasises the converse of this implicit relation, demonstrating how face-to-face interaction is, in itself, productive of new ways to envision cross-species encounters and relations. Classifications of the animal face, characterised either as a fixed symbolic counterpoint to the human or viewed on some form of gradated scale, challenge delineations of humans and non-humans

[29] Lavater's *Essays on Physiognomy* features a detailed analysis of *Physiognomics* (or *Physiognomica*), which Lavater considers to be authored by 'the great Aristotle', although this attribution is now contested. See Lavater, *Essays on Physiognomy: Designed to promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 206. Davide Stimilli argues that della Porta's placement of plates depicting animals and humans side by side 'enabled the invention of caricature'. Stimilli, *The Face of Immortality: Physiognomy and Criticism* (Albany: State University of New York Press, 2005), p. 42. See also Michael Shortland, 'The Power of a Thousand Eyes: Johann Casper Lavater's Science of Physiognomical Perception', *Criticism: A Quarterly Journal for Literature and the Arts*, 28. 4 (Fall 1986), 379–408. Interest in face-reading continues to pervade popular and academic writing. A (limited and diverse) selection of texts published since 2000 include: Robin McKie, *Face of Britain: How Our Genes Reveal the History of Britain* (London: Simon & Schuster, 2006); Naomi Tickle, *You Can Read a Face Like a Book: How Reading Faces Helps You Succeed in Business and Relationships* (Petaluma, CA: Face Language International, 2003); John Torpey, *The Invention of the Passport: Surveillance, Citizenship and the State* (Cambridge: Cambridge University Press, 2000); Paulo Ventura, 'Let's Face It: Reading Acquisition, Face and Word Processing', *Frontiers in Psychology*, 5 (2014), 1–4.

and the epistemological and discursive conditions upon which identificatory taxonomies are formed.

As indicated above, this thesis focuses on late eighteenth- and nineteenth-century texts to analyse what constitutes a face, who is believed to be in full possession of a face, and how interaction with faces becomes explicable through systematisation. Yet it is also inevitably informed by more recent criticism. For example, I draw on Michel Foucault's and Jonathan Crary's identifications of the prerogative, increasing in dominance throughout the eighteenth and nineteenth centuries, to view the body as divisible into components that conform to systematisations of naturalised signification.[30] While much recent critical discourse on the ascription of meaning to physical form focuses on the body, Foucault also refers to the 'confrontation' between the gaze of the observer and the face of the observed:

> the relationship of man to himself, and of language to things — was soon taken as a simple unconceptualized confrontation of a gaze and a face, or a glance and a silent body; a sort of contract prior to all discourse, free of the burdens of language, by which two living individuals are 'trapped' in a common, but non-reciprocal situation.[31]

Facial language is identified first through observation, recognition, and deduction (though not necessarily in that order); if the face is to be represented as instructive discourse, it must then be translated into a comprehensible system of signs, using a particular set of formally acknowledged referential markers — in Foucault's words 'a language of rationality' — as occurs in both written and pictorial physiognomic and pathognomic analysis.[32] The idealisation of observational and significatory interaction with another's face as a 'true' or 'natural' engagement recurs throughout discourses on face-reading, even

---

[30] Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (1963), trans. by Alan Sheridan (London: Routledge, 2000); Foucault, *Madness and Civilization: A History of Insanity in the Age of Reason*, trans. by Richard Howard (New York: Random House, 1988); on classification, see Foucault, *The Order of Things: An Archaeology of the Human Sciences* (London: Routledge, 2002); Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: The MIT Press, 1993).

[31] Foucault, *Birth of the Clinic*, xiv. Ludmilla Jordannova writes that during the eighteenth century it began to be 'taken for granted that the human body was legible, even though there was no consensus on exactly how it could and should be "read"': extending into the nineteenth century also, this applies equally to the face. Jordanova, *Sexual Visions: Images of Gender in Science and Medicine between the Eighteenth and Twentieth Centuries* (Madison: University of Wisconsin Press, 1989), p. 52.

[32] Foucault, *Birth of the Clinic*, xiv.

as diverging methodological approaches seek to re-determine and re-inscribe the rules governing such interactions. As such, tracing how the face is defined and transformed into ideas is a central preoccupation of this thesis.

So too is the systematisation of faces in the period and the ideological systems to which such systematisations attach. In his later text, *The Archaeology of Knowledge*, Foucault reflects back on the organisation of discursive themes and theories ('strategies') that have been exposed in his previous works, and argues that his (and others') task consists of no longer 'treating discourses as a group of signs (signifying elements referring to contents or representations), but as practices that systematically form the objects of which they speak'.[33] Something of this kind informs his earlier description of the face, and yet in *Archaeology of Knowledge* he also maintains: 'I am no doubt not the only one who writes in order to have no face'.[34] Foucault's critique renders the face a site on which ontological conflicts take place: a division arises between the face as constructed, but also potentially deconstructed, by some form of discursive act. For Foucault, the eradication of the face, the site of an illusory idealisation of reciprocal, unadulterated vision, is instigated through writing, a means to present an alternative to being formed as a subject through discourse: to see but not be seen. The writers I examine in this thesis do not perform the same level of critique as Foucault, and yet, they too recognise the face's potential to become a restrictive representation of identity, even as it is prioritised as a surface on which their own theories or narratives are granted epistemological validation: the animal face provides a means to negotiate this dynamic.

My thesis also takes issue with recent theories and criticism of the face. The twentieth-century philosopher Emmanuel Levinas has been more interested in the intersubjective interaction and communication enabled by the face than with one-way, scientific readings of faces, focusing on engagements with the specifically human other:

---

[33] Foucault refers specifically to *Madness and Civilisation*, *The Birth of the Clinic*, and *The Order of Things*. Michel Foucault, *The Archaeology of Knowledge* (1969), trans. by A.M. Sheridan Smith (Oxon: Routledge, 2002), p. 54.

[34] Foucault, *Archaeology of Knowledge*, p. 72. See also Gilles Delueze's and Félix Guattari's description of the face as both the cause of human subjectivization and the locale through which the liberating potential of 'becoming-animal', not animal metamorphosis but the nomadic state between identities, is achieved: '[i]f human beings have a destiny, it is rather to escape the face, to dismantle the face and facializations, to become imperceptible'. They write that the 'facial machine' is where 'we must stand battle': only on your face and at the bottom of your black hole and upon your white wall will you be able to set faciality free like birds.' Gilles Deleuze, and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (1988), trans. by Brian Massumi (London: Continuum, 2004), p. 189; p. 209.

'[T]he face summons me to my obligations and judges me'.[35] Levinas argues that 'the straightforwardness of the face to face' demands an ethical response, 'my responsibility, that is, an existence already obligated […] to be oneself is to express oneself, that is, already to serve the other'.[36] This vision of ethical faciality, however, is not extended to the animal: 'the priority here is not found in the animal, but in the human face [...] In the dog, in the animal, there are other phenomena. For example, the force of nature is pure vitality. It is more this which characterizes the dog'.[37] By contrast, as I demonstrate in Chapter One, Jacques Derrida's description of being caught in the gaze of his cat presents a challenge to Levinas at the same time as it accentuates the unquantifiable gulf between humans and animals.[38] While their perspectives are in many respects polarised, Levinas and the twentieth-century art critic John Berger agree on the priority of the human face: for Levinas, ethical communication creates an insurmountable barrier between humans and animals; for Berger, humans have obscured the face of the animal through the creation of 'human puppets', rendering the actual animal 'absolutely marginal'.[39] Yet human–animal relations are never this straightforward in the period under discussion in this thesis and the face is not a site on which the extrication of animality from humanity, or vice versa, occurs easily, either then or now.

The dialectical relation between reflection and recognition is enacted on species boundaries, as the observer is frequently caught between reflection of the self and recognition of the self in the animal. Nevertheless, I argue that the animal face retains a crucial role in breaking down boundaries between observer and observed, as well as between the observers and the epistemological and methodological foundations of their analytical procedures. Articulations of animal–human relations and animal–human relativity do not arise solely from symbolic quantification, but also from physical

---

[35] Emmanuel Levinas, *Totality and Infinity: An Essay on Exteriority* (1961), trans. by Alphonso Lingis (Dordrecht: Kluwer Academic Publishers, 1991), p. 215.
[36] Levinas, *Totality and Infinity*, p. 183.
[37] Emmanuel Levinas, 'The Paradox of Morality', in *The Provocation of Levinas: Rethinking the Other*, trans. by Andrew Benjamin and Tamara Wright, ed.by Robert Bernasconi and David Wood (London: Routledge, 1988), p. 169. See also Peter Atterton, 'Levinas and Our Moral Responsibility Toward Other Animals', *Inquiry*, 54 (Dec, 2011), 633–49; David Clark, 'On being "The last Kantian in Nazi Germany": Dwelling with Animals after Levinas', in *Animal Acts: Configuring the Human in Western History*, ed. by Jennifer Ham and Matthew Senior (London: Routledge, 1997), pp. 165–98; H. Peter Steeves, 'Lost Dog, or, Levinas Faces the Animal', in *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture*, ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005), pp. 21–35.
[38] See Jacques Derrida, *The Animal That Therefore I Am*, trans. by David Willis, ed. by Marie-Louise Mallet (New York: Fordham University Press, 2008).
[39] John Berger, 'Why Look at Animals?' (1977), in *About Looking* (London: Bloomsbury, 2009), p. 15. I return to this text in Chapter One.

proximity: as Fudge has indicated, for centuries humans have had 'an instrumental relationship with animals that relied on a conception of shared bodiliness and a shared home'.[40] In a letter to his sister in 1838, Darwin acknowledges how closeness to the animal instigates recognition of commonality. He describes his observation of Jenny, the first orangutan acquired by London Zoo, after she had been refused an apple by her keeper:

> she threw herself on her back, kicked & cried, precisely like a naughty child.— She then looked very sulky & after two or three fits of pashion [*sic*.], the keeper said, Jenny if you will stop bawling & be a good girl, I will give you the apple.— She certainly understood every word of this, &, though like a child, she had great work to stop whining, she at last succeeded, & then got the apple, with which she jumped into an arm chair & began eating it, with the most contented countenance imaginable.[41]

Written over twenty years before Darwin formalised his evolutionary theory in *Origin of Species*, and thirty years before he directly tackled emotional expression, this anecdote not only demonstrates Darwin's life-long interest in animal expression, but is also indicative of how narrative enacted via the face appears to collapse divisions between humans and other animals, even, as in Darwin's case, on first meeting a new species.

Consequently, and suggesting a partial alternative to theories that revolve around the construction of the human, observing subject, it is the animal's material, biological properties, as well as its ontological existence, that generate and resolve the conflicts and disputes that arise in facial analysis: for Darwin, it is the biological processes of evolution that enable the above narrative to operate. The face-reading discourses explored in this thesis dispute whether facial analysis should focus on identification of form or moveable features; in addition to this, they differ through their description and quantification of both the causes of facial appearances and their analysis of how their chosen face-reading method is enabled and enacted. This debate alternates between physical (biological) and metaphysical (theological/spiritual) causation: for instance, whether the face is a product of divine intervention or biological processes, and whether the ability to face-read is

---

[40] Fudge, 'Animal Face', p. 196.

[41] C. Darwin to Susan Darwin, 'Letter no. 407', 1 April 1838, *Darwin Correspondence Project*, database (Cambridge: Cambridge University Library) <http://www.darwinproject.ac.uk/DCP-LETT-407> [Accessed 20 April 2017]. Jenny arrived at London Zoo in 1835. See M. Palmer, 'Artefact of the Month: Portrait of Jenny', Zoological Society of London, website (1 June 2008) <https://www.zsl.org/blogs/artefact-of-the-month/portrait-of-jenny> [Accessed 20 April 2017].

learned or innate. While these causes are not intrinsic to either physiognomic or pathognomic methodological approaches, the animal face *is* endemic to these distinctions. The animal gives physical form and metaphysical meaning to conflicts generated through the submission of face-reading to a 'language of rationality', while providing a thread to connect diverse arguments.

Chapter Outlines

Part I, 'Classifying the Animal Face', investigates the animal face as a crucial site upon which the extent and implication of human–animal relations are negotiated and contested, and how the animal face mediates and problematises these debates. This discussion draws on various knowledge systems *about* the human species, treating the epistemological foundations of human thought regarding species identification and classification. Part II, 'From Physiognomy to Pathognomy' examines the methodological and ideological shifts and interchanges that take place between physiognomic and pathognomic methods of face-reading. While Part I demonstrates how classificatory procedures lay the epistemological groundwork for face-mediated identifications with and responses to the animal, Part II focuses on the divergent analyses and results that occur when faces are read in terms of fixed form, moving feature, and as a means for communicative or transformative exchange with the subject under scrutiny. Taken in order, the chapters recreate a shifting emphasis evident throughout physiognomic and pathognomic discourse, from identification and classification of the face to communication with the face.

More specifically, Chapter One, 'Classifying Human and non-Human Animals', provides an overview of Western discursive classificatory systems from the early-modern period to the nineteenth century. It includes analysis of both the conditions and criteria for species classification, together with critiques of how such systems are constructed and understood. Taxonomical systems have, in themselves, been subject to much critical dismantling and theoretical explication that continues to redefine, shape, or even obstruct ways of articulating human–animal relations. Following this, the next three chapters analyse the animal face's contribution to the creation and perpetuation of classificatory systems. Chapter Two, 'Policing the Animal/Human Divide', focuses on Lavater's classification of the animal and his stratification of the face into a system of physiognomic signs. Chapter Two initiates discussion on the observer's role in physiognomic analysis; Lavater's classificatory apparatus extends to identifying an exemplary scientific

practitioner, endowed with extraordinary perception and ability. In order to provide a contrast to Lavater's physiognomic analysis, in which the animal is ideally fixed as separate from the human, Chapter Three, 'Scientific Method and Classificatory Rhetoric', examines how classification contributes to Darwin's depiction of expressive evolution and how classificatory ability itself becomes a core constituent of Darwin's theory. These two chapters focus on the role of face-reading methodologies in observing/creating a non-verbal language that incorporates the animal face, subsequently transforming that language back into human words, whether it be in the form of scientific, religious, or literary discourse.

I then set these scientific works in dialogue with nineteenth-century literary writing, focusing particularly on the occurrence of animal-human hybridity within texts. Chapter Four, 'Classifying the Animal-Human Hybrid Face', demonstrates the relation between science, whose explicit function is to both classify the face and put it to use in a larger biological taxonomical project, and literature, where taxonomisation is implicit rather than categorical. Species classification via the face is an important thematic constant that occurs in two texts from opposite ends of the nineteenth century: the conflation and collision of literal and metaphorical animality is realised in the physiologically and biologically hybrid fictional creations of Shelley's *Frankenstein* and Wells's *The Island of Doctor Moreau*.

Beginning Part II, Chapter Five, 'Interchanges', analyses the distinctions, but also the congruities between Lavater's physiognomic science and Darwin's focus on evolved facial expression. Throughout this chapter, ideals of malleability and fixity are invoked to describe not only methodological approaches to face-reading, but also the broader ideals underpinning the prioritisation of one theory of face-reading over another. In order to investigate further the procedural and ideological shifts that occurred between these two writers, Chapter Five includes analysis of pertinent texts that mediate between Lavater and Darwin; this is then more fully explored in Chapter Six, 'From Physiognomy to Pathognomy via Aesthetics and Emotional Response', which considers the changing role of the observer in line with eighteenth- and nineteenth-century aesthetic theories. To illustrate how these debates can be both utilised and elaborated through literary narrative, Part II finishes with a chapter on Dickens's fictional representations of face-reading: 'Charles Dickens, Physiognomy, and the Pathognomic Animal Face'. Prior literary criticism has frequently highlighted Dickens's debt to Lavaterian physiognomic theory, along with the curious blankness of his physiognomically beautiful fictional child, Oliver

Twist: I show how the animal face mediates between the two opposing discourses of physiognomy and pathognomy, enabling affective and sympathetic response.

Limitations

This thesis is limited by its anthropocentrism. Significantly and necessarily, the face-readers in the discourses I explore are always human: even when animals read faces (as they do), this act is mediated and described via human representation and interpretation. Anthropocentric classificatory systems do not recognise faces that differ markedly from human ones, yet not all animals *have* faces, and many do not share the same features as human faces. This is acknowledged in nineteenth-century discourse: in his 1833 'Chapter on Faces', published in *The Athenæum*, the Unitarian minister and essayist, William Pitt Scargill, notes that 'all the interest of life depends on face. It is a difficult thing to imagine what we should do without faces; we have no sympathy for living things which have not face'.[42] As any entomologist or malacologist can testify, when issues of conservation are concerned, humans most often prioritise animals with faces that are similar to our own, a trend that is detrimental to the fate of organisms essential to ecological biodiversity.[43] While I address the symbolic facing and de-facing of the animal (and human) face, the animals featured in this thesis fit this dominant trend.

Another exclusion that deserves explanation, if not defence, is that this thesis intentionally does not deal substantially with phrenology (or cranioscopy) — another important scientific enterprise that emerged and became fully established during the nineteenth century, and often appears connected with physiognomic and pathognomic discourse. One of my intentions is to delineate terms and practices that have been too much conflated in critical writings: phrenology focuses on the shape of the whole

[42] William Pitt Scargill, 'A Chapter on Faces', *The Athenæum*, 311 (12 October 1833), 682–83 (p. 682). Published in *The Athenæum* anonymously, this essay was republished posthumously in William Pitt Scargill, *Essays and Sketches* (London: Robert Hardwicke, 1858).

[43] In recent years, scientists and zoologists have endeavoured to draw popular attention to this fact. See for instance, the entomologist, Ross Piper: 'the fact is that many animals are faceless, so we have trouble forming any sort of emotional bond with them and much of what they do seems very alien indeed. It is much easier to identify with a lion and the challenges she faces nurturing her cubs than it is to form any sort of emotional link with a faceless crustacean that spends its adult life attached to the eye of a fish'. Piper, *Animal Earth: The Amazing Diversity of Living Creatures* (London: Thames and Hudson, 2013), p. 14. See my Conclusion for a suggestion of further work that could approach this issue.

head/skull, and does not pay specific attention to the face.[44] As such, it lies outside the parameters of this thesis. It is, however, worth noting that, as physiognomy increasingly fell into disrepute in intellectual society (even as prominent literature continued to draw on Lavaterian motifs), phrenology, popularised in Britain by Johann Spurzheim and supported by the emergence of faculty psychology, appeared to provide a more rigorous and scientific quantification of mind.[45] James Secord notes how cheap printing transformed the fate of George Coombe's phrenologically inspired *The Constitution of Man* (1828), which 'became one of the most popular books in the English language, a new bible for natural law'.[46] The popularity of this text provides further evidence that relations between interior and exterior persistently preoccupied nineteenth-century scientific practitioners, authors, and broader popular audiences.[47] By the time Darwin published *The Expression of the Emotions*, interest in and satisfactory recourse to phrenological theory was waning; yet, crucially for my study, phrenology's division of the skull into human and animal constituents allowed for further analysis of shifting relations between humans and animals. This is a point I return to in my introduction to Chapter Three.

Inevitably, in a thesis covering a broad time span, there are texts that might usefully inform my questions, but in the interest of word count, have been excluded. I have selected texts that usefully inform and extend my arguments. George Eliot has been mentioned briefly in this Introduction, but I do not return to her in the main body of the thesis. As with Wells, Eliot's last full-length novel, *Daniel Deronda*, was published after Darwin's *Expression of the Emotions*; however, unlike Wells, her treatment of the animal face in this novel exceeds the parameters of the scientific ideas treated in this thesis. I

---

[44] In her treatment of Victorian psychology, Shuttleworth notes this also, writing that physiognomy and phrenology have been often lumped together in criticism, as a means to examine 'generalized concern with external appearance'. Shuttleworth, *Brontë and Victorian Psychology*, p. 58. I return to this point in Chapter Five, suggesting that recent critical interest in interiority has led to a dominating focus on pathognomy, sometimes to the detriment of historical accuracy.

[45] See Edward S. Reed, *From Soul to Mind: The Emergence of Psychology from Erasmus Darwin to William James* (New Haven: Yale University Press, 1997).

[46] Secord, *Victorian Sensation*, p. 73. See also David de Giustino, *Conquest of Mind: Phrenology and Victorian Social Thought* (London: Croom Helm, 1975); John Van Wyhe, *Phrenology and the Origins of Victorian Scientific Naturalism* (Aldershot, Hants: Ashgate, 2004).

[47] Prominent literary figures such as George Eliot and Charlotte Brontë drew on phrenology in their fictional writings, and also had analyses of their own skulls performed. Following Shuttleworth, critics have commented on Brontë's use of phrenology, particularly in her 1853 novel *Villette*. See Nathan R. Elliott, 'Phrenology and the Visual Stereotype in Charlotte Brontë's *Villette*', *Nineteenth-Century Studies* (2008), 41–55. Elisha Cohn argues that the sustained emphasis on dream-like states, psychological inertia, and passive bodies in *Villette* provides a means to challenge the narrative of active self-improvement, a prominent preoccupation of phrenological theory, that pervades the text. Cohn, *Still Life: Suspended Development in the Victorian Novel* (Oxford: Oxford University Press, 2016), p. 45.

return to Eliot in my Conclusion to argue that the internalisation of the animal face in her writing provides an area for further research and investigation, to be set in dialogue with scientific discourses.

Part I: Classifying the Animal Face

Chapter One

Classifying Human and Non-Human Animals

i. Why Classify?

Identifying and codifying the relation of humans to non-human species is an enduring preoccupation of Western human thought. As Keith Tester argues, species taxonomies repeatedly attempt to resolve the troubling question of '*what it is to be human*' [Tester's italics].[1] A solution is here revealed within the terms of Tester's question: while all species perform classificatory assessment, for humans, this assessment becomes defined as a self-conscious ontological act, and is presented as a further criterion with which to distinguish the human from the animal. This chapter draws on theoretical and historical debates to demonstrate how species taxonomies, and the motivations underlying the creation of such taxonomies, are continually subject to re-evaluation. I use these debates to define a methodology which I then apply in successive chapters: these analyse the ways in which the animal face participates in and challenges the maintenance of taxonomies; they also address how face-reading discourses subvert the assumption that human classificatory impulses and methods are themselves a marker of superior distinctiveness.

For the Structuralist anthropologist Claude Lévi-Strauss preoccupation with classifying what is other and external to ourselves is an instinctive act, common to all human societies: knowledge is created and established as sensory experiences are translated into rationalised and differentiated systems of meaning.[2] Both Lévi-Strauss's universalism and his insistence on the agency of the individual human mind have been contested; the work of the social anthropologists Edmund Leach and Mary Douglas focuses instead on the influence of human language and cultural conditions as integral to meaning creation via classification.[3] The historian Yuval Noah Harari draws on a combination of these perspectives to argue that the classificatory impulse is produced by

---

[1] Keith Tester, *Animals and Society: The Humanity of Animal Rights*, (London: Routledge, 1991), p. 31.
[2] Claude Lévi-Strauss, *The Savage Mind* (London: Weidenfeld and Nicolson, 1966).
[3] See Edmund Leach, *Social Anthropology* (London: Fontana, 1982); Mary Douglas, *Natural Symbols: Explorations in Cosmology*, 2nd ed. (London: Routledge, 2003). Tester challenges the implications of universality in Strauss's thesis, arguing that any sociological study of taxonomy should acknowledge the historical dimension of its findings. Tester, *Animals and Society*, p. 39.

evolutionary processes and eventually becomes an instinctive impulse: in comparison to other animals, humans have evolved unusually fast, causing the continual need to assert supremacy via either the physical or metaphoric subjection of non-human animals.[4] The sixteenth-century French essayist Michel de Montaigne considerably pre-empts these conclusions without deferring to an evolutionary framework to explain humanity's continued assertion of dominance over other species. Destabilising traditional Christian definitions of humans as closer to the divine than the animal, and explaining the drive to classify in terms of human ignorance, Montaigne writes:

> the most vulnerable and frail of all creatures is man, and at the same time the most arrogant. He feels and sees himself lodged here, amid the mire and dung of the world […] and in his imagination he goes planting himself above the circle of the moon, and bringing the sky down beneath his feet.[5]

Montaigne ridicules the easy construction of meaning and belief systems — that what is physically and cosmologically higher is necessarily superior to what is beneath it. Beyond this, he also testifies to the importance of defining through an oppositional rhetoric. Whether classificatory processes are determined by the individual or by broader societal and historical trends, this remains a feature of many species taxonomies and is therefore essential to any meta-criticism of their classification

While Montaigne questions the erroneous assumptions of hierarchical systematisation, taxonomies can also be subverted via the re-evaluation of the criteria that constitute them. As such, debates concerning species classification focus on the absence or presence of various capabilities and aptitudes, including capacities for reason, speech, moral/social instincts, and both physical and emotional sentience. For instance, the seventeenth-century dualist philosophy of René Descartes maintains that while both humans and animals physiologically operate as a 'bête-machine', only humans possess souls, and it is this that allows them to be classified as superior to animality.[6] Although

---

[4] Yuval Noah Harari, *Sapiens: A Brief History of Humankind* (London: Vintage, 2014), pp. 12–13. For dialectical biologists, the relationship between species and environment is symbiotic, and as the classificatory constitution of one changes over time, so does the other. See Richard Levins and Richard Lewontin, *The Dialectical Biologist* (Cambridge, Massachusetts: Harvard University Press, 1985).
[5] Michel de Montaigne, 'Apology for Raymond Sebond', in *The Complete Works of Montaigne*, trans. by Donald M. Frame (London: Hamilton, 1958), pp. 318–457 (pp. 330–31).
[6] René Descartes, *Discourse on Method* (1637), trans. by John Veitch (London: Dent, 1962). Aiming for a similar categorical distinction between humans and animals, Immanuel Kant argues that 'man, and in general

distinctions of this kind have a historical precedent stretching back to Aristotle and beyond, so too do the impulses that aim to overhaul such categorical delineations. The Aristotelian and Stoic belief in human uniqueness was challenged by the Pythagorean Empedocles, who argued that the soul itself is a necessarily fluid entity, capable of traversing species divides: 'we are made of the same elements […] the dog you are beating could be a friend, or presumably a relative, reincarnated'.[7] The separation of humans and non-humans is challenged, and, crucially, the character of the defining attribute — the soul — is also put into question. This not only reveals the methodological pitfalls for any taxonomic system dependent on the illusory ideal of definitive species categorisation, but also undermines the ideal that criteria used to classify are in themselves fixed and endowed with an essential meaning.[8]

Classification of animals and their relative positioning on a hierarchical scale has a significant impact on human identity; however, the process of defining via opposition also instigates imperatives concerning how animals should be viewed and treated. In the seventeenth century, John Locke stipulated that kind treatment to animals should be encouraged to prevent the human species' moral degeneration to the level of animals; this concern is illustrated in William Hogarth's 1732–33 painting series, *The Rake's Progress*, where cruelty to animals signifies the beginning of the rake's descent *into* animality and brutality.[9] Further philosophical promotion of the 'moral sentiments', as propounded by Francis Hutcheson, Adam Smith, and David Hume, combined with the late eighteenth-century 'cult of sensibility', continued to bolster this impulse.[10] Tess Cosslett has shown the influence that these philosophical and psychological ideals had on the portrayal of animals in late eighteenth-century educative children's literature, while the historian James Turner attributes nineteenth-century compassion for the plight of the animal to the anthropocentric desire to protect and nurture ideals of human uniqueness and moral

---

every rational being, *exists* as an end in himself […] Beings whose existence depends, not on our will, but on nature, have none the less, if they are non-rational beings, only a relative value as means, and are consequently called *things*'. Immanuel Kant, *The Moral Law: Groundwork of the Metaphysic of Morals* (1785), trans. by H. J. Paton (Abingdon: Routledge, 2005), pp. 105–06.

[7] See Richard Sorabji, *Animal Minds and Human Morals: The Origins of the Western Debate* (Ithaca, NY: Cornell University Press, 1993), p. 131. Sorabji discusses Plato's interest in humans as reincarnated animals as evidence for the existence of a rational soul in animals (p. 10).

[8] I return to motifs of fixity and fluidity throughout the thesis: Part II analyses how these ideals manifest particularly in relation to the interchanges between physiognomic and pathognomic analysis of the face.

[9] '[F]or the custom of tormenting and killing beasts, will by degrees, harden their minds even towards men; and they who delight in the suffering and destruction of inferior creatures, will not be apt to be very compassionate, or benign to those of their own kind'. John Locke, *Some Thoughts Concerning Education* (1693) (London: J. and R. Tonson, 1779), p. 171.

[10] See Michael Bell, *Sentimentalism, Ethics and the Culture of Feeling* (Basingstoke: Palgrave, 2000).

superiority.[11] In his *Principles of Morals and Legislations* (1789, revised 1823), Jeremy Bentham had challenged (albeit in a footnote) the imperative that concern for human morality and passion should be the primary reason for condemning cruelty to animals. Bentham redefined the debate to focus not on the human, but on the animal: 'The question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?'[12] Yet, as Mary Midgley points out, cruel treatment of animals does not necessarily deny the animal sentience or emotional capacity (as she notes, the beating of working animals, *depends* upon their capacity to feel pain and fear); human behaviour towards animals is dictated by human interest, just as it is in the treatment of other humans (e.g., slaves), who are not granted full humanity, or legal/moral protection.[13] The question of animal cruelty here reverts back to one of taxonomy, in which categorical relation to, as well as economic, affective, or symbolic dependence on, the animal, dictates how it is treated.

Interest in animal rights and welfare is potentially instigated, critics might argue, by changing definitions of 'what it means to be human'. Martin's Act, the first parliamentary bill preventing cruelty to domestic animals (e.g., horses, livestock), was passed in 1822 after numerous failed attempts, while the Society for the Prevention of Cruelty to Animals (later, the RSPCA), was formed in 1824.[14] As Anita Guerrini indicates, one consequence of such initiatives was the regulation of the behaviour and actions of the lower classes, while Turner argues that concern regarding animal welfare was a form of displacement activity, easier than worrying about the plight of human groups, such as the poor.[15] Christine Kenyon Jones and others emphasise that nineteenth-century concern for animal welfare was by no means a unanimous phenomenon and wide-spread animal abuse

---

[11] Tess Cosslett, *Talking Animals in British Children's Fiction, 1786-1914* (Hampshire: Ashgate, 2006), p. 10. Cosslett provides an excellent account of the animal in children's literature such as Sarah Trimmer, *Fabulous Histories,* later known as *Story of the Robins* (1786), and Mary Wollstonecraft's *Stories from Real Life* (1788). Cosslett also intervenes on recent post-humanist theory, writing that there is a middle ground between texts where the animal is prioritised 'as an animal' and educational texts where children come first: 'there is no reason why children's literature should not be used with the implicit purpose of improving the lot of animals, with anthropomorphised ('sentimental') animal characters who nevertheless have an effect on human behaviour towards animals in the real world' (p. 10). See also James Turner, *Reckoning the Beast: Animals, Pain and Humanity in the Victorian Mind* (London: John Hopkins University Press, 1980), p. 24.
[12] Jeremy Bentham (1789; revised 1823), *An Introduction to the Principles of Morals and Education* (Oxford: Clarendon Press, 1876), p. 311.
[13] Mary Midgley, *Animals and Why They Matter* (Athens: University of Georgia Press, 1983), pp. 112–14.
[14] Dogs were not granted legal protection until 1839. Christine Kenyon Jones, *Kindred Brutes: Animals in Romantic Period Writing* (Aldershot: Ashgate, 2001), p. 78; Anita Guerrini, 'Animal Experiments and Antivivisection Debates in the 1820s', in *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780-1830,* ed. by Christina Knellwolf and Jane Goodall (Ashgate: Surrey, 2008), pp.71–85 (p. 79).
[15] Guerrini, 'Animal Experiments', p. 79; Turner, *Reckoning the Beast,* p. 37.

continued largely unpoliced for many years.[16] The horse has long been regarded as one of the noblest non-human creatures — Kathryn Miele notes that Victorians often credited horses as more likely to possess 'virtues and vices in terms of making moral choices' than any other domestic animal — yet despite this, the nineteenth-century working horse was consistently maltreated.[17] While it is impossible to fully quantify motivations for action, what is evident is that animal taxonomies that revolve around human definition and a categorical system of values can be subverted and manipulated to suit ideological agendas.[18]

These moral and political issues are not only fundamentally rooted in broader questions and debates regarding classification and taxonomy; they also confound attempts at taxonomy. As Greg Garrard has recently explored, debates concerning how morality is distributed according to taxonomical systems can have a polarising effect on such systems and the consequent idealisations of human supremacy: on the one hand, those who ignore Locke's instruction and commit cruelty towards animals only end up emphasising the 'selfish passions and fierce appetites' of their own animality; on the other hand, it is the uniquely human choice to act in this way that reinforces the notion of human difference and provides a necessary contrast to higher, more 'human' ways of behaving.[19] Garrard quotes Kate Soper in support of this latter thesis: 'By associating all our "lowlier" characteristics and bodily functions with animality, we assert the importance of sustaining those higher or more spiritual attributes that grant us human sovereignty over the beast'.[20]

---

[16] See also Harriet Ritvo's description of nineteenth-century initiatives for protecting animals, as well as many instances of continued abuse. Ritvo, *The Animal Estate: The English and other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University press, 1987), particularly p. 143; p. 152.

[17] Kathryn Miele, 'Horse Sense: Understanding the Working Horse in Victorian London', *Victorian Literature and Culture*, 37 (2009), 129–40 (p. 131). Miele speculates that the reason for attributing morality to the horse may lie in the perceived 'difficulty involved in persuading such as strong animal as the horse to consistently follow human orders'. The plight of the working horse became an increasingly prominent cause during the nineteenth century with popular texts, such as Anna Sewell's *Black Beauty*, highlighting horses' working conditions as well as championing their intelligence and sensitivity. See Kenyon Jones, *Kindred Brutes*, p. 103.

[18] Tester and Steven R. L. Clark make a similar point in their respective analyses of different philosophical approaches to animal rights. Tester writes that while philosophers such as Tom Regan might resist the utilitarianism of the enormously influential 1970s philosopher Peter Singer, on the basis that everything has an intrinsic right to life (and that Singer might equally object that 'recognition of the other as the same' can only go so far), the implications of their philosophies produce similar results when considered in terms of human action. Clark details the various and divergent philosophical frameworks of those who share the common trait of writing in defence of animals. Tester, *Animals and Society*, pp. 10–15; Clark, *Animals and their Moral Standing* (London: Routledge, 1997), p. 2, and on Regan, pp. 70–86.

[19] Greg Garrard, *Ecocriticism* (Oxon: Routledge, 2004), p. 143.

[20] Kate Soper, *What is Nature? Culture, Politics, and the Non-Human* (Oxford: Blackwell, 1995), p. 86. The potential for sovereignty and animality to be aligned rather than opposed has been explored by Jacques Derrida, who argues that they are each representative of the other's position outside the usual dictates of

This porous model of classification equally applies to the way in which domestic animals appear to become representative of their owners.[21] The prioritisation of domination as a marker of human identity is exemplified in Ritvo's discussion of how nineteenth-century natural history writers continue to consider the relative servility and obedience of the domesticated animal as a gratifying reflection of its owner's status: William Swainson's *Natural History and Classification of Quadrupeds* (1835), for instance, classifies peoples whom have not yet mastered the dog as inferior and, potentially, not even fully human themselves.[22] Yet, returning to Miele's point, while this symbolic stratification of humans and animals may account for continued cruelties towards the morally noble horse, another explanation lies purely in the extent to which horses were an integral component of nineteenth-century lives, crucial to both livelihoods and leisure.

In her influential text, *What is Nature?*, Soper draws on Raymond Williams's depiction of the instability and mutability of the terms 'nature' and 'culture', in order to argue that definition through difference is crucial to the maintenance of human classificatory systems that revolve around a hierarchical ordering of types. She has returned to the subject more recently to stress the illusory character of this differentiation: 'we have to be clear that we have no conception of what the "difference" of nature consists in other than in the conceptions we have of its difference. All representations of nature are thus far discursively mediated'.[23] Soper demonstrates how easily rhetorical formulation concerning taxonomy can determine action, and can also act as a panacea to human paranoia about the implications of shared animal ancestry. Soper's work resonates with that of the twentieth-century art critic John Berger, who has reframed the ontological deficiencies resulting from such elisions and misappropriations, by focusing on the animal's unique position as the *enabler* of human classificatory thought. He argues that not only do inter-species relationships between humans and animals define the fundamental premises upon which humans differentiate themselves from animals, but that the animal also actively enables this differentiation: 'What distinguished man from animals was the

---

human laws. See Derrida, *The Beast and the Sovereign*, trans. by Geoffrey Bennington (Chicago: University of Chicago Press, 2009).

[21] Ritvo examines this in relation to dogs and the early nineteenth-century suspicion over young men with bulldogs, a notorious fighting breed: this indisputably continues today. Ritvo, *Animal Estate*, p. 110.

[22] Ritvo, *Animal Estate*, p. 21. In a similar vein, in his refutation of the 'noble savage myth', Charles Dickens claims that dogs, 'the friend of man', degenerate in savage society. Dickens, 'The Noble Savage', *Household Words*, VII.168 (11 June 1853), 337–39 (p. 337).

[23] Kate Soper, 'Nature and Culture: The Mythic Register', in Paul Sheehan, ed., *Becoming Human: New Perspectives on the Inhuman Condition* (Westport, CT: Praeger, 2003), pp. 67–80, (p. 68).

human capacity for symbolic thought […] Yet the first signifiers were animals'.[24] Berger collapses Strauss's differentiation between the human and the external world, and his argument coheres with that of Michel Foucault, who concludes that the discourses surrounding an animal — or, indeed anything and anyone subject to the human categorising impulse — become an inevitable constituent of that animal. In his seminal critique of taxonomical construction, *The Order of Things: An Archaeology of the Human Sciences*, Foucault argues that the human interpretation and codification of other species is integral to their existence: 'to know an animal or a plant […] is to gather together the whole dense layer of signs with which it or they may have been covered.'[25] In this sense, Foucault's work counterpoints Tester's claim that animals define '*what it is to be human*' [Tester's emphasis]; here, the human and the discursive actions of human society and culture, also define what it is to be animal.[26] As Berger indicates, the two are inextricably bound together.

New Historicist theory challenges the belief in the universal truth of taxonomical systems, arguing that they are culturally constructed, variable, and relative. Berger and Foucault indicate how taxonomies can be viewed as an arbitrary measure of human concerns: classification is laden with cultural, historical, and philosophical implications, and the signification of classificatory criteria or attributes is taken for granted. In line with Berger's emphasis on animals as 'the first signifiers', for the philosopher Jacques Derrida, the supporting structures of humans' classificatory systems are as unavoidable as they are undesirable. In *The Animal that Therefore I Am*, Derrida dismantles the constituents of language that situate human and animal as opposing constructions, creating the illusion of animality and humanity. Demonstrating the fundamental epistemological failure of taxonomical thought, he writes that: 'the animal is a word, it is an appellation that men have instituted, a name they have given themselves the right and the authority to give to the living other'.[27] Derrida promotes a non-speciesist re-evaluation of the meaning and use of the 'name and of the word', which considers its absence or lack 'as something other than a privation'.[28] Derrida asks, 'how can an animal look you in the face?' and, in his discussion of being caught in the gaze of his cat, concludes, 'Nothing can ever rob me of

[24] John Berger, 'Why Look at Animals?' (1980), in *About Looking* (London: Bloomsbury, 2009), p. 15.
[25] Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (1966) (London: Routledge, 2002), p. 44.
[26] Tester, *Animals and Society*, p. 31.
[27] Jacques Derrida, *The Animal That Therefore I Am*, trans. by David Willis, ed. by Marie-Louise Mallet (New York: Fordham University Press, 2008), p. 23.
[28] *Ibid.*, p. 48.

the certainty that what we have here is an existence that refuses to be conceptualized'.[29] Derrida dislodges the ontology behind the Levinasian argument that, when situated face to face with an animal (when 'understanding' the face of a dog, for example), the animal is necessarily subordinated and de-faced: equally, his refutation of repeated attempts to taxonomise the un-taxonomizable flies in the face of centuries of human endeavour.[30]

While these accounts lay important ground for critiquing classification, they do not provide a feasible structure with which to assess my primary research questions: how and why the categorical lines between animals and humans break down via discourses of facial classification. There are also inherent contradictions and areas of neglect at the level of these writers' own 'discursively mediated' analyses, which cannot be easily alleviated. The post-humanist critic Donna Haraway, for instance, critiques Derrida's work, making the point that, for an essay 'dedicated to the crime against animals perpetrated by the great Singularities separating the Animal and the Human', the cat 'was never heard from again'.[31] Haraway argues that despite the enormous influence of Derrida's deconstructive approach on the 'textual canon of Western philosophy and literature', he does not provide a realistic alternative model for animal–human interaction: 'he did not become curious about what the cat might actually be doing, feeling, thinking or perhaps making available to him in looking back at him'.[32] Haraway's own work decentres philosophical thought in its description of forming bonds with 'companion species' via means that do not utilise 'the word', such as touch — I return to this point in Chapters Two, Four, and Five in my discussion of how sight and language dominates taxonomic systematisation. While the cat's absence in fact perfectly exemplifies Derrida's point (that any symbolic, actual, or ethical relation to the animal is inevitably hindered by our own classification as language-using humans), it also inhibits further critical discussion. My historical and discursive research questions are more concerned with the cultural uses and inter-connections of taxonomical systems than with their value as truth.

In its approach to epistemological and taxonomical formation, this thesis bears in mind and pays deference to the deconstructionist accounts of Derrida and Foucault. Yet it

---

[29] *Ibid*., p. 7; p. 9. See also Michel de Montaigne: 'When I play with my cat, who knows if I am not a pastime to her more than she is to me'. Montaigne, 'Apology for Raymond Sebond', p. 331.
[30] See my Introduction. Levinas concludes that ethical communication cannot be had with an animal's face, as all that the human sees is itself: 'it is via the face that one understands, for example, a dog. Yet the priority here is not found in the animal but in the human face'. Emmanuel Levinas, 'The Paradox of Morality', in *The Provocation of Levinas: Rethinking the Other*, trans. by Andrew Benjamin and Tamara Wright, ed. Robert Bernasconi and David Wood (London and New York: Routledge, 1988), pp.168–80 (p. 169).
[31] Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008), p. 20.
[32] *Ibid.*, p. 20.

stops short of following these theorisations to the point where ideological conclusions concerning the nature of taxonomic systems generally dominate over particular historically situated systems, or to the point where the specifically human possession of 'the word' shuts down debate entirely.[33] Instead, I question how the apparatus that governs classificatory identification explicates the local, cultural, and historical factors that led writers to refigure taxonomies in specific contexts. The next section of this chapter investigates how changing species taxonomies not only illuminate contradictions between historical periods, but also provide a different way to conceptualise the epistemological basis of taxonomic thought.

ii. How to classify?

As indicated above, the criteria used to classify animals have shifted throughout history, as methods of constructing human knowledge have diversified in accordance with the priorities and needs of historically and culturally divergent societies. Prior to the eighteenth century, much classificatory thought had been amateur in provenance, and originated with people who depended on the land for economic survival; the qualities and properties of various herbs, foliage, trees, animals, and birds were widely and popularly agreed upon.[34] The institutionalisation of the sciences had a significant effect on classificatory methods and procedures as the province of animal knowledge passed from the stockman to the scientist. Isaac Newton's rationalisation of the laws of motion instigated the repeated endeavour to categorise all organic life in hierarchical taxonomies governed by standardised laws and objective criteria. A new perspective of universalism in classification was prioritised as natural history and natural knowledge became formalised: Latin terminology superseded a multitude of vernacular names, and popular knowledge, founded on traditional husbandry, came to be regarded as ignorant and superstitious.[35] The tenth and most complete edition of Linnaeus's *Systema Naturae* was published in 1758,

[33] Critics such as Rick Rylance take a similar standpoint: while Rylance credits Foucauldian constructivism, he also emphasises how constructivism itself cannot be viewed in an ahistorical vacuum. See Rylance, *Victorian Psychology and British Culture 1850–1880* (Oxford: Oxford University Press, 2000), p. 147.
[34] Keith Thomas, *Man and the Natural World: Changing Attitudes in England 1500-1800* (London: Penguin, 1983), p. 66; p. 71.
[35] Thomas writes, 'vulgar names were an obstacle to science', quoting John Berkenhout in 1789: "those who wish to remain ignorant of the Latin language […] have no business with the study of botany", while Ralph O'Connor discusses how Latin and Greek terminology was enthusiastically adopted by nineteenth-century 'genteel geologists'. Thomas, *Man and the Natural World*, p. 87; O'Connor *The Earth on Show: Fossils and the Poetics of Popular Science, 1802–1856* (London: The University of Chicago Press, 2007), p. 12.

and as Harriet Ritvo indicates, his exhaustive taxonomy, was 'hailed as both symbol and agent of a larger intellectual triumph', signalling an epistemological 'mastery of nature'.[36]

This shift marks a new way of conceptualising human relations to the external world: Foucault draws on this, describing the 'astonishment' experienced by the eighteenth-century French naturalist Comte de Buffon upon reading the sixteenth-century classificatory work of Ulisse Aldrovandi. In his *Historia Serpentum et Draconum* (1640), Aldrovandi considers 'the serpent in general' under a multifarious collection of headings, including, in Foucault's words:

> equivocation (various meanings of word serpent), […] physiognomy, antipathy, sympathy, modes of capture, death and wounds caused by serpent, […] mythology, gods to which it is dedicated, fables, allegories and mysteries, […] miracles, riddles, devices, heraldic signs, historical facts, dreams, simulacra and statues, use in human diet, use in medicine, miscellaneous uses.[37]

Aldrovandi's work exemplifies how animal taxonomy had been frequently endowed with additional symbolic meaning and signification; categorisation was influenced by cultural narratives, mythologies, and hearsay, as well as practical concerns regarding animal usage and functionality. Objecting to the criteria and the terms upon which the snake is assessed and categorised, on the basis that it is not conducive to accurate scientific analysis, Buffon writes '"there is no description here, only legend"'.[38] Foucault juxtaposes these two writers to illustrate both the growing dominance of scientific taxonomies as well as the potentially arbitrary selection of criteria upon which classification systems are formed.

It is not solely scientific endeavour that has instigated new patterns of epistemological formulation and changes in how the animal is conceptualised. Berger emphasises how nineteenth-century mass urbanisation transformed earlier relations between species, eroding the bonds of mutual economic dependence and removing working animals from their physical proximity to humans. In his vision, post-industrial

---

[36] Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge, Mass.: Harvard University Press, 1997), p. 18. Ludmilla Jordannova has also indicated that agreeing upon a standardised but distinct terminology contributes to the subjection of nature to order: language implies a 'system with consistent, coherent relationships between defined parts'. Jordanova, 'The Art and Science of Seeing in Medicine: Physiognomy 1780–1820', *in Medicine and the Five Senses*, ed. by W. F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1993), pp. 123–133 (p. 129).
[37] Foucault, *Order of Things*, p. 43.
[38] *Ibid*.

human interaction with animals moves away from inter-species communality in favour of a misconceived attempt at 'realism' — or in the terms of this thesis, biological realism — which eroded the symbolic bonds of recognition between species.[39] However, while Berger has a point and it is true that fewer people in the nineteenth century lived and worked with animals, it is not the case that the animal was entirely erased from symbolic thought and the gradations of this shift are subtler than his polemical argument allows. Pet dogs (as opposed to working dogs) had been popular for centuries before the Industrial Revolution, while in nineteenth-century towns and cities, people continued to live in close physical proximity to animals, with horses frequently kept in houses, hens in attics, and pigs in back yards.[40] As Ritvo demonstrates, inter-species relationships and anthropocentric codes of value continued to affect taxonomy throughout the nineteenth century: the ongoing debate between naturalists about whether the dog or ape was superior revealed a fundamental tension between whether utility and physical proximity to the human was more important, or whether animals should be categorised through a hierarchical ordering of their relative capabilities, such as intelligence or apparent emotional capacities.[41] These debates are still not resolved today: many people in Westernised societies keep dogs as pets and express horror at the thought of eating them, yet have few qualms about submitting the intelligent pig to intensive farming methods.[42]

Evidently, even as animal–human taxonomies became increasingly constructed according to the prioritisation of an ostensibly objective scientific method, the legacies of earlier thought patterns remained. For instance, Foucault represents Buffon's criticism of Aldrovandi as historically and culturally narrowminded and governed by an eighteenth-century preoccupation with scientific empirical thought. Yet there is a crucial commonality that links the two sources, despite the variance in the cultural and historical conditions of their production. In his encyclopaedic *Histoire Naturalle*, published between 1749 and 1789, Buffon argues that it is more important to 'examine the nature of animals, compare their structures, study the animal kingdom in general, in order to […] arrive at the capital

[39] Berger, 'Why Look at Animals?', pp. 3–30. While more recent post-humanist critics contest the legitimacy of inter-species relationships that depend upon the construction of symbolic narratives, for Berger, this is a more honest form of engagement between humans and non-humans.
[40] See Thomas, *Man and the Natural World*, p. 94.
[41] Ritvo, *The Animal Estate*, p. 35.
[42] Steve Baker speculates that the current toleration of factory farming and vivisection indicates that animals are 'generally held in contempt', while Erica Fudge highlights the deep irony implicit in recent scientific advances that counter the ill-health effects of eating too many factory-farmed animals by transplanting healthy pig-organs into humans. She writes: 'we cling onto the status of humanity, and turn to animals to plug the holes we make.' Baker, *Picturing the Beast: Animals, Identity and Representation* (Manchester: Manchester University Press, 1993), p. 89; Fudge, *Animal* (London: Reaktion, 2002), p. 105.

science of which man himself is the object?'[43] Aldrovandi's categorical system is structured around the multitudinous ways in which the animal can serve the human — in medicine, for food, and also as a symbolic signifier in stories and fables — while, for Buffon, the ideal of usefulness is realised through the animal's contribution to scientific knowledge. For both, the classificatory process is given significance through its focus on the usefulness of animals to humans: these remain fundamentally anthropocentric systems, despite post-Enlightenment attempts to objectify knowledge.[44]

During the late eighteenth and nineteenth centuries, the development and proliferation of evolutionary narratives raised further questions about human uniqueness and supremacy as set out in Christian doctrine and the Enlightenment's prioritisation of mind and reason. Moreover, even as the impulse to empirically quantify gained momentum, the symbolic indeterminacy of previous centuries began to be replaced with a growing emphasis on biological indeterminacy, especially at the boundary point between categories. Running concurrent to the emphasis on definitive classification producing fixed taxonomies, the shifting of disciplinary structures underlying epistemological formulation and propagation allowed for a previously unimaginable concretion of malleability as a principle governing the development and existence of all organic life. This is, in fact, credited by Buffon — a point neglected by Foucault in his emphasis on the fixity of scientific taxonomic systematisations. Indicating both taxonomic indeterminacy and human fallibility, Buffon writes: 'nature moves through unknown gradations […] she passes from one species to another species, and often from one genus to another genus, by imperceptible nuances'.[45] A century later, in *The Origin of Species* (1859), Charles Darwin again invokes the inherent futility of definitive species segregation: comparing birds from the American mainland and the Galapagos Archipelago, Darwin writes, 'I was much struck how entirely vague and arbitrary is the distinction between species and varieties'.[46] The Pythagorean belief in the soul's fluid transmission between species is here re-conceptualised as the mechanism governing gradual natural process. For scientists, such as

[43] Comte de Buffon, *Histoire Naturalle* (London: 1834), quoted in Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction*, 3rd ed. (Cambridge: Cambridge University Press, 2009), p. 266, n. 19.
[44] This anthropocentrism continues today as animals are still assessed using hierarchical orderings of human attributes; for instance, the ability to understand human language still signifies intelligence.
[45] From the 'Premier Discours' of Buffon's *Histoire Naturalle*, quoted in Jacques Roger, *Buffon: A Life in Natural History*, trans. by Sarah Lucille Bonnefoi, ed. by L. Pearce Williams (Ithaca: Cornell University Press, 1997), p. 85.
[46] Charles Darwin, *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008), p. 40.

Darwin and his staunch defender Thomas Huxley, evolutionary time enables the disassociation of classification from imperatives to definitively quantify species, even as new scientific methods provide apparently objective, biologically determinate means.

As the psychologist Eleanor Rosch has explained, in her influential 1970s work on classificatory principles, it is these 'fuzzy' areas that most easily confound traditional Aristotelian categorisation in which entities are defined by their indisputable 'essence'. In contrast to 'prototype' entities that clearly exhibit the attributes necessary for determined classification (e.g.: a cup has a handle and you drink out of it), 'fuzzy' categories can potentially elude the definition yet retain their classification (some drinking receptacles may not have handles but are still cups).[47] Rosch describes two dimensions of classification: vertical classification indicates the degree of inclusiveness in a category (how many kinds of object/being can be classified in the same category), while the horizontal level of classification is the dimension upon which the members of the higher vertical category vary. In vertical classification, the higher the category, the greater the inclusiveness and level of abstraction, while the final, logical endpoint of descending classification is reached at the level of the individual [see Figure 1.1].[48] Rosch argues that 'human categorisation should not be considered the arbitrary product of historical accident or of whimsy but rather the result of psychological principles of categorisation'.[49] Yet, while Rosch's terms of categorisation are phenomenologically useful, she does not account for the ways in which taxonomies defy logic or rearrange classifications according to culturally and historically specific narratives.

[47] Eleanor Rosch, 'Principles of Categorization', in *Cognition and Categorization*, ed. by Eleanor Rosch and Barbara B. Lloyd (New Jersey: Lawrence Erlbaum Associates, 1978), pp. 27–48 (p. 36).
[48] Rosch, 'Principles', pp. 30–32. In biology, these terms are used to different effect: vertical classification traces evolutionary descent, while horizontal classification considers organisms living at the same time.
[49] Rosch, 'Principles', p. 27. Both Rosch and Foucault cite Jorge Luis Borges's fictitious taxonomy, published in his 1942 essay, 'The Analytical Language of John Wilkins': Foucault writes, 'This passage quotes a "certain Chinese encyclopaedia" in which it is written that "animals are divided into: (a) belonging to the Emperor, (b) embalmed, […] (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) *et cetera*, (m) having just broken the water pitcher, (n) that from a long way off look like flies."' (*Order of Things*, xvi). While Foucault credits Borges with stimulating the 'laughter that shattered […] all the familiar landmarks of my thought […] breaking up all the ordered surfaces and all the planes with which we are accustomed to tame the wild profusion of existing things', Rosch writes: 'conceptually, the most interesting aspect of this classification is that it does not exist', p. 27. Evidently, Rosch's own classification is here open to dispute.

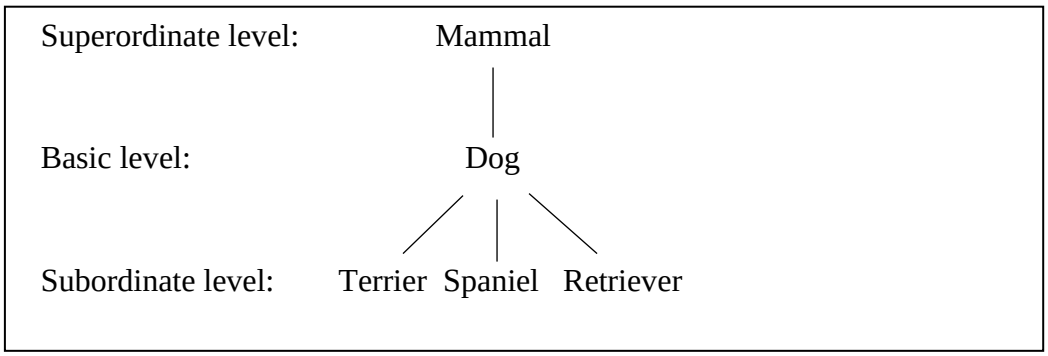


Figure 1.1: Classifying a Dog on Rosch's Vertical and Horizontal Dimensions

As the contemporary primatologist Frans de Waal has pointed out, all attempts to discursively differentiate 'human' and 'animal' are fundamentally erroneous, as humans are, unavoidably, also animals.[50] Waal's comment centres on the biological relation between humans and animals: this relation is particularly important to this thesis's investigation of the shifts and congruities between symbolic and scientific forms of taxonomical thought at a time when evolutionary malleability was exposing the irony of efforts to define the human against that which it is in fact a sub-category. Humans can be considered as paradoxically both separate from and part of the animal; this dialectic problematizes and confounds taxonomical systems dependent on the clear demarcation of species. Rosch's two-dimensional graph is hence complicated by two further axes: one that delineates according to scientific or symbolic taxonomies, and another that reflects change throughout time. In Darwin's work, the arbitrary nature of animal classification is relocated to all organisms and articulated specifically as re-defining human origins, yet the flipside of this, as Chapters Two and Three demonstrate, is that the creation of 'fuzzy' categories allows for the inter-category ordering of humans and animals on a hierarchical basis (e.g., some humans are more prototypically human than others). Darwin and Huxley do not condone the erosion of human–animal hierarchies; rather, they re-establish them using criteria and stipulations generated by evolutionary theory that allows for movement between categories.[51]

[50] Frans de Waal, *Are We Smart Enough to Know How Smart Animals Are?* (London: Granta, 2016), p. 5. I defer to the nomenclature used by my authors in my delineation of humans and animals.

[51] An evolutionary framework also enables hierarchical stratification within species. Huxley writes: 'the lowest apes differ as much, in proportion, from the highest, as the latter does from man'. Thomas Huxley, *Evidence as to Man's Place in Nature* (New York: Appleton and Company, 1863), p. 95. Assertions such as this, based on scientific process rather than metaphoric allusion (denigrating 'lower' humans such as slaves or the poor through animal-comparison is, after all, nothing new) caused shockwaves in nineteenth-century

The formation of category markers can be distinguished in conceptual terms, dependent on species definitions. For the nineteenth-century critic George Henry Lewes the classificatory enterprise is generated either by the qualitative 'Logic of Feeling', the 'observation and the judgement which follows observation […that] belong[s] to the animal side of our nature', or 'the Logic of Signs', characterised by human, quantitative '*Naming and measuring*' [Lewes's italics].[52] Lewes here subdivides and categorises modes of classificatory thought in order to mark species boundaries, yet these boundaries are necessarily non-totalised: he writes elsewhere that the terminology of 'classes, orders, genera, and species', do not indicate 'the existence of such *things* as classes, orders, genera, or species', but instead 'express the *relations of resemblance*' between things.[53] Classificatory understanding is equally produced through the relation between the logics of Feeling and Sign. As the layers of debate surrounding nineteenth-century animal welfare indicate, the underlying motivations or mechanisms that prompt classificatory action are not easily deciphered. Equally, in a neat corrective to ascriptions generated by such discourses, the primate researcher Sue Savage-Rumbaugh has more recently engaged with the implications for authorship and ownership that the humanised 'Logic of Signs' instigates, producing a study on captive-animal welfare, co-authored with three bonobo apes.[54] Evidence that many non-human species can recognise verbal and non-verbal signifiers indicates that animals, at some level, participate in humanised classificatory thought, just as humans retain an animalised 'logic of feeling'.

As Lewes demonstrates, the processes of classificatory thought are, in themselves poised between a 'basic level' fixity and the variance that is eventually reduced to the level

---

society. See for instance, Adrian Desmond and James Moore, *Darwin* (London: Penguin, 1992); William Irvine, *Apes, Angels, and Victorians: Darwin, Huxley, and Evolution* (New York: Meridian, 1959); Paul White, *Thomas Huxley: Making the Man of Science* (Cambridge: Cambridge University Press, 2003). I return the implications of the objective ideal, along with analysis of Darwin's taxonomic orderings of humans and animals, in Chapter Three.

[52] George Henry Lewes, *Problems of Life and Mind*, 5 vols (Boston: James R. Osgood, 1875–9), II, *First Series: The Foundation of a Creed* (1875), p. 4.

[53] George Henry Lewes, *Studies in Animal Life* (London: Smith and Elder, 1862), p. 129. Lewes's *Studies* were originally published in essay form in the *Cornhill Magazine*. Gowan Dawson notes that they were characterised by a familiar but authoritative tone, combining useful information with 'striking innovation'. Dawson, 'The Cornhill Magazine and Religious Monthlies in Mid-Victorian Britain', in in *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004), pp. 123–50 (p. 130).

[54] Sue Savage-Rumbaugh, Kanzi Wamba, Panbanisha Wamba, and Nyota Wamba, 'Welfare of Apes in Captive Environments: Comments on, and by, a Specific Group of Apes', *Journal of Applied Animal Welfare Science* 10.1 (2007), 7–19.

of the individual.[55] For Lewes, classification originates both in individual impulse (or, what Rosch terms 'psychological principles'), and in the 'dense layer of signs' (cf. Foucault) with which any being external to the self is covered. For Lewes, 'a thought always is related to some other thought […] *what* that other will be depends upon the physical conditions, themselves the product of the mind's history', yet, while all entities have specific cultural and individualised meanings, these may or may not impact on their resultant classification: when viewing the prepared breakfast table for instance, 'the eye passes without pausing over each familiar detail, as if each were not a condensed fragment of the history of our race'.[56] The classificatory procedure of granting symbolic meaning is itself necessarily non-absolutist, and dependent upon the transaction between thoughts and larger historical cultural conditions.

The dynamic between categorical fixity and the variance that originates in individual acts of classifying, can be seen replicated in the semantic choices of Keith Thomas's more recent analysis of human relations with the natural world. Commenting on the drive to ascribe meaning, Thomas writes: 'this *tendency* to see in each species *some* socially relevant human quality was *very ancient*, for men had *always* looked to animals to provide categories with which to define themselves' [my emphasis].[57] Thomas's description demonstrates the particular combination of arbitrary association ('tendency', 'some socially relevant human quality') and absolute terms ('men had always looked to animals') that frequently characterises critical discussion of taxonomy. This account implicitly reveals how classification emerges from the simultaneously dual and oppositional determinants of individual experience/identification and the solidification of certain identificatory modes that result from specific epistemological and historical conditions: constructed classificatory procedures do not exist in isolation, but rather are part of and contribute to ongoing historicity.

The following chapters trace these dynamics in discourses of face-reading. The identificatory acts involved in classifying faces originate in and reflect on both the individual observer and historical trajectories of epistemological development. This

[55] Cf. Rosch: 'Basic level' categorisation is 'the most inclusive (abstract level) at which the categories can mirror the structure of attributes perceived in the world'. Rosch, 'Principles', p. 30; Lewes, *Animal Life*, p. 129.
[56] Lewes, *Problems*, p. 18; p. 120.
[57] Keith Thomas, *Man and The Natural World*, p. 64. Thomas cites various instances of this from the early modern period. For instance, he writes that there is 'at least some symbolic truth' in the story that Henry VII once ordered all mastiffs to be executed after baiting a lion, '"being deeply displeased … that an ill-favoured rascal cur should with such violent villainy assault the valiant lion, king of all beasts' (p. 61).

reveals not only the constructed nature of taxonomical signification, but also the role that temporality and inheritance — processes central to Darwin's evolutionary theory — have in the perpetuation of classificatory procedures, and in the critical evaluation of such systems. Drawing on these historical shifts, I demonstrate how discourses on the face participate in the construction and dismantling of broader species-taxonomies. Equally, it is not only historical or evolutionary change that produces differences and similarities between species and between taxonomies, but there are also temporal processes at work within the classifying species that contribute further to the identification or eradication of difference.

Chapter Two

Policing the Animal/Human Divide: Taxonomies of Face and Species

Johann Casper Lavater's *Essays on Physiognomy* is predicated on multiple disciplines and epistemologies, which he both draws on and attempts to co-opt as a framework for his face-reading theory. These attempts at totalising completeness contribute to Lavater's depiction of physiognomic vision and classification as necessarily omnipotent and all-pervasive, yet the text exposes its vulnerabilities at the same time as it attempts to reinforce its epistemological authority. This chapter argues that facial taxonomies are determined but also undermined by these disciplinary interactions, and by the identifications and resultant categorisation of the observed and the observer. Its main focus is on how the animal face problematizes categorical delineations of animality, humanity, and the links between the two. The second half of this chapter examines the observational, categorical process in more detail: the application of the gaze to define face-reading practice brings about a further breakdown in animal and human facial categorisations.

i. Classification and Scientific Physiognomy in Lavater

Lavater's preference for permanent, un-moving facial structures (physiognomy) over the fluctuations of the expressive face (pathognomy) to decode character endorses notions of fixed, unchanging signification.[1] The ideological stipulations that rely on fixity of meaning also underlie Lavater's assertion of physiognomy as an authoritative science, subject to specific methodological instructions and regulation. While face-reading has an established and interdisciplinary heritage, the Elizabethan age had experienced a backlash against physiognomy's association with astrology and divination.[2] In response to such scepticism, Lavater sought to emphasise physiognomy's proper place within the paradigm-shifting rationalisation of the sciences during the eighteenth century, allying newer ideals of scientific objectivism with more traditional dictates of Christian doctrine. He argues that 'Physiognomony, or, as more shortly written Physiognomy, is the science or knowledge of

[1] I return to the relation between physiognomic and pathognomic face-reading in Part II.
[2] See Michael Shortland, 'The Power of a Thousand Eyes: Johann Casper Lavater's Science of Physiognomical Perception', *Criticism: A Quarterly Journal for Literature and the Arts*, 28.4 (Fall 1986), 379–408.

the correspondence between the external and internal man' which, crucially, can 'be reduced to rule, and acquire an appropriate character, by which it may be taught'.[3] This reduction to rule indicates the universality of meaning underlying physiognomic recognition and classification. Lavater's scientific practice, like that of many late eighteenth-century contemporaries, is grounded in a priori Christian belief: Lavater claims that the supreme physiognomist is God, 'he who knows how man is formed, who remembers that he is but dust' (p. 269)'. Divine power provides the evidence for physiognomy's validity and authority as an exemplary form of scientific method: conversely, physiognomy validates and authorizes Christian theology, creating a closed circuit where God's design (and, by extension, physiognomy) are both omnipresent and omnipotent. Additionally, physiognomy is endowed with unquantifiable emotional and mental qualities valued by eighteenth-century Romantic and humanist philosophies: 'as in every other science, so in this, much must be left to sensibility and genius' (p. 37).

Lavater envisions humans on an upward continuum towards divinity both in terms of physiognomic aptitude and external appearance: the perfect human face, 'that mirror of the Divinity, that noblest of the works of the Creator' (p. 14), is one that reflects 'God's own image' (p. 110). [4] As Peter Harrison argues, the 'dual concerns of God and nature' were 'inextricably connected' in pre-nineteenth century scientific discourse; Lavater maintains that physiognomy encompasses all of the observable world: 'is not all nature physiognomy […] exterior effect, and internal power?' (p. 16).[5] Physiognomy's relevance and reach is absolute, the synthesis of exterior and interior appearing in nature as paradigmatic examples of divine laws. This idealisation and the characterisation of physiognomy as science, but also more-than science, ensures that physiognomy is defined as the epitomic epistemological practice, encompassing within it all other scientific and non-scientific systematisations: it is 'as capable as experimental philosophy, for it *is* experimental philosophy, as capable as physic, for it *is a part of* the physical art; as capable as theology, for it *is* theology' [my emphasis] (p. 37). Here theology is allied with scientific knowledge and empirical method, the latter providing the foundational principles

[3] Johann Casper Lavater, *Essays on Physiognomy: Designed to Promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 11; p. 37. All further quotations in this chapter are from this edition and are included in parenthesis.
[4] See also Lavater on 'man': 'the compendium of all things, the mirror of the Deity' (*Essays*, p. 52).
[5] Peter Harrison, '"Science" and "Religion": Constructing the Boundaries', in *Science and Religion: New Historical Perspectives*, ed. by Thomas Dixon, Geoffrey Cantor, and Stephen Pumfrey (Cambridge: Cambridge University Press, 2010), pp. 23–49 (p. 26). Harrison notes the increasing secularisation of science, to the point where: 'by the end of the [nineteenth] century, there was an almost universal, if tacit, understanding that the term 'science' excluded the aesthetic, ethical, and theological' (p. 28).

and conditions for the confirmation of the former, producing a methodology in which Christian belief is defined and justified through apparent scientific empiricism. Lavater's inclusion of animal faces within his theoretical study further demonstrates the all-pervasive purview of physiognomic analysis as a means to understand and submit to classificatory order all human and non-human entities.

It is through the inclusion and discussion of animal physiognomy that Lavater's re-imagining of physiognomy as science is allied with more established face-reading traditions and with the conventional Christian promotion of human superiority. Lavater has to ensure that resistance to his potentially radical theoretical innovations is appeased by utilising familiar rhetoric, which includes participating in ongoing discursive treatment of the animal face. He writes that 'innumerable attempts' have been made to 'systematize and define' (p. 493) the division between species, and to chart, through scrutiny of faces, 'the transition from brutal deformity to ideal beauty, from satanical hideousness and malignity to divine exaltation, from the animality of the frog or the monkey, to the beginning humanity of the Samoiede [sic], and thence to that of a Newton and a Kant' (pp. 493–4). Here, as elsewhere in his work, Lavater unites and conflates aesthetic, theological, moral, biological, and mythological binary pairs, highlighting the antipathy between the aesthetic physical signifiers of 'brutal deformity' and 'beauty' by evoking supporting theological and scientific scales of reference: the satanic/divine, and the animal/human.

More than this, Lavater utilises binary oppositions shared across discourses in order to obscure the divisions between discourses, which physiognomic science seeks to unite. This triadic grouping ensures that any one referent of any triad (brutal deformity/satanical hideousness/animality – ideal beauty/divine exaltation/humanity) can be co-opted as synonymic for either of the other two. Lavater makes a concerted effort to ground his argument in specific examples and description, yet classificatory logic and clarity is confused by such synonymy, as well as by sub-classifications: abstract allusions to 'hideousness' and 'beauty' are identified on a mutating scale that shifts from broad species definitions (frog/monkey) to a species sub-category (the Samoyed), to the individuals who represent the pinnacle of one particular species, and as such are granted their own classificatory category (Newton and Kant).

Lavater's continuing investment in theology, mythology, and blend of Romantic philosophy with scientific empiricism is problematic in terms of classification. Prior to eighteenth-century developments in natural history, popular belief in humanity's divine sanctity had allowed for easy metaphorical comparisons between species, symbolic

analogies representing little threat to human uniqueness: Lavater's classificatory apparatus above demonstrates an increasing compulsion to specify as a means to distance animal types from human individuals.[6] Yet even as the prerogative to distinguish animals from humans in symbolic thought intensified, non-human species were still heavily depended upon for instruction in the human sciences. For example, in line with Baconian emphasis on empirical and replicable evidence, anatomical investigation became increasingly prioritised over non-interventionist observational methods as a means to establish fundamental biological laws delineating species. The potential for inter-species comparisons paradoxically stimulated theoretical responses that aimed to re-establish firm taxonomical boundaries, as anatomists examined the skulls of both humans and animals.[7] Sujit Sivasundaram comments on how the rise of new disciplines such as anatomy, zoology, and geology divided up 'the old natural history of the early modern period into distinct slices of the human and non-human'.[8] Yet such parallel movements — distinguishing between disciplines on the one hand and species on the other — were not always easily achieved. The new disciplines remained dependent on each other for validity and authority, while the encroachment of evolutionary narratives blurred the distinction between 'slices' still further: by the 1860s, Thomas Huxley had concluded that similarities between ape and human anatomy provided firm evidence for human descent from animals.[9] In line with this contemporary interest in comparative anatomy, Lavater's utilisation of material empiricism shifts focus from skulls and takes the form of geometrical facial measurements, ultimately representative, he claims, of a literal line between humanity and animality, but also endowed with traditional, symbolic connotations of non-scientific discourse.

It is in the angles of the face that Lavater claims species divisions can be determined. Examining other attempts at physiognomic systematisation, Lavater praises

---

[6] Christine Kenyon Jones has emphasised how proto-evolutionary narratives prior to the nineteenth-century were less threatening due to the acceptance of animal–human congruity in traditional symbolic thought. See Kenyon Jones, *Kindred Brutes: Animals in Romantic Period Writing* (Aldershot: Ashgate, 2001), p. 177.
[7] For some, during the eighteenth and nineteenth centuries, skull collecting was an obsession. Sujit Sivasundaram finds the largest nineteenth-century collection of skulls belonging to the American proslavery physician Samuel George Morton, who catalogued 867 human skulls and 601 belonging to 'inferior animals'. Sivasundaram, 'Imperial Transgressions: The Animal and Human in the Idea of Race', *Comparative Studies of South Asia, Africa and the Middle East*, 35.1 (May 2015), 156–72, (p. 159).
[8] Sivasundaram, 'Imperial Transgressions', p. 159. Emma Spray argues that, while Linnaeus's *Systemae Naturae* had categorised species according to external appearance from the 1740s onwards, anatomical evidence was considered necessary for 'true' results. Spray, 'Political, Natural, and Bodily Economies' in *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord, and E. C. Spray (Cambridge: Cambridge University Press, 1996), pp. 178–96 (p. 118).
[9] See Thomas Huxley, *Evidence as to Man's Place in Nature* (New York: Appleton and Company, 1863).

the work of the Dutch anatomist Petrus Camper 'on the natural difference of the lines of the countenance [between humans and animals]'; yet he adds that Camper's work cannot wholly satisfy the enquiring physiognomist due to its lack of 'sufficient accuracy' (p. 494).[10] In order to amend this deficiency and to add further credence to physiognomy as both a deterministic and mathematical science, Lavater claims that measuring the angles of a face in profile conclusively reveals the taxonomic classification of the face and its owner. One of these angles is also used by Camper, while the other, Lavater is keen to stress, 'I had used, before the similar idea of M. Camper was known to me' (p. 495).[11] Together, the two angles establish for Lavater a universal, categorical species dividing line, and Lavater's conclusion is that the 'more acute, in general, the angle of the profile is [….] the more brutal, inactive, and unproductive, the animal' (p. 494):

> All creatures which we comprehend under the name of man, with all their anomalies, are included between sixty and seventy degrees of my angle of countenance; and with reference to the other angle [Camper's angle] between the seventieth and eightieth degree. (p. 495)

Measurement of angles both sub-categorises hierarchical degrees of humanity and, in some cases, challenges divisions between humanity and animality: 'further diminution' of the facial angle much below seventy degrees 'soon loses all trace of resemblance to humanity' (p. 495).[12] Using Camper's facial angle, Lavater specifies that Chinese profiles are five degrees more acute than European, while 'what is below seventy degrees gives the countenance of the negro of Angola and the Calmuc' (p. 495): subsequently, he offers no supporting mathematical evidence for his claim that the 'humanity of the Samoiede' is merely 'beginning' (p. 494).

---

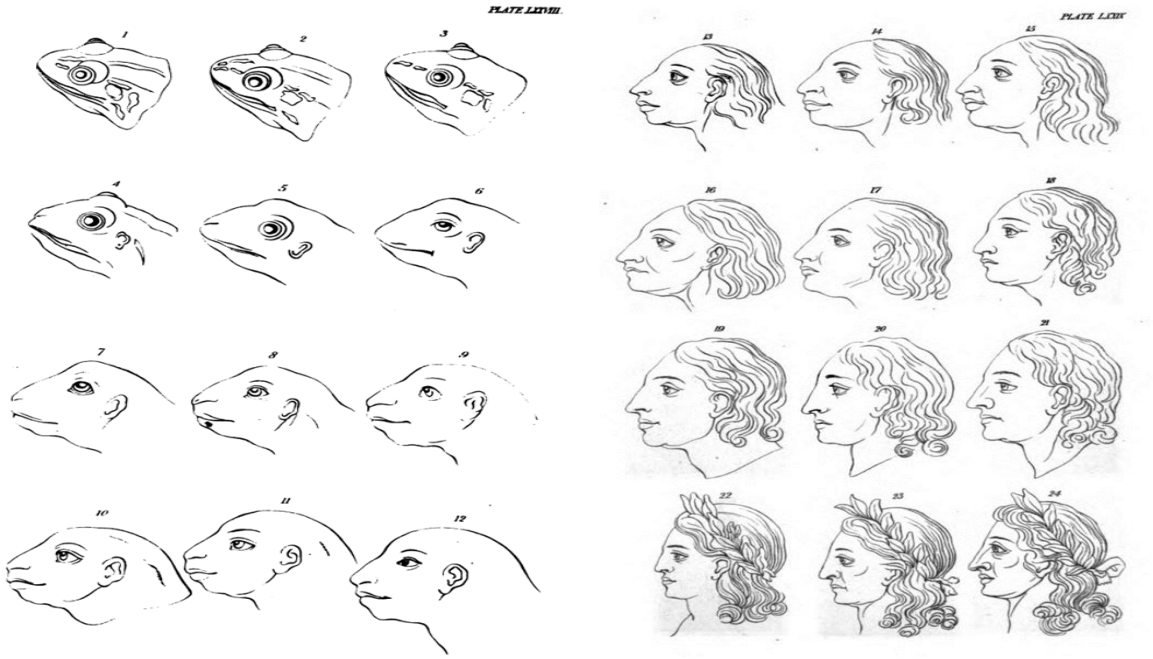
[10] As Richard Gray points out, the original edition of Lavater's *Essays* was one of the first places where Camper's theories appeared in print; Camper came to be seen as one of the founders of scientific racism and, as late as 1850, his angle was still used as evidence for European superiority. Richard Gray, *About Face: German Physiognomic Thought from Lavater to Auschwitz,* (Detroit: Wayne State University Press, 2004), p. 229.

[11] These two angles are described by Lavater as 'the legs of which extend either' 1. 'from the closing of the teeth to the cavity of the ear, and the utmost protuberance of the forehead' or 2. 'from the extreme end of the nose to the outer angle of the eye, and the corner of the mouth, which always ends where, in the skull, the first jaw-tooth begins' (*Essays*, p. 494).

[12] In an 1836 encyclopaedia, the Calmucs are considered to be 'the most remarkable branch of the Mongol race': 'part of this people is said to have made an expedition to the west, as far as Asia Minor, and to have lost themselves there among the mountains of Caucasus'; the rest, according to this source, remained in Tibet. 'Calmuc', in *The Popular Encyclopedia* [*sic*]*: A General Dictionary of Arts, Sciences, Literature, Biography, Ethics, and Political Economy*, ed. by Daniel Keyte Sandford, Thomas Thomson, and Allan Cunningham, 2 vols (Glasgow: Blackie, 1836–41), I, p. 816.

Lavater's combination of mathematical measurement and scientific precision with metaphoric and moralistic rhetoric results in theoretical and epistemological inconsistency, particularly in terms of classification. The symbolic coupling of the animal with the satanic and the human with the divine becomes problematic and contradictory when Lavater re-defines classification in terms of gradation instead of the binary pairings of his rhetoric. Lavater utilises a culturally specific nomenclature that locates the meaning of his symbolic referents within recognisable, but internally inconsistent, nominative categories. His category descriptors are very much the product of Euro-centric Enlightenment values that prioritise the learning of the European scientist and the philosopher as paralleling 'divine exaltation'. He includes an illustrative demonstration of gradation between recognisable animal and definitive human, incorporating within it the indeterminate bridging-faces that depicts the 'gradual transition from the head of a frog to the Apollo' (p. 496) [see Figures 2.1 and 2.2]. The Apollo here takes the place of Newton and Kant as the epitome of facial perfection; again, a specifically identified human individual, or representation of an individual, stands in opposition to the un-individualised 'frog'.

Figure 2.1: Gradual Transition from the Frog to the Apollo [13]



[13] Lavater, *Essays*, Plate LXXVVIII and Plate LXXIX, (following p. 496).

Figure 2.2: Selection of Faces from Lavater's Gradated Scale

Image 1 *Image 8* *Image 12* *Image 15*

This illustration serves to emphasise not only relatedness between animality and the human, but also the potential for biological categories that conflate the two; further evident through Lavater's avoidance of definitively classifying many faces on this scale.[14] He writes that *Image 1* 'is entirely the frog, the swollen representative of disgusting bestiality' (p. 496), and the subsequent two faces are also defined as frogs. The face in *Image 8*, however, belongs to a biologically indeterminate animal, considerably 'higher' than the frog, but undistinguished and un-named: 'the progress is small, but the angle between the mouth and eye is impossible in any animal of very low degree' (p. 496). *Image 12* is a constructed symbolic representation of 'the lowest degree of humanity', and Lavater suggests the race to which this face might belong: 'the angle of the countenance is indeed not much larger than sixty degrees, very little raised above brutality, yet nearer to the Negro than the orang-outang [*sic.*]' (p. 496).[15] This appears to be a relative rather than

[14] Sortland and Sibylle Erle have both discussed Lavater's use of illustration. Shortland claims that the visual images aid coherence, soldering together the 'disjointed, piecemeal and even contradictory' theoretical expositions of Lavater's prose. Erle, on the other hand, argues that Lavater's use of illustration eventually undermines the rhetoric of his text. The identification of perfect likeness hinges on inter-dependent text/image relationships; whilst he emphasises the authenticity of his illustrations, Lavater also writes about the difficulties of good likeness-making. Erle concludes: 'he creates a text which eventually outweighs what physiognomical portraits are said to provide: an unambiguous representation of the soul'. See Shortland, 'The Power of a Thousand Eyes', pp. 394–95. Erle, *Blake, Lavater and Physiognomy* (London: Legenda, 2010), p. 29.

[15] Lavater's theories remained highly influential in classifying human races: see for instance, the polemical work of the Manchester surgeon and midwife, Charles White, *An Account of the Regular Gradation in Man* (1799), which insists on African proximity to animality. Reproduced in *Slavery, Abolition and Emancipation: Writing in the British Romantic Period*, ed. by Peter J. Kitson Debbie Lee, Anne K. Mellor, and James Walvin, 8 vols (London: Pickering and Chatto, 1999), VIII *Theories of Race*, ed. by Peter J. Kitson, pp. 215–63. In her work on physiognomy in nineteenth-century Britain, Sharrona Pearl provides a detailed analysis of the ways in which comparisons between humans and animals contributed to the perpetuation of racist discourses concerning Irish, Jewish, and African faces. In this instance, the colour of the face is rendered marginal to the features. Pearl, *About Faces: Physiognomy in Nineteenth-Century Britain* (London: Harvard University Press, 2010), p. 126.

categorical judgement; it is an 'in-between' face that possesses slightly more humanity than animality, yet it is still indeterminate and not easily recognisable or quantifiable as one or the other. It is not until *Image 15* that Lavater recognises a face that has 'all the attributes of humanity'.

Lavater's semantic specification of the frog as the animal at the base of his hierarchical taxonomy, the representative of 'satanic hideousness' and 'brutal deformity', is laden with cultural signification. For many centuries prior to the publication of *Essays*, frogs had been endowed with particularly unpleasant symbolic connotations; as Keith Thomas indicates, human aversion to the frog arose partly as a result of repeated failures to ascribe it definitive classification as either bird, fish, or mammal.[16] In 1615, Bishop Babington had called the frog a 'foul and filthy creature […] abiding in foul places […] at night peeping out with the head above the water, making a hateful noise with many others of his sort till the day appear again'.[17] The description of the frog as a surreptitious creature, skulking in the dark, between land and water, literalises and moralises this taxonomical indefinability, emphasising the frog's complicity in its offence to sensory experience, and the confusion of human taxonomical thought — a confusion that is accorded a deliberate deceitfulness.[18] In his attempts to determine a graduated scale via the conflation of symbolic rhetoric and insufficiently delineated species categories, Lavater both addresses and contributes to this taxonomic confusion. Lavater's account of the frog face informs my discussion in two ways: it indicates the horror caused by an uneasily defined animal — indeed its 'brutal deformity' gestures to its lack of clear taxonomical form — while its transformative changeability makes it the epitomic symbolic signifier of physical gradation between animals and humans.

The faces on Lavater's scale are more concerned with a codification of physiognomic aesthetics than with policing any definitive species taxonomy: in order to show progression between faces, certain images are fixed and indubitable; others are necessarily ambiguous. In Eleanor Rosch's terms, this is a distinction between prototypical

---

[16] Keith Thomas, *Man and the Natural World: Changing Attitudes in England 1500–1800* (London: Penguin, 1983), p. 57.
[17] *The Workes of Gervase Babington* (1615), cited in Thomas, *Man and the Natural World*, p. 57.
[18] Tess Cosslett's work on animals in children's fiction provides evidence that, while associations between the frog and taxonomical indeterminacy lingered well into the nineteenth century, such associations became viewed as promising rather than disturbing: commenting on the writing of Charles Kingsley and Margaret Gatty, Cosslett writes that the frog's life-cycle, from frogspawn to tadpole to frog, permitted positive metaphorical portrayals of humanity's transformative potential. Discussing Rudyard Kipling's *Jungle Book*, Cosslett notes that 'Mowgli' is the Hindu word for frog; this signifies Mowgli's most important characteristic — his adaptability and his liminal position as neither fully human nor animal. Cosslett, *Talking Animals in British Children's Fiction, 1786–1914* (Hampshire: Ashgate, 2006), pp. 132–33.

and ‘fuzzy’ examples.[19] Lavater is principally concerned with identifying the relation between physical appearance and inner qualities as indicative of animality or humanity, rather than with comparing animal and human attributes, like-for-like. His description of the ‘swollen’, ‘disgusting’ frog focuses purely on physical characteristics, while the aesthetic elegance he accords faces at the higher end of the scale is demonstrative of internal ‘reason’ and ‘intelligence’ (p. 496). Lavater simultaneously represents the boundaries between species as potentially transgressable — the repulsive mutating frog is only twenty steps away from the refined European, while paradoxically subject to immutable mathematic laws. This dialectic, the tension between potential taxonomical transgression enabled by symbolic identification and the determinist fixity drawn from measurement and assessment of the face’s physical or biological features, persists throughout Lavater’s *Essays* and signifies not only the indeterminate classification of faces and species, but also the indeterminacy of his own work’s aspirations to unify theological treatise and scientific text. Lavater’s physiognomic classifications reveal that the animal face resists natural history’s growing preoccupation with taxonomy and nomenclature, and confounds physiognomy’s attempts at decisive categorisation of humans, including humans divided on racial grounds.[20]

ii. The Animal Face and Physiognomic Classification

This becomes further evident through Lavater’s frequent description of the animal as a component of the human face. Ugly human faces are conventionally characterised as brutal and animalistic; however, the descriptions of particular, individual faces do not necessarily maintain this classification. For example, Lavater describes the face in Figure 2.3 as showing ‘traits of drunkenness combined with thoughtless stupidity’, demonstrative of ‘the last stages of brutal corruption’ (p. 111), a dual descent into animality and moral decay, while the faces in Figures 2.4 and 2.5 have reached these ‘last stages’. Yet these faces are so debased in their ugliness that Lavater describes them as residing outside of nature, created by the demonic rather than the animal and thereby rupturing the demonic from the

[19] Eleanor Rosch, ‘Principles of Categorization’, in *Cognition and Categorization*, ed. by Eleanor Rosch and Barbara B. Lloyd (New Jersey: Lawrence Erlbaum Associates, 1978), pp. 27–48 (p. 36). See also Chapter One.

[20] For more on the growing concern with scientific classification over superstition, see Harriet Ritvo, *The Platypus and the Mermaid: and other Figments of the Classifying Imagination* (Cambridge, Mass.: Harvard University Press, 1997).

animal. On Figure 2.4 he writes, ‘nature forms no such countenance’ (p. 110). If nature does not form it, then it cannot be animal. Lavater considers Figure 2.5 to exhibit the most depraved and deformed countenance, signalling a supernaturally evil corruption of the soul that it represents: ‘by vice rendered fiend-like, abhorrent to nature, in which salaciousness is sunken almost *below brutality*. — Every spark of sensibility, humanity, nature is extinguished’ [my emphasis] (p. 110).

Figure 2.3

Figure 2.4

Figure 2.5 [21]

The animal face here reveals science’s limited scope. These faces are taxonomically indefinite (‘almost’); the indication is that the ‘last stages of brutal corruption’ leads to an indeterminacy that is more than a breakdown of the space between the animal and human, but also encompasses the other axes (satanical hideousness–divine beauty). In his self-appointed role as moral and aesthetic arbiter, Lavater endangers his avowal to promote love through knowledge and understanding of all the weaknesses of man; moreover, his evocation of a non-descript ‘almost’ animal face challenges physiognomy’s omniscience and its position as scientific paradigm. Through theological allusion, physiognomy appears to enable the perception of certain faces as being outside and beyond nature, whether above or below it. A paradox is created, in which Lavater’s own claim, ‘is not all nature physiognomy […] exterior effect, and internal power’ (p. 16), is countered with physiognomy’s own revelation that not all is nature. Lavater’s claim that the animal can exist outside of nature in a supernatural form potentially descending to the demonic (such as the frog), equally extends to humans. His attempt to situate the transient, soulless animal as inferior and unremarkable in comparison to the human is thereby

[21] *Fig. 3*, Plate XI, *Fig. 4*: Plate: IX; *Fig. 5*: Plate X (Plates included after p. 110).

undermined, as is his dual insistence on the sanctity of the human constitution and physiognomic analysis's completeness.

Complicating his taxonomic divisions further, Lavater argues that the animal is not apart from the human, but is necessarily contained and fixed within human physiognomies. The constitutional 'organisation' of humans is tripartite, composing 'animal, intellectual, and moral being' (p. 7), and Lavater celebrates the face as the archetypal, physical representative of humanity's composite nature, or 'sum-total' (p. 12), where the 'epitome of the three divisions [of the human]' (p. 10) is fully represented:

> the forehead, to the eyebrows [is] the mirror, or image of the understanding; the nose and cheeks the image of the moral and sensitive life; and the mouth and chin the image of the animal life; while the eye will be to the whole as its summary and centre. (p. 10)

Here the face is spatially and spiritually stratified, with the animal–human hierarchy physically and literally evidenced via a hierarchical physiognomic structure: the lowest part of the face is associated with lower non-human entities, and the highest with the most praised human faculties that lie close to the divine. The stratification re-affirms ideologically entrenched convictions about the upwardly progressive nature of classificatory systems, and the advancement of humanity, which, in Lavater's terms, is on a trajectory towards immortality and potential divinity.

Lavater's hierarchical species structure is thus supported and mirrored by a spatialised face, in which physical form becomes a literal representation of ascent through a taxonomic hierarchy. Within that regionalisation, there are further literal spatial hierarchies, for example, in his reiteration that it is 'the form, height, arching, proportion, obliquity, and position of the skull, or bone of the forehead [that] show the propensity, degree of power, thought, and sensibility of man' (p. 379). A higher forehead and more vertical lines elevate the mind above those with low brows. Lavater re-affirms the significance of the mid-face — nose and cheeks — in assessing internal moral virtue, asserting that 'a beautiful nose will never be found accompanying an ugly countenance' (p. 390), while a 'hollowed cheek' indicates immorality and 'the traits of hypocrisy' (p. 290).

Figure 2.6: Attilas [22]

Figure 2.7: 'visage of a satyr'[23]

The 'line of the mouth' in the lower face is crucial to identifying animal physiognomies, and this is exemplified in his discussion of the 'Attilas' in Figure 2.6. Despite the horns, it is nevertheless the mouth, 'impossible to be overlooked', that indicates the 'inhuman and brutal character' (p. 36); equally it is the thick lips of the 'satyr' which ensures that the 'visage' is 'distorted thus by sensuality' (p. 112) [Figure 2.7]. Lavater relies extensively upon the reiteration of symbolic tropes to reinforce his physiognomic theory: whilst he acknowledges the psychological impact that the horns of the illustrated men have in conferring animality — 'brutality is most apparent in the horned figures' (p. 36) — he does not locate that brutality in the horns but in the face. Attila, mythological King of the Huns, popularly known as the 'Scourge of God', is illustrated as demonic through his devilish horns, but it is his mouth that Lavater deems particularly brutal or bestial: he is thus an admixture of human, demonic, and bestial. Beyond these local illustrations, the larger point to glean is that the process of classifying the whole face hierarchically lends weight to the physiognomic identification of the parts and to the hierarchies on which physiognomy is based.

Lavater expects his reader to engage with many levels of signification and disciplines in order to authorise and comprehend his physiognomic taxonomies: historical knowledge of Attila or the cultural mythologies attached to the lustful satyr, for instance.[24]

[22] Plate II, Figs. 6 and 7, following p. 34.
[23] Plate XIV, Fig. 1, following p. 112.
[24] The orangutan, or 'man of the woods' was also called a satyr. The 2002 edition of *Roget's Thesaurus* includes entries for 'satyr' under the headings of both 'Mythical being' and 'Libertine'. *Roget's Thesaurus of English Words and Phrases*, ed. by George Davidson (London: Penguin, 2002), entries 970 (p. 566) and 952 (p. 557). This association continues throughout the nineteenth century: in his short story, 'The Great God

Deferral to entrenched symbolic, cultural codes in the taxonomic organisation of the face does not disappear from later scientific analysis: the nineteenth-century evolutionary biologist, Herbert Spencer, defends Lavater's spatial partitioning of the face, focusing specifically on the physiognomic relation between the forehead and the jaw as indicative of an individual's relative animality, writing that the 'simultaneous protrusion of the brain and recession of the jaws, which amongst lower animals has accompanied increase of skill and sagacity, has continued during the advance of Humanity from barbarism to civilisation'.[25] In Spencer's discussion of the animal jaw, physiognomic form is linked closely to function in terms of evolutionary survival/progression, and hence to consequent character assessment; the onset of civilisation — 'what one cuts in two with knife and fork, the other tears with his jaws' — negates the necessity for powerful jaws, for example.[26] Spencer's re-articulation of physiognomic theory renders explicit the evolutionary implications of Lavater's idealisation of humanity's upward trajectory towards perfection.[27] This argument appears in an essay on physiognomic form and quality of character in which Spencer both largely confirms Lavater's conclusion that there exists a direct link between the two and re-establishes racial hierarchies on physiognomic grounds.[28] For Spencer, evolutionary progression and the onset of civilisation diminishes the value of powerful jaws, while simultaneously enabling a way to biologise differences between humans predicated on facial appearance. Analogies between facial appearance and status are perpetuated in discussion of how the 'lateral jutting out of the cheekbones', 'great width between the eyes', and the 'forward opening of the nostrils […] a trait alike of infants, savages, and apes', are all 'by general consent called ugly': ugliness again here

---

Pan', Arthur Machen writes: 'the figures of Fauns and Satyrs and Ægipans danced before his eyes […] before which the human soul seemed to shrink back and shudder'. Machen, 'The Great God Pan' (1890), in *Late Victorian Gothic Tales*, ed. by Roger Lockhurst (Oxford: Oxford University Press, 2005), pp. 183–233 (pp. 212–13).

[25] Herbert Spencer, 'The Haythorne Papers. No. VIII: Personal Beauty', *Leader*, 5 (1854), 356–57. Harriet Ritvo writes that 'sagacity' was a term frequently used throughout the nineteenth century to describe specifically animal-intelligence as a means to semantically disassociate human and non-human wisdom. See Ritvo, *The Animal Estate: The English and other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University Press, 1987), p. 37. It also occurs frequently in phrenological discourse.

[26] Spencer, 'Personal Beauty', p. 356.

[27] Richard Levins and Richard Lewontin argue that Spencer's view of organisms and societies becoming more complex over time (found in his *First Principles*, 1862) is largely accepted by most modern evolutionists. Since the brain is viewed as the most complex organ, this means that creatures with the largest brains [in ratio to body size] are viewed as the most sophisticated and evolutionarily developed organisms. Levins and Lewontin, *The Dialectical Biologist* (Cambridge, Massachusetts: Harvard University Press, 1985), p. 16.

[28] Spencer continues, 'On contrasting the European and the Papuan, we see that what one cuts in two with knife and fork, the other tears with his jaws' ('Personal Beauty', p. 356). Countering Spencer's recourse to the fork as emblematic of civilisation, Bee Wilson argues that using forks was once scorned and regarded as effeminate. Wilson, *Consider the Fork: A History of How We Cook and Eat* (London: Penguin, 2013).

being allied with animality and classificatory inferiority.[29] The classification of faces is thus bound up with ideological, cultural, and aesthetic standards already informing and consented to by the reader.

More than these associated readings, the physiognomic reading process itself is integral to the production of physiognomic theory. The topographical stratification of the human countenance into three constituents extends to the physiognomist's act of face-reading; raising the gaze up over the face physically mimics the progress of the face's own upwards advancement and the procession of the features from animal through morality to intellect.[30] The eye has a double role here: 'to the whole as its summary and centre' (p. 10), its physiognomic appearance is central to the deduction of character, while also functioning as the organ through which these readings are obtained. The processes of hierarchical observing and subjecting to hierarchical classification are integral to the direction and momentum of this trajectory: the upward movement of the face-reader's eyes necessarily accords with taxonomic spatial-stratifications of the countenance into animal, moral, and intellectual constituents, arranged linearly in vertical ascent. This recalls a point made in Chapter One: human taxonomic systems are frequently organised around a conceptual literalisation of classificatory ascent/descent as manifesting in some physically tangible form. These systems of thought are presented as mirrored symbolic abstractions of what is sensorially perceived in nature. As such, they too are physiognomically manifested. Bearing this in mind, I now turn to species and facial classification as specifically related to the methodological practicalities of Lavater's physiognomic face-reading practice.

iii. Observing the Animal

In the discourses treated by this thesis, techniques and theories of visual observation construct varying physiognomic and pathognomic facial classifications. Within these techniques, observational talent and face-reading ability are frequently posited as an

[29] Spencer, 'Personal Beauty', p. 357. Kathryn Hughes speculates that one of the underlying reasons for Spencer's particularly fervent tone in this essay is his antagonistic relationship with George Eliot: his description of an ugly face, published just as Eliot was embarking on a relationship with George Henry Lewes, is 'suspiciously reminiscent of Marian [Eliot]'s physiognomy — heavy jaw, large mouth, big nose'. Kathryn Hughes, *George Eliot: The Last Victorian* (London: Fourth Estate, 1998), p. 168. This potentially contributes to Eliot's own scepticism towards physiognomy.

[30] As Charles Bell and Charles Darwin both point out in the nineteenth century, the upward look of the eyes is a common expression of devotion.

additional organisational criterion by which individual faces are categorised. Critics such as Jonathan Crary and Chris Otter have argued that the prioritisation of sight-based classification, seemingly endemic, is actually a product of a specific, localised historicity. Crary describes how sight has become disassociated and distinguished from other senses, such as touch, while for Otter, 'ocularphilia' has led to a particular 'hegemony of vision' that dominates other modes of interaction with the external world: 'over the past two hundred years […] vision has become unquestionably the most venerated, potent, and socially significant sense'.[31]

Theories of observation constitute part of larger disciplinary and epistemological shifts: as Lorraine Daston has argued, during the eighteenth century, observation became implicitly tied up with the foundations of science, including new ways of conceptualising and disciplining the relation between reason and experience.[32] Daston writes that observation is a crucial component in developing theories and pedagogies of ideal scientific practice, including 'the shift from the broad and heterogeneous sense of *experimentum* as recipe, trial or just common experience to a concertedly artificial manipulation, often using special instruments and designed to probe hidden causes'.[33] While Lavater's physiognomic methodology does permit the use of 'special instruments' – – he advocates a *stirnmaaβ* to assist the plotting of facial lines — it is the observational practice in itself that is frequently disciplined and subject to 'concerted […] manipulation' (cf. Daston) in the determination of facial classifications, according to pre-existing and imposed physiognomic scientific criteria.[34] Daston's emphasis on deciphering and revealing 'hidden causes' resonates with Michel Foucault's earlier description of the 'opening up' of the individual to 'the language of rationality' enabled by the post-Enlightenment reorganisation of medical institutions.[35] In Lavater's writings, it is problematic that idealisations of human 'perfectibility' are conclusively and categorically

[31] Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: The MIT Press, 1993), p. 19; Chris Otter, *The Victorian Eye: A Political History of Light and Vision in Britain, 1800-1910* (Chicago: University of Chicago Press, 2008), p. 23. Philip Prodger and Jonathan Smith have commented on Victorian visual culture's effect on observational science and the ideal of the objective gaze of the scientist: for instance, there is a conflict between the employment of photographs in Darwin's work as a source of truthful visual representation and the fact that such photographs were in fact significantly contrived. See Philip Prodger, *Darwin's Camera: Art and Photography in the Theory of Evolution* (Oxford: Oxford University Press, 2009), pp. 120–25; Jonathan Smith, *Charles Darwin and Victorian Visual Culture* (Cambridge: Cambridge University Press, 2006).
[32] Lorraine Daston, 'The Empire of Observation, 1600–1800', in *Histories of Scientific Observation*, ed. by Lorraine Daston and Elizabeth Lunbeck (Chicago: The University of Chicago Press, 2011), pp. 81–114.
[33] Daston, 'The Empire of Observation', p. 82.
[34] Lavater writes that 'shades should, first be measured by a proper instrument' (*Essays*, p. 147).
[35] Michel Foucault, *The Birth of the Clinic. An Archaeology of Medical Perception*, trans. by Alan Sheridan (London: Routledge, 2000), xiv. See my Introduction.

differentiated from the animal by the observing, categorising physiognomist; as Foucault indicates, even as the observer seems to set the parameters of delineating the other, s/he is inevitably bound up in and equally defined by the classificatory process.

In Lavater's utilisation of perceptive vision as a means to demarcate human types, the clarity and perception of the ideal physiognomist is both dependent on and validated by physiognomic analysis itself. Consequently, the taxonomical constitution of those who practise physiognomy becomes integral to the integrity and authority of the theory. Lavater argues that while the impulse to interpret external appearance is universal — 'I am willing, at any time, to risk my veracity on the proof that all men, unconsciously, more or less, are guided by physiognomical sensation' (p. 32) — the superior face-reader is a rarity: 'not one in ten thousand can become an excellent physiognomist' (p. 63). As we have seen, physiognomy is not a specialism independent of other areas of learning or occupation: the physiognomist represents the apotheosises of human endeavour across a multitude of disciplines, intellectual faculties, and character traits:

> to a well formed, well organized body, the perfect physiognomist must unite an acute spirit of observation, a lively fancy, an excellent wit, and, with numerous propensities to the arts and sciences, a strong, benevolent, enthusiastic, innocent heart, a heart confident in itself, and free from the passions inimical to man. (pp. 68–69)

Significantly, it is not just internal constitution or education that are important here, but also the external appearance of the physiognomist. Lavater maintains that those who approve the physiognomic system must first be proven and approved by it, creating an ouroboros structure, supported by circuitous logic: 'no one whose person is not well formed can become a good physiognomist' (p. 63). Consequently, Lavater is able to blame poor or inaccurate physiognomic analysis on the external appearance of the observer: 'the scarcity of human beauty is a certain reason why physiognomy is so much decried' (p. 63). As John B. Lyon has commented, Lavater's work resonates with 'the Enlightenment semiotic ideal of natural signs', in which the sign 'is readable only to the physiognomist; for those who lack his insight, signs appear arbitrary'.[36] The selectivity of Lavater's

[36] John B. Lyon, '"The Science of Sciences": Replication and Reproduction in Lavater's Physiognomics', *Eighteenth-Century Studies*, 40.2 (Winter 2007), 257–77 (p. 257; p. 267). As Barbara Benedict writes, 'physiognomists […] see virtuously because they see naïvely: locked in a Lacanian mirror stage, they see

characterisation ensures that physiognomy as a scientific discipline is self-policing and self-perpetuating: the ability to ascribe signification to facial appearance can only by accredited when the physiognomist already possesses both the talents and the appearance of the perceptive observer.

Physiognomic understanding becomes another supporting strut in Lavater's tripartite hierarchy in which the human is firmly situated between animality and divine perfectibility. The anthropomorphic portrayal of God, governed by the same predilections and preferences as humans, runs throughout Lavater's work and God's omniscience stands in as a classificatory marker for supreme physiognomic vision. The 'Author' is imagined as unwaveringly dedicated to the physiognomic cause: Lavater refers to 'the Creator[s]' vision as 'more penetrating than human eyes' (p. 185), and claims that exemplary perception is productive of 'perfect science' in which 'knowledge and judgement resemble the knowledge and judgement of the Deity' (pp. 268–9).[37] As Daston has emphasised, anthropomorphism appears in theological discourse long before it begins to be contested as 'un-scientific' in comparative behaviourism's analysis of humans and animals: she notes that, over many centuries, both psychologists and theologians relied on anthropomorphic analogy to bridge the unbridgeable.[38] For Lavater, angels, who are 'better physiognomists, and more philanthropic than men' (p. 269), become an intermediary category between the human and the divine in his taxonomy. Physiognomic science reveals that 'the more man is studied, the more power and positive goodness will he be discovered to possess' (p. 130), and the closer to the divine he is revealed to be. Lavater then employs idealisation of human 'power' as a rhetorical trope that celebrates human dominance over animals; the physiognomist's exemplary observational prowess is the archetypal manifestation of this domination. Comparison between humans and angels provides a further means to situate the divine in tripartite opposition to animality.

---

themselves in the other'. Benedict, 'Physiognomy and Epistemology in Late Eighteenth-Century Sentimental Novels', *Studies in Philology*, 92.3 (1995), 311–28 (p. 321). See also E. H. Gombrich: 'The reason why Lavater's method of physiognomic intuition results in nonsense is not that he explores his own response, but that he treats it like an infallible oracle that is in no need of corroboration', Gombrich, 'On Physiognomic Perception', *The Visual Arts Today*, 89.1 (Winter, 1960), 228–41 (p. 234).

[37] See Chapter Four on the God-author becoming the human-author in *Frankenstein* and *The Island of Doctor Moreau.*

[38] Lorraine Daston, 'Intelligences: Angelic, Animal, Human', in *Thinking with Animals: New Perspectives in Anthropomorphism*, ed. by Lorraine Daston and Greg Mitman (New York: Columbia University Press, 2005), pp. 37–58 (p. 39). Mary Midgley writes that '[a]nthropomorphism is a remarkable concept. It may be the only example of a notion invented solely for God, and then transferred unchanged to refer to animals'. Midgley, *Animals and Why They Matter* (Athens: University of Georgia Press, 1983), p. 125.

Yet this taxonomic division and the association between poor physiognomic practice and the animal can be countered with Lavater's own delighted appraisal of a superior human face, in which the power of vision is metaphorically classified as animal. In this description, the association of human beauty with the animal face helps to characterise a physiognomy so great in 'moral and material beauty' (p. 443) that 'from the lips truths so decisive stream as not to be effaced by all the waters of the Rhine' (p. 444) [see Figure 2.8]. Lavater singles out this face's eye as 'one of the most beautiful and

Figure 2.8: Beautiful German Countenance[39]

powerful of a German countenance', which 'in the living man is that of an eagle, looking through, piercing' (pp. 443–44). The symbolic animal is here manifested semiotically, and is unusually utilised to elevate the human character. It is not solely the Creator who possesses a visual capacity that is 'more penetrating than human eyes'; the eagle's highly developed ocular ability has been documented in both scientific and literary accounts of the bird since antiquity: a 1566 English translation of the Roman naturalist, Pliny the Elder, recounts that 'man's sense is perfect, but in seeing, the eagle does surmount him', while the symbolic potential of the eagle's superior eyesight appears in William Shakespeare's *Richard II*: 'Yet looks he like a king; behold! His eye/ As bright as is the eagle's, lightens forth'.[40] In Lavater's *Essays*, it is the act of 'looking through' with 'piercing' perception, that is characterised as animal, and yet signifies the superior power

[39] Plate LXVII, Fig. 2, following p. 442.
[40] Pliny the Elder, *A Summarie of the Antiquities, and Wonders of the Worlde*, trans by I.A. (1566), Fig. 46r. <www.eebo.chadwyck.com> [Accessed 21 July 2016]. William Shakespeare, *Richard II*, II. 3. 77–79, in *William Shakespeare: The Complete Works*, ed. by Stanley Wells and Gary Taylor, 2nd edn (Oxford: Clarendon Press, 2006), pp. 339–67 (p. 356).

and ‘moral and material beauty’ of this human face and character. In line with Lavater’s assertion that only a beautiful person can be a successful physiognomist, the aesthetic appearance and visual operation of the eye are dependent upon each other: for Lavater, the ‘piercing’ eagle-eye is allied to the most superior of humans — the perceptive, clear-sighted physiognomist.

The symbolic incorporation of the animal into the upper echelons of the human face and its role in making this eye superior to other human eyes interferes both with Lavater’s own theory and with the broader ideological orderings of animals and humans in which it participates: as well as intervening in a taxonomical ordering of physiognomic abilities, this illustration also contradicts Lavater’s previous description of the human face gaining visible humanity as the gaze is raised upwards over the countenance. Instead, the eye, characterised as the ‘summary and centre [of the whole]’ face, is here that of an eagle. This motif continues throughout later texts and becomes emblematic of how the animal face can confound both hierarchical relations between species and the mechanisms upon which these hierarchies are established in the evolutionary theory of Spencer and Charles Darwin. Spencer uses the eye’s development from outer layers of skin to exemplify his characterisation of evolution as a continual progression from the homogeneous to the heterogeneous and the simple to the complex: ‘That eyes are essentially dermal structures seems scarcely conceivable [... yet…] they really arise by successive modifications of the double layer composing the integument’.[41] The sophistication of the eye’s physical structure and ability unsettles species taxonomies that depend upon the classification of certain attributes on a linear, progressive scale. As William Cohen points out, one reason for Spencer’s incredulity is that the eye has a particular symbolic status in human understanding, ‘so crucial to notions of spiritual depth and mental penetration’, that sits in peculiar opposition to its origins in the simplest of organisms.[42]

In *The Origin of Species,* Darwin demonstrates how the eye renders null such categorical delineations of simplicity and complexity, and how the most perceptive and highly functioning eyes cannot be accounted for via reference to such reductive binaries.[43] Referring to the eagle as exemplar, Darwin argues that the explicit trajectory and mechanism of ocular evolution needs to be taken on trust: he who accepts ‘the theory of

[41] Herbert Spencer, *The Principles of Biology*, 2 vols (London: Williams and Norgate, 1864–67), II (1867), p. 303.
[42] William A. Cohen, *Embodied: Victorian Literature and the Senses* (Minneapolis: University of Minnesota Press, 2009), p. 4.
[43] Much recent post-humanist criticism, along with the work of ethologists (researchers in animal behaviour), foregrounds the issue of how we measure such elusive categorical definitions.

descent, ought […] to admit that a structure even as perfect as the eye of the eagle might be formed by natural selection', even though 'in this case he does not know any of the transitional grades'.[44] Darwin reveals the irony implicit in the relative lack of scientific understanding about an organ frequently characterised as 'piercing' or 'penetrating' (Lavater, *Essays*, p.103): although evolutionary discourse accounts for the eagle's eye in biological terms, it remains ignorant of the exact process of its formation.[45] The eye here confounds epistemological boundaries, and creates a continuum between these later writers and Lavater's own contrariness in identifying the animal eye as a superior metaphorical representation of the human constitution. Further investigation of the eye as both functional organ and epistemological tool reveals the difficulties of multi-disciplinary attempts to totalise a subject and the difficulties of reconciling conflicting narratives and epistemologies of the eye: for instance, the association between perceptive and cognitive ability, as well as between theological/mythological and scientific theories of causation.

Having demonstrated the ways in which the animal face intervenes in Lavater's physiognomic classifications, and his stipulations concerning the ideal physiognomist, Chapter Three now moves on to examine Darwin's approach to classification in *The Expression of the Emotions in Man and Animals*. As indicated above, these two theorists, are in many senses, radically opposed to each other, yet Chapter Three sets up further debate with analysis of how Darwin's theory is constructed around simultaneous assimilation and rejection of the animal face. In this manner, a link can be made between Lavater and Darwin: in Part II, this analysis extends to discussion of how these oppositions can be broached with closer examination of the ruptures and continuities between physiognomic and pathognomic analysis.

[44] Charles Darwin, *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008), p. 141.
[45] There are multiple references to penetrating eyes throughout Lavater's *Essays*, including descriptions of human eyes, animal eyes, and 'to eyes more penetrating than human eyes are', (p. 185).

Chapter Three

Scientific Method and Classificatory Rhetoric: Taxonomizing Charles Darwin's *The Expression of the Emotions in Man and Animals*

In his 1838 text, *The Education of the Feelings*, the phrenologist Charles Bray argues that certain emotional commonalities exist between humans and animals: 'the selfish feelings […] so evidently prominent in the mass of mankind […] are shared by the brute creation'.[1] Bray's work correlates with established philosophical narratives that taxonomise 'lower' emotional states using the appellations 'animal' or 'brutal' as category markers, designating traits shared by humans and non-humans as undesirable. For instance, the seventeenth-century philosopher Baruch Spinoza (1632–77) stipulates that Adam's fall from Paradise became inevitable 'when he came to believe that the beasts were like himself [and] straightaway began to imitate their emotions and to lose his freedom'.[2] This chapter introduces pertinent nineteenth-century discourses that re-evaluate both who/what can experience emotion and how emotions are manifested, providing historical-scientific context for Charles Darwin's challenge to species taxonomies via the evolving animal face. It analyses how the classificatory capacity (as species-marker) acts to extend Darwin's taxonomies of the face, yet, also considers how Darwin's own position as face-reading scientist is inhibited by the very taxonomies that he is attempting to reconceptualise.

My thesis focuses specifically on faces rather than heads in general. Even so, phrenology, the study of heads apart from faces, underscores the physical presence of animality within the human and as such is an important bridging discourse between physiognomic and evolutionary pathognomic theory. As critics such as James Secord have testified, phrenological theory was an influential alternative to Lavaterian physiognomics in the early decades of the nineteenth century.[3] Phrenological analysis, popularised chiefly by Franz Joseph Gall and his collaborator Johann Spurzheim, drew on faculty psychology to determine personality type by measuring the skull: Gall divided the human brain into twenty-seven organs, and stipulated that the first nineteen of these organs were also

---

[1] Charles Bray, *The Education of the Feelings* (London: Taylor & Walton, 1838), p. 13.
[2] Baruch Spinoza, *Ethics, Treatise on the Emendation of the Intellect, and Selected Letters*, trans. by Samuel Shirley, ed. by Seymour Feldman (Indianapolis: Hackett, 1992), IV.68s (p. 192).
[3] James Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago press, 2000), p. 73. See my Introduction for more on phrenology and my rationale for not investigating it more fully in this thesis.

present in other animal species.[4] In its disregard of a strict dualist division between mind and body, phrenology aligns with the work of earlier philosophers such as Spinoza and David Hume — the latter stipulates that reason, frequently taken as a marker of humanity's uniqueness, distinct from bodily-derived passions and 'much recommended in moral discourses', is in fact, 'nothing but a general and a calm passion'.[5] Gall, for instance, argues that 'man, to a certain degree, has an organization common to him with the brutes, he participates in their propensities, feelings, and intellectual faculties […] But as a man, he is endowed with superior propensities, feelings and faculties, which […] render him a moral being'.[6] Animals and humans are thus not distinguished by any intrinsic distinction in the *types* of attributes that govern behaviour — both possess 'propensities, feelings, intellectual capacities' — rather, a more precise classificatory schema is invoked, in which attributes are submitted to internal hierarchical ordering, and the absence or presence of the most superior manifestation of a type determines species classification.

As Chapter One indicates, the definition of humans as emotionally and morally distinct from animals could affect broader issues of animal welfare; yet throughout the nineteenth century, an alternative discourse promoted kinder treatment by foregrounding understanding of non-human animals *as* emotional beings. While Bray emphasised a shared commonality, but also a distinct separation between animal and human emotional capacities, other writers, both scientific and literary, did not sustain this differentiation. For instance, as Laura Brown has indicated, the late eighteenth- and nineteenth-century popular interest in 'dog narratives' relied on a 'common canine-human discourse of affect'; beyond this, novelists such as George Eliot and Charles Dickens frequently evoked this shared discourse as plot or characterisation device in 'human narratives'.[7] Emphasis

---

[4] Franz Joseph Gall, *On the Functions of the Brain and Each of Its Parts*, trans. by Lewis Winslow, 6 vols (Boston: Marsh, Capen & Lyon, 1835), I *On the Origin of the Moral Qualities and Intellectual Faculties of Man*. Partial translations of this long text had appeared in English during the 1820s. See John Van Wyhe, *Phrenology and the Origins of Victorian Scientific Naturalism* (Aldershot, Hants: Ashgate, 2004).

[5] David Hume, 'Of the Passions', *Four Dissertations* (London: A. Millar, 1757), p. 170. Alan Mackenzie argues that although we might think of emotion and reason as polarised states, they are in fact 'bound up together'. He writes: 'both were recognised as having a considerable role to play in the post-Renaissance justification of an 'independent, rationalised system of morality'. McKenzie, *Certain Lively Episodes: The Articulation of Passion in Eighteenth-Century Prose* (Athens, Georgia: University of Georgia Press, 1990), pp. 21–22.

[6] Gall, *On the Functions of the Brain*, p. 251.

[7] Laura Brown, *Homeless Dogs and Melancholy Apes: Humans and other Animals in the Modern Literary Imagination* (Ithaca NY: Cornell University Press, 2010), p 135. See, for instance, Frances Power Cobbe, *Confessions of a Lost Dog* (1867); Harrison Weir, *Memoirs of Bob, The Spotted Terrier: Written by Himself* (London: Routledge, 1885) Alfred Elwes, *The Adventures of a Dog* (1854) Lewis Carroll, *Sylvie and Bruno* (1889). I return to Dickens in Chapter Seven, and to Eliot in my Conclusion. Adam's staunchly loyal dog, Gyp, in Eliot's successful 1859 novel *Adam Bede*, is recognised by the sympathetic Dinah Morris as a fellow feeling being: 'they may well have more in them than they know how to make us understand, for we can't

on emotion and the changeability of emotional states, combined with growing advocacy for the alleviation of unnecessary animal suffering, saw the publication of informative books such as Edward Pett Thompson's *The Passions of Animals* in 1851, intended to obtain for 'the brute creation […] the admiration and protection it so signally and justly deserves'.[8] Thompson maintains that there exists an 'immeasurable gulf' between the 'wildest savage' and the 'highest animals'; yet, his own utilisation of a common 'discourse of affect' frequently blurs this distinction. Twenty years before Darwin traced the origins of the social instincts in animal communities, Thompson praises the 'wonderful spirit of sociality in the brute creation, independent of sexual attachment — that extends even to incongruous animals', and deploys stirring anecdotal evidence for particular emotional responses: for instance, the 'inexpressible fondness' of a mother polar bear whose cubs have been shot, and who, refusing to leave them, dies 'licking their wounds'.[9] Thompson employs an anecdotal anthropomorphism equally evident not only in literary accounts (e.g., 'dog narratives'), but also in scientific texts: a scathing *Edinburgh Review* article critiques Darwin's *The Expression of the Emotions in Man and Animals* on these grounds, concluding that 'the very limited expressive element in the countenance and gesture of animals is habitually overstated', attacking Darwinian evolutionists in general for acting on 'feeling and fancy rather than knowledge and insight'.[10]

Yet amid these debates, Darwin's theory goes beyond simply extending a humanised emotional capacity to animals, instead using the movements of expression to trace evolutionary congruity between species. As Thomas Huxley argues in his earlier text, *Evidence as to Man's Place in Nature* (1863), the delineation of superior and inferior emotions based on species categorisation is a product of erroneous anthropocentric logic: he asks, 'is mother-love vile because a hen shows it, or fidelity base because dogs possess it?'[11] Concerns about anthropomorphism can thus hinder scientific endeavour and are essentially futile, especially, as Darwin argues, *Expression*'s central tenet that 'he who admits on general grounds that the structure and habits of all animals have been gradually

---

say half what we feel, with all our words.' Eliot, *Adam Bede*, ed. Valentine Cunningham (Oxford: Oxford University Press, 1998), p. 118.

[8] Edward Pett Thompson, *The Passions of Animals* (London: Chapman and Hall, 1851), vi.

[9] *Ibid*., p. 302; p. 156. An example of social instincts cited by Thompson is that of a Newfoundland dog who was observed 'dropping into water a dog who bit him', before then rescuing it (p. 373).

[10] [Anon.], 'The Expression of the Emotions in Man and Animals', *The Edinburgh Review*, 137 (April 1873), 492–528 (p. 512; p. 503).

[11] Thomas Henry Huxley, *Evidence as to Man's Place in Nature* (New York: Appleton and Company, 1863), p. 131.

evolved, will look at the whole subject of Expression in a new and interesting light'.[12] As Graham Richards notes, by the end of the eighteenth century, physiological discourse was 'making serious headway in conceptualising biological processes', directly confronting 'philosophy's academic monopoly on physiological issues'.[13] Equally, William Cohen comments that throughout the following century, the 'dominant trend was toward materialism': prominent scientists such as Alexander Bain and George Henry Lewes 'sought to correlate intangible human qualities like consciousness and selfhood with somatic conditions'.[14] Darwin's work thus constitutes part of a broader shift towards providing empirical grounding for phenomena once explained according to theological or metaphysical dictates or symbolic allusion. I have demonstrated in my analysis of Lavater that one way in which this shift began to manifest itself was via the increasing emphasis on comparative geometrical measurement to determine character: another related shift occurs in psychological discourse as the symbolic starts to cede to the biologic.

Much nineteenth-century scientific research into the physiological causes and manifestations of emotion was indebted to animal analogy or anatomic analysis of humans and animals. During the 1820s, Charles Bell and François Magendie produced highly influential theories of nervous function, which were dependent on animal experimentation.[15] While Bell's work resists the evolutionary implications of comparative

[12] Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009), p. 23. All further quotations in this chapter are from this edition and are included in parenthesis. Debate on the dangers and values of anthropomorphism continues today. Commenting on modern scientific practices, Marc Bekoff argues that the application of anthropomorphism does not necessarily lead to erroneous results: without the anthropomorphic imagination, science can hit dead ends. Bekoff, 'Animal Passions and Beastly Virtues: Cognitive Ethology as the Unifying Science for Understanding the Subjective, Emotional, Emphatic, and Moral Lives of Animals', *Human Ecology Review*, 13.1 (2006), 39–59. See also, *Thinking with Animals: New Perspectives in Anthropomorphism*, ed. by Lorraine Daston and Greg Mitman (New York: Columbia University Press, 2005); Elizabeth Knoll, 'Dogs, Darwinism, and English Sensibilities', in *Anthropomorphism, Anecdotes, and Animals*, ed. by Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany, New York: State University of New York Press, 1997), pp. 12–21.

[13] Graham Richards, *Putting Psychology in its Place: A Critical Historical Overview* (Hove: Psychology Press, 2002), p. 24.

[14] William A. Cohen, *Embodied: Victorian Literature and the Senses* (Minneapolis: University of Minnesota Press, 2009), p. 3. Cohen writes: 'the pendulum has continued to swing back and forth between the extremes, down to the present: under psychoanalysis, in the first half of the twentieth century, for example, it swung toward the model of an immaterial unconscious as the prime motive force; more recently, it has moved back toward material and mechanical explanations, with the advent of the cognitive neuroscience associated with Antonio Damasio and the so-called meme theory of Richard Dawkins', (p. 2). See also Vanessa L. Ryan, *Thinking without Thinking in the Victorian Novel* (Baltimore: John Hopkins University Press, 2012).

[15] Bell was a British anatomist and Magendie a French physiologist; working independently, they distinguished how afferent nerves transmit information from the sensory organs to the brain, while efferent nerves control muscular action. Marshall Hall developed their theories in the 1830s and 40s, putting, in Richards's words, the concept of reflex actions 'firmly on the map'. Richards, *Putting Psychology in its Place*, p. 24.

analysis between different species, other nineteenth-century writers explicitly refer to burgeoning evolutionary theory as a basis for new ways to classify humans and animals according to a neuro-physiological schema: the animal becomes necessarily incorporated within the human at the category level of physiological constitution. For instance, the mid-century physiologist, William Carpenter, describes human emotions as unmediated nervous impulses, closely associated with the sensorimotor activity of the lower animals.[16] Twelve years prior to Darwin's publication of *Expression*, the evolutionary biologist, Herbert Spencer, utilises Bell's theorisation on afferent and efferent nerve function to stipulate that expressive acts are frequently dependent on nervous action: 'nervous excitation always *tends* to beget muscular motion; and when it rises to a certain intensity, always does beget it' [Spencer's italics].[17]

Just as genealogical variation and nuances between organisms have led to taxonomically identifiable species, so too repeated expressions lead eventually to surety. While Lavater endows facial features with a fixed signification, dependent upon the 'language of physiognomy', here the expressive movements of the face are equally granted particular connotations of permanence; under certain conditions they 'always' respond as expected.[18] It is this expressive consistency on which Darwin depends in his theoretical demonstration that the 'structure and habits of all animals have been gradually evolved […] expressions, such as […] the uncovering of the teeth under [the influence] of furious rage, can hardly be understood, except on the belief that man once existed in a much lower and animal-like condition' (p. 23). Recognisable and predictable emotional expressions evident across species serve as evidence for the biological relationships between humans and animals, just as an evolutionary framework provides explanation for how certain expressions manifest across species.

---

[16] William B. Carpenter, *Principles of Mental Physiology* (1847) in *Literature and Science in the Nineteenth Century: An Anthology*, ed. by Laura Otis (Oxford: Oxford University Press, 2002), pp. 370–73. See also Paul White, 'The Face of Physiology', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 7 (2008), 1–22 (pp. 9–10); Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003).

[17] Herbert Spencer, 'The Physiology of Laughter', *Macmillan's Magazine*, 5 (March 1860), 395–402 (p. 395). Darwin credits 'The Physiology of Laughter', along with the second edition of Spencer's *Principles of Psychology* (originally published in 1855), yet in a footnote, he emphasises his own scientific integrity: 'in order that I may not be accused of trespassing on Mr. Spencer's domain, […] my first MS. notes on the subject of expression bear the date of the year 1838' (p. 21). In his *Autobiography*, Darwin goes further, seeming to eradicate Spencer's influence on his own theory: 'I am not conscious of having profited in my own work by Spencer's writings. His deductive manner of treating every subject is wholly opposed to my frame of mind'. *The Autobiography of Charles Darwin, 1809–1882, with Original Omissions Restored*, ed. by Nora Barlow (London: W.W. Norton, 1993), pp. 108–9.

[18] Johann Casper Lavater, *Essays on Physiognomy: Designed to Promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 66.

Scientific experimentation subverts classifications that have been taken for granted, such as the oppositional classification of 'intelligence' and spontaneous, apparently impulsive bodily and facial expressions. Darwin argues that the dominant mechanism responsible for generating expression is that of 'serviceable, associated habits'; these expressions were once caused by actions 'of direct or indirect service under certain states of the mind', and over time have become habitual movements, 'though they may not then be of the least use' (p.38).[19] To demonstrate that certain expressions are so deeply ingrained that they cannot be regulated by the individual, Darwin refers to the 'decapitated frog, which cannot of course feel, and cannot consciously perform any movement', but nevertheless wipes acid away from its leg with the foot of the same leg. He quotes the alienist Henry Maudsley: "these are actions that have all the appearance of being guided by intelligence and instigated by will in an animal, the recognized organ of whose intelligence and will has been removed" (p. 45). While this analogy describes a physiological reflex action, Darwin emphasises how habitual expressions manifest in strikingly similar ways: the action of flinching, illustrated by his own encounter with a 'puff-adder at the Zoological Gardens', is 'an habitual and not a strictly reflex action, as the stimulus is conveyed through the mind and not by the excitement of a peripheral nerve' (p. 47). Nevertheless, the 'winking movement […] caused when a blow is directed towards the face' cannot be inhibited by cognitive rationalisation: 'our reason telling us there is no danger [in this instance, because the snake is behind glass] does not suffice' (p. 47).[20] Classificatory judgement and assessment (of danger) is here itself characterised as an impulsive act, habitual processes dominating and subordinating the cognitive. For Darwin, not only are expressions themselves inherited from ancient ancestors, but the governing mechanisms in humans and animals also function physiologically in the same way, forging further biological parallels.

Evolutionary development can be traced laterally over different individuals from the same species living at the same time, predicated on a comparative continuum that comes to embody and signify classificatory congruity between human and animal. Thomas Dixon suggests that Darwin's account of habitual expression is closer to a naturalised Christian narrative than evolutionary theory: like Adam and Eve after the Fall, Darwin's

[19] The theorisation of habit as the dominant mechanism of emotional expression is satirised in the *Edinburgh Review*'s criticism of Darwin's own 'habitual' overstatement of animal expression.

[20] Tiffany Watt-Smith has used the anecdote of Darwin observing his own flinch to comment on the nineteenth-century's broader culture of spectatorship, and the continued contested relation between external display and interior/authentic feeling. Tiffany Watt-Smith, 'Darwin's Flinch: Sensation Theatre and Scientific Looking in 1872', *Journal of Victorian Culture*, 15 (2010), 101–18.

humans are in a state of enslavement to useless physical urges.[21] Yet, while Darwin collapses species distinctions, an opposition is also created between those exhibiting "the brute nature within" (p. 223) and more refined and less expressive types, such as the civilised (often English) adult man.[22] His human subjects are carefully selected on the assumption that they are physically, mentally, or culturally primitive, and consequently least able to rationally control or simulate emotional expression. Their expressions can thus be linked to similar instinctually driven manifestations in our 'early progenitors': for instance, 'the essence of savagery seems to consist in the retention of a primordial condition' (p. 213).[23] He maintains that infants 'exhibit many emotions, as Sir C. Bell remarks, "with extraordinary force"', while 'the insane' are 'liable to the strongest passions, and give uncontrolled vent to them' (p. 24).[24] As Kate Soper argues, the 'history of exclusions' that dominates human classificatory thought, reveals 'a desire to re-find humanity in the very dimensions of being from which it has sought to discriminate itself, and to re-locate its position vis-à-vis nature accordingly'.[25] The process of using individual progression as a biologically verifiable analogy for evolutionary change was popularised by the German biologist, Ernst Hæckel, as 'ontogeny recapitulates phylogeny', and is explicitly referenced in *The Descent of Man*'s discussion of embryo development.[26] *Expression of the Emotions* takes this analogy one step further: moving away from embryo analysis, investigation of the differences and divergences between individuals, and between individuals at different points in their lives becomes, for Darwin, essential to establishing the operation of evolutionary processes via expressive performance. *Expression* reveals a dialectical interplay between expressive consistency and individual

[21] Dixon, *From Passions to Emotions*, pp. 169–77.
[22] As Darwin acknowledges in his Introduction, many of his conclusions are drawn from the experiences and notes of others. This is a quote from Henry Maudsley's 1870 text, *Body and Mind* (1870).
[23] The phrase 'early progenitors' is used often by Darwin, see, for instance: p. 87; p. 200; p. 213.
[24] Sir C. Bell, is Charles Bell. Janet Browne and Rosemary Jann comment on Darwin's treatment of the insane: Browne argues that Darwin's inclusion of the insane incorporates them into a larger scheme of humanity, while Jann critiques Darwin for encouraging the assumption that the insane were physiologically closer to animals than other humans. Browne, 'Darwin and the Face of Madness', in *The Anatomy of Madness: Essays in the History of Psychiatry*, ed. by W. F. Bynum, Roy Porter and Michael Shepherd, 3 vols (London: Tavistock Publications, 1985–88), I (1985), pp. 151–65; Jann, 'Evolutionary Physiognomy and Darwin's *Expression of the Emotions*', *Victorian Review*, 18.2 (Winter 1992), pp. 1–27. My Introduction contains more on animal–children relations, as described post-Darwin.
[25] Kate Soper, *What is Nature? Culture, Politics, and the Non-Human* (Oxford: Blackwell, 1995), p. 73.
[26] Richards succinctly describes recapitulation: 'each individual recapitulates in its development from conception to maturity the evolutionary stages through which its species has passed'. *Putting Psychology in its Place*, p. 32. First referred to in the early decades of the nineteenth-century by the Estonian scientist, Karl Ernst von Baer, it was Hæckel who coined the phrase 'ontogeny [development of form] recapitulates phylogeny [evolutionary descent]'. See also, Darwin, *Descent*, p. 26.

divergence, in which variation between members of the same species become emblematic of broader evolutionary trajectories.

The deterministic implications underlying Darwin's taxonomic system become evident when comparing descriptions of animals and 'primitive' humans (nominally, 'savages' and 'the insane'), with his discussion of human infants.[27] In an early chapter on animal expression, Darwin defers to evidence from W. L. Martin's *Natural History of Mammalia* (1841), to illustrate how angry monkeys 'gaze with a fixed and savage glare on their foe […] as if in savage defiance […] the long-tailed monkeys, or Guenons, display their teeth, and accompany their malicious grins with a sharp, abrupt, reiterated cry' (p. 128). This description serves to substantiate Darwin's later discussion of anger and rage, during which he notes that the human face appears 'ready for seizing or tearing an enemy', and cannot be explained 'unless it depends on our descent from some ape-like animal' (pp. 220-1).

Typically, Darwin uses a range of anecdotes supplied by his numerous correspondents, to illustrate how this expression can be considered universal: 'Mr. Dyson Lacy has seen this grinning expression with the Australians, when quarrelling, and so has Gaika with the Kafirs of South Africa' (p. 221).[28] Drawing on the parallel classification of the arrested human subject, Darwin provides an anecdote about an 'epileptic idiot', and particularly highlights the continuation of animalistic traits: 'when any one touches his toys […] he fixes his eyes on the offender, with a tardy yet angry scowl. If the annoyance be repeated, he draws back his thick lips and reveals a prominent row of hideous fangs (p. 222). While the epileptics in the photographs sent to Darwin by his correspondent James Crichton Browne have white faces, their features are often heavy, recalling a Lavaterian association between refined features and refined minds. Significantly, as with prior physiognomic discourse that classifies faces according to feature rather than expression,

[27] The 'human infants' were often his own: As Darwin points out (n. 17 above), his finished text began in 1838, with a 'little essay' on the facial expressions of his son, William. See C. Darwin to J. Crichton Browne, 'Letter no. 7499', 20 February 1871, *Darwin Correspondence Project*, database, (Cambridge: Cambridge University Library) <https://www.darwinproject.ac.uk/letter/DCP-LETT-7499.xml> [Accessed 15 July 2016].

[28] On these two correspondents, Darwin writes that Dyson Lacy has provided 'valuable observations, made several miles in the interior of Queensland', (p. 29). He notes that 'the opinion, written in English, of Christian Gaika, brother of the Chief Sandilli, on the expressions of his fellow country-men', has been procured in the form of 'a curious document', by a Mr. J. P. Mansel Weale (p. 31). This narrative chain is representative of the many layers of interpretation frequently integral to the development of Darwin's conclusions.

the animalised 'fangs', and the size of the lips contribute to the evocation of a racialized savage expression.[29]

In contrast to the implicit threat conveyed in these descriptions, Darwin more light-heartedly observes that young children 'naturally […] take to biting, when in a passion. It seems as instinctive in them as in young crocodiles, who snap their little jaws as soon as they emerge from the egg' (p. 221). Darwin frequently repeats words such as 'naturally' and 'instinctive', highlighting the inherent quality of animality across all species. However, in his discussion of rage, only children have expressions so described; for other human subjects, and even for the adult animals, the 'natural' is not evoked. As with the description of the flinch above, Darwin's extra emphasis on children's expressions as 'instinctive' serves to underscore how an habitual expression manifests as almost reflexive, unimpeded by the individual's cognitive control. By contrast, the designation 'savage' is at once metonymic for 'animal', yet also, through the semantic association with intentionally 'malicious' violence, appears categorically distinct from 'natural […] instinctive[ness]': this de-naturalisation of the animal is also evident in Lavater's *Essays*, where certain brutalised human faces are condemned as existing outside of nature.[30] The construction of a natural ideal, as described by Soper, is here dependent upon the intersection and juxtaposition of individual and evolutionary timelines; reading down an individual's own life-line to childhood, is productive of more positive evocations of the 'natural' than reading across from 'civilized' to other less-developed adults.

Associable and 'useless' habits can be trained and regulated by the evolutionarily developed individual. Darwin writes that although 'in all cases of distress […] our brains tend through long habit to send an order to certain muscles to contract, as if we were still infants on the point of screaming out', crucially 'this order we, by the wondrous power of the will, and through habit, are able partially to counteract' (p. 177).[31] But 'we' does not refer to all humans: the extent of expressive control becomes a means to determine and classify developmental progress on both individual and species level.[32] Darwin distinguishes between the 'free expression[s]' (p. 333) that most clearly indicate evolutionary descent, and 'conventional expressions or gestures, acquired by the individual during early life' (p. 25). These latter expressions 'differ […] in the different races, in the

[29] Darwin was introduced to Browne, 'who has charge of an immense asylum near Wakefield' (p. 24), by Henry Maudsley, and Browne supplied detailed anecdotal and photographic evidence for *Expression*.
[30] See Chapter Two.
[31] I return to control as a mechanism for forming expression in Chapter Five.
[32] Darwin's references to domestication in animals, and to a certain extent in people too, raises the issue that 'will' may be exterior to and belonging to someone other than the individual requiring the training.

same manner as do their languages' (p. 25), and Darwin warns against 'confound[ing] conventional or artificial gestures and expressions with those which are innate or universal, and which alone deserve to rank as true expressions' (p. 57). Darwin here confirms Bray's contention that it is 'the cultivation and strengthening of those feelings, proper to *man alone*' [my emphasis], which distinguish the human from the animal.[33] Yet, more than this, Darwin creates an internal stratification within the category of 'habitual' movements. While habit is an integral component of evolutionary descent, his argument suggests that expressive evolution is fixed at the point where it is most necessary for physical survival; any further habits gained beyond that point are deemed 'conventional or artificial'. As such, animals are an exemplary subject of study: 'we may feel safe that their expressions are not conventional' (p. 28).

In contradiction to these apparently automated responses, animal behaviour is sometimes characterised by unpredictability and malleability, omitted from the description of the decapitated frog, for which explanations must be hazarded by the pathognomist. Discussing the function of the ocular muscles, Darwin demonstrates how expressive appearance can in fact be dictated and tempered by individual circumstance: this is exemplified by evidence that some elephants cry when experiencing sadness and others do not.[34] Darwin contrasts Emerson Tennent's account with that of Rev. S. O. Glenie: the former claims to have seen elephants in Ceylon lying bound and "motionless on the ground, with no other indication of suffering than the tears which suffused their eyes and flowed incessantly", while the latter observes that recently captured elephants "when irritated, screamed violently; but it is remarkable that they never when thus screaming contracted the muscles round the eyes. Nor did they shed tears" (p. 155). The interchange between similarity and divergence that characterises Darwin's classification of human types is here extended to animals, and he suggests that 'these conflicting statements' can be reconciled 'by supposing that the recently captured elephants [observed by Glenie …] desired to observe their persecutors, and consequently did not contract their orbicular muscles, so that their vision might not be impeded'. On the other hand, 'those seen weeping by Sir E. Tennent were prostrate, and had given up the contest in despair'. Tennent is particularly moved by an elephant whose "violence sank to utter prostration

[33] Bray, *Education*, p. 13.

[34] This phenomenon has remained a touchstone in philosophical and political accounts of animal suffering, and is evidence of the extent to which these polemics appeal to anthropomorphic impulses: behaving like people is considered evidence for an evolutionarily sophisticated emotional capacity. For instance, Jeffrey Masson and Susan McCarthy, *When Elephants Weep: The Emotional Lives of Animals* (London: Vintage, 1996).

[…], he lay down on the ground, uttering choking cries, with tears trickling down his cheeks" (p. 155).[35] Only when the elephant has lost the drive to live and the impulse to observe and respond to those threatening it is the eye's function mitigated and impinged upon by the onset of tears. Full, liberated animal expression can hence collide with the individual's survival, and should be controlled; this phenomenon is paralleled in humans with expressive restraint signalling a compulsion to survive and thrive according to particular cultural requirements.

As elsewhere in Darwin's work, the conflicting reports about elephants' expression reveal his fascination with both the physical structure and the capabilities of the eye; it also stands as a metaphorical symbol for the extent to which 'natural' phenomenon exist outside the scope of human comprehension.[36] Darwin attests to the way in which accurate face-reading can be affected by the fluctuating variation between individual's circumstances and causes of expressive action; as such, the pathognomist's observation and interpretation are rendered potentially fallible or inconclusive. As James Krasner and others have argued, broader ideals of scientific vision are fundamentally altered by Darwin's work; never able to comprehend or visualise the whole of nature's formation in its entirety, the scientist must come to terms with his own limited perceptive abilities. In George Levine's words, 'the universal is first reduced to the empirical, which cannot be universal'.[37]

This represents a distinct departure from Lavater's emphasis on the physiognomist's all-encompassing gaze. These anecdotes are particularly cogent when assessing the expressive animal face, as it is not clear to what extent the elephant's decision-making is a result of instinctive behaviour (and the cessation of, in Freud's terms, the life-drive) or self-conscious thought and awareness; as such, the terms of Darwin's thesis, where expression is a direct consequence of habitual function, are potentially called

[35] Darwin also cites the Keeper of the Indian elephants at the Zoological Gardens (a frequent source) in support of Tennent: 'he has several times seen tears running down the face of the old female, when distressed by removal of [its] young' (p. 156).
[36] I discuss Darwin's description of the eagle's eye at the end of Chapter Two.
[37] It is thus nigh on impossible to perceive and comprehend the vastness and multiplicity of evolutionary processes in their entirety. George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Cambridge, Massachusetts: Harvard University Press, 1988), p. 218. Krasner argues that while in earlier nineteenth-century fiction, the reader's imagination is fully enabled by the vision of both the character *and* the narrator, in later, post-Darwin representations, the imagination is limited 'by constraints very like those imposed on the physical eye'; losing the ability to see 'for vast distances' or 'around corners and trees', the reader is only able to 'image the landscape as though he or she were actually seeing it'. James Krasner, *Visual Perception and the Representation of Nature in Post-Darwinian Narrative* (Oxford: Oxford University Press, 1992), p. 5; p. 7.

into question.[38] The elephant provides a precedent for the dualistic tension between expression as emotional release and as survival function; it also demonstrates how the pathognomist is responsible for the mediation of meaning. Darwin's dominant objective lies with the evolutionary causes of expression, yet he introduces the operation of the will as an intentional mechanism; equally, in contrast to his emphasis on inherited habits, transmitted over vast swathes of historical time and geographical space, here more local, individualised habits dominate the processes of evolution.

Classificatory ability (for instance, as in the assessment of danger or hopelessness) is a significant component in Darwin's evolutionary theory: in *Descent of Man*, he asks: 'are we not justified in believing that the female exerts a choice, and that she receives the addresses of the male who pleases her most[?]'[39] Darwin notes that the mental processes underlying classification are not easily explicated: 'from our ignorance on several points, the precise manner in which sexual selection acts is somewhat uncertain'.[40] Yet in *Expression of the Emotions,* he turns to the animal face as not solely an object to be classified according to an evolutionary thesis, but also as the medium on which the genesis of classificatory thought, and hence evolutionary development, can be traced.[41] He observes that 'when a dog approaches a strange dog or man in a savage or hostile frame of mind, he walks upright and very stiffly; his head is slightly raised, or not much lowered […] the pricked ears are directed forwards, and the eyes have a fixed stare' (p. 57). Yet if the dog 'suddenly discovers that the man whom he is approaching, is not a stranger, but his master […] let it be observed how completely and instantaneously his whole bearing is reversed […] the eyelids become elongated, and the eyes no longer appear round and

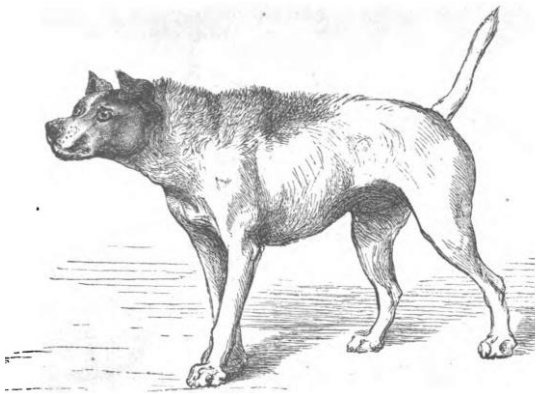
[38] The primatologist, Frans de Waal, has commented on how showing an awareness of self and foresight is a frequently used means of demarcating animal intelligence. Elephants and chimpanzees have been proven to display this proclivity; although, as de Waal points out, the fact that there is no parallel evidence for other species may point to a deficiency in human research methods rather than any inherent cognitive inferiority in the animal. De Waal's quotation of the German physicist, Werner Heisenberg, "What we observe is not nature itself but nature exposed to our method of questioning", is indicative of his awareness of the anthropocentrism informing scientific judgement. Frans de Waal, *Are We Smart Enough to Know How Smart Animals Are?* (London: Granta, 2016), p. 15.

[39] Darwin, *Descent*, pp. 473–74.

[40] *Ibid.*, p. 246. Peter Dear has pointed to Darwin's incorporation of two different imaginative procedures within his evolutionary theory, one of which accepts what is not empirically quantifiable, such as the expanse of time needed for evolutionary processes to take place. Peter Dear, 'Romanticism and Victorian Scientific Naturalism', *European Romantic Review*, 26.3 (2015), 329–40 (pp. 333–35).

[41] The capacity for classification continues to constitute part of taxonomies that define humans and animals. Irene Pepperberg's ground breaking work with Alex the African grey parrot (famous among ethologists), discovered that he could classify according to shape, colour, and name, and would ask questions to determine the object when one of these three signifiers were missing. See Irene Pepperberg, 'An Avian Perspective on Language Evolution: Implications of Simultaneous Development of Vocal and Physical Object Combinations by a Grey Parrot (*Psittacus erithacus*)', in *Language Origins: Perspectives on Evolution*, ed. by Maggie Tallerman (Oxford: Oxford University Press, 2005), pp. 239–61 (p. 241).

staring' (p. 58) [see Figures 3.1 and 3.2].[42] Discriminatory mental practices here operate on an inter-species level, affecting the resultant facial expressions and helping to form bonds of understanding between animals and humans: facial recognition supplements evolutionary relation. Equally, another dimension is added to Spencer's stipulation, as quoted by Darwin, that "an overflow of nerve-force, undirected by any motive, will manifestly take first the most habitual routes; and if these do not suffice, will next overflow into the less habitual ones".[43] While 'an overflow of [undirected] nerve-force' is analogous for the habitual instinctive performance of evolutionarily-inherited expressions, the classificatory apparatus provides a way to redirect these processes, contributing to the moderation of expressive action and the performance of individual agency.



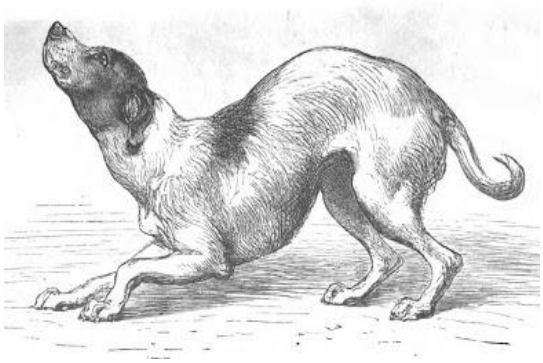


Figure 3.1: 'Dog approaching another dog with hostile intentions'; *Figure 3.2*: 'The same in a humble and affectionate frame of mind' (both M. Riviere, pp. 58–59)

The evolution of the classificatory capacity can, however, also be considered subject to inhibition, particularly when measured according to a hierarchical scale of predetermined value. Darwin often defers to the modes of classification in other animals that are most easily identifiable by humans like himself: while he predicates his theory on the basis that animals possess a similar, if rudimentary, mode of taxonomic procedure to humans, this classificatory process is characterised by the prioritisation of certain tastes over others. In *Descent*, Darwin concludes that 'on the whole, birds appear to be the most aesthetic of all animals […] they have nearly the same taste for the beautiful as we have', and supplements his defence of the non-human aesthetic sense with a comparison to uncivilised humans: 'judging from the hideous ornaments, and the equally hideous music

[42] See also, 'the power of the human eye on savage animals is wonderful […] by a glance at it, the dog knows thoroughly the humour of its master', Pett Thompson, *Passions*, p. 70.
[43] Spencer, 'Physiology of Laughter', p. 398. Quoted in Darwin, *Expression*, p. 21.

admired by most savages, it might be urged that their aesthetic faculty was not so highly developed as in certain animals, for instance, as in birds'.[44] This cultural judgement is replicated in *Expression* as he summarily dismisses the underlying causes of certain facial expression as trivial: for instance, insane patients' 'grief muscles' (those that stimulate tears of any kind), are brought 'into momentary action by ludicrously slight causes' (p. 172); savages 'weep copiously from very slight causes'; while, in comparison, more evolutionarily advanced 'Englishmen rarely cry' (p. 144). The mental comprehension and organisation of classificatory criteria is integral to Darwin's explication and categorical assessment of the evolutionary endurance or eradication of the animal face.

The process of maturing and progressing through a barbaric state into full English adulthood is recorded in Darwin's *Autobiography*: 'I discovered, though unconsciously and insensibly, that the pleasure of observing and reasoning was a much higher one than that of skill and sport. The primeval instincts of the barbarian slowly yielded to the acquired tastes of the civilized man.'[45] Darwin here refers to the loss of interest in shooting that he experiences during his *Beagle* voyage; as Ian Duncan argues, Darwin 'marks his own *Bildung* as an ontological rehearsal of the "evolution" from barbarian to the highest type of civilised man, the observing and reflecting scientist'.[46] However, more than this, the barbaric stage in Darwin's life appears as an intervening period between his childhood love of collecting and the scientific sensibilities of the adult man. Darwin writes that, at eight years old, he 'collected all sorts of things, shells, seals, franks, coins, and minerals', and even 'at this early age' was interested in 'the variability of plants'; on the other hand, it was not until the end of his school days that he became 'passionately fond of shooting'.[47] Childish curiosity and a burgeoning classificatory mental apparatus, were hence supplanted by the thrill of blood-sports; reflecting back in later life, Darwin is keen to emphasise that 'I must have been half-consciously ashamed of [this new-found] zeal'.[48]

Most nineteenth-century evolutionists were also monogenists (in contrast to polygenists, monogenists believed that all human types were part of one species), and

---

[44] Darwin, *Descent*, p. 408; p. 116.
[45] *Autobiography*, ed. Barlow, p. 79. The second sentence of this quote ('The primeval instincts…') was omitted from Francis Darwin's original publication of his father's *Autobiography* in 1887. See, *The Autobiography of Charles Darwin and Selected Letters*, ed. by Francis Darwin (New York: Dover Publications, 1958), p. 30. In her 1958 restored edition, Barlow, Darwin's granddaughter, notes that the Darwin family censored several lines (against Francis's wishes) that seemed particularly provocative. Barlow, 'Introduction', in *Autobiography*, (pp. 11–15), p. 12.
[46] Ian Duncan, 'Darwin and the Savages', *The Yale Journal of Criticism*, 4.2 (1991), 13–45 (p. 14).
[47] *Autobiography*, ed. Barlow, p. 23; p. 44.
[48] *Ibid.*, p. 55.

hence identified the cause of divergence between human individuals as cultural rather than biological.[49] Darwin acknowledges the fear that preoccupied many advocates of evolutionary advancement: the possibility that temporal exchange might begin to work in the opposite direction, reversing the progress of evolution. In his *Autobiography*, Darwin represents his own mental development as in a state of flux, rather than on a continually, upwardly progressive continuum. He acknowledges a similar faltering in later life, recounting how the constant 'grinding' of scientific laws has 'enfeebl[ed] the emotional part of [his] nature'.[50] Equally, Darwin laments that, while he used to love Shakespeare and Wordsworth, he now finds the former so 'intolerably dull' that it 'nauseates' him, and that 'if [he] had to live [his] life again', he would endeavour to keep these higher aesthetic tastes honed: 'I would have made a rule to read some poetry and listen to some music at least once a week'.[51] While much contested by Darwin scholars, these conclusions do not exist in isolation: there are occasions in *Expression* where Darwin allies himself with his less sophisticated subjects, providing a similar rebuke of his own classificatory judgement.[52] Confirming that he lacks the discerning taste required for appreciation of certain art forms, he notes that, not unlike the overly-weepy insane and savage, 'sympathy with the distresses of others, even with the imaginary distresses of a heroine in a pathetic story, for whom we feel no affection, readily excites tears' in him (p. 199). Sympathy,

[49] Both polygenetic and monogenetic thought contributed to nineteenth-century racialist discourse. See Scott Juengel, 'Countenancing History: Mary Wollstonecraft, Samuel Stanhope Smith, and Enlightenment Racial Science', *ELH*, 68.4 (Winter 2001), 897–927 (p. 902). Concern with mapping human descent continue today, especially with the Neanderthal Genome Project (founded 2006). See Musaddeque Ahmed and Ping Liang, 'Study of Modern Human Evolution via Comparative Analysis with the Neanderthal Genome', *Genomics Inform*, 11.4 (2013), 230–38; Michael Hofreiter, 'Drafting Human Ancestry: What does the Neanderthal Genome tell us about Hominid Evolution?' *Human Biology*, 83.1 (2011), 1–11.
[50] *Ibid.*, p. 139.
[51] *Ibid.*, pp. 138–39.
[52] Darwin is not consistent in his characterisation of science as emotionally debilitating; a few pages on, he writes: 'my love of natural science has been steady and ardent' (p. 141). Many critics have debunked Donald Fleming's theory that Darwin was indeed emotionally stunted (Fleming, 'Charles Darwin, the Anaesthetic man', *Victorian Studies*, 4 (March 1961), 219–36). See Jesse T. Airaudi, 'A Slumber Sealed: Science and Idealism in Darwin's *Autobiography*', *South Central Review*, 2 (Summer 1985), 38–48; Janet Browne, 'Making Darwin: Biography and the Changing Representations of Charles Darwin', *Journal of Interdisciplinary History*, 40.3 (Winter 2010), 347–73; John Angus Campbell, 'Nature, Religion and Emotional Response: A Reconsideration of Darwin's Affective Decline', *Victorian Studies*, 18 (December 1974), 129–74; Robert L. Stevens, 'Darwin's Humane Reading: The Anaesthetic Man Reconsidered', *Victorian Studies*, 26 (Autumn 1982), 51–63. Other critics have discussed how 'men of science' found ways to express feeling, combatting stereotypes of cold objectivity: for instance, David Amigoni, 'Between Medicine and Evolutionary Theory: Sympathy and Other Emotional Investments in Life Writing by and about Charles Darwin', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013), pp.172–92; Jim Endersby, 'Sympathetic Science: Charles Darwin, Joseph Hooker, and the Passions of Victorian Naturalists', *Victorian Studies*, 51 (Winter 2009), 299–320; Paul White, 'Darwin Wept: Science and the Sentimental Subject', *Journal of Victorian Culture*, 16 (2011), 195–213.

following Hume, was generally considered a civilising force, yet overt sentimentality was not viewed so beneficently; as Nicholas Dames explains, the nineteenth-century novel was long viewed as an inferior art form, provoking lazy, inattentive reading, and shallow emotional responses.[53] Darwin's *Autobiography* confirms this: novels are 'a wonderful relief and pleasure for me'; they are 'not of a very high order'.[54] Significantly, what is affected here is, in his view, Darwin's own ability to apply and live by appropriate regulatory and classificatory laws: as well as being subject to various temporal scales, evolutionary development is not presented as unidirectional, instead working backwards as well as forwards.

Discerning classificatory capacity thus, in itself, becomes a means to taxonomize the human. Following Lorraine Daston and Peter Galison's pioneering work on the various manifestations of 'objectivity' in the empirical sciences, critics have commented on the influence of emotional experience on the work of nineteenth-century scientists; as can be seen above, it is also the submission of this experience to classificatory value judgements that has an effect on Darwin's understanding and theorisation of expression.[55] The focus on an ideal of expressive restraint as indicative of civilisation is a prime example of Darwin's own 'discursive mediat[ion]' of his scientific evidence; it is indicative of the cultural and ideological influences informing Darwin's work, and also of the impact that his own experiences had on the formulation of his theory.[56] In his discussion of Darwin's 'beetlemania', Cannon Schmitt defends 'affective, visceral, animal, and familial modalities of knowing' as productive of worthwhile scientific practice: he asks, 'how can the self be sacrificed, put aside, or overcome in the study of nature when one recognizes other living beings as relatives, as versions of oneself?'[57] As the *Edinburgh Review* article cited above

[53] Dames, *The Physiology of the Novel: Reading, Neural Science, and the Form of Victorian Fiction* (Oxford: Oxford University Press, 2007), p. 16.
[54] *Autobiography*, ed. Barlow, p. 138.
[55] See Lorraine Daston and Peter Galison, *Objectivity* (Brooklyn: Zone Books, 2007); Daston and Galison, 'The Image of Objectivity', *Representations*, 40, Special Issue: Seeing Science (Autumn 1992), 81–128. See also, Paul White, 'Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity', *Isis*, 100 (Dec 2009), 811–26; White, 'The Emotional Economy of Science', *Isis*, 100 (December 2009), 792–97. George Levine challenges the recent endorsement of affective response, maintaining that the self-sacrifice and emotional control of the nineteenth-century scientist was a worthy pursuit. See Levine, *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002).
[56] Cf. Kate Soper, 'Nature and Culture: The Mythic Register', in *Becoming Human: New Perspectives on the Inhuman Condition*, ed. by Paul Sheehan (Westport, CT: Praeger, 2003), pp. 67–80, (p. 68).
[57] Cannon Schmitt, 'Victorian Beetlemania', in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Deborah Denenholz Morse and Martin A. Danahay (Hampshire: Ashgate, 2007), pp. 35–51 (p. 48).

makes clear, this is not a model that all of Darwin's contemporaries could accept.[58] The prejudices and assumptions of Darwin's (historically situated) 'self' are implicated in the positive and negative acts of recognition that he conducts throughout *Expression*: Darwin's 'recognition' takes the form of a literal re-cognising of a symbolic, 'older' primitivism within a 'newer' civilisation, evidenced through the visual observation of the expressive face.

As indicated here, Darwin's own taxonomic procedures are not always objective or faultless: his 'familial' relation to the subjects of his study affects his observation. Unlike his contemporary, Alfred Russell Wallace, Darwin had spent little time among the 'savage races' that he uses to demonstrate the universality of expression, and several critics have noted the lasting effect that Darwin's limited interactions with the South American and Fuegian natives during the *Beagle* voyage had on his assessment of such races. Paul White emphasises the discrepancy between Darwin's joyful appreciation for the richness of animal life and his frequent feelings of revulsion on meeting the human natives on his voyage, while for Schmitt, the Fuegians are central to the formulation of Darwin's evolutionary theory, becoming 'living mnemonic devices'.[59] Yet more pertinent to my discussion of dividing lines between human and animal faces, Darwin's notes concerning the men encountered on the *Beagle* voyage record his own failure in intra-species communication:

> Men, whose very signs and expressions are less intelligible to us than those of the domesticated animals; men, who do not possess the instinct of those animals, nor yet appear to boast of human reason, or at least of arts consequent on that reason.[60]

Communication and comprehension are integral to the germination of Darwin's theory; the ontological shock instigated by, in Huxley's words, being brought 'face to face with these blurred copies of himself' is here reversed as Darwin attempts, but fails, to recognise the

---

[58] The popularity of *Expression* at the time of its publication equally indicates that the *Edinburgh Review*'s criticism is not unanimously representative.

[59] Darwin, *Descent*, p. 689. Paul White, 'Becoming an Animal: Darwin and the Evolution of Sympathy', in *After Darwin*, ed. by Angelique Richardson, pp. 112–35. Cannon Schmitt, *Darwin and the Memory of the Human*: *Evolution, Savages, and South America* (Cambridge: Cambridge University Press, 2009), p. 40. See also, Duncan, 'Darwin and the Savages'. Recently, Adrian Desmond and James Moore have defended Darwin's work from the charge of racism, instead emphasising his belief in human racial unity. See Desmond and Moore, *Darwin's Sacred Cause: Race, Slavery, and the Quest for Human Origins* (London: Penguin, 2009).

[60] Charles Darwin, *The Voyage of the Beagle: Journal of Researches* (1839), ed. by Janet Browne and Michael Neve (London: Penguin, 1989), p. 375.

faces before him.[61] Darwin demonstrates the deficiencies of both articulate and non-articulate speech; he is unable to comprehend 'signs and expressions', gestures that he later claims 'reveal the thoughts and intentions of others more truly than do words, which may be falsified' (*Expression*, p. 333). On the basis that he cannot interpret and accurately classify 'signs and expressions', Darwin performs a classificatory judgement that divests these men of both human 'reason' and the animal instincts that he deems crucial to the formation of the expressive face: on an evolutionary scale, they are apparent anomalies.

It is not, however, only the more primitive expressions that Darwin fails to recognise. While Darwin considers himself proficient in visually identifying certain expressions as representative of evolutionary processes and animal/human kinship, others elude him and his classificatory framework. He emphasises the difficulty in recognising and scientifically determining expressions indicative of more 'complex states of mind', such as those characterising '*Jealousy, Envy, Avarice […] Ambition, Pride, Humility, &c*' [Darwin's italics] (p. 240). He argues that 'it is doubtful whether [they] are revealed by any fixed expression, sufficiently distinct to be described or delineated' (p. 240). The indication is that these emotions are too complex, and not physiologically animalistic enough, to manifest in the face; unlike Lavater's omniscient observer, who must completely master physiognomic signification (see Chapter Two), here the face-reader's capacity is limited as classificatory observation and procedures are deemed in themselves insufficient. As well as providing support for evolutionary theory based on an ideal of complexity as representative of progress from the animal to human, the rhetoric that Darwin constructs around emotional 'sophistication' — linked to control, or lack of expression — also raises questions concerning his own scientific ability to identify and codify. Failure to fully comprehend the face not only reveals the limitation of an evolutionary standpoint that upholds a particular ideal of what it means to be upwardly progressive, it also provides a significant stumbling block to any systematisation of the face that insists on fixed significations.

The act of 'seeing' is frequently characterised as an unadulterated, authentic act, while remaining ideologically and culturally constrained and fundamental to the formation of a 'language of rationality'.[62] Yet Darwin allows for the failure of such processes; unlike Lavater, he does not consistently characterise his ability to theorise face-reading as

[61] See Huxley, *Man's Place in Nature*, p. 73. I discuss this quotation in my Introduction.
[62] Michel Foucault, *The Birth of the Clinic. An Archaeology of Medical Perception*, trans. by Alan Sheridan (London: Routledge, 2000), xiv.

indicative of his own taxonomic superiority. The animal face in Darwin's text both contributes to the reconceptualization and interrogation of his own taxonomic treatment of emotional expression. The scientist's role in both the theoretical manipulation and practical operation of classificatory apparatuses is a central concern of my next chapter, which considers how these issues are reworked and reconsidered in science fiction of the period. My case studies of Mary Shelley's *Frankenstein* and H. G. Wells's *The Island of Doctor Moreau* both feature a scientist's interference with 'natural' evolutionary and temporal processes. The animal-human hybrid faces within these texts, and the categorical confusion that they incur, are fictional counterparts of Darwin's attempts to simultaneously conflate and separate the animal and human face.

Chapter Four

Classifying the Animal–Human Face in *Frankenstein* and *The Island of Doctor Moreau*

Throughout the nineteenth century, a variety of discourses rely on the authority of scientific vision to promote essentialist truths, from the enduring popularity of Johann Casper Lavater's physiognomic topographies to Charles Darwin's temporal charting of animal/human evolution via the classification of expression. Taxonomic identifications of the face that revolve around systematisations of the human and non-human are thus inextricable from the performance of human sight as classificatory mechanism. The consequent limitation that such taxonomic acts have on epistemological endeavour is critiqued by H.G. Wells in a review of the 1894 text, *Introduction to Comparative Anatomy*, by the British ethologist and psychologist, Conwy Lloyd Morgan. Wells compares the classificatory apparatuses of humans and animals to comment on the human prioritisation of sight as a means to taxonomise attributes such as cognition:

> the dog, possessing, as it evidently does, a power of olfactory discrimination infinitely beyond our own, may have on that basis a something […] higher than mere association and analogous to and parallel with the rational. It may even be that Professor Lloyd Morgan's dog, experimenting on Professor Lloyd Morgan with a dead rat or a bone to develop some point bearing upon olfactory relationships, would arrive at a very low estimate indeed of the human mind.[1]

As Wells points out, a dog's understanding of 'olfactory relationships' is infinitely superior to a human's; interrogating how capabilities are identified and defined — i.e., what it means to be 'rational' — he critiques the foundational weaknesses of an empirical system where results and conclusions are limited by anthropocentricism, even as other animals are defined as inferior. Wells's critique recalls Montaigne's derision of humans arrogantly categorising other animals according to criteria and using a process that

[1] H. G. Wells, '"The Mind in Animals": A Review of *An Introduction to Comparative Psychology* by C. Lloyd Morgan', *The Saturday Review of Politics, Literature, Science and Art*, 78 (22 December 1894), 683–84. Alexandra Horowitz, a researcher in canine cognition at Columbia University, argues that dogs can predict when their owners are coming home from work because the odours that humans leave around the house '*lessen* in a consistent amount each day'; when the smells have dissipated to the usual amount, the dog begins to anticipate its owner's return. Horowitz, *Being a Dog: Following the Dog Into a World of Smell* (New York: Scribner, 2016), p. 22.

inevitably favours the classifier; an approach that focuses on human classificatory vision and 'rationality' is here exposed as, ironically, short-sighted, insufficient in its analysis of non-humans.[2]

This chapter focuses on how taxonomic procedures mediate and determine the classification of hybridity. It focuses on animal–human hybridity, but also disciplinary hybridity, including in its many manifestations, oppositions and pairings between mythology and biology, science and literature, and fiction and non-fiction. Two literary representatives of such multiple hybridities are Mary Shelley's 1818 novel, *Frankenstein*, and Wells's 1896 text, *The Island of Doctor Moreau*. These two texts are taken from either end of the nineteenth century and frame many of the face-reading discourses with which this thesis is concerned. Both texts are literary creations that draw on contemporary scientific thought, both can be read as explicitly intertextual, and are in-themselves assembled from fragments, defying classification, like the creatures contained within them.[3] Most pertinent to my study, both novels feature a taxonomic collision between human and animal as each revolves around the artificial creation of biologically 'real' animal–human hybrids. Integral to this, the appearance and assessment of faces is a recurrent narrative trope: other characters' responsiveness to the hybrid face become a means through which to measure its respective animality or humanity. On the one hand, the faces of Frankenstein's and Moreau's mutilated creations provide an explanation for the human characters' repulsion, while on the other, the reader's encounter with the

[2] Erica Fudge uses the example of Clever Hans, the famous German counting horse, to make a similar point. The psychologist Oskar Pfungst demonstrated that Hans was not actually performing arithmetic but was responding to involuntary cues from his owner; yet, as Fudge notes, 'observational skills' have never been used to distinguish humans from animals: 'But, of course, the fact that Clever Hans can't count should not take away from what the horse could do. The cues that he was picking up were tiny — even the person giving them was unaware that they were sending them.' Fudge, *Animal* (London: Reaktion, 2002), p. 116. Equally, this example demonstrates an exemplary, powerful form of cross-species expressive communication.

[3] *Frankenstein* contains within it three narrative layers: Walton's letters to his sister, Frankenstein's account, and the Creature's own story. It includes other minor stories, such as those of Justine and Safie. Chris Baldick writes: 'like the monster it contains, the novel is assembled from dead fragments to make a living whole,' Baldick, *In Frankenstein's Shadow: Myth, Monstrosity, and Nineteenth-Century Writing* (Oxford: Oxford University Press, 1987), p. 30. Sandra Gilbert and Susan Gubar argue that 'reading and assembling documentary evidence, examining it, analysing it and researching it comprised for Shelley a crucial if voyeuristic method of exploring origins, explaining identity', Gilbert and Gubar, *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination*, 2nd edn, (Yale: Yale University Press, 2000), p. 225. Pendrick's account in *The Island of Doctor Moreau* is preceded by an explanatory note from his nephew verifying the dates and locating the island. Virginia Richter notes the connections between *The Island of Doctor Moreau, Frankenstein,* and Jonathan Swift's *Gulliver's Travels*, while in her introduction to the 2005 Penguin edition of *Doctor Moreau,* Margaret Atwood comments on associations with Daniel Defoe's *Robinson Crusoe*. See Richter, *Literature after Darwin: Human Beasts in Western Fiction, 1859–1939* (Basingstoke: Palgrave, 2011), p. 99; H. G. Wells, *The Island of Doctor Moreau*, ed. by Patrick Parrinder (London: Penguin, 2005), xvi.

animal–human face provides a means to interrogate and challenge the taxonomical systems imposed on human and animal alike.

i. From the Physiognomically Beautiful to the Pathognomically Ugly

Several critics have made the point that Mary Shelley was an interested and well-informed reader of early-nineteenth century scientific writing on classification, reproduction and evolution.[4] In *Frankenstein*, the animal face acts as both a guiding classificatory marker and a means to extend these debates. Shelley was likely to have been familiar with Johann Casper Lavater's physiognomic writings; her mother, Mary Wollstonecraft, had embarked on an English translation of Lavater's *Essays on Physiognomy*, and Shelley had her face read by a physiognomist as a child.[5] Throughout her novel, Shelley relies upon physiognomy as both narrative aid and a means to demonstrate the limits of human perception. As Graeme Tytler notes, post-Lavaterian literary expositions of physiognomy became a means not only to assess the relative virtues of the subject under scrutiny, but also to reveal the character of the physiognomist.[6] This is exemplified by Victor Frankenstein, whom the reader repeatedly encounters forming immediate physiognomic judgements of other characters. Frankenstein's supercilious disdain of M. Krempe's preference for natural philosophy is physiognomically rendered in his description of Krempe as 'a little squat man, with a gruff voice and repulsive countenance; the teacher, therefore, did not prepossess me in favour of his doctrine'.[7] On waking in custody after the

[4] Sharon Ruston compares the Creature's 'different but similar' nature to contemporaneous natural history works that 'try to account for the ways in which races of men are like and unlike each other, as well as comparing the similarities and differences between humans and animals'. Ruston, '"What Was I?": *Frankenstein*, Natural History and the Question of What it Means to be Human', *La Questione Romantica*, 3.1 (2011), 81–92 (p. 84). See also Stefani Engelstein, *Anxious Anatomy: The Conception of the Human Form in Literary and Naturalist Discourse* (New York: State University of New York Press, 2008); Melinda Cooper, 'Monstrous Progeny: The Teratological Tradition in Science and Literature', in *Frankenstein's Science, Experimentation and Discovery in Romantic Culture, 1780–1830*, ed. by Christina Knellwolf and Jane Goodall (Ashgate: Surrey, 2008), pp. 87–97.

[5] Wollstonecraft abandoned her translation when Thomas Holcroft's text appeared first. Holcroft was a friend of Shelley's father, William Godwin; equally, the Swiss painter, Henry Fuseli, with whom Wollstonecraft had a relationship before she married Godwin, was a close friend of Lavater. See Claire Tomalin, *The Life and Death of Mary Wollstonecraft* (London: Penguin, 2012), p. 105; p. 113. Scott Juengel notes that while both of Shelley's parents remained critical of Lavater's science, Godwin nevertheless had a precautionary reading performed on the young Mary. Juengel, 'Face, Figure, Physiognomics: Mary Shelley's *Frankenstein* and the Moving Image', *NOVEL: A Forum on Fiction*, 33.3 (Summer 2000), 353–76 (p. 354).

[6] Graeme Tytler, *Physiognomy in the European Novel: Faces and Fortunes* (Princeton, NJ: Princeton University Press, 1982).

[7] Mary Shelley, *Frankenstein or, The Modern Prometheus* (1818), ed. by Marilyn Butler (Oxford: Oxford University Press, 2008), p. 29. All further quotations are from this edition and are included in parenthesis.

death of Henry Clerval, Frankenstein observes the sleeping face of the nurse in the chair beside him:

> the wife of one of the turnkeys […] her countenance expressed all those bad qualities which often characterise that class. The lines of her face were hard and rude […] the expression of brutality was strongly marked. (pp. 149–50)

Here, Frankenstein defers to a code of signification in which animality denotes a lowly character — in this case also indicative of the 'bad qualities' associated with a lower social position than his own. Shelley points to the irony underlying her protagonist's application of physiognomics; he hubristically rejects Krempe's knowledge and experience based on a much-contested, simplistic Lavaterian association between external appearance and internal quality, and immediately classifies the face of his caregiver as brutish, providing a contrast between the ugly nurse's humane actions and Frankenstein's rejection of his own dependant creation.

As in Lavater's *Essays*, taxonomic transgressions recur throughout *Frankenstein*, and reference to the animal is not limited to one negative or positive set of metaphorical significations. According to traditional assumptions about the relation between facial angles and features, Frankenstein perceives only honesty and beneficent virtue in the face of his future wife, Elizabeth: 'An open and capacious forehead gave indications of a good understanding, joined to great frankness of disposition' (p. 60). Elizabeth's 'open' forehead, the 'seat of understanding' according to Lavater, marks an exemplary humanity, yet her species-classification, and by association her characterisation, is by no means purely and exemplarily human; Frankenstein recalls that 'I loved to tend on her as I should a favourite animal'; she is 'gay and playful as a summer insect' and her eyes are 'as lively as a bird's' (pp. 20–21). The bird's eye appears here as a positive trope, although Elizabeth's fluttering animation does not necessarily accord with the intelligence and 'good understanding' that her physiognomy initially conveys. As Lavater notes in his brief discussion of insect physiognomy, 'compact hard-winged insects [are] physiognomically and characteristically more capable and retentive than various light and tender species of butterfly' (p. 104). Both Lavater and Frankenstein nominate their beasts alternatively beautiful and ugly, depending on the species. Both also tend to identify specific animal species in their idealized, beautiful humans (Lavater's eagle's eye; Frankenstein's insect and bird), whilst the motif of an undifferentiated 'brutality' stands in for external and

internal ugliness.[8] In its position as a species composite, defying taxonomic classification, Frankenstein's Creature fulfils these criteria, yet Shelley's narrative ultimately demonstrates the severe epistemological deficiencies of this methodology.

In the creation of an animal–human hybrid, Frankenstein undermines the impulse of contemporary natural history to divide the external world into quantifiable, taxonomic categories. During her late teenage years Shelley had read the proto-evolutionary work of the natural philosopher, William Smellie, and, as Marilyn Butler suggests, the pre-*Frankenstein* reading of both Percy and Mary Shelley may well have been conducted under the auspices of the staunchly materialist anatomist, William Lawrence.[9] In resistance to John Abernathy's faith in vitalism, Lawrence promotes a system of evolutionary thought where '*all* [animals] have participated in the existence of other living beings' [my emphasis]; this is significantly pre-Darwin, but the emphasis on a shared participation in existence is a central motif in *The Expression of the Emotions.*[10] Lawrence's statement is suggestive of both reproduction within and evolution between species; in *Frankenstein*, Shelley takes species hybridisation and inter-species mutual dependence one step further, presenting the active participation of one species in the creation of another.

As with Elizabeth, Frankenstein is unable to keep the metaphorical animal distinct from the literal animal in his work; in order to create a 'new species', he 'torture[s] the living animal to animate the lifeless clay' (p. 36) and makes use of human and animal carcasses, provided by 'the dissecting room and the slaughter house' (p. 37). Frankenstein plunders churchyards, his culture's sanctity of the grave becoming for him 'merely the receptacle of bodies deprived of life, which from being the seat of beauty and strength had become food for the worm'.[11] In addition to being created from the material substance of

[8] Lavater notes that, while 'the distance between [insects] and the world of men I own is great', cross-species congruity nevertheless exists: 'were [insect physiognomy] sufficiently known, how useful would it be to human physiognomy!' Insect types support various characters and personalities, accompanied by their appropriate physiognomies, as do those of birds, including the 'savage' wild duck, the 'ignoble greedy' owl, the 'feeble, lustful' sparrow, and, as demonstrated in Chapter Two, the 'royal' eagle. Johann Casper Lavater, *Essays on Physiognomy: Designed to Promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), pp. 224–25.

[9] Smellie's *Philosophy of Natural History* considered the struggle for existence as well as analogies and comparisons between humans, animals, and plants. See Ruston, '"What was I"', p. 82.

[10] William Lawrence, *An Introduction to Comparative Anatomy, being two introductory lectures delivered at the Royal College of Surgeons* (London, 1816), quoted in Marilyn Butler, Introduction, *Frankenstein*, xix. Vitalism, as promoted by Abernathy, Lawrence's own teacher, represented 'life-force' as immaterial and like electricity.

[11] Stephanie Rowe notes that Mary and Percy Shelley's reading of the period 1814–16 featured Ovid, Rousseau, Milton, and Plutarch. Rowe, '"Listen to Me": Frankenstein as an Appeal to Mercy and Justice, on Behalf of the Persecuted Animals', in *Humans and Other Animals in Eighteenth-Century British Culture: Representation, Hybridity, Ethics*, ed. by Frank Palmeri (Aldershot, Hampshire: Ashgate, 2006), pp. 137–52, (p. 140).

unspecified animal species, the Creature is constructed from dead humans already consumed and possessed by an animal: Frankenstein 'saw how the fine form of man was degraded and wasted [...] saw how the worm inherited the wonders of the eye and brain' (p. 34). In the construction of the Creature, separate taxonomical categories, half-eaten and mutually possessed by each other, come back to life; this confuses not only the human and the animal, but also the natural processes of life and death over which Frankenstein desires mastery.[12]

As well as defying the species-determinacy promoted by writers such as Lavater, Shelley's text also marks a new direction in nineteenth-century face-reading discourse, from analysis of individual features (in Lavaterian physiognomics, these are specifically fixed and unmoving) to increasing interest in the physiological constitution and expressive operation of the whole face. An important contribution to this discursive trajectory is *The Anatomy and Philosophy of Expression in relation to Fine Art*, by the anatomist Charles Bell, who achieved fame and renown with his pioneering turn of the century work on nervous function.[13] In this text, initially published in 1806, and reissued in 1824, Bell attributes expression in humans and animals directly to physiological, muscular, and nervous processes. Bell's ground-breaking work, like that of Victor Frankenstein, was enabled and given evidential proof by comparative dissection of animals and humans; Bell dissected dead faces, comparing the facial nerves of humans with those of different species. Bell used these experiments to provide evidential support for pan-species facial congruities: '[w]hen the animal frame is surveyed as a whole, or as composed of parts *more or less common to all living creatures* […] a uniform plan is seen to pervade the animal kingdom' [my emphasis].[14] Every part of the face, he argues, contributes to the establishment of coherence and community, showing an identifiable development 'from the simple structure of those creatures which enjoy the lowest kind of sensibility, to that

[12] As Ruston points out, the Creature asks "What was I?" three times throughout the novel. Ruston, '"What was I?", p. 83. See Shelley, *Frankenstein*, p. 96; p. 97; p. 104.

[13] Anita Guerrini has used the experimental work of Bell, along with that of his French contemporary and rival, François Magendie, to provide contextual background for her discussion of how the 1820s anti-vivisection debates impacted the reception of Shelley's novel. Bell's work pre-dates Magendie's, but the latter's was more complete due to his willingness to experiment on live animals. Guerrini notes that the names of Magendie and Frankenstein became synonymous with the 'unblinking cruelty of the scientist in the process of gaining new knowledge'. Guerrini, 'Animal Experiments and Antivivisection Debates in the 1820s', in *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780–1830*, ed. by Christina Knellwolf and Jane Goodall (Ashgate: Surrey, 2008), pp.71–85 (p. 72; p. 82). Paul White writes that Bell's *Anatomy* was the 'most influential text on the subject' prior to Darwin's publication of *Expression*. White, 'The Face of Physiology', *19: Interdisciplinary Studies in the Long Nineteenth-Century*, 7 (2008), 1– 22 (p. 2).

[14] Charles Bell, *The Anatomy and Philosophy of Expression as connected with the Fine Arts*, 5th edn, (London: Bohn, 1865), p. 57.

which exists in the human frame'.[15] Figure 4.1 shows the muscular system of a human face, while Figure 4.2 depicts the similar workings of muscles in a lion.

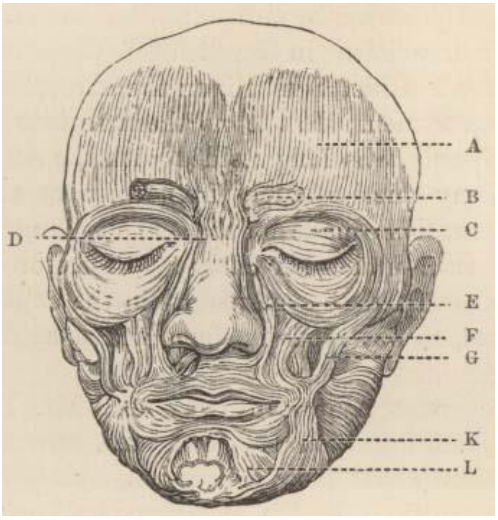


Figure 4.1: 'Of the Muscles of the Face'[16]

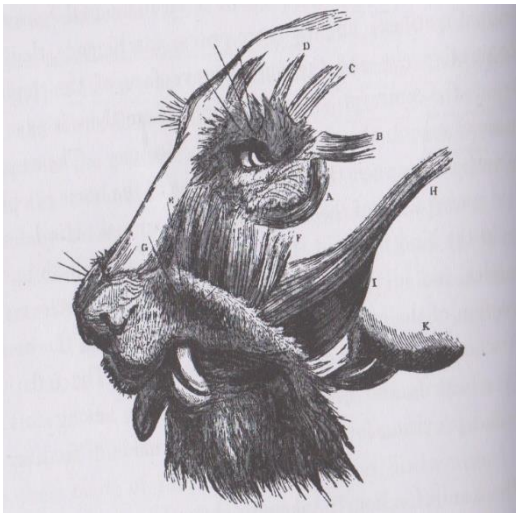


Figure 4.2: 'The Head of a Lion'[17]

Bell's text combines physiognomic analysis with examination of the physical structure and anatomical interiority of the face; consequently, Lavater's metaphorical comparisons between humans and animals become translated into analysis of how internal, constitutional similarities manifest themselves on the surface of the face. Yet despite seeming to promote a Lawrentian ecological holism, where 'all [animals] have participated in the existence of other living beings', the narrative endorsed by Bell is more indebted to natural theology than proto-evolutionary discourse. His theory depends upon a schema of dual causation, whereby the physiological causes of expression are enabled by divinely bestowed mechanisms; for animals, these mechanisms allow expression only of the 'necessary instincts', while human faces possess an additional 'peculiar set of muscles' specifically designed for communication with other humans.[18] This distinction ensures that animal faces cannot be humanised, while the hybridisation of animal and human faces

[15] *Ibid.*
[16] Bell, *Anatomy*, Plate II, following p. 270 (repr. in Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009), p. 33).
[17] Bell, *Anatomy*, p. 124.
[18] Bell, *Anatomy of Expression*, p. 41; p. 121. L. S. Hearnshaw notes that some form of duality, which granted the legitimacy of both physical and metaphysical causation, was frequently adopted in discussion of emotional states. Samuel Taylor Coleridge believed that complete division between psychology and physiology would deprive psychology of all objective truth, while reducing the latter to a mere enumeration of facts and phenomenon; he coined the term 'psycho-somatic' in order to describe what he considered an ideal union between the two disciplines. Hearnshaw, *A Short History of British Psychology* (London: Methuen, 1964), p. 8.

leads only to supreme ugliness: 'the satyr and faun are as mules and hybrids; the man and the brute are joined […] the conception is fulfilled by the grossness of form'.[19] Here the unification of animal and human features, despite their commonality ('more or less common to all living creatures'), in a single individual, inspires revulsion in the viewer. Gesa Stedman argues that it is precisely *becaus*e of his extensive anatomical knowledge that Bell is compelled to frequently reiterate human distinctiveness as a form of ideological preservation against the implications of muscular and nervous continuities between species.[20] In Shelley's novel, the necessity of taxonomically containing non-human species, against the evidence of burgeoning evolutionary theory and anatomical investigation, recurs: Frankenstein, like Bell, gains extensive anatomical knowledge and yet remains convinced of the indisputable superiority of human physiological constitution. He assumes that other species have a 'simpler organisation' in comparison 'to an animal as complex and wonderful as man' (p. 35), and is tortured, in his turn, by the 'multitude of filthy animals' that pursue him in his 'insanity' (p. 123), a reminder of his own transgression against species divisions.[21]

Beyond this, however, it is the prioritisation of the human face's communicative powers over its anatomic function that compels both Bell and Frankenstein to maintain rigid dividing lines between human and animal: communicative expression on the hybrid face becomes immediately repellent. Denise Gigante contends that it is the visual realisation of the Creature's 'hodge-podge' construction that shatters any illusion of facial harmony, and that his 'representational shell' cannot contain the chaos inside: 'as cracks and fissures emerge in the representation, the visceral reality of the Creature leaks through to destroy all fantasy'.[22] Yet it is also specifically the Creature's expressive face, 'wrinkled into contortions' (p. 40), that inspires particular horror. Having demonstrated his imperviousness to the expression of suffering in animals, Frankenstein admits that he can recognise emotion and suffering in the face of his Creation: 'his countenance bespoke

---

[19] Bell, *Anatomy of Expression*, p. 70. I return to this point in Chapter Six in order to demonstrate how Bell's discussion of affective response to the expressive face can be extended to animals also, through artistic representations.

[20] Gesa Stedman, *Stemming the Torrent: Expression and Control in the Victorian Discourses on Emotions, 1830–1872* (Hampshire: Ashgate, 2002), p. 50.

[21] As Mary Douglas argues in her anthropological discussion of dietary laws, ideals of purity and cleanliness have long been bound up with those of division and classificatory separation. Douglas, *Purity and Danger: An Analysis of the Concepts of Pollution and Taboo* (London: Routledge, 1992), p. 57.

[22] Denise Gigante, 'Facing the Ugly: The Case of *Frankenstein*', *ELH*, 67.2 (Summer 2000), 565–87, (p. 566; p. 570). Gigante argues that ugliness in *Frankenstein* is more concrete than a lack of beauty. Engelstein considers that it is because the Creature's face 'reveals too much' that viewers are repulsed. See Engelstein, *Anxious Anatomy*, p. 181; p. 193.

bitter anguish, combined with disdain and malignity'. The newly-created face is, for all intents and purposes, that of a human baby: 'His jaws opened and he muttered some inarticulate sounds, while a grin wrinkled his cheeks' (p. 40). Yet Frankenstein insists on remaining blind to the pathognomic signs — he relates, 'I beheld the wretch […] his eyes, if eyes they may be called, were fixed on me. […] He might have spoken but I did not hear' (p. 40) — resorting instead to a taxonomic code that associates the physical deformity of his creation with moral depravity, brutal and demonic in character.[23]

In *Frankenstein*, a distinction arises between perceptions of the Creature's unanimated and animated face: significantly for my thesis, the physiognomically beautiful face becomes the pathognomically ugly. A being of great stature and inhuman strength and agility, the Creature is not immediately identifiable as ugly or repulsive before he is animated. He is 'in proportion' and the features have been purposively selected by Frankenstein for their 'beautiful' quality: 'his hair was of a lustrous black and flowing; his teeth of a pearly whiteness' (p. 39). On bringing his creation to life, however, Frankenstein experiences an intense feeling of revulsion: 'when those muscles and joints were rendered capable of motion, it became a thing such as even Dante could not have conceived' (p. 40). Frankenstein recognises too late the 'horrid contrast' in the Creature's countenance, with the 'luxuriances' of his pearly teeth and flowing hair jarring against 'his watery eyes […] the dun white sockets in which they were set, his shrivelled complexion, and straight black lips' (p. 39). The moving face signifies the Creature's agency, his immediate involvement in the temporal narrative of the novel, and his communicative appeal to those around him, even as the separate components of his face, rendered fixed and dead, appear to have had their own varying and diverging lifelines extinguished. The Creature's face is quantifiable when viewed as segregated, fixed and unanimated components, yet '[w]hen the animal frame is surveyed as a whole', moving in unison, it becomes repellent as the accumulation of taxonomical transgressions and contradictions that constitute his animated being,

[23] Scott Juengel and Thomas Dutoit have used Emmanuel Levinas's theories in their respective discussions of Frankenstein's resistance to the Creature's face: Dutoit distinguishes between the 'phenomenal' faces of Shelley's human characters and the 'non-phenomenal' face of the Creature, while Juengel focuses on the physiognomic systematisation that Frankenstein substitutes for the ethical 'summons' of the non-phenomenological face. Dutoit, 'Re-Specting the Face as the Moral (of) Fiction in Mary Shelley's *Frankenstein*', *MLN*, 109.5 (December 1994), 847–71; Juengel,'Face, Figure, Physiognomics', p. 364; p. 360. Helena Feder argues that Frankenstein fears becoming the object of the Creature's gaze: 'in rationalist culture, the spectator is always superior to the spectacle […] this is the nightmare knowledge of Western consciousness, its life as the passive, helpless object of nature's agency'. Feder, *Ecocriticism and the Idea of Culture: Biology and the Bildungsroman* (Surrey: Ashgate, 2014), p. 70.

animal/human, dead/alive, ugly/beautiful, are symbiotically brought into moving expression in a living form.

The indeterminacy of the Creature's face excludes him from pathognomic communication with others. Like Lavater's ugly fiends, the Creature is an animal–human hybrid who must be envisioned as antithetical to the natural order in an attempt to protect the sanctity of that order, which Frankenstein has already violated; marking a shift in face-reading discourses however, it is through his expression that the Creature is determinedly marked as not only ugly, but also taxonomically unquantifiable. The failure of classificatory nomenclature is again indicated by the young William Frankenstein's recourse to indeterminate and unquantifiable signifiers when brought face to face with the Creature: '"Monster! Ugly wretch! […] Hideous monster!"' (p. 117). In their denial of both the verbal and visual expression of the Creature's hybrid face, the two Frankensteins spurn any potential for communication across taxonomical boundaries.

Yet the inability to communicate is not the fault of the Creature and, ironically, in their rejection of the expressive face, it is the human characters who lack what Bell terms a 'special apparatus' for communication.[24] The rejection of communicative exchange with the hybrid face relocates the taxonomical confusion generated by the Creature in the humans who observe and reject him as unclassifiable. According with a perspective that prioritises the comprehension of facial language as a specifically human attribute, Stefani Engelstein states that critical discussion of *Frankenstein* has neglected investigation of the instinctive, animal nature of the human characters. Drawing on the Rousseauvian philosophy that humans are distinguished from animals by their ability to act on reason over instinct, Engelstein asserts that, in their rejection of the Creature, the human characters fail to demonstrate their quintessential human ability to reason, succumbing to their baser impulses.[25] Human response to the Creature is marked by what is described by the architectural critic, Mark Cousins, as the typical response to the ugly: self-preserving flight.[26]

In support of Englestein's reading, the 'animal nature' of Frankenstein becomes evident in his internalisation of the animal face, an internalisation that also creates

---

[24] Bell, *Anatomy*, p. 138.
[25] '[W]e need reason […] all that we need when we come to man's estate is the gift of education.' Jean Jacques Rousseau, *Émile*, (1762), trans by. Barbara Foxley (London: Dent, 1974), p. 6. See also Jean Jacques Rousseau, *Discourse on the Origin of Inequality* (1755), trans by. Donald A. Cress (Indianapolis: Hackett, 1992), and Engelstein, *Anxious Anatomy*, p. 185.
[26] 'In effect we block our eyes and we turn away'. Mark Cousins, 'The Ugly [Part 2]', *AA Files*, 29 (Summer, 1995), 3– 6 (p. 6).

biological parallels between him and his creation. In an evocation of pent-up, brutal rage, the Creature reports that 'the feelings of kindness and gentleness which I had entertained [before he was shot at] gave place to hellish rage and gnashing of teeth' (p. 112). Following Justine's execution, Frankenstein exhibits similar brutal expressions: 'shunning the face of man […] when I thought of [the Creature] I gnashed my teeth, my eyes became inflamed, and I ardently wished to extinguish that life which I had so thoughtlessly bestowed' (pp. 69–71). Frankenstein's despair is animalised in an image of extreme brutal ferocity, the battle between animal and human nature expressed as an internal, physical experience: 'the tortures of the accused did not equal mine; she was sustained by innocence, but the fangs of remorse tore my bosom, and would not forgo their hold' (p. 64). The co-existence of the animal and human within the human body or mind has been discussed in various discourses, from early nineteenth-century phrenological theorisation on the animal faculties of the human brain, to Sigmund Freud's account of how animal instincts are necessarily repressed in modern civilised societies.[27] This co-existence is characterised by the interpenetration of conflicting elements or organisms; here, as the 'wonders of the brain' are consumed and superseded by the lowly worm, Frankenstein too is possessed and consumed by the animal.

This reading of the human characters as 'animal' in nature is complicated, however, by Shelley's frequently emphasised claim that it is the human eye that cannot look at the Creature: 'Oh! No mortal could support the horror of that countenance'; 'his face was wrinkled into contortions too horrible for the human eye to behold' (p. 40; p. 119). The Creature begs for a 'favourable eye' to recognise the 'love and humanity' within his soul (p. 78), whilst DeLacy, the one human sympathetic to his plight, is blind. The Creature is not abhorrent to other animals in the novel and, being vegetarian, poses far less of a threat to non-human animals than his maker.[28] The birds that 'surround' the Creature on his first forays in the world do not flee in terror at the sight of his face, instead they sing pleasant songs, so closely gathered around him that they 'intercepted the light from [his]

[27] Sigmund Freud, *Civilization and its Discontents*, trans. by Joan Riviere, ed. by James Strachey (London: The Hogarth Press and the Institute of Psychoanalysis, 1975).

[28] Already made out of humans half-eaten by animals, the process of his creation involves the mutilation and perversion of natural and dietary laws; the Creature rejects the possibility of taking this transgression further: 'I do not destroy the lamb and the kid, to glut my appetite […] the picture I present to you is peaceful and human' (*Frankenstein*, p. 120). Several critics have commented on how the contemporary trend for rejecting meat and adopting a 'natural', vegetarian diet influenced Shelley's work. Vegetarianism was promoted, among others, by Percy Shelley in 'A Vindication of Natural Diet', 1813. See Timothy Morton in *Shelley and the Revolution in Taste: The Body and the Natural World* (Cambridge: Cambridge University Press, 1995).

eyes' (p. 81). The Creature's voice, as he attempts to imitate birdsong, is 'uncouth and inarticulate', but it is not monstrous; while his form is an amalgamation of human and animal parts, leaving him physiognomically deformed, the Creature's voice identifies him as human. When Walton shuts his eyes at the sight of the 'loathsome, yet appalling hideousness' of the Creature's face, he allows himself to hear instead the 'suffocated' voice, which arouses 'a mixture of curiosity and compassion' (p. 187). It is not quite the case, as Engelstein states, that the human characters display a distinct lack of human reason; it is more that, their reasoning is immediately predicated on evidence processed through sight, thus restricting and limiting recognition of the hybrid face. In Darwin's terms, this processes eventually becomes apparently habitual, ingrained through a morally self-supporting codification of meaning.

The application of reason has been used over the centuries to justify human responses to external stimuli, including Lavater's rationalised condemnation of certain external appearances, which he nominates animalistic and 'ugly'. Yet this criterion is not the only basis on which classificatory apparatuses are formed, and, in a text from 1805, the MP and art critic Richard Payne Knight disputes the Lavaterian implication that any fault, error, or misreading of exteriority lies in the reasoning of the beholder (the reasoner/ aesthete/physiognomist) rather than in the system itself.[29] Knight writes that different humans find different things beautiful and that animal species, relying on different senses to humans, have an alternative scale of beauty:

> If, however, a boar can think a sow the sweetest and most lovely of living creatures, we can have no difficulty in believing that he also thinks her the most beautiful: for the sense of smell is much more impartial, and less liable to be influenced or perverted by mental sympathies, than that of sight.[30]

In this account, published many years prior to those of Darwin and Wells, the difference between animals and humans is underscored, with humans relying predominantly on their sense of sight to form classificatory judgements. Unlike Darwin, Knight does not impose a human-orientated hierarchy on alternative tastes and the classificatory mechanisms that support them. Significantly, in *Frankenstein*, the Creature has to learn to prioritise sight:

---

[29] Knight is best known for his theories of picturesque beauty, which influenced later Romantic and Victorian aesthetic theory. I return to theories of aesthetics in Chapter Six.
[30] Richard Payne Knight, *An Analytical Inquiry into the Principles of Taste* (1805) (Farnborough: Gregg International Publishers, 1972), pp. 17–18.

upon waking for the first time, he recalls that ‘a strangle multiplicity of sensations seized me and I saw, felt, heard, and smelt, at the same time’, and it is ‘a long time’ before he learns to distinguish between the senses (pp. 79–80).

The Creature’s education includes a growing acknowledgment that he cannot live peacefully in human society because ‘the human senses are insurmountable barriers to our union’ (p. 119). Like his creator, the Creature idolises human learning, nominating language ‘a god-like science’ (p. 88), and is desperate to learn human speech and transcend his animality. Yet, despite his acquisition of human language, Bell’s ‘special apparatus’, the Creature remains repulsive to human eyes; moreover, it is after he has acquired this apparatus that he comes to recognise and nominate himself as monstrous:

> I had admired the perfect forms of my cottagers, — their grace, beauty, and delicate complexions; but how was I terrified when I viewed myself in a transparent pool! […] when I became fully convinced that I was in reality the monster that I am, I was filled with the bitterest sensations of despondence and mortification. (p. 90)

Englestein’s assertion that it is animal, non-reasoning instinct that drives recognition of beauty/ugliness assumes that aesthetic sense is innate. Yet the Creature is too well versed in and reverent of human reasoning and language for this to be a self-evident truth: here the transparent pool works to reflect the perversion of what is considered to be another mirror, the human physiognomy, ‘that mirror of the divinity’.[31] The Creature not only learns human articulate language, but also proves himself remarkably adept at learning to process non-verbal signifiers. Through cultivating his human faculties, he assumes the same conventional aesthetic and physiognomic judgements promoted by Frankenstein. He recognises the good natures of the cottagers as reflected in their ‘perfect forms’ and ‘delicate complexions’ (p. 90), and adheres to this view despite their rejection of him.

Although other animals perform classificatory analysis (see Chapter Three), the category ‘human’ is itself here associated with an exclusively visual judgement, that remains ironically blinkered and resistant to, as Wells points out above, alternative modes of perception: comprehension of other organisms that do not cohere to visual-codifications, supported by a language-based significatory framework, are thus limited.

[31] Lavater, *Essays*, p. 14.

Unthinking impulses, or 'necessary instincts', appear to motivate animals and humans alike, yet the humans' responses are not those of a multi-sensory animalised perception and instead support rationalised systems of visual signification. I now go onto explore a counter to this through analysis of *The Island of Doctor Moreau*, a text in which Wells, influenced by the nineteenth-century evolutionary discourses that he also participated in, provides a means to further investigate how the animal face collapses species divisions and taxonomic codes of facial systematisation, as instigated in Shelley's novel.

ii. Hybrid Expression: The Communication of Monstrosity

In his fictional and non-fictional writings Wells debunks long-standing ideas concerning the representation of humans as indisputably superior to animals and of evolutionary development as necessarily progressive. The former is evidenced above with his wry remarks about dogs' olfactory perception, while the latter is broached in an 1891 article on 'zoological retrogression'. Here Wells claims that evolutionary advance cannot always be measured according to biological complexity, and defends the retrogression of the sea-squirt, a marine invertebrate that becomes less mobile and sensorially responsive as it matures: he maintains that this backwards process, in which evolutionary time is seemingly reversed, does not negatively affect the sea-squirt's survival, and hence there is no inherent contradiction of the evolutionary mechanism.[32] A conflict emerges, however, between Wells's anti-anthropocentricism and description of evolution as a multi-directional process, and his depiction of human evolution as subject to intervention and redirection away from animality.

As a student and great admirer of Thomas Huxley, Wells was greatly concerned about the potential for human degeneration; he considered the potential 'plasticity' of all living beings to be a biological safeguard that allowed for adaptation and mutability.[33] In an article published the year before *The Island of Doctor Moreau*, Wells writes that

[32] H. G. Wells, 'Zoological Retrogression', *Gentleman's Magazine*, 271 (September 1891), 246–53.
[33] Part I has already detailed examples of earlier racist discourses that relied on biological 'evidence' to explain the apparent animalistic nature of particular human groups, visually represented in the face; these discourses continued to proliferate throughout the nineteenth century, as biological degeneration provided an explanation for the inferiority not only of different races but also of marginalised societal groups, with facial identification and codification remaining key to these taxonomies. The work of Cesare Lombroso identified the traits of degenerate criminality in human faces. See also H. G. Wells, 'Human Evolution: An Artificial Process', *Fortnightly Review*, 60 (Oct., 1896), 590–95. Janet Browne notes that degeneration was an important source of imagery in late nineteenth and early-twentieth century literature, with the propertied

> we overlook only too often that a living being may also be regarded as raw material, as something plastic, something that may be shaped and altered […] and the organism as a whole developed far beyond its apparent possibilities.[34]

Animal evolution has long been manipulated by humans; yet Wells argues for a level of intervention that goes beyond the usual procedures of selective breeding, a practice that originated with the intentional delineation of the most pliable, least adventurous animals for human use thousands of years ago.[35] Instead, he seems to advocate something that resembles modern genetic engineering; this issue is taken up one year later in *The Island of Doctor Moreau,* as Wells's fictional scientist, Dr Moreau, explores the potentials for submitting both 'outward form' and 'physiology, the chemical rhythm of the creature', to 'enduring modification'.[36]

Victor Frankenstein and Dr Moreau have a shared interest in mastering traditional taxonomic divisions and re-shaping them for their own ends; the parallel themes of the two novels have allowed critics to consider these characters, both white, male scientists pursuing an ideal aim, as fictional counter-parts.[37] In contrast to Frankenstein, however, Moreau believes that he is acting according to scientific laws that are already in existence, as he himself responds and adapts to the principle that species identity is necessarily malleable and non-fixed. Justifying his actions, he states: "After all, what is ten years? Man has been a hundred thousand in the making" (p. 124). As a human intercessor in biological processes, Moreau instigates an artificial escalation of evolutionary time: "[t]hese creatures you have seen are animals carven and wrought into new shapes. To that, to the study of the plasticity of living forms, my life has been devoted" (p. 124).[38] On

---

classes combining worry about crime, poor public health, and the loss of imperial status with prejudices against decadent artists, criminals, homosexuals, New Women, and neurotics. See Browne, 'Constructing Darwinism in Literary Culture', in *Unmapped Countries: Biological Visions in Nineteenth Century and Culture*, ed. by Anne-Julia Zwierle (London: Anthem Press, 2005), pp. 55–69 (p. 63).

[34] H. G. Wells, 'The Limits of Individual Plasticity', *Saturday Review*, 79 (19 January 1895), 89–90 (p. 90).

[35] On human-governed selective breeding, see Charles Darwin, *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008), pp. 25–36.

[36] H. G. Wells, *The Island of Doctor Moreau* (1896), ed. by Mason Harris (Plymouth: Broadview, 2009), p. 124. All further quotations are from this edition (unless otherwise stated) and are included in parenthesis.

[37] Baldick comments on Moreau's Frankenstein-ian attributes in *In Frankenstein's Shadow*, p. 153; for discussion on the two characters' relation, see Anne Stiles, '"Literature in "Mind": H. G. Wells and the Evolution of the Mad Scientist', *Journal of the History of Ideas*, 70.2 (April 2009), 317–39; Jürgen Meyer, 'Surgical Engineering in the Nineteenth Century: *Frankenstein, The Island of Dr Moreau, Flatland*', in *Unmapped Countries*, pp. 173–82.

[38] Martin Danahay explores the links between *The Island of Doctor Moreau* and the work of geneticist and eugenicist, Francis Galton: 'Mason Harris astutely observes that Moreau's aim is to "purify the human race

viewing his finished creations, Moreau is content that "they seem to be indisputably human beings", yet is frustrated by the fact that they revert to animal form: "as soon as my hand is taken from them the beast begins to creep back" (p. 124). While species boundaries are malleable to an extent, a biological impediment is here placed on the overt manipulation of an organism's 'plasticity' by human hands, a manipulation that Wells himself had previously advocated. The taxonomic category of the animal is altered: this also necessitates a change in the way in which the animal is defined, recognised, and communicated with, as the usual procedure of evolution, operating via drawn-out temporal processes, natural selection, or even, in Darwin's Lamarckian terms, the inheritance of habitual actions, is violated and confused.[39]

This taxonomic confusion extends to the use of verbal language, which poses a continual significatory quandary in the novel: for Moreau, who relies on articulate-language acquisition to define the success of his experiments, for the Beast People, who struggle to remember and adhere to a semiotic system, and for the reader, who has to decipher often elusive, incomplete version of events — as Pendrick becomes more drawn into island life, long periods of time pass with little commentary. Participating in lengthy and ongoing debates about language origin and distribution, Moreau observes that 'the difference between man and monkey is in the larynx, […] in the incapacity to frame delicately different sound-symbols by which thought could be sustained' (p. 125).[40] Pendrick notes: 'in this I failed to agree with him', but fails to elaborate on what exactly he disagrees with — whether it is that spoken language is the biggest difference between humans and animals, or whether cognition cannot exist without the ability to 'frame delicately different sound-symbols'. As articulate language and 'sustained' cognition is gradually eroded on the island, the veneration of human thought itself comes under threat; Pendrick recognises this when he comments on the Monkey-man's idea that to 'gabble about names that meant nothing was the proper use of speech' (p. 166). The Monkey-man's confused gabbling seems apt on an island where semiotic signs of species

---

by perfecting the process of evolution" which is a strikingly Galtonian formulation and aligns Moreau with the attempt to create a "pure" society based on Darwin's theories'. Danahay, 'Wells, Galton and Biopower: Breeding Human Animals', *Journal of Victorian Culture*, 17.4 (December 2012), 468–79 (p. 473).

[39] For more on the relationship of evolutionary science to Wells's narrative, see: Patrick Parrinder, *Shadows of the Future: H. G. Wells, Science Fiction and Prophecy* (New York: Syracuse University Press, 1995); Browne, 'Constructing Darwinism in Literary Culture'; John Glendening, '"Green Confusion": Evolution and Entanglement in H. G. Wells's *The Island of Doctor Moreau*', *Victorian Literature and Culture*, 30.2 (2002), 571–97. Richter argues that scientific context creates a meta-textual dimension that permits 'an interrogation of the reciprocal action of narrative, science and culture'. *Literature After Darwin*, p. 99.

[40] I return to debates concerning language origin in Chapter Five.

categorisation are frequently untrustworthy; in an aside, Pendrick comments on the animal and human parallels indicated by such behaviour: ‘he had developed in the most wonderful way the distinctive silliness of man without losing one jot of the natural folly of a monkey’ (p. 166).

It is here that face-reading intervenes: comprehension of unspoken facial language becomes the means via which Pendrick forges a classificatory apparatus (whether determining beneficence or threat), upon which representations of both the Beast-people and other humans depend. As in *Frankenstein*, the narrative of Wells’s novel is enacted through the confused interactions and identifications that occur between the animal and human face. The mutilated, half-human, half-animal faces of Moreau’s surgically adjusted Beast People do not provoke the same level of horror in their human observers as the Creature does in his, yet a sense of uncanny perturbation and discomfort remains. Pendrick’s first meeting with the Beast People is characterised by interaction solely with faces: ‘I saw only their faces, yet there was something in their faces — I knew not what — that gave me a queer spasm of disgust’ (p. 88). Pendrick’s disgust is generated by his assumption that what he sees before him are humans, with the familiarity of the animal written too clearly on their countenances. When meeting M’Ling for the first time, Pendrick recognises his bestial features: ‘the facial part projected, forming something dimly suggestive of a muzzle, and the huge half-open mouth showed as big white teeth as I had ever seen in a human mouth’ (p. 78). While Pendrick considers M’Ling’s face ‘singularly deformed’ (p. 78), looking at him prompts further acts of reflective recognition and attempts at identification: ‘I experienced at the same time an odd feeling that in some way I *had* already encountered exactly the features and gestures that now amazed me […] Yet how one could have set eyes on so singular a face and yet have forgotten the precise occasion, passed my imagination’ (p. 79). Pendrick’s recognition of M’Ling’s face hinges on investment in the evolutionary imagination: as such, he eventually comprehends that the Beast People are not degenerate humans, but humanised animals.

Throughout *Island of Doctor Moreau,* conventional means of distinguishing the animal from the human are systematically dismantled: the Beast People can speak; they walk on two legs; they can reason; and their tendency to revert to animal-state is manifested via traditional physiognomic signs, ‘their foreheads fell away and their faces projected’ (p. 167). Significantly, the human characters, like Wells’s sea-squirt, also show signs of regression. Contrary to Moreau’s faith in an artificially ‘progressive’ evolution, species flux becomes a recurrent reality. Moreau’s assistant Montgomery is the most

identifiably animal of the three men who inhabit the island; his physiognomy presents bestial characteristics: 'his dropping nether lip showed his irregular teeth' (p. 119); 'his face was rather pale and he showed more of his lower gums than ever' (p. 148). Montgomery shares M'Ling's habit of revealing his teeth: as Darwin notes in *Expression*, the 'power of uncovering the canine tooth on one side differs much in different persons', allowing for variation on a gradated evolutionary scale; here, the man and the Beast-person are united via their proximity to each other on such a continuum.[41]

Montgomery has a physiognomy that confers animalised signification, while his eyes remain peculiarly 'expressionless' (p. 148), 'oddly void of expression' (p. 75). Pendrick's alienation from Montgomery is signified here by his inability to read or assess the eyes that he looks to for communication; equally Montgomery's empty vision indicates a form of blindness to events occurring around him and the process of change he himself is undergoing: as with *Frankenstein*, eyes and ocular ability remain an important indicator of classification through varying degrees of perception. Like the Beast People, Montgomery struggles to control his desire for flesh, and is seen by Pendrick as regressing to an animal state, at the end of the novel: '"You've made a beast of yourself — to the beasts you may go."' (p. 154).[42] Yet maintaining species confusion, Pendrick is not a reliable narrator, and his own taxonomic status remains unconfirmed; the 'scarlet stuff, iced' that Montgomery gives him on their first meeting 'taste[s] like blood', but rejuvenates him (p. 76) and, as the novel draws to its cataclysmic close, he observes, 'I became one among the Beast People in the island of Dr Moreau' (p. 162). Pendrick's experience, however, marks him as different to Montgomery: on returning to England, he notes that '[his] eyes have a strange brightness, a swift alertness of movement' (p. 168); he is akin to the Puma woman with her 'shining eyes' (p. 82). Species lines are potentially crossed and it is not clear whether Pendrick is referring to being alone among others unlike him, becoming complete, or becoming in constitutional form similar to the remnants of the society he is surrounded by.

The uncanny doubleness of animal-human hybridity is not only a product of Moreau's experimental intervention, but is also a quality that Pendrick recognises as extant in more familiar environments: 'I would meet the Fox-bear woman's vulpine, shifty face, strangely human in its speculative cunning, and even imagine I had met it before in some

[41] 'the power of uncovering the canine tooth on one side differs much in different persons', Darwin, *Expression of the Emotions*, p. 32.
[42] In Wells's novella, *The Time Machine*, the theme of flesh-eating, specifically human flesh-eating, recurs: the human species has morphed into two types and the ape-like Morlocks eat the helpless Eloi in order to survive.

city byway' (p. 136).[43] As Patrick Parrinder has pointed out, the repeated moments of eye contact between the human protagonists and the Beast People in *The Island of Doctor Moreau* have the effect of heightening the narrative's horror.[44] More than this, however, it suggests a burgeoning reciprocal relationship between human and non-human, and also the point at which boundaries between species are broken and re-imagined. Unlike *Frankenstein*, Wells's novel allows for moments of affinity and communication with the hybrid-face. As with the general process of taxonomic systems, out of uncertainty generated by an exchange of seeing and being seen, new ways of recognising the other emerge. Pendrick responds to the animal elements of the Beast People's faces; it is these features, rather than those of the 'deformed' human, that prompt his 'amazed' recognition. This uncertainty continues to plague Pendrick on his return to London: 'I would go out into the streets to fight with my delusion, and prowling women would mew after me' (p. 173). As for Darwin, the procedure of visual recognition, where cultural and social significations become represented via the relative animality of the face, determines classification. Pendrick's realisation of what the Beast-People are and his understanding of the elusive 'something' that causes revulsion occurs not purely via his acknowledgment of the Beast-People's animality, but also via the animality of other humans.

The classificatory confusion instigated by humanised animal faces in *The Island of Doctor Moreau* adheres to Bell's description of the satyr and faun's uncanny ugliness; however, extending on Bell, response to the face's physical constitution does not negate expressive communication. This is memorably realised through Pendrick's interaction with the Leopard-man: 'seeing the creature there in a perfectly animal attitude, with the light gleaming in its eyes and its imperfectly human face distorted with terror, I realised again the fact of its humanity' (p. 144). Here Wells fictionalises the encounter between the human and the non-human other as described by his teacher, Huxley: 'brought face to face with these blurred copies of himself, the least thoughtful of men is conscious of a certain

[43] Erica Fudge discusses the changing status of the fox. Although initially considered as vermin in the early modern period, with the decline of deer hunting by the end of the seventeenth century, foxes became the substitute of choice, and as such had to be characterised as a worthy opponent — highly intelligent, wily, and cunning. Fudge, *Animal*, p 147. See also: 'secretiveness and cautiousness are very large in the fox, as seen in the great width of his head, and his cunning expression of face; that shrewd smirk, as seen by the position of the eyes and sharp phiz, harmonize with his head and character'. [Anon.], 'Animal Phrenology: The Fox', *The American Phrenological Journal*, 13.2 (February 1851), 32.

[44] Parrinder writes that 'to meet an animal face to face and look it in both eyes is an unusual experience for most people, partly as a result of physical differences and partly because of our preoccupations which prevent us from encountering animals on terms of equality'. Parrinder, *Shadows of the Future*, p. 59. Wells circumvents this difficulty by having his animals walk on two legs.

shock'.[45] The juxtapositions and contrasts within Wells's sentence indicate how approaches to the face have changed; the combination of the 'perfectly animal' attitude with the 'imperfectly human' form indicates not animality or repulsive hybridity, but 'humanity', signalling a necessary acceptance of hybridity as the inherent nature of all creatures. As in Huxley's account, the indeterminate and seemingly paradoxical collapse of animal and human is instigated via interaction with the face: instead of allowing the Leopard-man's capture and inevitable return to the 'House of Pain', Pendrick shoots it 'between its terror-struck eyes' (p. 144). The willingness to comprehend and act on expressive communication with the hybrid face contrasts significantly with the actions of Shelley's human protagonists; it is also the 'necessary instinct' of fear that Wells responds to: in the Leopard-Man's look he recognises commonality with himself.

As the discourses in this thesis suggest, understandings and classificatory systematisations of human life are, in many ways, dependent on the animal face, even as the animal is subjected to order via comparison with the human. This is exemplified through how communicative understanding either operates or refuses to operate, in *Island of Doctor Moreau.* After a prolonged time on the island, the human inhabitants begin to find interaction with other non-islander humans difficult: Pendrick becomes 'a little habituated to the idea of [the Beast People], while Montgomery 'regard[s] them as almost normal human beings' (p. 135). In a narrative parallel to Pendrick's original disconcerting boat-ride, Montgomery relates that, when venturing abroad on a trip undertaken to aid Moreau, 'the men aboard-ship […] seemed at first just as strange to him as the Beast Men seemed to me' (p. 135). Alienation from the outside world begins with the inability to recognise human faces as familiar. The men on the ship are 'flat in the face, prominent in the forehead' and, while this archetypal human physiognomy would usually be figured as desirable according to physiognomic tradition, here it indicates that the men are 'suspicious, dangerous, and cold-hearted' (p. 135). Equally, having participated in an actively accelerated and fluctuating evolutionary narrative, Pendrick becomes unable to comprehend the relation between himself and other humans; in London, he recognises the animality of the 'prowling women', but becomes unable to communicate effectively with human faces: '[p]articularly nauseous were the blank, expressionless faces of people in trains and omnibuses; they seemed no more my fellow-creatures than dead bodies would be' (p. 173). Darwin's troubled negotiation with human types that he sees as existing

[45] Thomas Huxley, *Evidence as to Man's Place in Nature* (New York: Appleton and Company, 1863), p. 73.

outside the usual evolutionary processes is replicated, although while Darwin displays discomfort in analysis of the overtly-animalised human, here the obverse, the peculiarly unanimated de-animalised human, is revealed as unsettlingly alien.

As with *Frankenstein*, a distinction emerges between physiognomic classification and pathognomic identification. Montgomery's animal-esque physiognomy, permits classification and some form of interaction via recognition of pan-species traits, yet sympathetic communication is hindered, as with the Londoners on trains and omnibuses, by absence of expression. By contrast, Pendrick's interaction with the Leopard-Man's 'terror-struck eyes' depends on both the primacy and comprehension of animality via the expressive face. This contrast occurs more vividly reinforced through Wells's depiction of Moreau, a man who, in Anne Stiles' words, has 'evolved too far', past moral sense and sympathy.[46] It is through the presence or absence of the animal face that Moreau's experimental successes can be measured, and unlike the other characters in the novel, Moreau lives up to his own standards, remaining unmarked by any physical signs of degeneration. Animal physiognomy and pathognomy, in the form of expression of 'necessary instincts', are excluded from his face. Moreau's face is blank and devoid of expression: as an apocalyptical archetype of Darwin's allusion to expressive control, Moreau is defined by his imperviousness to others' suffering, as visually manifested in his 'set tranquillity', 'his serenity' and his 'calm eyes' with their 'drooping eyelids' (p. 124).[47] His is the quintessential Lavaterian face, lacking any evidence of either animal or human emotion; even when confronting his own violent demise, he remains tranquil: 'with his massive face calm even after his terrible death, and with the hard eyes open, staring at the dead white moon above' (p. 155). In his lack of expression, Moreau is neither human or animal; here, another exchanged identificatory look occurs between a human character and a non-human aspect of nature, yet significantly, the moon is a dead, inanimate entity, not a living organism, and as inscrutable as Moreau.

In *Man's Place in Nature,* Huxley focuses on how encounters with the animal face causes the human to experience an 'awakening of a sudden and profound mistrust of time-

[46] Stiles considers 'the ruthlessly intellectual' Moreau to be a precursor to the aliens with enormous brains and useless bodies in Wells's 1901 text, *The First Men in the Moon.* Stiles, 'Evolution of the Mad Scientist', p. 319.

[47] Like Frankenstein, Moreau cares little for the sentience of the animals on whom he experiments: '"So long as visible or audible pain turns you sick; so long as your own pains drive you, so long as pain underlies your propositions about sin — so long, I tell you, you are an animal, thinking a little less obscurely what an animal feels"'. Wells, *Moreau,* p. 126. See also, H. G. Wells, 'The Province of Pain', *Science and Art,* 8 (February 1894), 58–59 (p. 59).

honoured theories and strongly-rooted prejudices regarding his own position in nature'.[48] *The Island of Doctor Moreau* moderates this reading and also allows its hybrid creations to feel consciousness of a similar uneasy fear: the Leopard-man, along with the rest of the Beast-people, is instinctively aware of the dangerous precariousness following the collapse of species distinction. Moreau's attempt to 'burn out' (p. 130) animality in pursuit of the perfect human highlights the consequences of intervening in human evolutionary development, and warns how the wilful reinterpretation of taxonomic construction is further complicated by the necessary indeterminacy of species boundaries, either preceding or post scientific manipulation. Collapsing divisions between animal and human can perform two distinct functions, raising the animal to the position of the human or lowering the human to position of the animal. This dialectical, yet also over-lapping and reciprocal, tension is manifested in face-reading discourse through recurring concerns about the moral and emotional significations of classificatory systems; in *The Island of Doctor Moreau*, as in Wells's discussion of the sniffing dog, no clear hierarchical structure remains with which to assess or judge the human, animal, or hybrid.

Part I of this thesis has demonstrated that discussions of animality have a crucial role in re-assessing hierarchical classifications according to diverse agendas. My discussion of *Frankenstein* and *The Island of Doctor Moreau* has instigated discussion on how these classifications and agendas can be further moderated via reference to either the physiognomic or pathognomic face. Part II goes on to explore the dynamic between these two face-reading methodologies in further detail, continuing to draw on the theme of facial language and sympathetic identification as referenced in this chapter. Part II charts how articulations of species divisions, difference, and congruities, contributes to a growing emphasis on face-to-face interaction and reciprocal communication.

[48] Huxley, *Evidence*, pp. 73–74.

Part II: From Physiognomy to Pathognomy

Chapter Five

Interchanges: Fluidity in Lavater's Physiognomy and Fixity in Darwin's Evolutionary Pathognomy

As Part I of this thesis demonstrates, species taxonomies during the late eighteenth and nineteenth centuries were governed by two simultaneous but apparently contradictory motivations: the submission of organisms to definitive, systematised categorisation contrasts with a burgeoning emphasis on evolutionary malleability between species. This process produces various complex contradictions and divergences, as both compulsions impact on larger institutional and disciplinary movements and on theories of face-reading practices, which, in turn, reflect broader ideological concerns such as relations between theological and scientific epistemologies and the evolutionary relation between different species and members of the same species. While face-reading discourses assume that the face is legible and that there is a necessary correlation between exterior appearance and interior constitution, the methodologies on which these classificatory acts are predicated do not remain consistent. The relative prioritisations of physiognomy (fixed facial structures) and pathognomy (transient facial expressions) have been subject to continued rhetorical manipulation and reversals throughout a long trajectory of face-reading discourse, as scholars strive to preserve and disrupt taxonomic divisions between humans and animals.

To illustrate some of these dynamics, this chapter takes as its subject the debate that unfolds between Johann Casper Lavater and Charles Darwin over their respective prioritisations of physiognomic and pathognomic readings of the face. Beginning with a contextual introduction that indicates the increasing significance of methodological fixity and links the 'language' of face-reading to broader debates about species divisions, the chapter goes on to demonstrate how emphasis on immovable or malleable boundaries between species is replicated in face-reading discourses: these ideals are co-opted as part of a dialogue between physiognomic and pathognomic theorists in the critical debate over the validity of the methodological structures that they utilise. I analyse my two key texts, Lavater's *Essays on Physiognomy* and Darwin's *The Expression of the Emotions in Man and Animals*, arguing that while these scientific works are shaped by polarised idealisations of fixity and fluidity, the animal face challenges both fixity and fluidity, as

well as relationships between the two.[1] The chapter also considers intermediary, lesser-known texts that further illuminate the shifting methodological priorities of fixity and fluidity endemic to face-reading practices, allowing consideration of the divergences but also the consistencies between Lavater and Darwin.

i. From Face to Sign

In *Essays on Physiognomy*, Lavater draws definitive parameters between the fixity of physiognomic and the fluidity of pathognomic analysis: 'physiognomy therefore teaches the knowledge of character at rest; and pathognomy of character in motion'.[2] For Lavater, physiognomy represents the 'sum total of the mind' (p. 12), while pathognomy is defined as an insufficient or inconclusive means to decipher character. Lavater's determined segregation of physiognomy and pathognomy marks a turning point in face-reading practice, which, up until this point, had in general been characterised by an integrated approach: Phillip Prodger notes that previous studies valued the combined study of emotional expression and fixed facial forms.[3] For instance, the seventeenth-century painter and theorist Charles le Brun was renowned for his detailed depictions of various expressions or passions and also published illustrative typologies of faces at rest. This integrated approach was so popular that, as Lucy Hartley indicates, le Brun's *Conference sur L'expression Generale et Particuliere* (1668) was published in sixty editions throughout the late seventeenth and eighteenth centuries.[4] Figure 5.1 shows le Brun focusing predominantly on physiognomy over pathognomy: the man's face is immobile, allowing clear visual parallels between his face and that of a donkey, especially focusing on his protruding jaw with the thick, over-bitten lips, his prominent eyes, and the shape and positioning of his ears.[5] Despite the fact that later theorists sought to re-address le

[1] Part I discusses Lavater's defence of his work as a science. The veracity of this definition was disputed in his own time, as well as by subsequent critics, but I defer to his description.
[2] Johann Casper Lavater, *Essays on Physiognomy: Designed to Promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 12. All further quotations in this chapter are from this edition and are included in parenthesis.
[3] Phillip Prodger, *Darwin's Camera: Art and Photography in the Theory of Evolution* (Oxford: Oxford University Press, 2009), p. 52.
[4] Lucy Hartley, *Physiognomy and the Meaning of Expression in Nineteenth-Century Culture* (Cambridge: Cambridge University Press, 2001), p. 19.
[5] The medium of illustration, necessarily fixed in form, is not solely used to depict physiognomy: Darwin's *Expression of the Emotions* features many drawings and photographs of highly expressive faces, as does Charles Bell's *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*.

Brun's methodological divergences, his utilisation of inter-species analogy remained a prominent trope in face-reading; Darwin transforms this analogy into reality in the latter decades of the nineteenth century, arguing that biological commonality between animals and humans is the key to comprehending facial expression and, by inference, the structures that support these expressions.

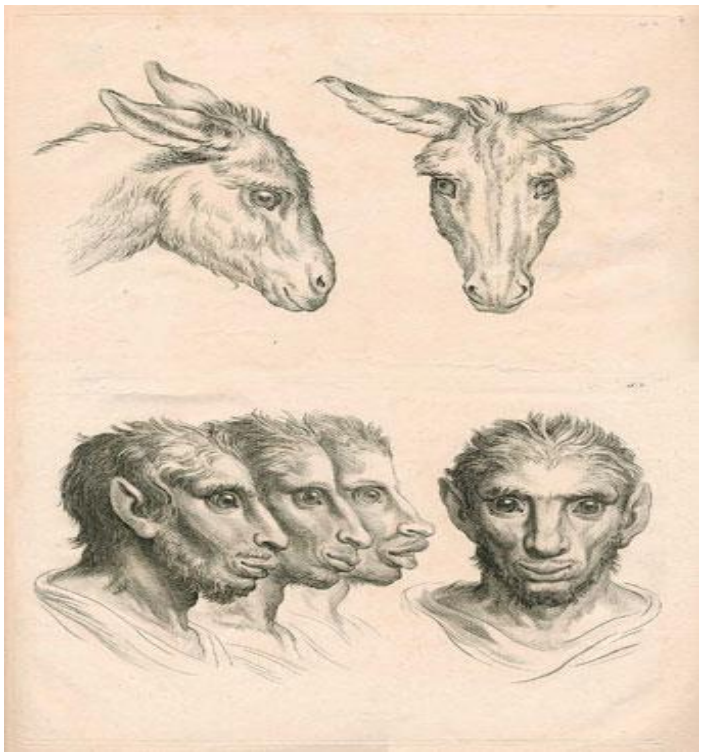


Figure 5.1: From Charles le Brun, *Relation between the Human Physiognomy and that of the Brute Creation* [6]

For Darwin, acceptance of congruity and a specific familial relationship between humans and animals goes hand in hand with increased focus on emotional expression. The chronological trajectory of this thesis demonstrates that, throughout the nineteenth century, pathognomic analysis was increasingly favoured over physiognomic study, extending beyond Darwin's publication of *Expression* in 1872. This coincides with recent critical accounts of mounting nineteenth-century popular and scientific interest in emotional experience and the expression of emotional interiority: for instance, Rachel Ablow writes that 'the emotions continued to function as a central epistemological tool throughout the

[6] Charles le Brun, *A Series of Lithographic Drawings Illustrative of the Relation between the Human Physiognomy and That of the Brute Creation*, trans. by J.G. Legrand and Louis-Pierre Baltard (London: Carpenter, 1827), Plate XIV <http://ic.pics.livejournal.com/zooart/10376496/271777/271777_original.jpg> [Accessed: 10 June 2016].

era'.[7] Discursive representations and mediations of the face are endemic to and inseparable from these burgeoning epistemological constructions: one definitive example of this is the nineteenth century's revived interest in both language acquisition and how emotional expressions contribute to a shared dialogue between species.

Face-reading discourses are implicitly governed by prior ideological convictions concerning how language operates as identificatory sign and communication device (whether this communication indicates a relationship between individuals or remains a means to classify and quantify). A shift occurs between Lavater's demotion of the animal in terms of its lack of language and Darwin's establishment of both articulate language as originating in animal sounds and facial expression as a shared cross-species trait. Lavater champions an intellectualised mediation between face and face-reader, in which effective physiognomic analysis is dependent on the physiognomist's sophisticated linguistic skills. He qualifies the argument that physiognomy can 'be reduced to rule, and acquire an appropriate character, by which it may be taught' (p. 37) with the assertion that only those who are 'inexhaustibly copious in language' can comprehend and truthfully interpret the face according to physiognomic rules (p. 65).

Lavater resorts to the non-human, viewed en masse, to provide metaphorical representation of the deficiencies that humans suffer when unable to apprehend meaning communicated or constructed through language, and the resulting paucity in physiognomic advancement that this produces: 'the herd satiate themselves with words without *meaning*, externals without *power*, body without *mind*, and figure without *essence*' [my emphasis] (p. 55). Lavater utilises a series of discursive dichotomies revolving around the lumpish ignorance of the un-individuated animal form; humans without physiognomic comprehension are constitutionally akin to equally unaware animals, possessing only the inferior half of the rhetorically juxtaposed pairings, operating solely on sensory perception, and unable to tie signifier to signified. The stress is on absence and Lavater implies that ignorance of or refusal to defer to physiognomy's significatory power as a superior semiotic diminishes human potential; equally, the 'power and positive goodness' (p. 130) of physiognomy is hindered through the denial of it or inability to read the face.

[7] Rachel Ablow, 'Victorian Emotions', *Victorian Studies*, 50.3 (2008), 375–77 (p. 375). For example, in an article on 'Sentimentalism' (1864), James Fitzjames Stephen (the brother of Leslie Stephen) writes that 'a man, totally destitute of feeling of every kind, could no more act than a mill could go without wind.' Stephen, 'Sentimentalism', *Cornhill Magazine*, 10 (July 1864), 65–75 (p. 70). Throughout Part II, I provide evidential support for growing interest in emotional experience.

Discussions about language acquisition and how different species learn to read each other persist throughout the nineteenth century, but are generated in earlier discourses. In 1585, Michel de Montaigne had specifically granted animals communication skills, asking, 'how could they not speak to one another? They certainly speak to us, and we to them', highlighting not only that language or communicative ability can be granted to non-human species, but also that mutually reciprocal understanding across species barriers reinforces some form of shared commonality.[8] As Christine Ferguson points out, during the seventeenth and eighteenth centuries, an increasingly proto-evolutionary discourse continued to make claims for verbal human language as a product of gradual processes: John Locke, Adam Smith, and Jean Jacques Rousseau provide important precedents for undermining the characterisation of language as a divine gift bestowed only on humans.[9] Lord Monboddo's much-satirised multi-volume work *Of the Origin and Progress of Language,* published between 1773 and 1792, followed on from these developments: this text emphasised the cultural and social foundations of spoken language, and gained notoriety for the claim that orangutans were a form of primitive human, possessing great emotional capacity and a strong moral sense of justice.[10] Claims such as this continued to be met with significant resistance throughout the nineteenth century; following Darwin's publication of *The Origin of Species* in 1859, the philologist, Max Müller, famously stipulated that 'language is our Rubicon, and no brute will dare to cross it'.[11]

In his 1871 text, *The Descent of Man and Selection in Relation to Sex,* Darwin responds to prior critique, incorporating the work of theorists such as Monboddo into his

[8] Michel de Montaigne, 'Apology for Raymond Sebond', in *The Complete Works of Montaigne*, trans. by Donald M. Frame (London: Hamilton, 1958), pp. 318–457 (p. 335).
[9] Christine Ferguson, *Language, Science and Popular Fiction in the Victorian Fin-de-Siècle: The Brutal Tongue* (Aldershot, Hants: Ashgate, 2006), p. 1. As Gillian Beer argues, there are close correlations between the development of evolutionary science and semiotic theory, with one often drawing on the other's evidence and metaphors. See Beer, 'Darwin and the Growth of Language Theory', *Nature Transfigured: Science and Literature, 1700–1900,* ed. by John Christie and Sally Shuttleworth (Manchester: Manchester University Press, 1989), pp. 152–70.
[10] James Burnett, Lord Monboddo, *Of the Origin and Progress of Language*, 6 vols (Edinburgh: Balfour; London: Caddell, 1773–92). For more on Monboddo, see Christine Kenyon Jones, *Kindred Brutes: Animals in Romantic Period Writing* (Aldershot: Ashgate, 2001); Paul B. Wood, 'The Science of Man', in *Cultures of Natural History,* ed. by N. Jardine, J. A. Secord, and E. C. Spray (Cambridge: Cambridge University Press, 1996), pp. 197–210. Laura Brown argues that, while Monboddo and Jonathan Swift's Gulliver both criticise humankind's refusal to recognise its proximity to the hominoid ape, Gulliver's criticism revolves around humans ignoring their own diseased degeneracy, whereas for Monboddo, similarity to the ape offers instead "the greatest praise of man". Brown, *Homeless Dogs and Melancholy Apes: Humans and Other Animals in the Modern Literary Imagination* (Ithaca, NY: Cornell University Press, 2010), p. 58.
[11] Max Müller, *Lectures on the Science of Language, delivered at the Royal Institution of Great Britain in April, May & June 1861* (London: Longman, Green & Roberts, 1862), p. 360.

evolutionary schema: 'the instinctive powers of producing musical notes and rhythms is developed low down in the animal series […] we may […] believe that musical sounds afforded one of the bases for the development of language'.[12] This commonality allows for theorisation on both the evolution of language within species and the idealisation of communication between species. Prior to Darwin's publication of *Descent* or *Origin of Species*, Richard Horne, a regular contributor of zoological articles to Charles Dickens's *Household Words*, had maintained that while a human infant left on an 'uninhabited island' would have no instinctive knowledge of human language, it would still be able to communicate *across* species boundaries: 'a dumb language […] of signs, gesticulations, and expressive sounds would undoubtedly be possessed, and be correspondingly intelligible to all of his own species, and to many of a different species'.[13]

Again providing a scientific basis for such speculation in *Descent*, Darwin claims that evolution provides an explanation for human and animal facial expressions, just as facial expressions provide further evidence for human evolution from animals. Biological distinctions between animals and humans can be collapsed via recourse to the language of facial expression: both humans and animals continue to use 'inarticulate cries to express […] meaning, aided by gestures and the movements of the muscles of the face'.[14] Müller's Rubicon is not so much crossed as proved to be an illusion. Far from condoning articulate speech as superior, and in line with this universalisation of non-verbal language, Darwin argues that physical and inarticulate vocal manifestations of inner states, common across different species, are governed by 'instinctive powers' and are superior to language because they are 'more expressive than any words'.[15]

These theorisations constitute a radical departure from Lavater's insistence on facial signs as comprehensible only to those steeped in the appropriate knowledge; the

---

[12] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871), ed. by James Moore and Adrian Desmond (London: Penguin, 2004), pp. 638–39. Darwin cites Monboddo, p. 639, n. 40.
[13] Richard Horne, 'More Dumb Friends', *Household Words*, 5.109, (24 April 1852), 124–27 (p. 126). Even as he critiques human assumption of superiority, Horne reveals his own anthropocentrism: an island populated with animals would not be 'uninhabited'. Tess Cosslett's discussion of the popular fascination with 'wild' children instigated further interest in language ability as innate or acquired. The wolf-boy of Lucknow, discovered in 1844, never learned human language, but did understand signs: as Cosslett argues, such 'failings' frustrated belief in humanity's unlimited progress, and it was common for such children to be defined as a separate species, 'homines feri', a missing link between humans and apes. See Cosslett, *Talking Animals in British Children's Fiction, 1786–1914* (Hampshire: Ashgate, 2006), pp. 130–34.
[14] Darwin, *Descent*, p. 107.
[15] *Ibid.* Kenyon Jones discusses the resurgence of the classical and Renaissance tradition of theriophily during the late eighteenth century. See Jones, *Kindred Brutes*, p. 126. Theriophily is the label given by George Boas and Arthur O. Lovejoy to 'the concept underlying the inversion of human and animal traits and the argument that animals are in some way superior to men'. For more on this legacy, see James E. Gill, 'Theriophily in Antiquity: A Supplementary Account', *Journal of the History of Ideas*, 30.3 (1969), 401–12.

face, validated by drawn out and essentially unquantifiable biological processes, dominates over more limited word-based significations.[16] Darwin develops this point in *The Expression of the Emotions in Man and Animals*, published one year after *Descent*, maintaining that 'the movements of expression give vividness and energy to our spoken words. They reveal the thoughts and intentions of others more truly than do words, which may be falsified'.[17] Expression is here prioritised as primary and endowed with a validity deficient in other forms of communication. Darwin's comment on how expression 'reveal[s] the thoughts and intentions of others', refers specifically to humans, yet forms part of a conclusion in which Darwin also states that 'the theory of expression confirms […] that man is derived from some lower animal form […] various expressions […] may be hourly seen on the faces of the men around us, not to mention our domesticated animals' (p. 334). This does not preclude the communicative functions of facial expression between species, even though that may not be his main focus. Indeed, in the reference to 'our domesticated animals', Darwin articulates his methodology: while *Expression*'s theoretical conclusions are in part derived from reports sent by a wide range of collaborators, Darwin's interaction with faces close to him, including those of animals, constitutes the main body of his observational experimentation.

Emotional experience, communicated by the subject and recognised by the observer, is hence fundamental to Darwin's study and central to mine. For Darwin, expressions exist outside the discursive apparatus used to define them (words), and hence defy physiognomic science's attempts at systematic, rule-defined quantification and undermine the priority of both reading fixed faces and verbal readings of faces. Building on nineteenth-century foundations, pathognomy has since come to be championed as more revelatory of human identity than physiognomy across scientific and non-scientific disciplines. Preoccupation with interiority and the emotional self are tied to shifting classifications and theories of the external sign; emotional recognition between faces is a dominant interest of modern and contemporary scientific research.[18] Consequent emphasis

[16] In Chapter Three, I discuss the unquantifiability of evolutionary processes, citing Darwin scholars, George Levine, James Krasner, and Peter Dear.
[17] Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009) p. 333. All further quotations in this chapter are from this edition and are included in parenthesis.
[18] Mariam Chammat, Aurélie Foucher, Jacqueline Nadel, and Stéphanie Dubal, 'Reading Sadness beyond Human Faces', *Brain Research*, 1348 (2010), 95–104; Haydn D. Ellis, Angela H. Quayle, and Andrew W. Young, 'The Emotional Impact of Faces: Face Specific Changes in Skin Conductance Responses to Familiar and Unfamiliar People', *Current Psychology: Developmental, Learning, Personality, Social* 18.1 (Spring 1999), 88–97; Jennifer M. B. Fugate, Harold Gouzoules, and Lisa Feldman Barrett, 'Reading Chimpanzee

on facial expression over facial form is so marked in recent humanities discourse that no critic has picked up on Lucy Hartley's reversal of two terms, pathognomy and physiognomy, in her book *Physiognomy and the Meaning of Expression in Nineteenth-Century Culture*.[19] This is more than a reversal of Lavater's distinction between physiognomy and pathognomy; it marks an elision and displacement of physiognomy by making it signify, against Lavater's usage and against dictionary definitions, 'pathognomy', so that physiognomy is co-opted for expression studies.

The ideals of fluidity and fixity are endemic to the construction of such dialogues — and to the understanding of the language acquisition and ability that constitute the dialogues themselves. In broader conceptual terms, under new theories of signification, meaning itself is deemed to be fluid, as face-readers and critics both shape and redefine evidence to cohere with their own ideological concerns. In line with historians such as Thomas Dixon, who emphasise the continued relevance of disparate and conflicting models for understanding feeling and character throughout the nineteenth century, Part II of my thesis redresses this imbalance, demonstrating that methodological distinctions between these two systems of facial analysis are not always clearly articulated.[20] While increasing interest in pathognomy is credited as becoming ever more imperative with the advent of nineteenth-century psychological discourse, I also attend to moments where pathognomy continues to be subordinated, implicitly or explicitly, to the tenets, assumptions, and methodological procedures of physiognomic theory. Differentiation between physiognomic and pathognomic rules and stipulations are not necessarily maintained in individual discourses on face-reading, and the methodological transition from physiognomy to pathognomy cannot be represented by a simple historical trajectory; the intermittent rise of one and fall of the other are characterised by a series of collisions between face and sign. Just as le Brun's work demonstrates that attention to emotional

---

Faces: Evidence for the Role of Verbal Labels in Categorical Perception of Emotion', *Emotion*, 10.4 (2010), 544–54.

[19] Hartley writes erroneously: 'Lavater alludes to a distinction between pathognomy and physiognomy in the early pages *of Essays on Physiognomy* in order to make clear the scope of his study; **pathognomy**, he says, is concerned with the analysis of **fixed** facial structure whereas **physiognomy** involves the observation of facial **expression**' [my emphasis], Hartley, *Physiognomy and the Meaning of Expression*, p. 36.

[20] Dixon critiques the ideological construction of a 'one-dimensional canon' of historic theorists that perpetuates a secular scientific model of psychological discourse, in line with modern propensities overly preoccupied with emotion. He indicates that the words used to describe feeling (e.g., passion, emotion, effect, sentiment) are not interchangeable and are often endowed with specific historical or cultural relevance: 'emotion', for instance, gained in usage throughout the nineteenth century. Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003); Dixon, '"Emotion": The History of a Key Word in Crisis', *Emotion Review*, 4.4 (October 2012), 338–44.

expression is by no means a new phenomenon, so too, even Lavater's theory has critical moments of deviation from the prioritisation of physiognomy; moreover, nineteenth-century evaluations of expression often continue to evoke implications of more fixed, permanent moral judgement.

The post-le Brun theoretical distinctions between physiognomic and pathognomic methodology can be re-evaluated fruitfully via analysis of epistemological usages of the animal face.[21] Animals are conventionally seen as limited by their physicality and finite temporality in a way that humans are not, and are frequently posited as metaphorically representing the unfixed face (as in Chapter Two's discussion of the frog). The animal face generates and resolves the conflicts and disputes that arise between both alternate face-reading methodologies and proponents of the same methodological approach. The identification, recognition, and even the attempted exclusion of the animal face as signifier serve as means to mediate, and re-articulate the relation between physiognomy and pathognomy and the ideological premises on which they are predicated. It is through the attachment and detachment of face-reading discourses to pre-existing ideological constructions regarding the constitution of humans and animals that the animal face acts as an instigating and dominant force in dialectical transitions between physiognomic and pathognomic discourses that insist on methodological fixity.

ii. Physiognomic Fixity as Ideal and Method

In this chapter, 'fixity' is evoked as the principle underlying both physiognomic analysis and also the definition of one face-reading methodology as superior and unyielding to the encroachment of other methodological procedures. Lavater's *Essays on Physiognomy* expresses some admiration for prior theorists, praising, for example, the considerable effort involved in le Brun's depiction of 'the eyes, eyebrows and mouth of every passion' (p. 155), yet he remains keen to re-articulate physiognomic theory according to his own polemical insistence on both permanent facial form and the potentials of a universal standardisation of physiognomic signification. Attempting to exclude and discredit prior pathognomic interpretations of the face, Lavater argues that expression is both secondary

[21] Darwin remains sceptical of le Brun's theoretical conclusions: for instance, that when a person experiences fear, the eyebrow rises, seeking protection from danger by increasing its proximity to the brain. Darwin writes: 'I have thought the fore-going sentences worth quoting, as specimens of the surprising nonsense which has been written on the subject [of expression]'. Darwin, *Expression*, p. 16.

to and reliant on physiognomy: 'the first ['physiognomy, opposed to pathognomy'] is the root and stem of the second, the soil in which it is planted. Whoever believes the latter and not the former, believes in fruit without a tree, in corn without land' (p. 12). The germination processes of seed-bearing structures here metaphorically promote Lavater's physiognomic method; his
emphasis on natural ordering is replicated in his contrast between human and animal creation: 'how much is [man's organisation] exalted above the brute in those parts in which are the *powers* of superior origin, the *powers* of mind!' [my emphasis] (p. 8). Evidence for humanity's 'superior origin' is localised in the face; the body, not possessing features or traits that Lavater considers raise the human above the animal, is denoted as externally inferior. Here, Lavater forges an intrinsic connection between the pre-eminence of physiognomic analysis and the dominance of the human over the animal constitution

For Lavater, humans are remarkable, not merely because of their superior origins, but also, at the other end of the continuum, because of their spiritual permanence and eternal fixity: 'the head of man is placed erect on the spinal bone; his whole form is as the foundation pillar for that arch in which heaven should be reflected' (p. 209). Here again, the body is relegated to an inferior position while the ability to enter heaven is seen literally marked by the topmost placement of the head and the face's divine physiognomy. Even in the 'worst of men' this reflection lingers and cannot be erased; there remains the 'spirit of humanity, the ineffaceable traits of internal, *eternal* perfectibility' [my emphasis] (p. 135). By contrast, the positioning of animals' heads on their spines is indicative of their earth-bound, transient lives: 'the brain, the extremity of the spinal marrow, has no greater extent than is necessary for animal life, and the conducting of a creature wholly sensual, and formed but for temporary existence' (p. 209).[22] For Lavater, this limitation becomes metaphorically united with the temporal and temporary limitations of pathognomic expression and analysis: 'physiognomy, opposed to pathognomy, is the knowledge of the signs of the powers and inclinations of men. Pathognomy is the knowledge of the signs of the passions' (p. 12). Temporary 'passions' remain closely associated with the 'sensual'

[22] This is not an original argument. Michel de Montaigne critiques the 'prerogative that the poets make much of, our erect stature, looking toward heaven', citing Ovid: "While other animals face down to earth/to man he gave a face raised to the skies/and to the stars he bade him lift his eyes". Montaigne, 'Apology for Raymond Sebond', p. 356. In her discussion of the working horse, Kathryn Miele argues that a potential reason for the persistence of the restrictive bearing rein throughout nineteenth-century Britain was the fact that it made horses look like they were displaying pride, like a human, with their heads held high. Miele, 'Horse Sense: Understanding the Working Horse in Victorian London', *Victorian Literature and Culture*, 37 (2009), 129–40 (p. 137).

and animal in contrast to physiognomy, a contrast demarcating both human superiority over animals on the basis of metaphysical permanence and the superiority of facial fixity over facial fluidity.[23]

Lavater's veneration of immutable physiognomy is achieved finally and permanently through the dead human face, the physical signifier of the final ascent to a heaven previously only 'reflected'. Despite their chronological polarity, the close relation between divine creation and immortal permanence is pursued in a conjunction of the faces of human babies, 'about an hour after a not difficult birth' (p. 370) and dead faces, both of which are lauded as the most revelatory of physiognomic truth. Final fixity brings immeasurable physiognomic gain: Lavater insists that 'of the many dead persons I have seen […] I have uniformly observed […] they have had a more beautiful form, better defined, more proportionate, harmonized […] more noble […] than they ever had in life' (p. 370–1). Dead physiognomies, detached from any momentary impulses or sensations of their owners, become an ideal representative of temporal and character fixity: the 'calm of death' has a restorative effect, 'like as troubled waters, being again left at rest, become clear' (p. 371). Even as death evidences permanence, life does not substantially interfere with physiognomic evidence of it: while living, animated faces may be temporarily 'disturbed by the ebb and flow of accident, and passion' (p. 371), these 'accident[s]' are minimally disruptive to the belief that individual human existence endures eternally, or '[for]ever'. Human superiority is once again established through a metaphysical signification against which the animal serves as an antithetical marker: even though Lavater discusses the angles of animal skulls/faces, he offers no parallel analysis of the epistemological, theological, or aesthetic potentials to be found in the dead animal's face. The ontological irrelevance of these physiognomies, representative of an existence and identity completely extinguished by death, is underscored by their absence from the text.[24]

For Lavater, comparison between humans and angels provides a further means to situate divinity in binary opposition to animals, a point of reference from which humans should always be striving to extricate themselves: more to the point of this chapter, it also furthers the promotion of the physiognomic over the pathognomic. Angelic appearance,

[23] See Part I for evidence of Lavater's association of animality, passion, and sensuality.
[24] This marks a distinction between Lavater's work and later theories of face-reading, such as Charles Bell's early nineteenth-century text, *The Anatomy and Philosophy of Expression*, which depend on the fleshy muscular constituents of the dead, dissected animal face to further human knowledge; equally, in Darwin's *Expression of the Emotions*, animal life and death are in themselves intrinsic to the evolutionary processes that eventually result in the expressive human face.

upholding and reinforcing Lavater's methodology, is the ultimate proof of physiognomic veracity: 'the physiognomonical [*sic.*] question is can an angel's soul act the same in a fiendlike body, as in an angelic body? […] it is not in the nature of things, not in the relation of cause and effect, that virtue should look like vice' (p. 272–73)'.[25] Building on this angelic argument, he claims that the relation between the observer and the observed in physiognomic analysis is honest and not subject to mediation or the deceptive manipulation of the observed by the observer. Lavater argues that, although both physiognomy and pathognomy are 'the friend of truth' (p. 12), 'the arts of dissimulation' (p. 12) in the transient, emotionally expressive face can render pathognomic analysis misleading, rupturing the angelic physiognomic ideal. Rejecting the unreliable movements of 'momentary change' (p. 180) associated with emotive faces and transient animal lives, physiognomic science thus valorises the motionless, the durable, the human, and 'positive', or fixed, 'goodness' (p. 130).

Moreover, while the pathognomic face may be subject to a measure of human control, its expressions and analysis are necessarily limited and curtailed: 'man is as free as the bird in the cage[;] he has a determinate space for action and sensation, beyond which he cannot pass' (p. 90). Replicating his emphasis on external, omnipotent, metaphysical forces and structures, Lavater's physiognomic principles define and delimit individuals according to physical appearance, setting them against experience in the temporal world:

> I know no error more gross or palpable than the following which has been mentioned by such great men: "Everything in man depends on education, instruction and example; and nothing on organisation, and the original formation of the body; for these latter are alike in all." (p. 105)

Lavater's rhetoric rebukes Lockean or Rousseauvian emphasis on the significance of education and environment in the formation of character: individual personalities are refused any significant measure of autonomous malleability beyond the parameters of pathognomic 'dissimulation'.[26] Lavater's evocation of a 'determinate space', defined by a

[25] The Bible contains accounts of angels appearing in human form to humans (Gen. 18:2; 19:1, 10; Luke 24:4; Acts 1:10). This is Lavater's rebuke to one of his most prominent critics, the German scientist and satirist, Georg Christoph Lichtenberg, whose question 'why not an angel mind in a fiendlike form?', Lavater includes in *Essays* (p. 271).

[26] John Locke, *Some Thoughts Concerning Education* (London: A and J Churchill, 1693); Jean Jacques Rousseau, *Émile* (1762), trans. by Barbara Foxley (London: Dent, 1974).

non-human creative act, both limits and protects humans, who, 'amid all [their] distortions will ever remain wondrous humanity' (p. 133). Within Lavater's rhetoric, the metaphysical power that is derived from human origins ensures that human constitution is fixed, unconducive to change, and cannot be significantly tainted with animal life.[27]

Yet even as permanence and transience function as recurring motifs to valorise Lavater's theory, his utilisation of them is not always consistent. Lavater's claim that, when comparing 'a new-born child, of the most savage nation' and 'a new-born orang outang [*sic.*]', 'in the first, will certainly be discovered a much greater possibility of becoming an angel, than, in the second, of becoming a man' (pp. 228–29), serves to emphasise the impossibility of the latter. The contrast between what is permanent and what is transient is crucial in the contrast of the savage child to the animal: human 'perfectibility' is a durable trait given an eternity in which to manifest, allowing for the potential (if unlikely) advancement and progression of the savage child to a superior state. The potentiality of the savage child's advancement to the angelic rank, far from supporting human fixity, endorses malleability in its efforts to collapse the division between all human forms and divinity and increase the gulf between humans and animals. It appears here that there is a form of evolutionary progress occurring in individual life, achieved through moral effort and acculturation.[28] Given Lavater's claim, cited above, that angels cannot appear as devils, because the form belies the identity, the implication is that the face of savage children will change along with their moral progress.

Essays on Physiognomy argues that meaning, like faces, should be fixed and unchanging. Yet in such statements as the one above, Lavater's theory is indebted to ideals of mutability and variance. This debt emerges particularly clearly when his discussions of human and animal faces are juxtaposed: temporality and divergence are found in the former, and fixity in the latter. Lavater claims that human faces are characterised by multitudinous variances between individuals; beyond this, within the individual human, there exists evidence for multi-faceted personalities that resist reduction to straightforward simplification or interpretation. For example, in his description of the 'universal excellence of the form of Man' (p. 132), Lavater argues that the 'millionfold individuality' (p. 134) of each human testifies to the 'metaphysical' uniqueness and 'the indispensability of [each] being' (p. 132). Lavater endorses the face's susceptible responsiveness and the potential

[27] This lies in contrast to his many metaphorical comparisons between humans and animals: see Part I.
[28] What Lavater here implies, Darwin explicitly states in his comparison of individual development and species evolution (see Chapter Three).

for physiognomy to be determined by transient rather than permanent conditions: he concedes that 'each frequently-repeated change, form, and state of countenance, impress at length, a durable trait […] repeated states of mind give hability' (pp. 98–9). In a description that appears proto-evolutionary, repetition of more momentary 'states' here produces permanent traits; the 'hability' that Darwin would later use to describe expression is here transposed to indicate the formation of permanent physiognomy through habitual pathognomic expression. Contrary to his denunciation of education and environment elsewhere, this indicates Lavater's brief acceptance of a symbiotic rather than unilateral relationship between form and constitution, in which change in the latter is replicated in the flexible alteration of the former; the implication of a divergent methodological approach itself marks a temporally transient or pathognomic moment in his systematised physiognomic theory.

In his desire to represent the infinite potential of human 'powers and inclinations', it is the animal face that Lavater accords a naturalistic physiognomic fixity, thus associating it with both his evocation of 'determinate space[s]' and his prioritisation of fixity as the ultimate signifier of both natural order and idealised face-reading processes. In contrast, he champions the ongoing flexibility of the human mind and its potential to develop and thereby change physical form by association: 'we wonder and adore the so simple, yet so infinitely varied, expression of almighty power inconceivable, so especially, and so gloriously, revealed in the nature of man' (p. 134). The paradox between simplicity and variability is underscored by connotations of inscrutability — the 'infinite' and the 'inconceivable'— undermining confidence in the ability of physiognomic analysis to decipher universal phenomena. Quoting the 'thoughts of a friend on brutal and human physiognomy', Lavater again admits that "it is conspicuously evident that, in man, the mind is not one character, or quality; but a world of qualities, interwoven with, and obscuring each other" (p. 213).[29] Ideals of variance, fluidity, and flexibility are celebrated here, and Lavater again reinforces his celebration of the human by contrast to the animal face, which is, he argues, lacking in any distinguishing individuality or capacity for 'infinite' variability: "the principal character of the species, in animals, remains such as it was given by nature […] The essential of the character can as little be changed as the peculiarity of the form" (pp. 212–23). Here, the inversion of fixity and fluidity in humans

[29] Lavater quotes extensively from the 'thoughts' of others, including criticism that he takes to task. Here, the 'friend['s]' remarks are left unchallenged, apart from the passing remark that 'figurative language is dangerous, when discoursing on the soul; yet, how can we discourse on it otherwise?' (p. 214).

and animals comes full circle: animals belong to unindividuated species groups identifiable via the monotonous repetition of physical appearances and character traits; there is little chance of detecting variance either within the individual animal or among the entire species when examined collectively. For instance, the sheep's head, 'rounded at the top', proves the animal to be 'patiently stupid! […] incapable of everything that can be called acuteness, or penetration' (p. 216), while the dog's 'eye-bone, and its relative proportion to the nose' consistently and fixedly reveals 'fidelity and sincerity' (p. 211). Animal physiognomy is thus considerably easier to identify than human using species physiognomical traits, while also remaining true to what has been established 'by nature'.

Lavater's insistence on the fundamental fixed, generic simplicity and similarity of the animal face and character is not, however, upheld consistently throughout *Essays*. Deeming horses to be ideal candidates for physiognomic observation, Lavater writes at length on the various types, concluding: 'it seems to me indubitable that there is as great a difference in the physiognomy of horses as in that of men. [Each horse's profile is] prominent, sharp and characteristic' (pp. 218–19). The emphasis here on variation rather than physiognomic species fixity grants individual horses an idiosyncrasy — and by association, an indispensability — which contrasts significantly with his description of other animal species while being more similar to that of humans. Beyond their human-esque individuality, almost one hundred years before Darwin was to account for the origin of human morality in animal social instinct in *The Descent of Man*, Lavater describes horses as possessing a range of moral virtues which he identifies and venerates as ideal in human faces as well. A particularly aesthetically pleasing horse face is described as 'not only beautiful, but, I repeat […] noble, proud, spirited, firm, faithful, and sure' (p. 220); elsewhere, it is the human countenance that is characterised as the '*noblest* of the works of the Creator' [my emphasis] (p. 14). As Chapter One indicates, the horse was conventionally upheld as a particularly moral and noble animal during the nineteenth century; such associations, nominally based on the horse's usefulness compared to other animals, can also be traced in much earlier discourses, such as this.[30] In Lavater's text, the word 'spirit', generally reserved for the human and the divine, is extended to the horse.

[30] Richard Nash cites Gervase Markham's *The Complete Farrier* (1639) as evidence for the way in which animals were prioritised in early-modern society. A 'Perfect Cure for a New Sinew-straine' [*sic*] is: "Take a live Cat either wilde or tame, and cut off her head and tail, then cleave her down the chine, and clap her hot the bowells and all to the strayne, and remove it not for forty-eight hours, and the effect is great." Nash, 'Joy and Pity: Reading Animal Bodies in Late Eighteenth-Century Culture', *The Eighteenth Century*, 52.1 (Spring 2011), 47–67 (p. 50). See also, Erica Fudge, 'The Animal Face of Early Modern England', *Theory, Culture & Society*, 30.7/8 (2013), 177–98.

The individual horse described here exhibits a complex, multi-faceted personality that enables it to be both 'spirited' and 'faithful and sure'; the horse's face intriguingly combines two apparently opposed character traits, emphasising internal variation over simplistic physiognomic fixity.

Not only does Lavater gesture towards the equine equivalent of human 'millionfold individuality' while simultaneously undermining the epistemological benefits of studying the immobile 'character at rest', here, he also presents variation as aesthetically and constitutionally superior to physiognomic fixity. Subsequently, he puts this capacity for variety in equine physiognomy to use to illustrate variety in human character: crossing the lines between animal and human once again, Lavater decrees that grey horses, like people with grey hair, are tender, while the 'sorrel' horse, 'ill or well formed, is treacherous' (p. 222).[31] In a metonymic epithet that relies on animal metaphor coupled with personification to describe a horse and then to align that description with that of a man, Lavater writes that the 'swan-necked' horse is 'cheerful, tractable, high-spirited', and, 'I dare venture to wager that a man with a swan neck […] would have similar sensibility and pride' (pp. 220–21). The motif of flexible variability expands through metaphor and analogy, as the physical traits of one animal are evoked to contrast with other animals, then used to mirror human character. Beyond the resemblances of metaphor and analogy, physiognomical relations between animal and animal and between human and animal are here permitted a symbolic malleability that undermines fixity.

In his description of the 'noble' horse's beautiful face, Lavater further reveals his own methodological fluidity, as he combines both physiognomic and pathognomic analysis to characterise the animal: 'the forehead should be narrow and somewhat convex […] the eyes clear, penetrating, full of ardour, tolerably large, as I may say, and projecting from the head' (p. 219). While his description of the forehead is solely physiognomic, focusing on the fixed bone structure of the horse's face, the eyes are characterised by both physiognomic and pathognomic aspects: they should be 'tolerably large' and 'projecting', while also 'full of ardour'; moreover, the 'penetrating' expression of the horse's eyes allies it to the most superior of humans, the perceptive, clear-sighted physiognomist.[32] The combination of physiognomic and pathognomic analysis challenges Lavater's claims that physiognomy produces complete meaning, while pathognomy is merely a by-product (and

[31] Again, these 'remarks on the horse', although not directly quoted, are 'communicated by a friend' (p. 222). Lavater frequently defers to others in his description of animal physiognomies.
[32] See Chapter Two for more on Lavater's description of the physiognomist as exemplary observer.

a potentially confusing one) of this totality: 'the interest which is the product of this sum total'. Paradoxically, while animals are elsewhere associated with 'temporary existence' rather than permanent life through transient expression, they are here allowed an individuality and moral character that aligns them with humans.

Appreciation of and sympathetic response to the animal face interfere with the ideological foundations of Lavater's theory; they collapse differentiations between human and animal, undermining any strict delineation of physiognomic and pathognomic analysis. These contradictions inherent in much of Lavater's physiognomic theory, however, inform and are explained by later theories of human and animal relations, particularly evolutionary biology. Before turning to Darwin's theories, the next section of this chapter considers how these conflations and confusions inform and challenge subsequent renegotiations between physiognomy and pathognomy.

iii. Tensions between Physiognomy and Pathognomy: Lavater to Darwin

Partly in response to and partly as a reaction against Lavater's insistence on immoveable features, much late eighteenth- and nineteenth-century writing on the face demonstrates a renewed and fortified interest in expression or pathognomy. Lavater's attempts to quantify physiognomy as fixed, while emphasising pathognomy's limited relevance, met with immediate resistance. For instance, the German scientist and satirist, Georg Christoph Lichtenberg, to whom Lavater responds in *Essays*, insists that expression invariably leaves evidential traces on the features of the face, and cannot be considered secondary to physiognomy (p. 267). Subsequently, Johann Jakob Engel's *Ideas toward a Mimetic Theory*, published in 1785, acts as a direct corrective to Lavater's rejection of pathognomic significance, promoting movement and gesture as integral to deciphering the relationship between body and soul.[33] This response was not ubiquitous, however, and other authors maintained a spirited defence of Lavater's physiognomics well into the nineteenth-century. As late as 1856, the English surgeon, James Paget, praised the earlier works of Lavater, claiming that emotional expressions indicate 'only the present or passing state of the mind' and are hence productive of incomplete and only marginally significant knowledge.[34]

[33] See Sander L. Gilman, *Seeing the Insane* (Lincoln, Nebraska: University of Nebraska Press, 1996), p. 66.
[34] James Paget, 'Physiognomy of the Human Form', *The Quarterly Review*, 99.198 (September 1856), 452–91. Paget also praises the influential German physiologist and physiognomist, Carl Gustav Carus; Richard Gray writes that Carus was the most influential scientific physiognomist in nineteenth-century German

The animal face remains highly relevant to ongoing methodological disputes between physiognomy and pathognomy. Providing further evidence for his demotion of pathognomy, Paget argues that 'even the brutes that we bring about us in domestic life seem to judge of our minds from their observations of our features'; the cross-species pathognomic ability of animals, he claims, is enduring proof of the inferiority endemic to facial analysis focusing on the 'surface of emotional expressions'.[35] The ability to read faces through pathognomy rather than physiognomy is, in Paget's view, an inferior capability; he endorses a Lavaterian meta-analysis, where the status of the face-reader stands in direct relation to the authority of the methodological approach. In contrast to the animal, like Lavater's physiognomically discerning angels, a skilled face-reader requires 'a perception as penetrates far beneath the surface of emotional expressions, right into the foundation form, in which are the true symbol of the mind's nature'; as with Lavater, the 'transience' of animal lives limits them and renders transient expression equally limited.[36] Paget's polemic revolves around his a priori conviction that animals are an inferior life form, and that the face-reading method used by such organisms (pathognomic interpretation) is inevitably inferior by association. Yet his argument is overly simplistic and misses the more nuanced discourse of Lavater's *Essays*: I have already demonstrated that Lavater was not always successful in subordinating pathognomy to physiognomy in his enquiries, particularly in his discussion of the animal face. Paget's work does, however, form part of a trajectory between Lavater and Darwin, and constitutes part of an ongoing dialogue that addresses animals' capacity to feel emotion, express emotion, and comprehend and respond emotionally to emotional expression by others. Despite Lavater's attempted prioritisation of facial fixity, it is also evident that certain of his arguments paved the way for subsequent theorists: discursive re-negotiations of Lavaterian physiognomics, including his dominant emphasis on the priority of the physiognomist's observing gaze, persist throughout the nineteenth century.

Animal faces not only inform Paget's idealisation of deterministic, physiognomic systematisations, but also, beyond scientific or medical discourse, animals' perceptive face-reading abilities frequently function as a narrative device in nineteenth-century fictional literature: for instance, in Mary Elizabeth Braddon's 1862 novel, *Lady Audley's*

speaking Europe. Gray, *About Face: German Physiognomic Thought from Lavater to Auschwitz*, (Detroit: Wayne State University Press, 2004), p. 112.
[35] Paget, 'Physiognomy', p. 461.
[36] *Ibid.*, p. 473.

Secret, Alicia Audley's Newfoundland dog, Caesar, is immediately suspicious of the newly instated Lady Audley. Alicia Audley, Lady Audley's stepdaughter, recounts: "she came up to him once with her red lips apart, and her little white teeth glistening between them […] if I had not had hold of his collar, he would have flown at her throat".[37] Caesar's ability to read human facial expression, here presents a narrative depiction of an animalistic, menacing Lady Audley, lips parted, teeth bared, read and recognised by an actual animal. Chapter Seven returns to this trope with Bill Sikes's mongrel, Bull's-eye, responding to his master's threatening gaze in Charles Dickens's 1838 novel, *Oliver Twist*. As recent studies have demonstrated, this response is now quantifiable in scientific terms, and much has been made of the apparent fact that thousands of years of domestication has allowed for dogs to become more receptive to human facial expressions than other highly developed animals, such as chimpanzees; debates of this kind recall the nineteenth-century disputes, noted in Chapter One, concerning whether the dog or the ape should be considered taxonomically superior.[38]

Published five years prior to Paget's article, Edward Pett Thompson's politically motivated text, *The Passions of Animals*, similarly provides sympathetic anecdotes that encourage expressive communication between humans and animals.[39] One anecdote goes beyond sympathetic identification to sympathetic action: a lame spaniel, after being given veterinary assistance by a surgeon in Leeds, returns with another dog in a similar condition, intimating 'as well as piteous and intelligent looks could intimate, that he desired the same assistance to be rendered to his friend.'[40] As Donna Haraway has pointed out, 'dogs' survival in species and individual time regularly depends on their reading humans well'.[41] Although sentimental in tone, this anecdote provides evidence of the dog's capacity to recollect, act accordingly, and, most pertinent to this discussion, not only read

[37] Mary Elizabeth Braddon, *Lady Audley's Secret* (1862), ed. by Lyn Pykett (Oxford: Oxford University Press, 2012), p. 93.
[38] See for instance J. Bräuer and others, 'Making Inferences about the Location of Hidden Food: Social Dog, Causal Ape', *Journal of Comparative Psychology*, 120 (2006), 38–47; Brian Hare and others, 'The Development of Social Cognition in Dogs', *Science*, 298.5598 (22 November 2002), pp. 1634–36; Sanni Somppi and others, 'Dogs Evaluate Threatening Facial Expressions by Their Biological Validity: Evidence from Gazing Patterns', PLoS ONE, 11.1 (13 January 2016), 1–16. On the preferences of nineteenth-century naturalists, see Harriet Ritvo, *The Animal Estate: The English and other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University Press, 1987), p. 35.
[39] Edward Pett Thompson, *The Passions of Animals* (London: Chapman and Hall, 1851), vi. Thompson had previously published, *The Note-book of a Naturalist* in 1845; *Passions of Animals* was motivated in part by the desire to alleviate some of the animal suffering Thompson saw around him. Now little read, it remains an important contribution to evolving definitions of animal mental and emotional capabilities.
[40] Thompson, *Passions of the Animals*, p. 327.
[41] Donna Haraway, *The Companion Species Manifesto: Dogs, People and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003), p. 50.

human faces, but also demonstrate awareness of the effect of its own face on a human observer: the face-reading act is here acknowledged by the animal as two-way and reciprocal.[42] Thompson corroborates Paget's later stipulation that 'the brutes that we bring about us in domestic life' understand human facial expressions; beyond this, the spaniel is presented as acting on the innate acknowledgment that the human can read and interpret its expression. Both Paget and Thompson's texts are written from conservative Christian perspectives, demonstrating that, even as underlying ideological assumptions remain intact (e.g., hierarchical ordering of humans and animals/physiognomy and pathognomy), the animal begins to be endowed with a more active agency as face-reader.

Such agency becomes apparent not only in the actions of individual animals, but also in a wider re-envisioning of an active interdependent relation between human and animal species that, by analogy, articulates the dependent relation between physiognomy and pathognomy. Lavater's concession that repeated expressions eventually infiltrate fixed facial features bridges physiognomic and pathognomic analysis. This notion is taken up by many post-Lavaterian physiognomy advocates. In an 1854 essay on 'Personal Beauty', the nineteenth-century biologist Herbert Spencer moderates Lavater's physiognomic theory, arguing that it is the repeated movement of the expressive face that leads to the deterministic fixity of both form and internal character generally and pervasively rather than occasionally and partially: 'is it not hourly seen that the transitory forms are by perpetual repetition registering themselves on the face, and *producing* permanent forms? […] *expression is feature in the making*' [Spencer's emphasis].[43] Here the muscular movements of pathognomy is the process by which facial physiognomy is determined; repeated, habitual, fluid expressions produce formal fixity. Answering the objection that facial expression would have no impact on bone structure, which is a central though not exclusive component of physiognomic form, Spencer argues that 'the variations of feature constituting expression […] tend by repetition to organise themselves, to affect not only

[42] The primatologist Frans de Waal provides more recent evidence of chimpanzees not only demonstrating awareness that their expressions have an effect on the observer, but also knowing when to disguise or 'dissimulate' expression. He recounts how two chimpanzees, Luit and Nikki, competing over females, 'did their best not to show the slightest trace of uncertainty in each other's presence'. Manipulating his expression of fear, Luit 'put his hand to his mouth and pressed his lips together […] the nervous grin appear[ed] on his face again and once more he used his fingers to press his lips together. The third time Luit finally succeeded in wiping the grin off his face; only then did he turn around […] he displayed at Nikki as if nothing had happened'. This, writes de Waal, 'was a case of *genuine bluffing*' [de Waal's emphasis]. Frans de Waal, *Chimpanzee Politics: Power and Sex among Apes* (1982) (Baltimore, John Hopkins University Press, 2007), p. 128.

[43] Herbert Spencer, 'The Haythorne Papers. No. VIII: Personal Beauty', *Leader*, 5 (1854), 356–57 (p. 356).

the skin and muscles, but the bones of the face […] all forms of feature are related to forms of mind'.[44]

Spencer's claim that repeated transient moments lead to eventual organisational fixity not only confers agency upon pathognomy, but also contends that gradual variety can produce permanent change. This is because Spencer's theory depends upon the conceptualisation of physiognomic advance from an animal state, through barbarian and primitive cultures, to civilisation.[45] His essay highlights the changing physical structures of the face in order to support the malleability of species boundaries. A correlation can thus be traced between evolutionary theory and increasing interest in physical causes of emotional experience, producing an escalation of pathognomy's popularity and apparent scientific relevance; yet, such intellectual developments are not dependent on evolutionary theory and germinate earlier in Lavater's *Essays*.

In his theoretical demonstration that the 'structure and habits of all animals have been gradually evolved' (p. 23), Darwin realises the methodological implications of Spencer's earlier essay; moreover, just as Lavater's prioritisation of physiognomy over pathognomy is predicated on an inflexible theological science of the human, Darwin's emphasis on transient pathognomic expression is founded on his scientific belief in evolutionary fluidity between species. In his explicit prioritisation of pathognomy, recognisable and predictable emotional expressions become representative of the relationships between humans and animals. Even so, physiognomic fixity informs and at times clouds his evolutionary focus. Rosemary Jann and Sharrona Pearl have argued that Darwin's incorporation of the animal into the human expressive face actively participates in the familiar tropes of older physiognomic discourses. Jann writes that the long tradition of symbolic comparisons between animals and humans in physiognomic theory softens the impact of Darwin's argument and generates sympathetic understanding with his conclusions, while Pearl emphasises that animal-human comparisons inevitably 'reinforce a teleological conception of development in which humans were predictably superior to the animals they resembled'.[46] However, while it is undoubtedly the case that prior

[44] Spencer, 'Personal Beauty', p. 357.
[45] Part I addresses how Spencer's hierarchy contributed to ongoing racialized physiognomic discourse.
[46] Rosemary Jann, 'Evolutionary Physiognomy and Darwin's *Expression of the Emotions*', *Victorian Review: The Journal of the Victorian Studies Association of Western Canada and the Victorian Studies Association*, 18.2 (1992), 1–27; Sharrona Pearl, *About Faces: Physiognomy in Nineteenth-Century Britain* (London: Harvard University Press, 2010), p. 200. Contemporary reaction to Darwin's text was mixed and not necessarily soothed by this familiarity: an article in *The Edinburgh Review* scathingly states that Darwin 'completely abandons the true position of science'. [Anon.], '*The Expression of the Emotions in Man and Animals*', *The Edinburgh Review*, 137 (April 1873), 492–528 (p. 497).

discourses provide a standard against which Darwin can situate his own theory, these critiques undersell the significance of Darwin's focus on expression as a means to create significant ruptures in conventional, hierarchical orderings of species.

Expression's opening paragraph determinedly locates Darwin's conviction regarding organic malleability in his prioritising of pathognomy over physiognomy: '[m]any works have been written on Expression, but a greater number on Physiognomy, — that is, on the recognition of character through the study of the permanent form of the features. With this latter subject I am not here concerned' (p. 13). Consequently, he disciplines prior physiognomic theory according to his own theoretical interpretation of 'habitual' expressive actions. Towards the end of his text, Darwin joins Spencer in arguing that any meaning to be gleaned from physiognomic analysis is derived only from the durable results of repeated expressive movements:

> whatever amount of truth the so-called science of physiognomy may contain, appears to depend […on…] different persons bringing into frequent use different facial muscles, according to their dispositions; the development of these muscles being perhaps thus increased, and the lines or furrows on the face, due to their habitual contraction, being thus rendered deeper and more conspicuous. (p. 333)

Circumventing Lavater's prioritisation of physiognomy and seeking corroboration from earlier discourses that, as he sees it, had prioritised pathognomy over physiognomy, Darwin writes that this conclusion was 'long ago remarked' (p. 333) by the early eighteenth-century Swiss anatomist and naturalist, Albrecht von Haller.[47] Despite acknowledging some relationship between pathognomic performance and the 'so-called' scientific study of physiognomic form, Darwin's prose displays a reluctance to fully endorse or specify the mechanisms determining this relation: muscular development is only 'perhaps' increased with repeated pathognomic action. In contrast to Lavater's physiognomic universalist essentialism, Darwin emphasises the arbitrary and variable nature of pathognomy, as 'different facial muscles' are brought into more frequent action

[47] Darwin does not quote Haller directly, instead citing *De la Physionomie et des Mouvements d'Expression* (1865), the posthumously published text of French anatomist, Louis Pierre Gratiolet (d. 1865). Sander Gilman notes that Haller's 1763 text *Elementa Physiologiae Corporis Humani* (*Physiological Elements of the Human Body*) was Lavater's main source for the positioning of 'psychopathological states on one end of a scale of normal intelligence and passion'. Gilman, *Seeing the Insane*, p. 62. Yet in *Essays*, Lavater is keen to emphasise that his work is not 'an extensive and accurate essay on temperaments, and their characteristics' as, he claims, is supplied, 'good and bad', by Haller (p. 327).

in ‘different persons’. Unlike pathognomy, which he argues can be clearly identified and traced on an evolutionary continuum, his allusion to an unspecific and unscientific ‘difference’ elicits a sense of haphazard uncertainty, unconducive to any meaningful detection of individual physiognomic character.

Reinforcing notions of evolving organisms and expressions as united through the forces of movement, Darwin sets the stasis of dead faces unfavourably against the centrality of living pathognomic faces, whose expressions manifest and maintain life, growth, and individual and species development. While other nineteenth-century theorists continue to select and rework ideals and themes from Lavater’s work, Darwin attempts to create a clear methodological delineation between his work and Lavater’s. Contrary to Lavater’s argument that dead faces are the most legible precisely because of their lack of variable pathognomic expression, Darwin argues that the variation and indeterminacy of muscular structure is an inherent quality of faces and of evolutionary inheritance between faces that the face-reader should not attempt to avoid. Darwin agrees with Lavater that, in their malleability, faces are intrinsically obfuscating, yet it is this malleability, he claims, that is most conducive to furthering scientific knowledge. The drawing of a dead (dissected) face clearly shows up distinct muscle formation [Figure 5.2], and Darwin argues that such pictorial depictions are inevitably inadequate as they cannot capture either the living moving muscles or the indeterminacy of individual muscle boundaries: in reality, muscles ‘blend together […and…] hardly appear on a dissected face so distinct as they are here represented.’[48] In place of anatomical dissection, Darwin favours comparative observation of live fluctuating behaviours to establish the commonalities of facial movements within and between species, and in order to present the evolution of muscular and nervous function as the primary explanation for commonalities not only between different humans, but also between humans and non-human species.

[48] Darwin here recognises the limitations of his accompanying illustrations; yet, as Phillip Prodger and Jonathan Smith have pointed out, he neglects to critique his photographic sources. Prodger discusses how Oscar Rejlander’s photo of ‘Ginx’s baby’ (included by Darwin in *Expression*) is widely celebrated for capturing momentary facial movements, even though it is significantly contrived. Prodger, *Darwin’s Camera*, p. 125. The photograph is, in fact, a ‘photographic copy of a drawing *after* an original photograph’. Prodger, ‘Illustration as Strategy in Charles Darwin’s *The Expression of the Emotions in Man and Animals*’, in *Inscribing Science: Scientific Texts and the Materiality of Communication*, ed. by Timothy Levine (Stanford: Stanford University Press, 1998), pp. 140–81 (p. 173). Smith demonstrates that, for many nineteenth-century critics, the photograph could never be detached from the limitations of mechanical process. Smith, *Charles Darwin and Victorian Visual Culture* (Cambridge: Cambridge University Press, 2006), p. 227.

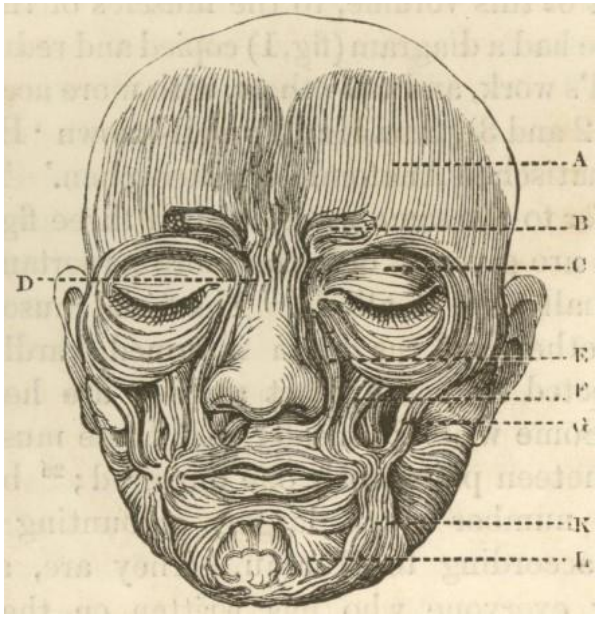


Figure 5.2: 'Diagram of the Muscles of the Face, from Sir C. Bell' (*Expression,* p. 33)

In *Expression of the Emotions,* Lavater's cross-species confusion becomes biological fact through expressive action. Contradicting Pearl's statement that Darwin's theory utilises fundamental tenets of Lavaterian physiognomics to 'reinforce a teleological conception of development', it is exactly this teleology that Darwin questions and re-formulates via his attempt to biologise the symbolic sign as a constituent of evolutionary processes. In his discussion of rage, for example, Darwin cites Louis Pierre Gratiolet's interpretation of how this emotion causes the teeth to 'imitent symboliquement l'action de déchirer et de mordre' (imitate symbolically the action of tearing and biting).[49] Darwin counters this view, arguing that 'if, instead of using the vague term *symboliquement*, Gratiolet had said that the action was a remnant of a habit acquired during primeval times when our semi-human [and therefore semi-animal] progenitors fought together with their teeth, like gorillas and orangs at the present day, he would have been more intelligible' (pp. 221–22, n. 10). While Gratiolet's symbolic association of the human and animal is not necessarily incorrect and is endowed with a multitude of cultural, philosophical, and theological significations, it is, for Darwin, unverifiable without the imposition of a biological narrative. Similarities between faces are confirmed even as divergences between

[49] This statement comes from Gratiolet's posthumously published *De la Physionomie et des Mouvements d'Expression* (1865).

species remain intact, which ensures that, methodologically, expressions are viewed as simultaneously fluid in their manifestation and fixed in terms of the mechanisms that govern their operation.[50]

Yet the indication of methodological fixity, in which expressions are anchored in meaning, gestures towards occasions in *Expression* when Darwin's theorisation is more closely allied with physiognomic ideals than he overtly admits. Having linked particularly forceful expressions with animality and atavistic humanity throughout his writings (see Part I), Darwin concludes by claiming that modifications of certain expressions are required in order to direct emotional experience. He argues that humans can determine their own emotional feeling, moralising that 'the free expression by outward signs of an emotion intensifies it […] the repression, as far as this is possible, of all outward signs softens our emotions' (p. 333). Darwin's description of rage and fear cohere with the prioritisation of the less expressive face, as expressive repression leads to a softening or depleting of emotion: 'he who gives way to violent gestures will increase his rage; he who does not control the sign of fear will experience fear in a greater degree' (pp. 333–34). In these scenarios, there is a trade-off between fluidity of emotional expression in the body and firmness or fixity of mind, enacted via cutting the body off from expressing too much emotion.[51] In an 1884 article, the psychologist William James, provides a useful measure of the extent to which Darwin's theorisation contributed to the definition of emotion solely in physical terms by the latter decades of the nineteenth century: 'a purely disembodied human emotion is a nonentity […] whatever moods, affections, and passions I have, are in very truth constituted by, and made up of, those bodily changes we ordinarily call their expression or consequence'.[52] Here, the experience of emotion is dependent upon the body's act of expression: James and Darwin both acknowledge a reciprocal relationship

[50] As Smith indicates, the emphasis on fluidity extends to Darwin's lack of any extensive delineation of specific expressions: astonishment and fear, for instance, are portrayed on a continuum. Smith, *Charles Darwin and Victorian Visual Culture*, p. 208.

[51] The American physiologist Walter Bradford Cannon famously disagreed with Darwin, envisioning the indulgence rather than the suppression of responses (fight/flight, for instance) as a means of regulating stress; inhibition of such behaviours would result in increases in other aspects of emotional response. See James J. Gross and Robert W. Levenson, 'Emotional Suppression: Physiology, Self-Report, and Expressive Behaviour', *Journal of Personality and Social Psychology*, 64.6 (1993), 970–86. In literary criticism, recent discussion about affect draws on similar debates surrounding the significance of performativity to emotion. See Sally Ledger, '"Don't Be So Melodramatic!": Dickens and the Affective Mode', *19: Interdisciplinary Studies in the Long Nineteenth Century* 4 (2007), 1–14; Lynn M. Voskuil, *Acting Naturally: Victorian Theatricality and Authenticity* (Charlottesville: University of Virginia Press, 2004). John Kucich's landmark study discusses Victorian self-negation's demonization in twentieth-century psychoanalysis as the repressed enemy of truth. See Kucich, *Repression in Victorian Fiction. Charlotte Bronte, George Eliot and Charles Dickens* (Berkeley: University of California Press, 1987).

[52] William James, 'What is an Emotion?', *Mind*, 9.34 (April 1884), 188–205 (p. 194).

between form and interior, in which moderation of one can determine the other. Darwin's endorsement of emotional control resonates with Lavater's prioritisation of the still over the animated face, while simultaneously intervening in the mechanisms of his own evolutionary theory, allowing humans to direct (at least in part) the course of their own evolutionary development: conversely, the fixed, physiognomic face requires an increasingly flexible methodological apparatus to account for it.

While Lavater does not comment on whether the relation between repeated habitual expression and physiognomic form applies equally to simulated expressions or 'the arts of dissimulation', he does emphasise that 'habits are derived from propensities, and generate passions' (*Essays*, p. 99). If the propensity is to dissimulate, then physiognomic form can also be artfully manipulated by the subject under observation. This particular nod to individual agency reappears in Darwin's argument that indulgence in the performance of the unbridled expressions of the animal face leads to a further loss of mental control. Thus, for all their differences, there are commonalities between Lavater and Darwin here: both endorse a form of hybrid physiognomic–pathognomics, in which conscious or unconscious manipulation of the external expressive face has a resultant impact on internal constitution. This problematises Darwin's presentation of his theory as a corrective to symbolic (mis)interpretation of the face: while the transmission of expressions can still be considered using an evolutionary framework, the manifestation of emotional expression in an individual becomes closely associated with their own awareness of the symbolic associations that their expressions instigate and the cultural, religious, moral, and philosophical narratives that seek to regulate them.

Darwin's comments on emotional control indicate the extent to which expressive behaviour continues to be susceptible to malleability by other discourses and factors besides biology, especially when 'intelligence and will' and cultural dictates are allowed to exert agency; a tension therefore arises here between emotional expression as instinctive display and mediated behaviour. For both Lavater and Darwin, humans are primarily governed by their inheritance, moderated by the influence of habit; however, the capacity for change in individuals is limited. As Lavater writes, 'each individual can but what he can, is but what he is' (*Essays*, p. 59). However, for Darwin the capacity to modify habitual expressions becomes not solely a marker of a self-conscious or rational humanity and he incorporates the modification and control of 'useless habits' back into his theory of evolution. Indeed, Darwin maintains that the intelligence of domesticated animals can be determined by their commitment to maintaining useless habits: a 'semi-idiotic dog […]

would be particularly liable to follow a senseless habit' such as 'scratching the ground with their fore-paws [before lying down …] as if they intended to trample down the grass and scoop out a hollow, as no doubt their wild parents did' (p. 51). The animal here serves as a means to naturalise processes that in Lavater are considered a result of the 'arts of dissimulation'.

As such, Darwin does not consistently permit individuals' ability to regulate habitual expressions to compromise his theory of evolutionary descent. He argues that certain pathognomic processes are the result of an 'extraordinarily complex chain of events' (p. 321), indicating the operation of primary and secondary habits, and reiterating the centrality of evolutionary flux to his theory. To illustrate this, he cites 'the oblique eyebrows of a man suffering from grief or anxiety' (p. 321), demonstrating that even restrained emotional expressions have still been formalised according to principles of malleability. This expressive movement is the result of two different types of functionality acting in tandem, but also in opposition. The first of these functions is envisioned as the primary, primitive survival instinct — that of a hungry or injured baby crying for attention: 'When infants scream loudly from hunger or pain, the circulation is affected, and the eyes tend to become gorged with blood: consequently, the muscles surrounding the eyes are strongly contracted as a protection' (p. 321). According to Darwin's theory of habitual associated expressions and the evolutionary descent of expression, 'this action, in the course of many generations, has become firmly fixed and inherited' (p. 321), which is where the second functional process begins to have an effect: it is the repressive function of another muscle, in this case the action of the frontal muscle on the nose's pyramidals, that causes the resultant movement, 'which we instantly recognise as the expression of grief or anxiety', 'draw[ing] up the inner ends of the eyebrows, and wrinkl[ing] the forehead in a peculiar manner' (p. 321).

The muscular action taken to stifle a more forceful expression results in the perpetuation of a different kind of facial movement that consequently comes to signify and stand in for the original emotional expression. What makes this face human is the desire to conquer primitive expression, producing a hybridised response rather than a 'natural' animal outpouring of emotion. Darwin here makes a claim for the continued significance of the pathognomic face, revealing the layers of interpretation necessary for tracing expressions that are identifiable by humans and animals alike (cf. Paget and Thompson). Both Lavater and Darwin consequently seek to elevate the human above the animal, each achieving varying success; their texts are therefore both marked with some level of

contradictory rhetoric. Their relationship is thus not as diametrically opposed as it may at first appear.

Beyond this, it is through his communicative engagement with the face that Darwin most successfully challenges Lavater's systematisation of physiognomic identification, exemplified in non-interaction with a dead face. Prior critics have commented that Darwin marginalises the communicative function of facial expression in favour of identifying the process via which expressive human movements have been inherited.[53] While it is true that communication's role in the evolution of expression only irregularly appears explicitly articulated, it is nevertheless also the case that the comprehension of expressive performance is an implicit concern of Darwin's text, and one that frequently supplies explanations for emotional expressions that go beyond theories of evolutionary habit.

The breakdown of animal–human classification through language ability emerges in Darwin's account of his own communicative interaction with animals. One of these concerns a 'large dog, who, like every other dog, was much pleased to go out walking', but suffered 'great disappointment' upon Darwin's detours to examine his experimental plants in the hot-house: 'with the falling of the ears and of his great chaps, the eyes became much changed in appearance, and I fancied that they looked less bright […] Every detail in his attitude was in complete opposition to his former joyful yet dignified bearing' (p. 63). For Darwin, this experiment illustrates 'the principle of antithesis', in which particular expressions are not caused by any inherent value of the movements themselves, but rather because they are directly antithetical in their manifestation to habitual expressions associated with the opposite state of mind that *did* once bear some relation to individual survival. These emotional expressions are formed through 'a strong and involuntary tendency to the performance of movements of a directly opposite nature' (p. 57).[54] The

[53] See Jann, 'Evolutionary Physiognomy', p. 15. Sarah Winter notes: 'as universal physiological signs, Darwinian expressions have a biological status that is different from a conventional sign system such as language, and this distinction allows Darwin to disconnect them from a strictly or predominantly communicative function'. Winter, 'Darwin's Saussure: Biosemiotics and Race in Expression', *Representations*, 107.1 (Summer 2009), 128–61 (p. 144).

[54] For instance, 'an animal when going to attack another, or when afraid of another, often makes itself appear terrible, by erecting its hair, thus increasing the apparent bulk of its body, by showing its teeth, or brandishing its horns' (*Expression*, p. 64); when trying to communicate an opposite response, the animal would behave in the opposite manner. In his edition of *Expression*, the psychologist, Paul Ekman, argues that the 'hot-house' example is unlikely to be a true example of antithesis, instead being a result of dejection or low spirits: '[Darwin] apparently did not accept this as the full explanation because it happened so quickly and the occasion, from his point of view, was so slight'. Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Paul Ekman (London: Harper Collins, 1998), p. 62.

principle of antithesis is central to Darwin's argument as it is used to explain anomalous expressions which have no obvious evolutionary advantage.

In this scenario, objective analysis of the ears and chaps is here mingled with conjecture concerning the eyes' brightness, although in his addition of 'I fancied', Darwin nods to the circumstantial requirements implicated in the origin of antithesis itself: 'as the power of intercommunication is certainly of high service to many animals, there is no *a priori* improbability in the supposition, that [antithetical] gestures […] should at first have been voluntarily employed under the influence of an opposite state of feeling' (p. 64). This contradicts Darwin's later point that 'there are no grounds, as far as I can discover, for believing that any muscle has been developed or even modified exclusively for the sake of expression' (p. 325); here, while the muscles may have other purposes, the expression itself is presented as originating in some form of voluntary action, originally based around awareness of the other's response.

There is a clear reciprocal response here; the dog reads and interprets Darwin's actions as signalling the premature end of the walk, and Darwin deduces the cause of the dog's expressive behaviour, and reacts with amusement — the effect, he claims, is 'laughable'. Communication is central to this exchange and to the mechanism that dictates expressive evolution; however, over time, this communicative purpose has become involuntary and habituated. There is a deliberate omission of any reference to this individual dog's volitional agency in determining his actions.[55] Here and elsewhere in *Expression,* Darwin resorts to a Lamarckian emphasis on acquired characteristics, once intentional, but now innate: 'if practised during many generations, they would probably at last be inherited' (p. 64).[56] Referring back to Eleanor Rosch's vertical dimension of classification (see Chapter One), the most arbitrary level of classification (wild dog in the past) is here endowed with an agency absent from the identification of the individual dog's

[55] This is overlooked in Emma Townshend's recent paraphrasing of the anecdote, in which she conflates deliberate intention and instinctive action: 'the dog was simply acting on its instinct, trying to change his owner's behaviour'. Townshend, *Darwin's Dogs: How Darwin's Pets Helped Form a World-changing Theory of Evolution* (London: Frances Lincoln, 2009), pp. 5–6. Townshend's book is intended for the popular market, and is not immune from misrepresenting some of the subtleties of Darwin's work in order to reach a mass audience well-versed in the solipsistic representation of pet dogs striving to communicate with their owners.

[56] The classic example of inherited acquired characteristics is that of the giraffe's neck: Lamarckian evolutionary theory suggests that individual giraffes stretch their necks to reach the highest leaves. This 'acquired characteristic' is then inherited by their offspring. The mechanism of natural selection would instead claim that it is the giraffes with the longest necks that are best able to survive and procreate.

motivation for action.[57] In place of the dog's impulse to communicate, Darwin stands as the human intermediary: the face-reader has shifted from objective physiognomist to empathetic pathognomist. This cross-species interaction can potentially be critiqued with Foucault's comment on the observer's ideologically prescribed relation to the sign that is being read, and the illusory ideal of a 'simple unconceptualized confrontation of a gaze and a face'.[58] Yet, it is through the temporal biologizing of these processes that Darwin demonstrates how the interaction between faces has come to manifest as 'unconceptualized', and detached from a physiognomic schema in which face and meaning are idealised as fixed.

The overall arc of this thesis's argument demonstrates a rising interest in pathognomy that correlates with the increasing credibility and maintenance of evolutionary explanations for human existence. Implicated within this is an increasing motivation to identify and define psychological interiority. Yet within these broader dialogues lie smaller methodological divergences in face-reading discourse. As my next chapter explains, the increasing emphasis on expression instigates both a discursive and significatory awareness of the observer's aesthetic or emotional response, and a new emphasis on how response to aesthetic artworks can speak back to and moderate face-reading theories. This is most clearly revealed in the fluctuating discursive tensions between a Lavaterian model of (purportedly) exclusive physiognomics and a revived and increasingly primary focus on pathognomy. Chapter Six focuses on aesthetic pathognomics and the animal face in texts that mediate chronologically and thematically between Lavater and Darwin: it is necessary to consider what lies between in order to fully understand the two in relation to one another, and I examine these discourses to provide further elaboration on how animal aesthetics and emotional response become intertwined throughout the nineteenth century.

[57] Eleanor Rosch, 'Principles of Categorization', in *Cognition and Categorization*, ed. by Eleanor Rosch and Barbara B. Lloyd (Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1978), pp. 27–48 (pp. 30–32).
[58] Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (1963), trans. by Alan Sheridan, (London: Routledge, 2000), xiv.

Chapter Six

Physiognomy to Pathognomy via Aesthetics and Emotional Response

In *Essays on Physiognomy*, Lavater utilises the aesthetic value of faces as empirical evidence, bridging eighteenth-century scientific and aesthetic theory, and providing an additional support for his classification of species according to facial characteristics.[1] In an effort to uphold taxonomical boundaries between man and animal, whilst collapsing those between man and divinity, Lavater invokes conventional standards of beauty and ugliness, claiming that even 'the wickedest, the most deformed of men, is still more noble than the most beauteous, most perfect animal'.[2] This unilateral assertion is reinforced by Lavater's insistence that judgements to the contrary are attributable to errant physiognomic analysis rather than any inconsistency in the physiognomic project: 'his discernment errs, not the countenance'.[3] In previous chapters, I have indicated that these rhetorical divisions are not consistently maintained throughout *Essays*, ensuring that standards and indices of facial beauty and ugliness remain a significant factor that subsequent theorists negotiate through either their inclusion or attempted exclusion of the animal face.

This chapter investigates how nineteenth-century face-reading discourses incorporate the animal face into theorisations of physiognomic and pathognomic beauty. While Chapter Four uses Mary Shelley's *Frankenstein* to examine how the physiognomically beautiful face becomes pathognomically ugly through animation, this chapter analyses the reverse of this scenario: how what is physiognomically undesirable can become pathognomically beautiful through expressive animation. As I demonstrate, the increasing dominance of pathognomy over physiognomy in scientific and non-scientific texts instigates a movement that defends the workings of expression as beautiful, through their claim on the observer's emotional response and sympathetic imagination. In order to understand and contextualise these dynamics, I begin by considering eighteenth- and nineteenth-century aesthetic theories that both influenced and were rebuked by developments in later pathognomic analysis. Drawing on this, I demonstrate how Darwin's

---

[1] Paul Youngquist has argued that developments in late eighteenth-century aesthetics bore a close relationship to contemporary medical discourse: 'what aesthetics theorises medicine materialises'. Youngquist, *Monstrosities: Bodies and English Romanticism* (Minneapolis: University of Minnesota Press, 2003), p. 62.

[2] Johann Casper Lavater, *Essays on Physiognomy: Designed to promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 133.

[3] Lavater, *Essays*, p. 52.

depiction of the animal face in *Expression of the Emotions in Man and Animals* is problematised by, but also problematises, aesthetic theory. Investigating the relationship between beauty and animal faces further I then analyse three seminal texts that all prioritise pathognomic readings of the face and constitute an important link between Lavater's physiognomics and Darwin's exclusive focus on expression: Charles Bell's *Anatomy and Philosophy of Expression as Connected with the Fine Arts* (1806, revised and re-issued 1824), Guillaume Benjamin Duchenne's *Mécanisme de la Physionomie Humaine* (*The Mechanism of Human Facial Expression*) (1862), and an 1851 article, 'Physiognomy', by Elizabeth Eastlake, the first woman to write regularly for the *Quarterly Review*.[4]

The first two sources are scientific texts, credited by Darwin as greatly important to the elevation of pathognomy over physiognomy. He writes that Bell, 'so illustrious for his discoveries in physiology, […] may with justice be said, not only to have laid the foundations of the subject [of expression] as a branch of science, but to have built up a noble structure', and that 'no one has more carefully studied the contraction of each separate muscle, and the consequent furrows produced on the skin [than Duchenne]'.[5] Paul White has recently confirmed the significance of these now lesser-known works for their revolution against Lavater's facial theory, noting that 'the theoretical challenge posed by Bell, Darwin, and Duchenne to Lavaterian deductions, seems to result in a profusion and revision of facial topographies which recruit physiology as a foundation'.[6] Both of these 'bridging' authors are also keenly concerned with intersections between aesthetics and anatomy, scrutinising the representation of faces in art. Bell combines detailed anatomical analysis with commentary on how beauty manifests through accurate artistic depiction, while Duchenne galvanises facial expressions using electrical currents to supplement his indictment of the weak expressive power displayed in celebrated sculptures. As such, while they dispute Lavater's methodology, they maintain his use of multiple disciplines,

[4] Rosemary Mitchell, 'Eastlake, Elizabeth, Lady Eastlake (1809–1893), database entry, in *Oxford Dictionary of National Biography* (Oxford University Press, online edn, May 2008) <http://www.oxforddnb.com/index/8/101008415> [Accessed 4 October 2014].
[5] Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009), pp. 13–14; p. 17. Duchenne (de Boulogne) was a French neurologist; the neurological illness Guillaume-Barre syndrome is named after him in recognition of his work. There were several editions of Bell's work in circulation. In *Expression of the Emotions*, Darwin uses the 1844 posthumous edition, which he considers far superior to the original 1806 text.
[6] Paul White, 'The Face of Physiology', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 7 (2008), 1–22 (p. 2; p. 13).

championing scientific authority as reaching beyond the definitive boundaries of biological or anatomical investigation, and informing art and aesthetics.

Eastlake's article takes a similarly multidisciplinary approach, yet she has no vested interest in tying her interpretation of pathognomic theory definitively to either scientific or artistic processes; this article, ostensibly a rebuke to the continued popularity of George Jabet's 1848 Lavaterian physiognomic treatise, *Nasology: or the Classification of Noses*, pushes further than either Bell or Duchenne in its celebration of the expressive face.[7] Although Eastlake credits the knowledge and representational acumen of her predecessors, particularly Bell, whose 'graceful talent in drawing, combined with his profound anatomical skill' has left proof of 'those types of human expression that can never be surpassed', beyond this artistic achievement, she doubts that experimental science can aid comprehension of either individual faces, or the relations between faces.[8] While Eastlake may seem potentially at odds with the other authors in this study, she provides a valuable dissenting voice. Robert Young's pioneering work reminds us that the thriving periodical press contributed to a widely disseminated 'common intellectual context' during the early–mid years of the nineteenth century; Gowan Dawson, Richard Noakes, and Jonathan R. Topham have developed Young's thesis, arguing that 'from the perspective of readers, science was omnipresent, and general periodicals probably played a far greater role than books in shaping the public understanding of new scientific discoveries, theories, and practices.'[9] Eastlake thus enables understanding of the wider dissemination and impact

[7] *Nasology: or the Classification of Noses* was published by Jabet, under the pseudonym Eden Warwick: before moving on to describe her own theory of expression, Eastlake uses this text to critique the simplistic ascriptions and erroneous classificatory logic promoted by Lavaterian physiognomy: 'there are plenty of eagles' noses belonging to lambs' hearts […] there is no evidence in the natural history of the eagle to prove that it has as much [love of domination] as a strutting, crowing, barn-door fowl'. Elizabeth Eastlake, 'Physiognomy', *Quarterly Review*, 90.179 (December 1851), 62–91 (pp. 75–76).

[8] Eastlake, 'Physiognomy', p. 69.

[9] Robert M. Young, *Darwin's Metaphor: Nature's Place in Victorian Culture* (Cambridge: Cambridge University Press, 1985), p. 127. Gowan Dawson, Richard Noakes, and Jonathan R. Topham, 'Introduction', in *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004), pp. 1–33 (pp. 1–2). Central premises of Young's work have been readdressed in recent years: Dawson, Noakes and Topham critique his exclusion of any 'non-highbrow' periodicals along with his presentation of the declining power of periodicals towards the end of the nineteenth century as representative of a progressive shift from a one-culture model to a two-culture distinction between art and science (cf. C. P. Snow; see my Introduction). Dawson, Noakes, and Topham, 'Introduction', p. 8. For more on the dissemination of science and the relevance of its metaphors across disciplinary boundaries, see Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction*, 3rd edn (Cambridge: Cambridge University Press, 2009). Adding another dimension to this rich research field, recent critics have demonstrated how the metaphorical potentials of the relationship between reading and scientific processes were employed by nineteenth-century commentators: Dawson, Noakes, and Topham cite the physicist James Clerk Maxwell's comparison of the 'book of nature' (a unified, comprehensive whole), and the 'magazine of nature' (as revealed during the nineteenth-century, nature as a miscellany of articles), while David Amigoni writes that journal editors, such as Leslie Stephen, used evolution as a metaphor on

of face-reading discourse in the period, forming an intermediary between scientific treatises and scientific concepts of faces as they were remediated by equally widely disseminated periodical fiction (the subject of Chapter Seven).

i. Aesthetics and the Expressive Face

Whether beauty is an inherent quality of animate and inanimate objects, or one that varies according to individual taste and perception, is an issue frequently considered in eighteenth- and nineteenth-century philosophical theory. In his 1790 text, *The Critique of Judgement*, Immanuel Kant claims that the categorical designation, 'beautiful', is indicative of such elevated excellence that it must necessarily be endemic to the object under scrutiny, arguing that different observers will acknowledge it alike: while 'no one cares about' the markers of 'charm or agreeableness […] when he puts a thing on a pedestal and calls it beautiful, he demands the same delight from others'.[10] In accordance with his transcendental idealism, Kant maintains that beauty necessarily becomes a universal entity, precisely because it behaves as if it is an actual property: 'if it merely pleases *him*, he must not call it *beautiful*. […] He judges not merely for himself, but for all men, and then speaks of beauty as if it were a property of things'.[11] Kant's critique coheres with Lavater's validation of beauty as a physiognomic marker that equally requires determination as an actual property of things. Lavater writes that there exists a 'universal though tacit confession' that 'every outward sign is the symbol of some inherent quality', and that 'harmony between physical and moral beauty' is a '[t]ruth': 'It is not my declaration that makes that true which is true; but it being true, I will speak'.[12] Lavater's insistence on the irreducible truth of this 'universal[ly]' relevant relationship endorses, ipso facto, beauty as an intrinsic entity, without which any such relationship would be rendered meaningless.

---

which to reflect on the nature of periodical writing and the development of the periodical press. See Amigoni, 'Carving Coconuts, the Philosophy of Drawing Rooms, and the Politics of Dates: Grant Allen, Popular Scientific Journalism, Evolution, and Culture in the *Cornhill Magazine*', in *Culture and Science in the Nineteenth-Century Media*, ed. by Louise Henson and others (Aldershot: Ashgate, 2004), pp. 251–61 (p. 251).

[10] Immanuel Kant, *The Critique of Judgement*, trans. by James Creed Meredith, ed. by Nicholas Walker (Oxford: Oxford University Press, 2007), p. 44.

[11] *Ibid.*

[12] Lavater, *Essays*, p. 18; p. 95.

In both Kant and Lavater, the naming, or speaking of beauty becomes a constituent of its consolidation as an ideal standard: the authoritative identification of beauty elevates the identifier as superior, necessarily human, arbiter.[13] Lavater unifies the goals of aesthetic production with the recognition of the universal semiotics of physiognomics in order to emphasise that the ability to accurately depict faces is a pre-requisite for the accomplished physiognomist: 'drawing is the first, most natural, and most unequivocal language of physiognomy'; 'if the student cannot produce a general resemblance of character, he has […] not observed as a student of physiognomy ought to observe'.[14] The 'harmon[ious]' relation between beautiful exterior form and interior constitution, is not just represented through artwork, but is dependent on the authority of perceptive and faithful artistic depiction for its recognition and identification. Lavater laments that 'the majority of portrait painters' do not have the talent required for realistic physiognomic reproduction, stipulating that until this is rectified, 'we shall, at best, creep in the region of physiognomy, where we might otherwise soar'.[15] The perpetuation of scientific knowledge is here closely tied to aesthetic and artistic reproduction.

In contrast to the idealisation of beauty as a fixed, universally legible entity runs a prominent alternate discourse that insists on beauty's dislocation from the object or subject, its location in the mind of the beholder, and its variable perception by different beholders. In 1757, the Scottish philosopher David Hume had famously described beauty as 'no quality in things themselves: it exists merely in the mind which contemplates them, and each mind perceives a different beauty'; drawing on this two years later, the painter Joshua Reynolds claimed that fixing 'a general criterion of beauty' is an impossible feat, 'for we have no criterion of form by which to determine our judgement'.[16] Thus beauty is rendered malleable and open to varying interpretation, while reference to animals provided a way to illustrate divergences in taste. Earlier still, demonstrating the extent to which these ideals fluctuate, in 1725 Frances Hutcheson had addressed how ideals of beauty vary

[13] I discuss language and species categorisation in Chapter Five. While identification through naming is often considered a solely human enterprise, domestic animals have responded to their human-given names for centuries, while recent research shows that certain animals (e.g.: dolphins) use specific calls for intra-species communication between 'named' individuals. For instance: Stephanie L. King and Vincent M. Janik, 'Bottlenose Dolphins Can Use Learned Vocal Labels to Address Each Other', *Proceedings of the National Academy of Sciences of the United States of America*, 110.32 (6 August 2013), 13216–21.
[14] Lavater, *Essays*, p. 140; p. 66.
[15] Lavater, *Essays*, p. 175.
[16] David Hume, 'Of the Standard of Taste', *Four Dissertations* (London: A. Millar, 1757), pp. 203–40 (p. 209); Joshua Reynolds, 'To the Idler', Saturday, 10 November 1759, quoted in Youngquist, *Monstrosities*, p. 71.

between species: 'there are many Objects, which seem no way beautiful to Men, and yet other Animals seem delighted with them; they […] may have the Ideas of Beauty excited by Objects of a quite different Form'.[17] Variation here becomes less random and the observer's own constitutional form becomes a crucial component in tracing and quantifying the aesthetic sense.

As proto-evolutionary discourse started to penetrate broader philosophical debates, this constitution itself could increasingly be explicated on a metaphorical or actual evolutionary continuum. Five years prior to the publication of Kant's *Critique*, the Scottish philosopher Thomas Reid provided a way to navigate disputes concerning beauty's essentialism by creating a division (itself essentialist) in the aesthetic faculties, promoting a more codified explanation of variation. Reid distinguishes between instinctive and rational aesthetic senses: the former 'are purely the gift of nature, and we have no standard by which they may be measured'; the latter, however, can transform objects that the instinctive sense recognises as ugly through a cultural or practical comprehension.[18] The aesthetic sense is thus either 'natural' and unquantifiable or focused and cultural/social/occupational — and (as Darwin would have it) conventional.[19] A mechanic viewing a well-functioning machine provides an example of how 'rational' beauty is de-naturalised in its association with technological progress, just as its identification is dependent on the observer's classification as part of a specialised group. This view of the instinctive aesthetic sense is corroborated by Richard Payne Knight's early nineteenth-century text, *Principles of Taste* (1805), which argues that the only universally uniting aesthetic sense is derived from the primal rather than the civilised natures of man.[20] Much like Darwin's description of evolving facial expressions, the perception of beauty, Knight maintains, has been modified by 'the influence of acquired ideas, or social habits', and is consequently determined according to the observer's motivations and needs: for instance, the poet and the grazier both admire the bull, but do so for different reasons.[21]

The distinctions and tensions between the beautiful as a venerated, natural, instinctively recognisable entity and its status as culturally constructed artefact are

---

[17] Frances Hutcheson, *An Inquiry into the Original of Our Ideas of Beauty and Virtue* (1725), 3rd edn (London: J. and J. Knapton, 1729), p. 16.
[18] Thomas Reid, *Essays on the Intellectual Powers of Man* (1785), ed. by James Walker (Boston: Phillips, Samson and Company, 1855) p. 469.
[19] I discuss Darwin's approach to 'conventional' expressions — those that he considers 'artificial', not 'innate or universal' — in Chapter Three.
[20] Richard Payne Knight, *An Analytical Inquiry into the Principles of Taste* (1805) (Farnborough: Gregg International Publishers, 1972), p. 213.
[21] *Ibid.*, p. 17; p. 84.

replicated in philosophical and scientific debate on the purpose served by beauty and by the capacity to detect and judge beauty. For Kant, true experiences of beauty result from non-purposiveness; he claims that even a botanist, '[who recognises] in the flower the reproductive organ of the plant, pays no regard to this natural end when using his taste to judge of its beauty'.[22] Kant argues that appreciation of 'free natural beauties' can occur only when intellectual engagement and interest are suspended. Nineteenth-century interest in sexual selection allows for this stipulation to be disputed on scientific grounds: in the 1866 fourth edition of *Origin of Species*, Darwin associates intrinsic natural beauty with the survival function of reproduction, writing that flowers 'have become through natural selection beautiful […] that they might be easily observed and visited by insects'.[23] This is reinforced in his 1862 text, *Fertilization of Orchids*: '[A]n examination of their many beautiful contrivances will exalt the whole vegetable kingdom in most persons' admiration […] these contrivances have for their main object the fertilisation of each'.[24] Darwin's emphasis on the organism's agency culminates in *The Descent of Man*'s description of sexual selection: 'if female birds had been incapable of appreciating the beautiful colours, the ornaments, and voices of their male partners, all the labour and anxiety exhibited by the latter in displaying their charms before the females would have been thrown away; and this is impossible to admit'.[25] Ideals of instinctive beauty produce a version of aesthetic theory maintained by coherent biological narrative.

In *Expression of the Emotions in Man and Animals*, Darwin contradicts his own identification of beauty as necessary to species survival. Despite the acknowledgement that the face is recognised around the world as the 'chief seat of beauty and ugliness', Darwin's analysis of the latent animal in the expressive human face asserts that expressions originally related to survival instincts do not beautify the face.[26] His pathognomic theory

[22] Kant, *Critique of Judgement*, p. 60.
[23] Charles Darwin, *The Origin of Species: A Variorum Text*, ed. by Morse Peckham (Philadelphia: University of Pennsylvania Press, 1959), p. 370. Gillian Beer notes that later editions of *Origin* drew further away from Darwin's original text as he responded to subsequent critiques; if this is the case here, the additional emphasis provides an invaluable snapshot of changing attitudes. Charles Darwin, *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008), *Note on the Text*, xxxiii.
[24] Charles Darwin, *On the Various Contrivances by which British and Foreign Orchids Are Fertilised by Orchids* (London: John Murray, 1862), p. 2; p. 1.
[25] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871), ed. by James Moore and Adrian Desmond (London: Penguin, 2004), p. 115. In 1880, the popular periodical contributor, Grant Allen, expands upon Darwin's association of beauty with physical survival in terms of health: 'the beautiful for every kind must similarly be (in the main) the healthy, the normal, the strong, the perfect, and the parentally sound. Were it ever otherwise […] that race or kind must be on the highroad to extinction'. Allen, 'Aesthetic Evolution in Man', *Mind*, 20 (October 1880), 445–64 (p. 449).
[26] Darwin, *Expression*, p. 301.

side-steps the implication of facial aesthetics on emotional expression or, vice versa, of emotional expression on the aesthetic quality of the face. Delineating the most useful research subjects (predominantly animals, infants, the 'insane', and members of 'savage races'), he notes that he has been unable to 'derive much aid from the great masters in painting and sculpture […] in works of art, beauty is the chief object and strongly contracted facial muscles destroy beauty'.[27] A contrast arises between Darwin's description of expression, often spontaneous and forceful, and his earlier references to the way plants or animals 'contriv[e]' to artistically ornament themselves in order to appear attractive to the opposite sex.

In *Origin of Species*, Darwin had decentred the human from aesthetics: 'if beautiful objects had been created for man's gratification, it ought to be shown that there was less beauty on the face of the earth before man appeared than since he came on the stage'.[28] Yet, as David Amigoni points out, the metaphors Darwin utilises to promote the natural world's beauty evoke a cultivated admiration of music as an emblematic marker of the aesthetic sense.[29] In Chapter Three, I discuss Darwin's demotion of 'savages'' classificatory ability on the basis of their taste for what Darwin deems to be 'hideous' ornaments and music.[30] Darwin resists recognising anything fundamental or aesthetically pleasing in savage societies, denying the implications of variability upon which his evolutionary theory rests: as such, he elevates the artistic production, 'beautiful colours, the ornaments, and voices' of other species over that of his own.[31] There is a link between cultivation and decoration that sits opposed to the situation of pathognomy's origins in instinctive actions, frequently centred around individual survival, rather than reproductive pursuit. While the face is 'throughout the world […] the most ornamented' part of the body, it is not, itself, ornamental.[32] Kant's emphasis on non-purposiveness here appears

[27] *Ibid.*, p. 24.
[28] Charles Darwin, *Origin*, ed. Peckham, p. 370. The equation of aesthetics with utilitarianism caused considerable unease for critics such as John Ruskin, although it is nevertheless the case that Darwinian ideals had a lasting impact and were upheld by others. See Smith, *Darwin and Victorian Visual Culture*, p. 167.
[29] David Amigoni, *Colonies, Cults, and Evolution: Literature, Science and Culture in Nineteenth-Century Writing* (Cambridge: Cambridge University Press, 2007), p. 85.
[30] Darwin, *Descent*, p. 116.
[31] Contemporary critics were not slow to pick up on this methodological shortcoming; following *Descent*'s publication, John Morley posed the question, 'why should we only find the aesthetic quality of birds wonderful when it happens to coincide with our own?'. Morley, *Pall Mall Gazette*, 20 and 21 March 1871, citied in a letter from Charles Darwin to John Morley, 24 March 1871. See *More Letters of Charles Darwin*, ed. by Francis Darwin and A. C. Seward, 2 vols (London: Murray, 1903), I, pp. 324–25. Morley is not arguing that humans should look for other examples of the aesthetic sense in animals, but that this evident anthropocentrism makes a mockery of the application of 'aesthetic consciousness' to non-humans.
[32] Darwin, *Expression*, p. 301. Darwin is keen to enforce this distinction and does not consider the contrary to this claim — that facial expressions can be 'ornamental' and as much a part of sexual selection as feathers

reversed; the expressions of the face are not purposefully beautiful and are consequently not beautiful, while certain organisms have evolved and developed features or traits that are intentionally beautiful, or attractive, and so serve a specific purpose. Darwin's ideology and methodology tacitly acknowledges the predominant ugliness of the pathognomic faces that he *does* discuss; the exclusion of beauty from the expressive, or animalised, face also works to condone a Lavaterian association between beauty and fixed faces, even as he dismisses the validity of physiognomic analysis.

Yet Darwin's text marks a distinctive departure, in inter-disciplinary terms, from the claim that scientific knowledge permits authoritative critique of the 'great masters', made in older face-reading discourses: for Lavater, this is focused on artists depicting physiognomy, whereas, as the next section of this chapter demonstrates, Bell and Duchenne discuss the absence or presence of beauty in the painted or sculpted expressive face. For Darwin, the decision to prioritise the pathognomic face over the physiognomic leads to his exclusion of beautiful art, and he delineates artwork into two types: those designed to convey beauty and those that instead accurately depict the expressive face. In this sense, his polarisation of beauty and expression is complete and circumvents the need to shape ideals of beauty to accord with his theory. Darwin includes artistic sketches as illustration of his arguments, crediting Mr Wolf, Mr T. W. Wood and the 'distinguished' M. Riviere for their assistance. As Phillip Prodger has pointed out, Darwin often intervened in the production of these illustrations, attempting to 'superimpose his own understanding' of animal expression; several of the final, published drawings are the result of long discussion and eventual compromise with the respective artist.[33] While Darwin is wary of taking any liberties with art criticism, he claims authority to direct his illustrators' work. The understanding and appreciation of a representational medium is linked to the development of a specialised, occupationally orientated rationality; this is reminiscent of Reid's mechanic, yet Darwin does not here make the association between rationality and the aesthetic sense.[34]

---

or tuneful voices. For instance, he aims to disassociate blushing from connotations of sexuality, modesty, or beauty: 'the firmest believer in the efficacy of sexual selection will hardly suppose that blushing was acquired as a sexual ornament' (*Expression*, p. 310).

[33] Phillip Prodger, *Darwin's Camera: Art and Photography in the Theory of Evolution* (Oxford: Oxford University Press, 2009), pp. 146–51.

[34] A positive contemporary reviewer of *Expression*, attests that, despite his claims, Darwin's text still holds value for the artistic observer, who 'will read his work with interest, and remember it with gratitude'. [Anon.], '*The Expression of the Emotions in Man and Animals*. By Charles Darwin', *The Athenæum*, 2350 (9 November 1872), p. 591.

As such, Darwin's treatment of art challenges established theories that promote as an ideal the intrinsic relationship between beauty and truth. As Jonathan Smith points out, Darwin does not entirely reject artworks by the 'great masters' from his study, and he incorporates analysis of Leonardo da Vinci's *Last Supper*, and William Hogarth's *Rake's Progress* into his theory.[35] Yet this usage is not necessarily contradictory, and Darwin's inclusion of these specific examples supplements his claim that beauty is at odds with 'strongly contracted' faces: his discussion of the *Last Supper* focuses on hands rather than faces, while Hogarth's 'wonderful pictures' derive their artistic power from their rejection of beauty in favour of representing 'passion in the plainest manner', for instance, 'the open glaring eyes, frowning forehead, and exposed grinning teeth'.[36] As exemplified in this description, *Expression* depends on the premise that pathognomic movements provide 'vividness and energy […] They reveal the thoughts and intentions of others more truly than do words', yet this truthful vivacity is not conducive to attractive appearance.[37] For Darwin, artistic mimesis grounded on epistemological faith in an evolutionary framework, remains at odds with beauty.

ii. Aesthetic Pathognomics in Bell and Duchenne

Darwin's focus on expression theory departs from that of his predecessors in his apparent acceptance of beauty and expression as intrinsically opposed entities; for earlier pathognomic theorists, such as Bell and Duchenne, it is not a foregone conclusion that artistic accuracy and beauty are inconsistent with each other. Bell and Duchenne differ from Darwin in considering their theories highly relevant to art critique; they also both maintain that expressive capacity in humans is divinely ordained. My fourth chapter has already discussed Bell's emphasis on human expression as a 'special apparatus' informing communication in Shelley's *Frankenstein*: Bell argues that, although both humans and animals are designed by God, humans are granted a 'special [expressive] provision', specifically designed to aid communication with other humans.[38] Similarly, although Duchenne's electrical experiments seem to take the materialistic implications of expressive

[35] Jonathan Smith, *Charles Darwin and Victorian Visual Culture* (Cambridge: Cambridge University Press, 2006), p. 184.
[36] Darwin, *Expression*, p. 264; p. 221. Hogarth's accurate drawing of a drunkard is also referred to on p. 260.
[37] *Ibid.*, p. 333.
[38] Charles Bell, *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*, 5th edn (London: Bohn, 1865), p. 138.

theory to the extreme, he maintains that facial expression is subject to divine law 'so strict that man cannot change it or even modify it', producing a 'universal language' recognisable by 'all people, in savage and civilised nations'.[39] In contrast to Darwin's emphasis on a dialectic operation between expressive consistency and individual variation through evolution, Duchenne argues that the semiotic system of facial signs is designed by God, is immutable and, 'always the same': it will not suffer the 'fate' of diversification as the 'spoken languages created by man'.[40] While Darwin intends to entirely detach pathognomic theory from any form of Creationism or natural theology, both of his sources appeal to theology to justify their demotion of the animal face. Their evocations of fixed species divisions ensure that Duchenne and Bell's writings on expression maintain an essentialist universalism, also advocated by Lavater; this essentialism is then translated into an interdisciplinary omniscience that Darwin, already aware of his theory's provocative conclusions, is reluctant to invoke.

As with broader debates on aesthetic consciousness, tension arises in pathognomic discourse between an acceptance of primal or savage expressive acts as a naturalistic bond between humans and animals, and the insistence on the expressive face as a means to distinguish between species, thus elevating the human. In *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*, Bell diminishes the potential of animal expression in order to accentuate human superiority, claiming that animal expressions are chiefly simplistic manifestations of rage and fear, concomitant with flight or fight survival mechanisms: the movements of the animal face originate in 'their acts of volition, or necessary instincts'.[41] He argues that animals are governed by 'hunger and animal passions' and that consequently the 'brute['s]' mouth is designed solely for 'apprehension, tearing, and mastication'.[42] As in Darwin's later text, the expressions related to individual survival are dislocated from ideals of beauty, and moreover do not permit any meaningful interaction between observer and observed. In contrast to this, Knight's text, published one year before the first edition of Bell's *Anatomy*, stipulates that it is precisely such animalistic manifestations that are most productive of human response, however base. Knight writes that 'it is the expression of the energetic passions' that maintain the

[39] Guillaume Benjamin Duchenne de Boulogne, *The Mechanism of Human Facial Expression* (1862), trans. and ed. by R. Andrew Cuthbertson (Cambridge: Cambridge University Press, 1990), p. 30.
[40] *Ibid*., p. 30.
[41] Bell, *Anatomy*, p. 121. Darwin counters this claim, arguing that a dog's demonstration of love and humility can no more 'be explained by acts of volition or necessary instincts […] than the beaming eyes and smiling cheeks of a man when he meets an old friend' (*Expression*, p. 22).
[42] Bell, *Anatomy*, p. 138.

popularity of nineteenth-century blood sports, such as bull-baiting and cock-fighting. Knight closely allies the observer's emotional response to the circumstantial cause of expressive reaction in the organism under observation, sardonically remarking that the audience would not feel 'the same pleasure from the slaughterhouse', in which the battle for survival has already been lost.[43]

For Bell, it is imperative to set the human apart from the implications of animalistic behaviour (e.g.: blood lust) indicated by Knight, and he necessarily codes uniquely human expressions as beautiful because they are a marker of the divine spirit in man. Bell segregates the 'organs of smell and taste' as primary indicators of animality or humanity; their form is either fundamental to individual survival or aesthetically elevated due to their more sophisticated functionality, for instance, the ability to form words. The acquisition of speech produces physiognomic, pathognomic, and aesthetic beauty; the absence of speech renders the mouth brutal, inhuman, and ugly:

> the unusual development of the nose and mouth degrades or brutifies the human countenance […] Model the lips for this, for eloquence and the expression of the softer passions, and it becomes beautiful; extend the teeth, and make the lips a mere covering for them, and it is brutal, at variance with human physiognomy and detracting from whatever is agreeable in the face.[44]

Bell is most attentive to the relations established between facial features through movement and emotional expression, yet he does not accord such movement to animal mouths. In the animal face, the lips are devoid of meaningful expressive power, their sole purpose being the 'covering' of the extended teeth: there is no variance or animation in this description, apart from through an implicit inversion of the image via the threatening motion of 'uncovering'.

Physiognomy's association with fixed signification means that animal faces are doubly limited and constrained. In contrast, the ideal, higher human face is animated, as the mouth can perform a range of vocal and non-vocal expressions, the reference to 'eloquence' semantically gesturing to both divinely-ordained communicative ability and beauty of expression. Joining this image of verbosity and movement, Bell argues that

[43] Knight, *Principles*, p. 332.
[44] Bell, *Anatomy*, p. 60.

human expressions are complex and vary 'almost to infinity'.[45] Thus even as the analytical focus of Bell's work has changed from fixed to malleable features, its ideological principles retain much of the ideological and representational fixity evident in Lavaterian physiognomics; it also recreates the contradictory valuation evident in Lavater's *Essays*, in which the fixed animal face is associated with the permanence reserved for humans and human souls.

Even so, Bell's theory remains at odds with Lavater's: his analysis of muscle movement and the co-operation of the face with the survival function of the animal body identifies inconsistencies in Lavater's *Essays* and in other theories that render animal faces representative of beauty. Maintaining that there is nothing in animals that 'truly approaches to human expression', Bell concedes that the faces of particularly attractive animals can instigate comparison with elevated humanity.[46] Like Lavater, he reveres the horse, 'universally held to be a noble animal', adducing that 'there is a consent between the motions of the ear and the eye, which resembles the exertion of mind, and the movements of the human countenance […] we admire it because there is as much animation as in the tiger, without the ferocity'.[47] Here, the animal face is not physiognomically segregated into parts, the features working in expressive, 'eloquen[t]' harmony together. Yet Bell qualifies that such cognitive perspicacity is merely an admirable effect, not deriving from a higher nature, but rather a 'consequence of the necessities of the animal [...] the result of an incidental consent of animal motions'.[48] Expressive muscular movements are produced by the horse's defensive requirement to observe the direction of its hind feet when kicking out at a predator: there is an arrangement, both in the muscles and in the form of the skull, for that retroverted direction of the eye, which seems so expressive […], but which merely serves to guide the blow'. Consequently, physiological function collides with appearance to create an illusory effect of superior mental 'exertion'.[49] Bell here rebukes Lavater's praise of the 'noble' horse face, claiming that its expression 'no more proves intelligence than the diminutive eye and the unexpressive face of the elephant denote the contrary'.[50] Significantly, he makes a claim for the epistemological superiority of a scientific procedure that defers to biologic

[45] *Ibid.*, pp. 140–1.
[46] Bell, *Anatomy*, p. 140.
[47] *Ibid*., p. 123.
[48] *Ibid.*
[49] *Ibid.*
[50] *Ibid.*

processes over the continued prioritisation of a symbolic appropriation that eludes reality even as it champions mimetic, truthful representation.

Following Bell, Duchenne takes these implications further, as his experimental procedure seeks to objectify emotion by removing its subjective components and substituting a mechanical external power for both the subjective and other external forces. Duchenne's focus on pathognomy forms a bridge between Bell and Darwin; Darwin subsequently replaces the electrical stimulation of expression with the mechanism of evolutionary inheritance.[51] For Duchenne, machine analogy provides a means to circumvent the animal face even as it implicates it through traditional associations with animal as automata: his description of galvanisation gestures to both the mechanical nature of expression and René Descartes's representation of the animal-machine. While nineteenth-century neuro-physical explanations for psychological states often derived from an understanding of animal life (see Chapter Three), Duchenne rebukes scientific theory that depends on animal comparison. He incredulously claims that Galen, the second-century 'great anatomist […] never dissected anything but apes. And he then extrapolated from this animal to man!'[52] This argument has been discredited by the historian Erica Fudge, who writes that Galen intentionally avoided dissecting apes precisely *because of* their human-like facial expressions; yet it is nevertheless employed by Duchenne in defence of his exclusion of the animal face from his scientific theory.[53] Through his emphasis on the face as an externally operable system endowed with spiritual significance, Duchenne idealises 'spiritual' beauty produced by the material nervous responses of the face. This position is not anomalous or necessarily contradictory: Rick Rylance has demonstrated that understanding of the human body *as* machine had a significant impact

[51] Photographs of Duchenne's electrical experiments are one of the sources on which Darwin draws throughout *Expression*; Darwin asks his own focus group whether they can recognise the expressions displayed. On a photograph of a human face 'in which one half of the face is made, by galvanizing the proper muscles, to smile; whilst the other half is similarly made to begin crying', Darwin writes: 'Although Dr. Duchenne has so carefully studied the contraction of the different muscles during the act of crying, and the furrows on the face thus produced, there seems to be something incomplete in his account […] Almost all those (viz. nineteen out of twenty-one persons) to whom I showed the smiling half of the face instantly recognized the expression; but, with respect to the other half, only six persons out of twenty-one recognized it, — that is, if we accept such terms as "grief," "misery," "annoyance," as correct; — whereas, fifteen persons were ludicrously mistaken; some of them saying the face expressed "fun," "satisfaction," "cunning," "disgust," &c. We may infer from this that there is something wrong in the expression.' (*Expression*, pp. 140–41, n. 4).

[52] Duchenne, *Mechanism*, p. 32.

[53] Fudge, *Animal* (London: Reaktion, 2002), p. 99. The paradoxical conundrum concerning animal–human similitude and difference is frequently utilised by campaigners against animal vivisection today: If they are not like us, then why do we experiment on them? If they are like us, then how do we justify experimenting on them? See National Antivivisection Society, website, <http://www.navs.org.uk/home> [Accessed 31 March 2017].

on burgeoning nineteenth-century psychological discourse; he argues that spiritual and iatromechanical psychological models have more in common than is immediately apparent, both emphasising fixed structures, sequences, and hierarchies, and both drawing deterministic boundaries around the body.[54]

The practice of pulling apart and isolating the features of previous face-reading theorists is replicated in different aspects of Duchenne's methodology. Just as he attempts to exclude the animal from pathognomic discourse, he also segregates and treats as separate components individual muscles of the face: 'localised electrisation can provoke the isolated contraction of the facial muscles singly or in groups […] building up a representation of both primitive and complex expressions' (p. 36). Duchenne's principal argument, in opposition to both Bell's emphasis on harmonious movement and his own indication of muscles operating 'in groups', is that 'it is always a single muscle that executes the fundamental movement, representing a movement dictated by the soul'.[55] Redefining the relation between 'primitive and complex', Duchenne contrasts the singular simplicity of muscle movements with the illusion of a complex effect produced on an observer: for instance, activating the 'm. corrugator supercilii', or the 'grief muscle', in the eyebrow has the power to transform the whole face, even though it is only the eyebrow that moves.[56] As with Bell's noble horse, the observer's perception is implicated in the recognition and appreciation of human facial expression; the singular movement creates the illusion that the whole face is muscularly expressing grief. Pathognomic power is isolated in specific, highly localised motions, even as the rest of the face retains physiognomic stillness. As such, unlike previous and successive theorists, the description of 'primitive' expression applies to the human, but not to the animal face. The underlying simplicity of human expression is extricated from prior theorists' discussion of animal faces, although the association between animality and simplicity is reintroduced in Darwin's later demarcation of the most 'complex' human emotions as the most difficult to identify (see Chapter Three).

---

[54] Rick Rylance, 'Convex and Concave: Conceptual Boundaries in Psychology, Now and Then (But Mainly Then)', *Victorian Literature and Culture*, 32.2 (2004), 449–62 (p. 453). Rylance writes that soul-discourse and iatromechanicalism were the 'binary pair' foundational to much nineteenth-century psychological theory. Prominent figures such as T. H. Huxley were iatromechanists, and Rylance suggests that the persistence of the iatromechanical view is partly due to the glamour of new technological innovations: machine analogy promoted the reassuring predictability of the well-functioning automaton, combined with a veneer of excitement.

[55] Duchenne, *Mechanism*, p. 30.

[56] Duchenne tests this by masking the forehead while the grief muscle is activated, rendering the rest of the face unreadable, 'not displaying the slightest contraction!' (*Mechanism*, p. 13).

Reversing Lavater's dictum, Duchenne identifies physiognomy as dependent on pathognomy — or, as he terms it, the 'symptomatology of emotion' — for its formation, and Lavater, he claims, would have understood this, had he been 'either an anatomist or a physiologist or a doctor or even a naturalist.'[57] The dynamic between natural/instinctive and rational/learned beauty is encapsulated in Duchenne's face-reading methodology, and in his resistance to fixed form. The study of faces, Duchenne argues, should be based on movement: expression is fundamental to the resulting appearance of facial features, and 'should serve as the basis for the examination of the physiognomy at rest'.[58] Duchenne condemns the 'exaggeration of morbid anatomical science [as] one of the principal causes of the decline of art', and equally berates the 'sculptured beauty' of earlier Greek artists, writing that 'innumerable Venuses […] have neither heart nor spirit': what may in life be instinctively beautiful is demoted, via inanimateness, to the rationally beautiful, dependent on a specialised appreciation of artistic endeavour for aesthetic response.[59] Instead, Duchenne intentionally selects physiognomically 'ugly' faces to work on, contending that 'every human face can become spiritually beautiful through the accurate rendering of emotions'.[60] Duchenne's analysis here coheres with Lavater's (ostensible) prioritisation of artistic mimesis, as productive, because truthful, of beauty.[61] While the most 'brutal passion[s]', for instance, those of an alcoholic, are not included in this schema, crucially, aesthetic appreciation is validated through accurate representation, ensuring that it is both the face's expression and the artistic (or mechanical) process that enables beauty.[62]

Duchenne's scientific technique enables him to produce emotional expression without needing to first stimulate a psychological emotional response. Emphasising expressions' complete transformative power, he maintains that were it not 'too revolting!',

---

[57] Duchenne, *Mechanism*, pp. 3–4.
[58] *Ibid.*, p. 4.
[59] *Ibid.*, p. 32; p. 99.
[60] *Ibid.*, p. 101.
[61] John B. Lyon argues that it is the diverging paradigms of Lavater's theory and the negotiation between scientific replication and aesthetic reproduction that instigates the rift between aesthetic and scientific theory as seen clearly articulated in Darwin's work: Lyon notes that although the importance of replication for Lavater is explicitly related to scientific progress, he ultimately favours aesthetic reproduction as it allows the representation of himself as the mediator of truth. John B. Lyon, '"The Science of Sciences": Replication and Reproduction in Lavater's Physiognomics', *Eighteenth-Century Studies*, 40.2 (Winter 2007), 257–77 (p. 257). For more on the post-seventeenth-century importance of replication and repeatable experimentation in scientific practice, see Lorraine Daston, 'The Empire of Observation, 1600–1800', in *Histories of Scientific Observation*, ed. by Lorraine Daston and Elizabeth Lunbeck (Chicago: The University of Chicago Press, 2011), pp. 81–114. For a sociological critique of the continuing ways in which scientific practice is affected by factors that potentially mitigate replication, see Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts*, 2nd edn (Princeton, New Jersey: Princeton University Press, 1986).
[62] Illustration of 'brutal passions' of the alcoholic, Duchenne, *Mechanism*, Plate 42.

he could galvanise a corpse's face to produce the same effect; not only the mechanical, but also the dead face is here situated as positive alternative to the animal.[63] This statement casts Duchenne's definitive exclusion of the animal face into considerable doubt. If it is irrelevant whether the animated face belongs to a corpse or a living body, the imperative to classify the subject's physiological constitution as definitively 'human' is thrown into question: 'the fundamental movement […] a movement directed by the soul', is here detectable in a body from which the soul, a key taxonomic marker of humanity, has departed. Like the animal, the dead body does not have spirit or soul but can be animated to produce spiritual beauty, while the original constitution of living animals as 'soul-less' appears to exclude them from such experimentation, fundamentally confusing ideals of human status as fixed. This problematic theoretical leap reveals how Duchenne's complete detachment of expression from emotional experience reflects on the organic constitution of the face under scrutiny; rather than being conclusively recognisable as human or animal, the being attached to the face is defined purely by its absence of interiority: it becomes merely external effect.

Duchenne's removal of the subjective component (mind) significantly problematises the claim of relation between inner and outer; in the creation of beautiful effects via mechanic manipulation, Duchenne conclusively rejects the significance of the subject's underlying emotional experience in the attainment of an aesthetic ideal. Duchenne's artificially stimulated, beautiful expressions raise an issue endemic to both face-reading discourse and nineteenth-century exploration of 'physiological aesthetics': the extent to which externalised expressive states are both stimulated by an outside source and are an authentic representation of internal experience. As Carolyn Burdett has argued, during the nineteenth century 'the nature of beauty and aesthetic pleasure were matters of intense interest for the developing discipline of psychology'.[64] Yet in face-reading discourse, a new dynamic opens up, in which either the subject's feelings or the observer's emotional and aesthetic responses or both are prioritised as integral components of face-reading. The subject either represents or becomes the conduit for emotional expression, itself akin to an art work or object on display.

[63] Duchenne, *Mechanism*, p. 101.
[64] Carolyn Burdett, 'Psychology/Aesthetics in the Nineteenth Century', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 12 (2011), 1–6 (p. 1). See also Burdett, '"The Subjective Inside Us Can Turn into the Objective Outside": Vernon Lee's Psychological Aesthetics', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 12 (2011), 1–31.

This dynamic is also addressed in Bell's earlier defence of the pathognomic over the physiognomic face: Bell describes the direct relation between the experience of aesthetic appreciation and the observation of facial expression, arguing that pathognomy creates an illuminating aesthetic effect: 'expression is even of more consequence than shape: it will light up features otherwise heavy; it will make you forget all but the quality of the mind'.[65] Bell's analysis draws heavily on both classical and Christian theological rhetoric that determines animal passion and instinctive behaviour as an undesirable, immoral, lower form of emotional experience. Bell makes the same claims for pathognomy that Lavater had made for physiognomy: just as Lavater claims that physiognomy has redemptive power, always able to identify the good and beautiful in the human, Bell argues for certain expressions' indisputable capacity to add 'charm' to the 'ordinary face': '*Human* sentiments prevailing in the expression of a face, will *always* make it agreeable or lovely' [my emphasis].[66] Furthermore, he claims that expression has the power to make the blank face beautiful precisely because it 'raises affection' in the observer.[67] By contrast to Lavaterian physiognomy, which aims to act as an objective, scientifically, and topographically codified character assessment, Bell's inclusion of affect indicates burgeoning interest in pathognomy as a relational experience between the subject and scientist, acting on the responses, emotions, and expressions of the observer as well as the observed. This is indicated too, with different implications for animal–human relations, in Knight's discussion of cock-fighting. Bell allies the two strands of aesthetic theory described above: subjective affective response allows for another kind of individuated response to beauty besides primal instincts or survival based usefulness, whilst his unification of affect with anatomical facial analysis permits him to develop formal standardisations of beauty (for instance, delineated according to species-divisions).

For Bell, aesthetic pathognomics is closely related to the appearance or nonappearance of the animal face, yet while he emphasises the immutable division

---

[65] Bell, *Anatomy*, p. 60. Jonathan Smith points out that Bell undermines his own theory about human distinctiveness by including more illustrations of brutalised than non-brutalised human faces. See Smith, *Darwin and Victorian Visual Culture*, p. 198. Bell recreates Lavater's paradox of describing human faces as animal while insisting on human uniqueness and gestures to Darwin's later association of the expressive face with the animal and the ugly.

[66] Bell, *Anatomy*, p. 19; p. 60.

[67] Bell, *Anatomy*, p. 20. See also Otniel E. Dror's remark that 'many of the diverse practices for observing emotion worked through the body of the observer and his or her feelings and experiences. The experiencing-feeling self was the apparatus for observing emotions and other states of mind. These types of observations often depended on the observer's self-referential and reflexive adoption of a particular consciousness'. Dror, 'Seeing the Blush: Feeling Emotions', in *Histories of Scientific Observation*, ed. by Lorraine Daston and Elizabeth Lunbeck (Chicago: The University of Chicago Press, 2011), pp. 326–48 (p. 330).

between animals and humans, he struggles to clearly delineate how species boundaries affect the observer's aesthetic and emotional response. Bell's dislocation of expression from the feeling subject, his focus on the expressive face's effect on the observer, and his subsequent denial and rationalisation of that effect allows for a re-evaluation of the determined segregation of animal and human faces.[68] It is artistic appreciation that allows for the extension of the key principle of Bell's pathognomic theory — that expression makes the blank face 'beautiful' — to animals. Bell contradicts his own statement about the optical illusion of the 'noble' horse, arguing that the direct communication of aesthetic pleasure from an animal face to a human's is not necessarily deceptive, especially when the process occurs through some form of artistic mediation. Commending ancient artists' ability to render animals beautiful through accurate representation of their natural physiognomies, Bell asks, 'is there anything finer than the wolf of the Capitol, or the antique boar, or the [Roman] dogs in the entrance of the Florentine gallery?'[69] Bell's response to these accurate representations of expressive animal faces reveals a discrepancy between two theoretical foundations of his argument: the first states that the face should function as an accurate guide to the moral, emotional, and cognitive qualities of its owner (always denigrating animals as lower), while the second claims that the beautiful expressive face is pathognomically quantifiable through its effect on the observer, an experience generally excluded from both Lavater's prioritisation of the still, ideally sleeping or dead face and Darwin's interactions with/observations of his animal-faced human subjects. Here, the second claim works against the first and enables classificatory elevation of the animal.

Consequently, Bell's work probes further than a simple reconsideration of the dichotomy between beautiful human and ugly animal faces: while the animalisation of human faces is condemned, significantly, the humanisation of animal faces does not produce beauty. Ugliness thus derives from crossing species boundaries in either direction. Bell both accords beauty to animals and critiques 'mistaken' efforts to impose human expression on the animal face in art, saying that 'it will never enhance the peculiar beauty

[68] There are occasions within Lavater's *Essays* where he reveals himself to be affected by the appearance of faces; however, his physiognomic theory (and the idealisation of the dead face) ostensibly minimises face-to-face interaction.

[69] Bell, *Anatomy*, p. 61. Bell does not specify further which dogs he refers to, however, there are two 'Cani Molossi' (equivalent of Bull Mastiff dogs) situated in the vestibolo, or lobby, of the Uffizi gallery in Florence. These two statues are replicas made in the first Imperial Age (first century AD): the originals date from the third Century BC, along with the Cinghiale (wild boar), also displayed at the gallery — potentially the source of Bell's 'wild boar'. See Giovanni di Pasquale and Fabrizio Paolucci, *Uffizi: Le Sculture Antiche: La Guida Ufficiale* (Florence: Firenze Musei, 2001), p. 16.

of any animal to engraft upon it some part of human expression'.[70] Just as 'extend[ing] the teeth, and mak[ing] the lips a mere covering for them […] detract[s] from whatever is agreeable in the face', and brutalises the human physiognomy, here, the humanising of an animal uglifies its face. The animal face is incorporated within an analytical process that focuses on the inter-relational experience between faces rather than examination of individual physiognomic structures (e.g.: the teeth and the lips) apart from pathognomy. Expression, is not, then, beautiful in itself, but only beautiful on the correct physiognomic object. The emphasis on 'human expression' implies that there may be an alternate, more accurate and aesthetically pleasing 'animal expression' that should be depicted in its place: the animal, it seems, is not purely defined by its physiognomy or by fear and rage.

The interpenetration of aesthetics and science becomes palpable when it turns out that aesthetics can change scientific views. Bell notes that his opinions, 'drawn from the observation of nature' in the first edition of *The Anatomy and Philosophy of Expression* (1806), have been moderated 'since that time' as a result of viewing the Elgin Marbles, newly acquired and displayed in the British Museum in 1816. Following his description of the deceptive horse face, Bell praises the sculpted Elgin horses, assessing that they are 'perfectly natural' because they represent only what already exists in the face of the horse: there is 'consistency of natural form and beauty'. Moreover, a certain amount of artistic embellishment is here considered acceptable as long as it does not undermine the overall effect: 'if there be exaggeration, it is only in the stronger marking of that which is the characteristic distinction of the animal' [see Figures 6.1 and 6.2].[71] While practices of aestheticized pathognomic identification and response can be extended, in their turn, to the animal face, the 'natural' beauty of the animal face is necessarily mediated through a human artist or sculptor, whose skill allows for the exaggeration of certain features and expressions without impacting on the naturalistic ideal: truth is magnified not negated. Bell's change of mind reveals the sub-layers of pre-determined and accepted discursive dictates that form the foundations of his pathognomic theory. While species confusion in form or expression is ugly, cross-species communication is here aesthetically beautiful, and arouses the same emotions as beautiful aesthetics.

[70] Bell, *Anatomy*, p. 125.
[71] Bell, *Anatomy*, p. 126.

Figure 6.1: 'Sketch of a Horse'[72]

Figure 6.2: 'The Horse of Selene'[73]

iii. 'Communication across the Frontier': Eastlake's Segregation and Recognition of the Expressive Animal Face

Bell's and Duchenne's articulations of pathognomy revolve around a paradigmatic construction of the relation between observer and observed, in which the features of the observed create meaning and signification for the observer and, particularly in the transformation of ugly faces or animal faces, also stimulate the observer's aesthetic perception. Whereas Bell's rhetoric hints at a reciprocal communicative ideal between subjects, these forms of face-reading nevertheless remain one-way processes; the communication enacted is unilateral, dependent on the observer's interpretations and responses. Crucially, the intercessory mediator of both mechanical manipulation and artistic representation ensure that the face in question is rendered subordinate.

Eastlake's review article can be read as a contrast to these two texts, although it appears methodologically allied to them. Eastlake's view is antithetical to Lavater's; she claims that expression is conclusively superior to physiognomy, and that angels and humans should be read using pathognomic principles, with only inferior animals subject to the crudity of physiognomic readings. Eastlake rhetorically aligns inferior beings with the

[72] Mr Northcote, 'Animated Sketch of a Horse', in Bell, *Anatomy*, p. 130. Image reproduced at <http://figure-drawings.blogspot.co.uk> [Accessed 10 November 2014].
[73] 'The Parthenon Sculptures' [also known as 'the Elgin Marbles'], database entry, *The British Museum: Collection Online* (2017) <http://www.britishmuseum.org/collectionimages/AN01550/AN01550256_001_l.jpg> [Accessed 18 April 2017].

inferior physiognomic methodology of face-reading; she critiques physiognomic analysis as simplistic and brutally basic, corroborating her insistence that expressions, 'except those of a lower kind which instinct dictates', are exclusively human and divine.[74] Resolute that animal life represents a purely material, earth-bound fixity, she refers to the form of the animal face as signifying the ultimate difference between human and animal, and argues that the profiles of 'inferior' creatures take, 'without exception, the form of a wedge, more or less blunt or acute. That of man presents a comparatively perpendicular line, rendered such by the addition of a forehead above and a chin below'.[75] Eastlake's description of the 'wedge, more or less blunt or acute', implies even less facial activity and movement than Lavater's lines and angles: the 'animal' face in this description is rendered featureless, lacking the definition of a forehead or chin. Pathognomy here features as the highest development from a more primitive physiognomy.

Nevertheless, despite her prioritisation of the expressive face, Eastlake also directly criticises how pathognomic discourses overestimate their capacity for epistemological revelation or completeness. She writes: 'in truth, the power of recognising our fellow creatures is a phenomenon too great to be based on any physical cause whatever'.[76] Her account not only leaves physiognomy behind as an earlier, cruder form of face-reading associated with the lower animals, but also minimises the importance of and necessity for physiognomic or pathognomic training. Almost pre-empting Duchenne's experiments, she disputes the capacity for further scientific investigation to understand higher human and theological forms. Eastlake's anti-materialist position thus stands between Lavater and Darwin through her inversion of both, denying the ability of science and physiognomic theology to explain the human.

In contrast to her reading of the animal face, Eastlake disrupts science's deterministic, sequential relation between sign and signifier through a hearty defence of the unmediated quality of emotional expression — to the extent that even the intermediary of face-reading protocol and method is challenged. While physiognomy depends on signs, words, and concrete forms, such as the blunt wedge, pathognomy needs no words or artistic mediations by which to interpret it, and goes further to render analysis and explication completely redundant:

---

[74] Eastlake, 'Physiognomy', p. 88.
[75] *Ibid.*, p. 69.
[76] *Ibid.*, p. 65.

> Expression is not, like the actions, the mere straws thrown on the stream to tell the course of the mind; it is the mind itself flowing clearly through the face, and needs no signs by which it may be deciphered. That therefore which is the highest development of Physiognomy goes utterly beyond it.[77]

Pathognomic readings of the face, in Eastlake's view, are indubitably superior to physiognomic ones: she conclusively rejects Lavater's view that physiognomy is the reflection of the mind, arguing that the physiognomic form of the face is in fact a blank surface that requires further mediation through expression. Yet her veneration of expression recalls older aesthetic theories in which beauty is rendered ephemeral and not subject to rationalisation: as with the instinctive sense of the beautiful, understanding of expression here seems to work telepathically. In Eastlake's description and acknowledgement of the ideal process and manifestation of emotional expression, the sign itself is negated and rendered conclusively transient and malleable, freely 'flowing' through the face. This is exemplified in the angel face in which she maintains, 'mind has triumphed over matter, and the bonds of flesh seem already vanishing from our sight': the angel here represents the antithesis of the brutally physicalized wedge-like animal face.[78] Angelic superiority is characterised by the elevation of pathognomy over the material and biological dimensions of the physiognomic face; as such, Eastlake insists that pathognomy needs no discursive explanatory apparatus, and instead is an immediate, unmediated representation of the mind breaking through the face.[79]

Yet Eastlake's methodology is not entirely consistent, and, while she stands apart from her predecessors, she also struggles to absolutely eradicate the animal from her schema of aesthetic and emotional response. In the same article where she dismisses the animal face as a 'wedge', Eastlake comments, like many before her, on the superiority of the animal over the human eye:

> No human eye surpasses that of an animal in material beauty, in clearness, delicacy, exquisite tint, and minute finish, nor scarcely in intelligence and sweetness of expression. The hawk's eye and the gazelle's eye are the types of

[77] *Ibid*., p. 90.
[78] *Ibid*., p. 91.
[79] Although she chronologically pre-empts Spencer's concession to pathognomy's ability to impact bone structure (see Chapter Five), Eastlake's idealisation pushes further, considering such structures irrelevant.

> energy and melting softness. The eye is thus the frontier where man and brute may safely meet.[80]

When considering faces according to physiognomy, Eastlake diminishes the animal; turning to pathognomic analysis, however, she is compelled to comment on their 'intelligence and sweetness of expression'. Her differentiation between 'energy' and 'softness' reveals the animal eye to be not only the 'frontier' across which humans can meet the animal, but also on which opposing character traits can meet and be satisfactorily combined. Significantly, eyes are not described in definitively anthropocentric or anthropomorphic terms: 'intelligence', 'sweetness', and 'delicacy' are all descriptors that can apply across and beyond species. The evocation of an 'exquisite tint, and minute finish' implies artistic perfection, while 'energy' and 'melting softness' indicate ongoing active processes associated with both organic and inorganic forms. There is a combination here of precise description with conceptual abstraction, enforcing how beauty or aesthetic quality is located in a face that is representationally complex; the exterior surface of the eye alone enables a multitude of layered ascriptions, before its biological constitution is even considered. Equally, this description emphasises movement and animation, even though the eye itself is apparently unmoving. As occurs with the idealised angelic countenance, interaction with the animal eye provides a means to access the 'mind itself flowing clearly through the face'.

Eastlake's comments on the animal eye breaches two divisions: the mediating line between signifier and signified in pathognomic and physiognomic analysis, and the line between human and animal, crossed through expression. This encounter with the animal introduces a typologically complex character, in direct contradiction to the blunt wedge of the animal's physiognomic profile. Eastlake makes a claim for human supremacy through expression on the one hand, while she champions the 'material beauty […] clearness, delicacy, exquisite tint, and minute finish' found in the animal face as unsurpassable on the other. As an extension of her anti-materialism, Eastlake's description of the eye is capable only of summoning up an idea rather than a concrete image (e.g., of a wedge), the complexity of signification ensuring that the 'signs by which [the animal eye] may be deciphered', as with the angel, are here hindered from complete discursive representation. It is through the eye that this combination of aesthetic quality and expression are realised,

[80] Eastlake, 'Physiognomy', p. 84.

producing a dynamic and responsive exchange between face and observer that eludes definitive description. The demotion of the animal caused by an identification of fixed features with fixed meaning is renegotiated through pathognomy, and serves as a radical continuation of Eastlake's rebuke to the ideological relation between face and sign. Eastlake prioritises the rejection of the mediatory process between signifier and signified above her insistence on the division between human and animal; this rejection is consequently extended further in her discussion of animal expression as mitigating the sign and significations of species barriers. What's more, her interaction with an 'existence that refuses to be conceptualized' prefigures by more than a century Jacques Derrida's description of the intangible ontological 'frontiers' but also the potential for cross-species interaction revealed in the gaze of his cat.[81] The 'frontier' is again endowed with meaning: it is the site at which human and animal can communicate without mediation.

Eastlake demonstrates how face-readers' interest in relational experience and aesthetic response via pathognomic interactions with the face penetrates the writing of even the staunchest advocates for animal/human exclusivity. This derives in part from the difficulties theorists encounter in applying a rigorous theoretical model across species barriers, even as they attempt to firmly distinguish the human from the animal. As Mary Midgley indicates, the extensive variety of animal species ensures that once the constitutional make-up or appearance of particular animals is probed and remarked upon, there can be no clear delineation between 'humans' on the one hand, and 'animals' on the other; an ordering of animals in terms of recognition as 'like us', or as possessing certain aesthetic qualities (e.g., the hawk or gazelle) almost inevitably leads to a reconsideration of inter-species relations as flexible rather than fixedly polarised.[82] Consequently, Eastlake's article has elements in common with Darwin's work on expression, despite its rejection of scientific method: both resist the stasis of fixed faces and place highest meaning in fluidity. Moreover, her resistance to the epistemological completeness claimed by prior face-reading theorists is in some respects reproduced in Darwin's rejection of what he considers to be aesthetically superior artwork: reading expression consistently in terms of evolution, or scientific sign, negates, for Darwin, aesthetic response.

---

[81] Jacques Derrida, *The Animal That Therefore I Am*, trans. by David Willis, ed. by Marie-Louise Mallet (New York: Fordham University Press, 2008), p. 9. Michel Foucault's argument that the 'simple unconceptualized confrontation of a gaze and a face' is an illusion, allows Derrida's argument to equally stand for human–human interaction. See Foucault, *The Birth of the Clinic. An Archaeology of Medical Perception*, trans. by Alan Sheridan (London: Routledge, 2000), xiv.

[82] Mary Midgley, *Animals and Why They Matter* (Athens: University of Georgia Press, 1983), pp. 101–09.

The discourses discussed in this chapter provide a wider explanation for Darwin's rejection of classical art that goes beyond personal, autobiographical explanations of his concern with conventional, personal, and appropriate aesthetic taste. What these texts share, in spite of their many differences, are attempts to include in or exclude the animal from their idealistic representations of expression based on cultural theories of aesthetic appreciation and emotional response. Darwin instead attempts to promote a form of realism that rejects the overt conventional emotional response instigated by the beautiful, expressive face. Equally, through his exclusion of extensive theorisation on expression as related to aesthetics or communicative response per se, Darwin largely avoids the collapse between observer and observed as described by many of his nineteenth-century predecessors such as Bell and Duchenne. Yet where Darwin's concurs with other theorists is in how the animal challenges the uniformity of universal or standardised ascriptions and provides a space for variance, flexibility, and discrepancy.

Taking Eastlake's view of pathognomic communication across species as a principal motif, the next chapter considers the implications of both physiognomic and pathognomic interpretations of fictional faces. In her article, Eastlake identifies expression as a means through which different species can 'safely meet'; I demonstrate that this equally applies to the representation of cross-species expression and its utilisation in fictional texts. While Darwin avoids using visual art to develop his theory, he does defer to the literary art of realist novelists, referencing Dickens, George Eliot, and Elizabeth Gaskell as exemplary in their accurate rendering of expression in prose. Darwin utilises *Oliver Twist* to illustrate how rage manifests in the human face: describing Fagin's arrest, Darwin writes, 'Dickens, in speaking of an atrocious murderer who had just been caught, and was surrounded by a furious mob, describes the people as "jumping up one behind another, snarling with their teeth, and making at him like wild beasts."'[83] In its contrast of Oliver's beautiful physiognomy with his vitalised pathognomy, *Oliver Twist* initially appears to adhere to the Frankensteinian model: this reading is challenged and extended by the animal face. *Oliver Twist* is a fictional stage on which meetings between human and animal are permitted to take place through pathognomy; such meetings demonstrate not

[83] Mary Noble comments that, in order to negate the unnerving connotations of this display of animality, Darwin suppressed the moral ambiguity in Dickens's text, justifying the crowd's rage by emphasising (not entirely accurately) that Fagin is an 'atrocious murderer'. Noble, 'Darwin among the Novelists: Narrative Strategy and *The Expression of the Emotions*', *Nineteenth Century Prose*, 38 (Spring 2001), 99–126 (p. 110).

only the evolutionary trajectory between species, but also how the animal face enables further investigation of the relationship between aesthetic and affective response.

Chapter Seven

Charles Dickens, Physiognomy and the Pathognomic Animal Face

The scientific and non-fiction literature already examined in Part II of this thesis focuses specifically on dynamics between face and observer (usually the writer) as a means to contribute to theoretical knowledge or to make a political point. Similar dynamics reappear in fictional writing, operating on two levels: first, faces are described and mediated by the narrator either in isolation or in interaction with other characters; second, these representations produce further responsive interactions between characters and readers. Physiognomic and pathognomic techniques, as well as shifting relationship between the two, are important both to authors seeking to depict characters' personalities and to readers seeking to access and evaluate such depictions. These interactions provide further support of the philosophies in which both these face-reading methodologies participate: literary fiction contributes to ongoing and emergent scientific debates, enabling both their circulation and their re-working.[1]

Charles Dickens is an ideal author for my study: familiar physiognomic tropes and reading methods abound in his prose fiction, juxtaposed with authorial comment on the deployment of such methods. Dickens's novelistic utilisation and simultaneous critique of physiognomy's conventions have proven lively topics in literary criticism.[2] Dickens's fiction utilises the dramatic potential of strongly expressed emotion, textual collisions and congruities between face-reading techniques, and the consequent effects of such deployment upon the reader. All writing on facial analysis is preoccupied with ideals of authentic, valid representation, ideals that also haunt a critical tradition that alternately praises and denigrates Dickens's characterisation on the basis of its authenticity or inauthenticity.[3] Writing soon after Dickens's death, George Henry Lewes draws an

---

[1] See my Introduction.

[2] Like many nineteenth-century novelists, Dickens treats specific physiognomic rules with scepticism even as he continues to draw upon physiognomy's broader methodological processes for characterisation. See Graeme Tytler, *Physiognomy in the European Novel: Faces and Fortunes* (Princeton, NJ: Princeton University Press, 1982), p. 262. Also Taylor M. Scanlon, 'The Face of the Crowd: Reading Terror Physiognomically in Charles Dickens's *A Tale of Two Cities*', *The Victorian*, 2.3 (September 2014), 1–12; Angelica Zirker, 'Physiognomy and the Meaning of Character in *Our Mutual Friend*', *Partial Answers: Journal of Literature and the History of Ideas*, 9.2 (June, 2011), 379–90. In a series of articles published in *Dickens Quarterly*, Michael Hollington has written on physiognomy in *Barnaby Rudge*, *Hard Times* and *Martin Chuzzlewit* (1991–93).

[3] An extensive critical tradition alternatively attacks and defends Dickens's characterisation; from the remark attributed to Oscar Wilde that 'one must have a heart of stone to read the death of Little Nell without laughing', to more recent literary criticism that uses a variety of approaches in order to re-consider the

analogy between the characters of Dickens's novels and 'frogs whose brains had been taken out for physiological purposes, and whose actions henceforth want the distinctive peculiarity of organic action, that of fluctuating spontaneity'.[4] The image of the decapitated frog is an 'often-quoted' example of reflexive feeling, addressed in Charles Darwin's *Expression of the Emotions in Man and Animals*, published later in the same year as Lewes's article.[5] Darwin inadvertently challenges Lewes's view that the 'distinctive peculiarity of organic action' is 'fluctuating spontaneity'; the automated headless frog serves as the means by which to illustrate, rather than counter, theories of 'natural' human responsiveness and emotional expression. This chapter begins with an introductory analysis of one of Dickens's earliest publications, the short story, 'Our Next-Door Neighbour (1836), before moving on to *Oliver Twist*, a text that was initially serialised in *Bentley's Miscellany* (1837–39), and published as a novel in 1838. I argue that the animal face opens up a textual space in which Lewes's original condemnation of Dickensian characterisation as lacking the 'peculiarity of organic action [and] fluctuating spontaneity' exposes the enduring conflict between physiognomic aesthetics and the instinctual responses attributed to survival function.

The animal face in Dickens's novelistic characterisation frequently occurs as a means to demonstrate interaction and communicative response (or its lack) between faces: for instance, in *Great Expectations*, the impressionable Pip confronts a 'clerical' ox and is fixed with his obstinate 'accusatory' stare, while the young David Copperfield is sprung upon by Mr Murdstone's canine representative, 'deep-mouthed and black-haired like Him'.[6] Juliet John argues that 'Dickens's prose-poetics are rooted in a fascination with the

theoretical value found in Dickens's methods of depicting feeling. See, Marcia Muelder Eaton, 'Laughing at the Death of Little Nell: Sentimental Art and Sentimental People', *American Philosophical Quarterly*, 26.4 (October 1989), 269–82 (p. 269); Nicola Bown, 'Crying over Little Nell', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 4 (2007), 1–13; Emma Mason, 'Feeling Dickensian Feeling', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 4 (2007), 1–19.

[4] G.H. Lewes, 'Dickens in Relation to Criticism', *Fortnightly Review*, 11.62 (February 1872), 141–54 (pp. 148–49). Lewes's article constitutes part of the critical tradition described in n. 3, above.

[5] Charles Darwin, *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009), p. 45. Although Darwin's text was published after Lewes article, Maudsley's *Body and Mind*, from which Darwin lifts his frog example, was published in 1870 and Lewes owned a copy. See Angelique Richardson, 'George Eliot, G. H. Lewes, and Darwin: Animals, Emotions and Morals', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013), pp. 136–71.

[6] Charles Dickens, *Great Expectations* (1861), ed. by Graham Law and Adrian J. Pinnington (London: Broadview, 2002), p. 53; Charles Dickens, *David Copperfield* (1850), ed. by Nina Burgis and Andrew Sanders (Oxford: Oxford University Press, 2008), p. 41. Critics have commented on the prominent role of animals — often, specifically dogs — in Dickens's life, fiction, and non-fiction prose. See Kate Flint, 'Origins, Species and *Great Expectations*', in *Charles Darwin's "The Origin of Species": New Interdisciplinary Essays*, ed. by David Amigoni and Jeff Wallace (Manchester: Manchester University Press,

interaction between the animate and the inanimate'. John's comment refers broadly to relations between organic and non-organic tangible structures (for instance, as Tamara Ketabgian has discussed, between human and machine in *Hard Times*), although her astute observation can also be applied to interactions specifically occurring between the animate (pathognomic) and inanimate (physiognomic) face.[7] More central to my argument, joining its illuminations of how emotions are manifested, externalised, and responded to, the animal face becomes a locale for the dynamic interactions between physiognomy and pathognomy.

In 'Our Next-Door Neighbour' the animal face does not merely provide evidence for the nineteenth-century author's conflicted preoccupation with face-reading, but also narratively and thematically provides a re-enactment of this conflict. In this story, Dickens extends the familiar interpenetration of the animal and human, comically yet persuasively, to the inanimate. Incorporating pathognomic analysis into a wider definition of physiognomy, Dickens concedes deferentially that 'the various expressions of the human countenance afford a beautiful and interesting study', before adding, 'but there is something in the physiognomy of street-door knockers, almost as characteristic and nearly as infallible'.[8] His comparison between the animal faces of the door knockers to their human owners' characteristics scrutinises both fixed features and emotional expressions. The inanimate object, the knocker, is at once animalised and animated as an expressive representative of its owner. The lion-faced door knocker favoured by 'the selfish and brutal' man is a 'heavy ferocious-looking fellow, with a countenance expressive of savage stupidity'; 'the jolly face of a convivial lion smiling blandly at you', is in comparison indicative of a friendlier home-owner, invariably offering 'hospitality and another bottle', the smile more actively communicating amiability.[9] Blending physiognomic and pathognomic analysis, the knockers furthermore indicate individual variance between

---

2005), pp.152–73; Tamara Ketabgian, '"Melancholy Mad Elephants": Affect and the Animal Machine in *Hard Times*', *Victorian Studies*, 45.4 (2003), 649–76; Ivan Kreilkamp, 'Dying like a dog in *Great Expectations*', in *Victorian Animal Dreams. Representations of Animals in Victorian Literature and Culture*, ed. by Deborah Denenholz Morse and Martin A. Danahay (Aldershot: Ashgate, 2007), pp.81–94; Tara Macdonald, '"red-headed animal": Race, Sexuality and Dickens's Uriah Heep', *Critical Survey*, 17.2 (2005), 48–62. Other texts relating to *Oliver Twist* and animals are cited later in this chapter.

[7] Juliet John, *Dickens's Villains: Melodrama, Character, Popular Culture* (Oxford: Oxford University Press, 2003), p. 105. Ketabgian argues that *Hard Times*'s endlessly repetitive mechanical 'mad-elephants' (in Coketown's factories) validate alternate means of representing expressive feeling, negating prior epistemological antagonism between mechanisation and psychic depth. Ketabgian, '"Melancholy Elephants"'.

[8] Charles Dickens, 'Our Next-Door Neighbour', in *Sketches by Boz: Illustrative of Every-day Life and Every-day People* (1836) (London: Hazell, Watson & Viney, 1934), pp. 36–41 (p. 36).

[9] *Ibid.*, pp. 36–37.

members of the same species (lions as well as humans), and the inter-species transferability of affective expression from animals to humans. As in traditional physiognomic analysis, the knockers mirror internal character via their form in communicative interaction with both house-owner and house-guest.

This interactive relationship does, however, have limits: in line with the shift from the simplistic associations of faculty psychology, Dickens cautions, 'do not let us be understood as pushing our theory to the full length of asserting that any alteration in a man's disposition would produce a visible effect on the feature of his knocker'.[10] This wry remark critiques the universality of the mimetic relation between external sign and internal signified that is the basis of physiognomic practice: as Dickens demonstrates, once the authoritative dominance of the signifier is taken as a self-evident fact, almost anything can have an apparently logical signification ascribed to it.[11] 'Our Next-Door Neighbour' culminates with the death of the neighbour in question: 'a strange expression stole upon his features; not of pain or suffering, but an indescribable fixing of every line and muscle'.[12] While this closing description appears as a straightforward adoption of Lavaterian physiognomics, the introductory critique on door-knockers indicates both the narrator's and the reader's culpability in allowing either physiognomic or pathognomic representations of the inviolable relationship between the internal and the external to dictate and mould their perception.

George Levine contends that Dickens's fictional focus on external appearances is dependent on his confidence in the legibility of nature; for Levine, the increasing secularisation of the external world leads in turn to Dickens's growing inability, throughout his career, to be satisfied with the essentialist imagination.[13] Yet I argue that this resistance to essentialism, related as it may be to burgeoning evolutionary theory, is also identifiable in Dickens's early prose, such as 'Our Next-Door Neighbour' and *Oliver Twist*.[14] In the latter, Dickens creates an opposition between the still, physiognomic human

[10] *Ibid*., p. 37.
[11] Johann Casper Lavater, for instance, claims 'do we not daily judge of the sky by its physiognomy? No food, not a glass of wine, or beer, not a cup of coffee, or tea, comes to table, which is not judged by its physiognomy'. Lavater, *Essays on Physiognomy: Designed to promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840), p. 16. Lewes responds to what he considers to be the paucity and un-individuated limitations of Dickens's bookshelves with the claim that they have 'no Physiognomy in the collection', Lewes, 'Dickens in Relation to Criticism', p. 152.
[12] Dickens, 'Next-Door Neighbour', p. 41.
[13] George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Cambridge, Mass.: Harvard University Press, 1988), p. 140.
[14] Levine discusses Dickens's relationship with Darwin, as do other critics such as Kate Flint. Dickens would have been familiar with Darwin's writing, he owned a copy of *The Origin of Species*, and as editor of *All the*

face and expressive animal pathognomy. The animal face in *Oliver Twist* navigates both the conflicting dialectic between physiognomy and pathognomy and readings of faces that prioritise either survival function or aesthetic response. It is through the pathognomic animal face that Oliver's angelic physiognomy, along with physiognomy's epistemological dominance over pathognomy, are challenged and subverted, revealing the expressive capacity and mutability of Oliver's seemingly unchanging face.

Physiognomy and Pathognomy in *Oliver Twist*

i. A Physiognomically Beautiful Child

In *Oliver Twist*, faces, quite literally, haunt the text. Dickens draws on the Lavaterian prioritisation of sleeping and dead faces as most resonant in their physiognomic intensity more than once in the novel. Introducing the deathbed scene of Old Sally, the narrator offers a standard Lavaterian preamble on physiognomy's relation to the processes of life:

> it is only when those passions sleep, and have lost their hold for ever, that the troubled clouds pass off, and leave Heaven's surface clear. It is a common thing for the countenances of the dead, even in that fixed and rigid state, to subside into the long-forgotten expression of sleeping infancy […] so calm, so peaceful do they grow again […] the Angel even upon earth.[15]

Dickens demonstrates close allegiance to physiognomic rather than pathognomic models here, emphasising that it is 'only' when 'passions sleep' and lose their hold 'that the troubled clouds pass off, and leave evident 'the Angel even upon earth'. Indicating calm and peace, this idealised face is closely associated with childhood innocence and, as in Johann Casper Lavater's *Essays on Physiognomy*, divine perfection. Both the expressive and the animal face are entirely absent, and the representation of passions as 'troubled

Year Round, and *Household Words* he frequently encountered evolutionary debate. See Levine, *Darwin and the Novelists*, and Flint, 'Origins, Species and Great Expectations'. Ben Winyard and Holly Furneaux argue that Dickens's appreciation for scientific discourse was predicated on its ability to rouse the imagination and tell stories, binding people together. Winyard and Furneaux, 'Dickens, Science and the Victorian Literary Imagination', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 10 (2010), 1–17.

[15] Charles Dickens, *Oliver Twist*, ed. by Kathleen Tillotson and Stephen Gill (Oxford: Oxford University Press, 2008), p. 185. All quotations are taken from this edition, which uses Dickens's revised 1848 text, and are included in parenthesis.

clouds' undoubtedly prioritises tranquillity over strongly-felt emotion making it difficult to decipher 'Heaven's surface' clearly. Dickens here appears to echo Lavater while supplementing particular cultural representations of death. Many twentieth-century critics have testified to the 'theatricalisation' of nineteenth-century deathbed scenes, emphasising the gulf between contemporary and Victorian approaches to dying.[16] According to these accounts, the nineteenth-century imperative — given high death rates — is to assimilate death into life via ritual and beautifying the deceased; as such, Dickens's evocative sentimentalising of the dead face can be viewed as realistically capturing a specific cultural and social moment. Margarete Holubetz, for instance, notes that the association between death, birth. and sleep (prominent also in Lavaterian physiognomics), was a recurrent literary trope during the nineteenth century.[17]

Other critics have, however, warned against using such accounts to homogeneously universalising cultural norms; the extent and uniformity of deathbed rituals, along with the validity and usefulness of such rituals, as well as of critical paradigms that read fiction to make generalisations about culture, are continuing topics of debate. The philosopher, Philippe Ariès, for instance, identifies the nineteenth century as an era of flux and change, while historians such as Julie Marie-Strange and Stephen Garton have noted the very different representation of death and grief, according to the social stratifications of class and gender.[18] This can also be seen directly in *Oliver Twist*, and unlike other more 'sentimental' death-bed scenes in Dickens's novels, the actual account of Old Sally's death is blunt and matter-of-factly sparse in detail (if still theatrical in execution): '[Sally] once again rose, slowly and stiffly into a sitting posture; then, clutching the coverlet with both hands, muttered some indistinct sounds in her throat, and fell lifeless on the bed' (p. 190).

---

[16] Norbert Elias has emphasised the isolation of the dying and grieving processes caused by the twentieth-century imperative for self-control. Elias, *The Loneliness of the Dying*, trans. by Edmund Jephcott (Oxford: Blackwell, 1985). See also James Steven Curl, *The Victorian Celebration of Death* (Devon: David and Charles, 1972); John Morley, *Death, Heaven and the Victorians* (London: Studio Vista, 1971); Michael Wheeler, *Death and the Future Life in Victorian Literature and Theology* (Cambridge: Cambridge University Press, 1990).

[17] Holubetz, among others, has criticised Dickens's representation of death as overly theatrical; she does, however, concede that he is 'fairly accurate' regarding 'the rituals of the time'. Margarete Holubetz, 'Death-Bed Scenes in Victorian Fiction' *English Studies*, 1 (1986), 14–34. More recent theorists have defended Dickens's deathbed scenes on the grounds that 'sentimentalism', while potentially culturally-specific, actually works to keep Dickens relevant, relaying emotional experience across historical boundaries and 'collapsing the difference' between the reader and text. See Bown, 'Crying over Little Nell'.

[18] Philippe Ariès, *The Hour of Our Death*, trans. by Helen Weaver (New York: Alfred A. Knopf, 1981). Strange has done much to illuminate working-class processes of grief and mourning, emphasising the emotional and communicative potentials of touch and silence, while Garton discusses how public and private constructions of masculinity affect the grieving process. See Julie-Marie Strange, *Death, Grief and Poverty in Britain 1870–1914* (Cambridge: Cambridge University Press, 2005) and Stephen Garton, 'The Scales of Suffering: Love, Death and Victorian Masculinity', *Social History*, 27 (January 2002), 40–58.

This death bears little relation to Dickens's rhapsodic interjection concerning deathly physiognomy. Sally's 'clutching […] indistinct' expiration has none of the solemn gravitas of a death that 'leave[s] heaven's surface clear', and even lacks the 'indescribable fixing' ascribed to the next-door neighbour's dead face. This contrast is indicative of both the romanticism underlying physiognomic accounts of death and the extent to which observation and representation of external appearance are unavoidably dictated by internal character, behaviour, and actions carried out in life. Instructive accounts of face-reading, such as Lavater's, stipulate that even (especially) in death, physiognomy is a direct symbiotic representation of character: Sally, who was present at Oliver's birth, significantly contributes to his childhood misery, and as such is not permitted a sympathetic physiognomy. Yet through the juxtaposition of two different accounts of death, Dickens's fictionalised narrative can be read as an acknowledgment of the role that the observer, or author, has in mediating these representations.

Dickens's prioritisation of physiognomy, and particularly his emphasis on the clarity with which the immobile, sleeping, or dead face represents true character, is repeated in the representation of Oliver, a particularly innocent child, whose face and character are unmarked by life: 'Oliver stared *innocently* in Mr. Bumble's face' (p. 20); '"Did you want a coffin, sir?" inquired Oliver, *innocently*' [my emphasis] (p. 33). An ideal Lavaterian face, even in life, Oliver's face is metaphorically marked by death: asleep in Fagin's den after being forcibly taken from his refuge at Mr Brownlow's by Sikes, Nancy, and Bull's-eye, Oliver 'looked like death […] in the guise it wears […] when a young and gentle spirit has, but an instant, fled to Heaven, and the gross air of the world has not had time to breathe upon the changing dust it hallowed' (p. 155). Oliver's face appears here captured at the point of death, but untouched either metaphorically by the corruption of the corpse's decay, or aesthetically and literally, by the 'gloomy abode' and 'rude bed upon the floor' (p. 155). The physiognomic arrest of his features freezes the temporal boundary between both life and death, and human and divine, recalling the image of the 'Angel even upon earth'. In a state of suspended animation, captured at the point of fleeing to heaven, Oliver is granted a temporary death in sleep, and, fitting the pacifying and sanctifying evocation of death as amelioration above, a temporary respite from consciousness of danger.

The characterisation of Oliver in this suspended, inanimate state persists throughout the novel and is achieved via his bodily, vocal, or conscious removal from a significant proportion of the plot's tumultuous action. As the undertaker, Mr Sowerberry,

notes, Oliver is the quintessential '"delightful mute"' (p. 35): Kamilla Elliott points to Oliver's inaction, arguing that, for an eponymous character, Oliver spends a surprising amount of time absent or asleep.[19] Physiognomy is in this way integral to defining permanent character: the various clothes in which Oliver is dressed throughout the novel indicate an external appearance that is malleable to a certain extent, whilst his generally unmodified voice, manners (when he is awake), and face continually set him apart from the thieves and murderers inhabiting Jacob's Island.[20] Sambudha Sen has noted that social spaces in *Oliver Twist* are frequently internalised within people, yet this is not necessarily the case for Oliver, whose face is an exemplary instance of physiognomic rule, where what Dickens terms the 'principle of Good' resists the influence of external circumstance and environment.[21]

Oliver's fixed facial physiognomy does not communicate with the physiognomy of his environment, and is hence a necessary condition of his survival. The decay and ruination of Jacob's Island is otherwise all-encompassing and, as with the door-knockers, physical environment is described in physiognomic terms: '*every* repulsive *lineament* of poverty, *every* loathsome indication of filth, rot, and garbage; all these ornament the banks of Folly Ditch' [my emphasis] (p. 404). Oliver's character, evidenced through his physiognomy, is equally absolute and essential: Brownlow's identification of total truth in Oliver's face is described in the same terms, although the signification is in direct opposition to the personified Folly Ditch: there is '*truth* in *every* one of its thin and sharpened *lineaments*' [My emphasis] (p. 90). Oliver's honest naivety is emphasised in order to indicate his alienation from his environments, while in comparison, physiognomic and pathognomic description of other characters demonstrates that they are adapted to and resemble Jacob's Island, as inhabitants of houses resemble their door knockers.[22] The Artful Dodger is startlingly shrewd and adult (although not grown *up*) in appearance: he is

[19] Kamilla Elliott, '*Oliver Twist* and the Survival of the Cutest', Unpublished, pp. 1–35 (p. 24).
[20] Goldie Morgentaler and Sambudha Sen have written on the role of Oliver's clothing in forming an integral but disposable part of Oliver's changing social identity. See Morgentaler, *Dickens and Heredity: When Like Begets Like* (Basingstoke: Macmillan, 2000), p. 45; Sen, 'Hogarth, Egan, Dickens, and the Making of an Urban Aesthetic', *Representations*, 103.1 (Summer 2008), 84–106 (p. 103).
[21] In Sen's words: 'Oblivious to the details of his actual location, absorbed completely in his book, Mr. Brownlow seems, as Dickens suggests, to carry his study out with him to the streets'. Sen, 'Hogarth, Egan, Dickens', p. 100. In his preface to the 1850 edition of *Oliver Twist*, Dickens writes that it his primary aim to 'shew, in little Oliver, the principle of Good surviving through every adverse circumstance'. Dickens, 'Author's Preface to third edition', (1841), in *Oliver Twist*, ed. Tillotson and Gill, liii.
[22] Dickens's description of London's underworld is motivated by a desire to counter previous fictional glamorisations of criminal behaviour, 'to paint them', instead 'in all their deformity, in all their wretchedness, in all the squalid poverty of their lives'. See, Dickens, 'Preface to third edition', liv.

'snub-nosed, flat-browed, common-faced […] he had about him all the airs and manners of a man. He was short of his age: with rather bow-legs: and little, sharp, ugly eyes' (p. 57). Dodger's face indicates some form of "inferior" genealogy: in this case, determined by social class; he has been stunted in growth, yet his eyes remain 'sharp' and cunning, while his 'snub-nose' and 'flat-brow' recall how, in Lavaterian discourse, such features are identified with ugliness and a tendency to animality in both behaviour and circumstance.

The endurance of the 'principle of Good', identifiable through Oliver's aesthetically pleasing face, both physiognomically proves his lack of survival instincts, as evidenced in others via animalised characteristics, and mitigates his need for them. The instinct for self-preservation is common to many of the 'sharp' underworld characters, human and animal, but often denied to Oliver. Dickens remarks that, 'although Oliver had been brought up by philosophers, he was not theoretically acquainted with the beautiful axiom that self-preservation is the first law of nature' (p. 74). Oliver is frequently depicted as incapable of helping himself. In his first two appearances in the narrative, as a baby and as a nine-year-old child, he is crying copiously: 'Oliver cried lustily' (p. 3); 'Oliver cried very naturally indeed […] he burst into an agony of childish grief' (p. 8). Contrasting with his angelic physiognomy, Oliver's face is here described pathognomically, yet the extent of his tears indicates his inability to protect himself; as Darwin demonstrates, the act of crying interferes directly with the eyes' ability to aid survival and self-preservation (see Chapter Three).[23]

Oliver's narrative fate is thus dependent on the response that other characters have to his exterior appearance, as manifested through sympathetic identification. Elliott writes that it is Oliver's sweet baby-face (Mrs Bedwin cries, '"Bless his sweet face! […] I can't bear, somehow, to let him go out of my sight"' (p. 109)), that provokes other characters to sacrifice themselves in order to protect him — this is a case of 'survival of the cutest'.[24]

[23] The role and signification of crying is an ongoing preoccupation across scientific and humanities discourse. The historian Thomas Dixon proposes that the British idealisation of a 'stiff-upper lip' is very much a construction of later nineteenth-century militaristic and Darwinian thought, stimulated partly by increasingly urgent impulses to distinguish British identity from the rest of the world. Dixon's work fits in with recent philosophical works on the role of emotional expression: in his study of masculinity and subjectivity Peter Middleton responds to Franco Moretti's claim that "crying enables us not to see" with the idea that blindness instead comes from the inability to express an emotion and that crying performs a cathartic function. Dixon, *Weeping Britannia: Portrait of a Nation in Tears* (Oxford: Oxford University Press, 2015); Middleton, *The Inward Gaze: Masculinity and Subjectivity in Modern Culture* (London: Routledge, 1992).

[24] Elliot, 'Survival of the Cutest', p. 16. In 1833, four years before the first appearance of Oliver's face in text, *The Athenaeum* published an article about the human impulse to 'love young faces': 'there is not one man in a thousand, save and except butchers, who could stick a knife into the throat of a lamb, it has such a

Equally, Sally Ledger argues that Dickens's earlier novels are characterised by the existence of sympathetic, binding forces between people.[25] The dialectic between evidence of sympathetic care for others and the more ruthless exploitation that Oliver encounters replicates contemporary and ongoing debates concerning apparent conflicts between the instincts of altruism and self-preservation. In the eighteenth century, David Hume countered the Hobbesian construction of the human as motivated solely by self-interest with his theory of natural benevolence and the moral sentiments; among others, Hume laid the groundwork for the novel to be valued as a civilising force through the generation of imaginative sympathy.[26] Comparisons with animals and the 'natural' abound throughout the nineteenth century and, in his 1871 publication of *The Descent of Man*, Darwin argues that evidence for altruistic behaviour can be found in animal societies; there is a blurred line between preservation of the self and preservation of the kinship group that the 'social instincts' navigate.[27] More recently, the primatologist Frans de Waal, has argued that, while humans frequently explain their own cruelty by reference to an animal ancestry 'red in tooth and claw', scant attention is paid to the converse side of animal behaviour; studying reconciliation practices in primates, Waal argues that sympathetic response is crucial to the cohesion of the social group.[28] While these latter two critiques appear after Dickens's death, the enactment of sympathy operates on a similar level in *Oliver Twist*, as the motions taken to protect Oliver protect and maintain social hierarchies and class boundaries.

There are, however, two levels in which survival is dependent upon sympathetic response in *Oliver Twist*, and they do not always comfortably cohere: narrative survival within the text collides with survival in literary imagination and tradition outside the text. As Elliott indicates, the rather infuriating lack of agency on Oliver's part can provide justification for pervasive critical interpretations of Oliver as an unsatisfactory hero, his

---

pretty, innocent face'. William Pitt Scargill, 'A Chapter on Faces', *The Athenæum*, 311 (12 October 1833), 682–83.

[25] Ledger discusses the influence of both Darwinian science and political economy on Dickens's narratives, arguing that by the publication of *Our Mutual Friend*, the influence of the more dog-eat-dog philosophy of Malthusian political economy is evident. Sally Ledger, 'Dickens, Natural History and *Our Mutual Friend*', *Partial Answers: Journal of Literature and the History of Ideas*, 9.2 (June 2011), 363–78.

[26] David Hume, *Four Dissertations, I. The Natural History of Religion, II. Of the Passions, III. Of Tragedy, IV. Of the Standard of Taste* (London: A. Miller, 1757). See also, Hume, *A Treatise of Human Nature* (1740) (The Floating Press, 2009).

[27] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871), ed. by James Moore and Adrian Desmond (London: Penguin, 2004).

[28] See Frans de Waal, *Primates and Philosophers: How Morality Evolved* (New Jersey: Princeton University Press, 2006); de Waal, *Are We Smart Enough to Know How Smart Animals Are?* (London: Granta, 2016).

personality disappointingly unfulfilled and enduringly blank: 'scholars have agreed that Oliver has no signifying power apart from the discourses inscribed and/or the projections cast upon him'.[29] George Orwell's 1940 essay on Dickens expresses incredulity that a writer possessed of Dickens's 'vitality' could aspire to the 'purposeless' resolutions we see in novels such as *Oliver Twist*: 'What is striking about it is the utterly soft, sheltered, effortless life it implies […] a vision of a huge, loving family of three or four generations, all crammed together in the same house and constantly multiplying, like a bed of oysters.'[30] The novel's final chapters' favour familial sanctity and financial security in a bucolic idyll, standing in stark contrast to the animated city scenes, and narratively enacting the collision between the ideals of physiognomy and pathognomy.

Social fixity is closely linked to physiognomic ideals; this is an entirely different message to the one originally suggested by Dickens's illustrator, George Cruikshank, who envisioned a story featuring 'men of humble origin, by natural ability, industry, honest and honourable conduct [who] raise themselves to first class positions in society'.[31] The physiognomy of place and face is inevitably deterministic and entrenched by birth; related to this, critics have long debated whether *Oliver Twist* is politically radical or conservative. Among others, Goldie Morgentaler comments on the moral protection that the inherited social status of Oliver's parents affords him; unlike his half-brother Monks, Oliver is the result of a loving relationship, a factor that contributes to his goodness, and, in comparison, by virtue of its lack, Monks's degeneracy.[32] On the other hand, in defence of Dickens's politics in the novel, Richard Dellamora has written that the 'barbarous' revelation of Oliver's origins in middle-class illegitimacy turns the charge of Malthusian political economy — the excessive consumption and reproduction of the poor — towards the higher stratifications of society.[33] Dellamora argues that through *Oliver Twist* Dickens criticises representations of the poor as non-human others.[34] Contradicting Dellamora's

[29] Elliott writes: 'Simon During draws similarly on D. A. Miller's Foucauldian *The Novel and the Police*, declaring Oliver an "empty signifier who merely demonstrates the proliferation of [the] institutions" amongst which he moves. Terry Eagleton turns to Marxist theory to argue that Oliver's "very blankness brings into dramatic focus the social forces which dominate him; he becomes, in a Brechtian metaphor, the empty stage on which these historically typical forces contest"'. Elliott, 'Survival of the Cutest', p. 2.
[30] George Orwell, 'Charles Dickens', in *Collected Essays* (London: Secker & Warburg, 1961), pp. 31–87 (p. 73; p. 71).
[31] Quoted in Richard Dellamora, 'Pure Oliver: or, Representation without Agency', in *Dickens Refigured: Bodies, Desires and other Histories*, ed. by John Schad (Manchester: Manchester University Press, 1996), pp. 55–79 (p. 74).
[32] Morgentaler, *Dickens and Heredity*, p. 44.
[33] Dellamora, 'Pure Oliver', p. 76.
[34] *Ibid.*, p. 62.

assertion, however, is the prominent role that metaphorical images of animality, traditionally symbolic of inferior life forms, perform in the novel. I argue that, while animals and animality are essential to Dickens's narrative articulation of his poor, criminal characters, such imagery is not always conducive to denigration and that the expressive animal face challenges the dominance of the physiognomic face, along with the ideological and epistemological promotion of fixity on which physiognomy depends, giving new signification to face-reading.

ii. Pathognomy and the Animal Face

In *Oliver Twist*, as in 'Our Next-Door Neighbour', human character is not solely defined through the human face. The expressive animal face constantly renegotiates the balance of power between physiognomy and pathognomy, while also challenging the fixed relation between signifier and signified according to methodological collisions and interchanges between the two forms of face reading. Although they share some physiognomic characteristics, it is predominantly through pathognomy that human and animal faces are linked. Metaphorical and literal collisions and affinities between animal and human characters are frequent in Dickens's second novel. Analogous to his wily character, Fagin has a scrupulously perceptive 'hawk's eye' (p. 342), and he refers to his boys as '"Clever Dogs!"' (p. 65), while the literal dog, Bull's-eye, has been identified by critics as a symbolic stand-in for, alternatively, Bill Sikes and Nancy. Beryl Gray notes that Bull's-eye's name becomes noticeably absent from the novel as his identity merges with Sikes's, while Grace Moore writes that Bull's-eye grows increasingly ape-like in Cruikshank's illustrations, embodying his Master's regressive descent into brutality. Moore also claims that Bull's-eye is united with Nancy, through both their shared suffering and their intense loyalty to Sikes.[35] In a similar vein, Kattie Basnett argues that it is the vision of Nancy's eyes looking out of Bull's-eye's body that causes Sikes to fall off the roof-top at the climax of the novel ('"The eyes again!"' (p. 412), he cries). Basnett views Dickens's fictional animals as a means through which to re-imagine animal–human power dynamics, writing that 'dysfunction arises when the animal is symbolically overwritten by or

[35] Beryl Gray, *The Dog in the Dickensian Imagination* (Surrey: Ashgate, 2014), p. 102; Grace Moore, 'Beastly Criminals and Criminal Beasts: Stray Women and Stray Dogs in *Oliver Twist*', in Morse and Danahay, *Victorian Animal Dreams*, pp. 201–14. Moore's interpretation can be countered with evidence of Dickens's frequently violent treatment of his own pet dogs (see Gray).

overwrites human identities'; in effect both Sikes and Bull's-eye die as a result of 'the ubiquitous Victorian tendency to blur animal and human identity'.[36]

Building on these interpretations, I argue that study of the pathognomic animal face is tied to the paradoxical operation of survival function in the novel, and that the dialectical interaction between physiognomy and pathognomy can be seen explicitly occurring in *Oliver Twist* in the collision between Oliver's innocent, angelic physiognomy and a particular form of expressive countenance that he often fails to read and respond to. Oliver's safety is directly challenged by the pathognomic face of the world into which he has been thrown. Introducing Sikes and his dog, Dickens emphasises the facial similarities between the two — as Dickens draws on in his door-knocker parody, the likeness between dogs and their owners is a commonly utilised and easily recognisable motif. Sikes has a 'broad heavy countenance with a beard of three days' growth: and two scowling eyes; one of which, displayed various parti-coloured symptoms of having been recently damaged by a blow' (pp. 94–95), while his canine counterpart, following him into the room, is 'a white shaggy dog, with his face scratched and torn in twenty different places' (p. 95). Sikes has the ability of communicating ominous threats with a 'very expressive look' (p. 112), whereas Bull's-eye is as menacingly expressive as his owner: 'the dog growled again; and, licking his lips, eyed Oliver as if he were anxious to attach himself to his windpipe without delay' (p. 119). Oliver does not react to this threat at all and, despite being shepherded through the streets by Sikes and Nancy at this point, is not heard from again for several paragraphs, when he looks up into Nancy's face and sees 'that it had turned a deadly white' (p. 120); again, whether he has any reaction to this is not detailed.

The vivid pathognomic portrayals of other characters indulging in a variety of lively, revealing, and communicative facial expressions entrench the textual dialectic between animation and Oliver's inanimate lack of agency. The boys in the workhouse, Dodger, Nancy, Fagin, Noah Claypole, and Bull's-eye all have a habit of winking suggestively. In the case of Bull's-eye, winking adds to the menace of his portrayal, 'winking at his master with both eyes at the same time [...] licking a large, fresh cut on one side of his mouth, which appeared to be the result of some recent conflict' (p. 110); 'winking his very ill-looking eyes twenty times in a minute' (p. 95). As Darwin would

[36] Kattie M. Basnett, 'Reversing Domestication in Dickens: Forging Masculine and Domestic Types through the Cross-Species', *Dickens Studies Annual*, 44 (2013), 55–84 (pp. 57–59). As other critics have indicated, this is an issue that extends far beyond the nineteenth century; Mario Oritz Robles, for instance, argues that one reason why literature is an ideal means through which to study 'the animal', is that animals can only ever be accessed via a 'screen of tropes'. Robles, *Literature and Animal Studies* (Oxon: Routledge, 2016), p. 18.

later note, however, winking is primarily a defence mechanism, and the wink here indicates not only potential menace, but also fear and servility before a threatening master. Pertinent to Bull's-eye's relationship with Sikes, Darwin writes: 'A similar winking movement is caused when a blow is directed towards the face'.[37] This appropriate expressive reaction to threat is seen replicated again via Sikes's interactions with Fagin: angered by Fagin's 'restless and suspicious manner which was habitual to him' (p. 149) and his attempts to avoid straight-talking about the 'crib at Chertsey' (p. 149), Sikes sneers, "Speak out, and call things by their right names; don't sit there, winking and blinking, and talking to me in hints" (p. 149).[38] Sikes and Oliver, noticeably, do not wink; while this potentially indicates a lack of sly frivolity on their part, it also gestures to their unnecessary or insufficient instinct for self-protection.

As seen above, threat operates through expression; however, an understanding of another's expression also ensures survival. The necessarily reciprocal process of expression-response is best exemplified by Bull's-eye's desertion of his master at the end of the novel. A key contributing factor to Sikes's eventual pursuit and violent death is his initial decision to kill Bull's-eye; the identities of Master and dog are so conflated that Sikes is convinced that Bull's-eye's distinctive appearance will give him away. This highlights the dog's recognisable individuality — a point disputed in Lavater's descriptions of animal physiognomies.[39] Displaying a combination of survival instinct and personal autonomy that here surpasses those of both Nancy and Oliver, Bull's-eye accurately assesses his Master's murderous intentions: 'the animal looked up into his master's face while these preparations were making; and, whether his instinct apprehended something of their purpose, or the robber's sidelong look at him was sterner than ordinary, he skulked a little farther in the rear than usual, and cowered as he came more slowly

[37] Darwin, *Expression*, p. 47.
[38] For Darwin, the extent to which habitual movements remain is key to identification of the extent to which an organism is evolved/a person is able to adapt to the cultural norms of civilised society.
[39] Despite the fact that Dickens describes Bull's-eye, as 'a white shaggy dog', he is frequently associated with English Bull Terrier/Staffordshire Bull Terrier type-dogs, often white with black markings: *Oliver Twist*, dir. by David Lean, (Cineguild,1948); *Oliver!*, dir. by Carol Reed (Romulus Films, 1968). Certain of Cruikshank's illustrations support this depiction, although Bull's-eye is rarely as large as subsequent dog actors have been. A review of Roman Polanski's 2005 film, *Oliver Twist*, published in *The Telegraph*, mounts an extended criticism on Polanski's 'Lassification' of Bull's-eye, writing that the original dog is a 'proto-pit bull, a vicious, bullying muscle-dog […] everyone is scared of Bull's-eye; the only surprise is he doesn't wear a hoodie'. This interpretation is far removed from either Cruikshank's or Dickens's portrayal. Jim White, 'A Twist in the Tale: Courtesy of Animal Rights Fanatics', *The Telegraph*, 10 October 2005, Comment <http://www.telegraph.co.uk/comment/personal-view/3620260/A-twist-in-the-tale-courtesy-of-the-animal-rights-fanatics.html> [Accessed 24 April 2017].

along' (p. 393).[40] This exchange between Bull's-eye and Sikes depends upon the active transmission and communication of intention via feeling: as Isobel Armstrong has indicated, literary representation of emotional experience incorporates inter-relational feelings between subjects, as well as private expressions.[41] Bull's-eye's perceptive face-reading demonstrates how inter-relational communication also functions on a cross-species basis, incorporating animals as well as humans into the discursive representation of facial identification and recognition.

While sympathetic feeling can be instigated via interaction with beautiful physiognomies, it is also generated by the expressive face: it is through pathognomic interactions, including cross-species interactions, that sympathy is primarily enabled in the novel. Study of the literary operation of sympathy, both between characters and between readers and characters, has produced a vast array of critical material in recent years, with much emphasis placed on conceptualising the divergences between alternate emotional responses within and toward fiction: these debates emerge in the discussion of death-bed scenes above.[42] Another increasing critical preoccupation is the performance of sympathy in the non-literary realm: for instance, the contribution that sympathetic, subjective response had in the creation and perpetuation of scientific theories.[43] These two critical areas are not unrelated: as the exchange between Sikes and Bull's-eye demonstrates, it is possible to explore the manifestation of literary sympathy through physical, bodily or facial, response. In his work on physiology and novel-reading, Nicholas Dames has demonstrated how physiological reactions to reading are, in themselves, conducive to polemical arguments that denote the moral imperatives associated with reading texts in order to achieve affective identification with characters.[44] Dames's argument acknowledges how, just as sympathetic feeling is transmitted between characters, readers also take part in an active interchange with the text. The combination of physiological and

[40] This independence does not last, as Bull's-eye meets his own death in his desperate leap to reach Sikes.
[41] Isobel Armstrong, *The Radical Aesthetic* (Oxford: Blackwell, 2000), p.115.
[42] See for instance: Rachel Ablow, 'Victorian Emotions', *Victorian Studies*, 50.3 (Spring 2008), 375–77; Michael Bell, *Sentimentalism, Ethics and the Culture of Feeling* (Basingstoke: Palgrave, 2000); *Compassion. The Culture and Politics of an Emotion*, ed. by Lauren Berlant (London: Routledge, 2004); Thomas Dixon, *The Invention of Altruism: Making Moral Meanings in Victorian Britain* (Oxford: Oxford University Press, 2008); Judith Stoddart, 'Tracking the Sentimental Eye', in *Knowing the Past. Victorian Literature and Culture*, ed. by Suzy Anger (New York: Cornell University Press, 2001), pp. 192–211.
[43] See Chapter Three, p. 15, n. 51; p. 16, n. 54.
[44] Nicholas Dames, *The Physiology of the Novel: Reading, Neural Science, and the Form of Victorian Fiction* (Oxford: Oxford University Press, 2007). See also Rachel Ablow, *The Feeling of Reading: Affective Experience and Victorian Literature* (Michigan: University of Michigan Press, 2010); Elizabeth A. Wilson, *Psychosomatic: Feminism and the Neurological Body* (Durham, North Carolina: Duke University Press, 2004).

emotional response occurs especially through Dickens's description of Oliver's pathognomic animal face.

It is not solely Oliver's innocent, sweet physiognomy that procures the reader's sympathy or determines his bodily survival in the novel, and it is through the collision between physiognomy and pathognomy that a new way of reading Oliver is enabled, providing a means to address what the conflict between 'vitality' and the veneration of the 'soft' and 'sheltered' in Dickens's prose. This reading also combats the juxtaposition between the altruism of other characters and the reader's own acts of sympathetic identification. The blankness of Oliver's physiognomic face provides an exemplary surface on which pathognomy is enacted: not signifying anything in itself, it gives into, and becomes the basis for, intense expressive response. The interaction between physiognomy and pathognomy reveals a further dialectic between status and sympathy, in which the altruism of other characters' contrasts with readers' acts of sympathetic identification. In fiction, facial identification and analysis are established as part of an artistic, narrative technique allowing for a measure of projective and sympathetic identification with the characters and motivations represented via the face. Importantly, this identification explicitly incorporates the animal face, even as certain scientific discourses (for example, those of Charles Bell and Guillaume Duchenne) attempt to exclude it. The manifestation of animal functionality through the expressive face is at odds with the peaceful, beauty of Oliver's physiognomy, yet it encourages another kind of aesthetic response, as characterised by Bell, 'rais[ing] affection' or feeling in the observer, or in this case the reader.[45]

Dickens's city streets throng with animals, humans, and hybrids of animals and humans, literally and metaphorically colliding together. The chase scene, in which Oliver, suspected of pick-pocketing, is pursued by an angry crowd, exemplifies this:

> "Stop thief! Stop thief!" There is a magic in the sound. […] Away they run, pell-mell, helter-skelter, slap-dash; tearing, yelling, and screaming; knocking down the passengers as they turn the corners, rousing up the dogs, and astonishing the fowls; and streets, squares, and courts re-echo with the sound. (p. 74)

[45] Charles Bell, *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*, 5th edn (London: Bohn, 1865), p. 20. See Chapter Six.

As Dickens indicates, there is a 'magic' in this tumultuous cacophony, as the entire environment reverberates with noise and action. Oliver, the unwitting perpetrator of pandemonium, is presented in imagery starkly contrasting his usual sweet, tranquil physiognomy. In this pivotal scene, where he is permitted to act in aid of his own survival, Oliver's face is described in pathognomic, inter-species terms. The running, 'tearing, yelling, and screaming' humans are aligned with the indeterminate from the roused dogs and fowls both via their expression and their collusion in the action. Equally, so too the quarry of the chase, 'one wretched breathless child' (p. 74–75), implicitly evokes a pursued animal: 'panting with exhaustion; terror in his looks; agony in his eyes; large drops of perspiration streaming down his face; strains every nerve to make head upon his pursuers' (p. 75).

The resonating imagery of this scene is infectious and promotes a view of the human world as endemically primal and indicating an undercurrent of primitive predation 'in the human breast', common to all.[46] Clear parallels can be drawn here between this scene and Darwin's utilisation of the animalised crowd surrounding Fagin, 'jumping up, one behind another, and snarling with their teeth and making at him like wild beasts', as evidence for the descent of expression.[47] Dickens too gestures towards the inherent atavism of the chase: 'there is a passion *for hunting something* deeply implanted in the human breast' [Dickens's emphasis] (p. 74). The anonymity conferred here, the implication being that '*something*', or anything, will suffice, while bestialising the pursuers, ensures that Oliver is not protected from accusation by his physiognomy, as he is elsewhere in the novel. His innocent blankness is obscured, and robs Oliver of any special physiognomic-status previously conferred upon him.

The close relation of reader-response and character-response is vividly enacted here: just as sympathy is narratively evoked for Oliver, the object of the chase, the echoing sensation of excitement infects the reader, equally caught up in the action. In this scene, the phrase "Stop thief!" occurs eleven times (pp. 74–75), with mounting urgency as Oliver is chased by the mob: 'The cry is taken up by a hundred voices; and the crowd accumulate at every turning. Away they fly: splashing through the mud, and rattling along the pavements […] joining the rushing throng, swell the shout: and lend fresh vigour to the cry, "Stop thief! Stop thief!"' (p. 74), as the process of replicating sound through

[46] On the relationship between environment and the communication of emotional affect, see Teresa Brennan, *The Transmission of Affect* (Ithaca: Cornell University Press, 2004).
[47] Dickens, *Oliver*, p. 405; Darwin, *Expression*, p. 221

reverberation is here co-opted into narrative form via repetition. Oliver's face, straining 'every nerve', prefigures Darwin's later reference to the conducive power of nervous function in the expression of excitement, where it is not solely expression but also the physiological process of feeling itself that is inherited from animals by humans. As Darwin writes, excitement is physically manifested via the conduction of nerves, sympathetic to, and dependent on, each other: 'the conducting power of the nervous fibres increases with the frequency of their excitement.'[48] *Oliver Twist* appeared before Darwin's evolutionary theory, but associations between expression and nervous function, frequently dependent on physiological comparison with the animal, were integral to the development of early nineteenth-century psychological discourse.[49] In responses to fiction, however, this nervous excitement, rather than being genealogically inherited, is transmitted directly from the animal or animalesque character to the human reader.

As indicated above, the affective power of Dickens's prose has long been the subject of critical debate. It is difficult to know what the defiantly unsentimental reader, such as Oscar Wilde, would have made of such scenes; the point here is that such expressive displays work to limit sentimentalism, in direct opposition to the atmosphere conveyed in the description of, for instance, deathly but heavenly beautiful physiognomies. Contrary to Lewes's claim, Dickens's characterisation does allow for 'fluctuating spontaneity', in that the representation of Oliver is not consistently fixed and immutable; however, what is also apparent is that the appearance of spontaneity is, in itself, actually a product of deeply ingrained reflexive action that revolves around individual survival and 'organic function'.

While Dickens emphasises that Oliver is 'not theoretically acquainted with the beautiful axiom that self-preservation is the first law of nature' (p. 74), his response of flight is entirely consistent with the characterisation of himself and his pursuers acting according to primal instincts. The chase scene is not the first time in the novel that Dickens describes Oliver's ability to respond to the 'axiom' of self-preservation. Starving at the Sowerberrys', Oliver, 'whose eyes had glistened at the mention of meat, and who was trembling with eagerness to devour it' (p. 31), is offered the 'cold bits' that the dog has not bothered to come in for. Again, this image of Oliver, at his most desperate in terms of

[48] Darwin, *Expression*, p. 39.
[49] For more on this, see Chapter Three.

physical survival, is characterised both by vivacity of expression and metonymic comparison to animals:

> I wish some well-fed philosopher, whose meat and drink turn to gall within him; whose blood is ice, whose heart is iron; could have seen Oliver Twist clutching at the dainty viands that the dog had neglected. I wish he could have witnessed the horrible avidity with which Oliver tore the bits asunder with all the ferocity of famine. There is only one thing I should like better; and that is to see the Philosopher making the same sort of meal himself, with the same relish. (p. 31)

Oliver is here in a more desperate situation and is consequently more animalised than the dog who rejects the food: in this scenario, it is the facial movements of tearing at food like a ravenous animal that vitalise Oliver and invite the reader's emotional identification with him. Cold, resistant, and unresponsive 'ice' and 'iron' are contrasted with 'horrible avidity', 'ferocity', and 'relish'; philosophical emotional frigidity, like physiognomic passivity, is morally culpable, and contrasted with primitive passion inspired by virtuous hunger and noble survival instinct.[50]

This extract confronts established hierarchies that elevate mind over matter and civilized human over animal and the epistemological foundations of theories, including nascent scientific theories, that subject people to disciplinary order via identification and assessment of behaviour. In contrast to Darwin's later theory of expression, Oliver does not eat like a dog because he is biologically regressive, or because he is trained by habit, but as a result of social circumstance and the oppressions of hierarchically higher classes. The episodes where Oliver is represented as animal symbolically place him below the human hierarchies in which he is otherwise situated; yet the primal, animal affects manifested in Oliver's face (hunger, terror) do not compromise his physiognomic form as other kinds of affect (for instance, greed, lasciviousness, cruelty) might: hence, pathognomy serves physiognomy here, and underlines it. While Oliver's necessarily fleeting pathognomy does not permanently fix him as 'lower', it does play an essential role in offering a challenge to fixed categorisations and hierarchies.

[50] Fred Botting describes how Frankenstein's monster has been regularly invoked as a symbol of resistance to established authority; in this description, Oliver's animal face performs a similar function. Botting, *Making Monstrous: Frankenstein, Criticism, Theory* (Manchester: Manchester University Press, 1991), p. 139.

iii. Including or Excluding the Animal Face

The sympathetic inclusion of the animal face within the human can be illustrated further via reference to an article, 'Passing Faces', by the journalist Eliza Lynn Linton, published by Dickens in an 1855 issue of *Household Words*. Linton writes:

> It is perfectly incredible what a large number of ugly people one sees. One wonders where they can possibly have come from, from what invading tribe of savages or monkies [*sic*.] […] the beast-faces, there is no limit to them! […] unknown to all and to themselves whence they came; beasts and birds dressed in human form.[51]

Linton provides a catalogue of the different human–animal types that populate the streets, focusing particularly on facial appearance. There is the bulldog man with 'the small eyes close under the brows, the smooth bullet forehead, heavy jaw, and snub nose'; the 'greyhound woman with lantern jaws'; the 'strong visaged', 'strong minded' lurcher woman; and the 'active, intelligent little women, with just the faintest suspicion of a rat's face on them as they look watchfully after the servants'.[52] The provenance of these untraceable, yet limitless, 'beast-faces' is unknown, although there are significant evolutionary implications of 'beasts and birds' appearing, temporally-relocated, in 'human form[s]'. The association between animality and class or racial hierarchies are somewhat mitigated, as the animal face links both 'invading tribe[s] of savages', and those who are able to afford servants.

Linton's description engages and speaks back to contemporary face-reading discourse; her rhetoric of the animal face as caricature for human types makes didactic and explicit what is implicit in the narrative technique of novelists such as Dickens. She also recreates the chaotic crowding multitudes of Dickens's London streets, particularly the

---

[51] Eliza Lynn Linton, 'Passing Faces', *Household Words*, 11.264 (14 April 1855), 261–64, (p. 261; p. 264).
[52] Linton, 'Passing Faces', p. 262. Steve Baker provides an account of how the bulldog can stand in for/provide comment on 'Englishness', for instance, as a positive metonymic emblem for a football team/a negative metaphor for football hooliganism. Baker, *Picturing the Beast: Animals, Identity and Representation* (Manchester: Manchester University Press, 1993), p. 84. Harriet Ritvo notes how the fledgling Bulldog Club worked hard to revive the breed's reputation following bans on bull-baiting. Extolling the bulldog's courage when suffering at the hand of its depraved owners proved a successful tactic: by 1885, the bulldog was second only to the collie in popularity. Ritvo, *The Animal Estate: The English and other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University Press, 1987), p. 110. Linton recognises other dog-breeds in human faces: the 'graceful, animated, well-formed, intelligent […] setter woman – the best of all types' (p. 262).

animalisation endemic to such chaos. This extract bears similarities to the description of Oliver's final capture in the street chase ("Stopped at last!"), where he is detained, 'looking wildly round upon the heap of faces that surrounded him' (p. 75). In Linton's article, unindividuated, wild faces are again heaped together, conjuring up a scientific taxonomist's nightmare of non-identifiable 'beasts and birds dressed in human form'. This leads to extreme slippage between the expressive animal and human face: Linton writes that 'We meet faces that are scarcely human, positively brutified out of all trace of intelligence by vice, gin, and want of education', her comment on environmental effects recalling Dickens's campaign against the deleterious squalor of Jacob's Island. Yet her condemnation is modified by her normalisation of the animal face through the recognition of multiple types, not necessarily defined by moral depravity, and quantifiable according to definitive species identifications. Linton concludes that this multiplicity is representative of 'LIFE, in all its boundless power of joy', indicating both effusive quantity and a lack of limiting barriers. Linton here overrides morality and aesthetic standardisation, replacing traditional physiognomic appropriations with the reverently joyful response of the non-judgemental observer.[53]

The prominent trope of 'power', rendered synonymous in Lavater's *Essays* with the advance of humanity and the all-pervasive superiority of the physiognomist's gaze, is here re-located in the observer's freedom from prescriptive and categorical preconceptions. Linton's faces are not wholly animal and not wholly human; the causes of this liminal state are undetermined — on the one hand a result of depravity, on the other entirely naturalistic. Linton's gesture towards the 'boundless' vivacity to be identified in faces on the streets relinquishes the 'distinctive headings' of both taxonomic and epistemological boundaries that determine and prescribe particular ways of reading faces; while the meaning that she ascribes to the animal face (immorality) may be conventional, the joy that she experiences is not. Even in her discussion of 'vice, gin, and want of education' Linton's rhetoric is distinctly amoral and detached from affective aversion: unlike Dickens, she is not crusading for social change. Linton provides important evidence for the ways in which certain faces — particularly here, animal ones — can confuse and re-determine the epistemological foundations of face-reading methodologies, tackling

[53] Linton, 'Passing Faces', p. 264. Having been warily described by Dickens as getting 'so near the sexual side of things as to be a little dangerous to us at times', Linton was no stranger to her own share of moral condemnation. Nancy Fix Anderson, 'Linton, Elizabeth [Eliza] Lynn (1822–1898)', database entry, in *Oxford Dictionary of National Biography* (Oxford University Press, first published 2004) <http://www.oxforddnb.com/index/16/101016742> [Accessed 24 April 2017].

specific appropriations between sign and signifier with the 'heaping' of individuals and meanings: as the 'invading tribe of savages or monkies [*sic.*]' populate the street, so too are traditional epistemological constructions of both human typologies and expressive-responsive registers invaded and mediated.

Linton reimagines relations between aesthetic and affective categories and between observer and observed, violating one taxonomic systematisation, but creating a new one in its place. Unlike other authors featured in this thesis, Linton expresses no overt allegiance to physiognomic or pathognomic recognition, yet her article unflinchingly champions the animal's centrality to a larger expressive cause. Linton incorporates ugliness and expressive animality into her evocation of 'Society and the world', associating what she terms joyful 'LIFE' with the communicative potential of the 'brutified' and 'savage', re-imagined as the 'wild notes to be listened to', the inspiration for a range of artistic communications, including 'pathos, poetry, caricature, and beauty'.[54] Significantly here, expressions are not explicitly identified and individualised within the faces that Linton describes; it is the stimulating impact of these faces that provokes the observer's emotional and artistic expression, challenging the prioritisation of the 'beautiful' physiognomic face. Linton's descriptions build on the accounts of face-reading according to observer response as detailed in Part II of this thesis.

As in Bell's text, experience is validated and granted signification through affective reaction, and this response is then rechannelled and used as inspiration for artistic production. Significantly, while Linton writes a non-fiction observation of the street, she emphasises that it is only through artistic and cultural production that that representational potential of the faces before her can be fully realised. As with Duchenne's scientific experiments, ugliness becomes powerfully affecting through mediated expression — and particularly through the mediated expression of 'the great picture-book to be read in the London Street'.[55] Differing vastly from Lavater's emphasis on fixed, physiognomic identification of character types, Linton's conceptualisation of 'reading' faces already and automatically assumes that mediation, here achieved through aesthetic and literary metaphor, has a fundamental and unavoidable role in recognition and interaction.

The importance of face-reading as relational experience, paying attention to the 'wild notes to be listened to', can also be seen as dramatized, didactically, at the end of

[54] Linton, 'Passing Faces', p. 264.
[55] *Ibid.*

Dickens's novel. While Sikes's animal passions are terminated in a gripping, adrenalin-charged, but potentially redemptive flight, Fagin's fate is duller and quieter, and the explicit appearance of the animal has an opposite effect to the implicit animalism of Oliver's hunted and starving face: '[t]he condemned criminal was seated on his bed, rocking himself from side to side, with a countenance more like that of a snared beast than the face of a man' (p. 434). The animal face challenges Fagin's species identification when the turnkey calls, "Fagin, Fagin! Are you a man?", to which Fagin looks up, 'with a face retaining no human expression but rage and fear' (p. 435), emotions that Bell (ostensibly) deems as the only ones the animal face is capable of displaying.[56] Yet Fagin is not one of the recognisable dogs, one of the petty criminals, with which this novel abounds: he is an unidentified, un-individuated 'beast'. My study has demonstrated the importance of recognisable individualism to the identification of quality and value via the face. While this is not necessarily endemic to either representations of humanity or animality, the characterisation of Fagin as a non-specific, snared beast levies a final judgement on the extent of his villainy: he is jettisoned from species categorisation, alienated from both the humans around him and from the identifiable animal life with which the novel is filled.

Like Oliver, Fagin is not always characterised in reciprocal communication with his environment or with other characters. The beastilisation of Fagin's face contributes to the representation of an otherness with which ethical communication is denied: as Murray Baumgarten notes, '[Fagin's] existence is ontologically different in kind', his life is 'unsayable and un-narratable'.[57] While this does indicate a form of individuality, it significantly remains undefinable and unrecognisable; the 'un-narratable' can here relate to the narrative, accessible or not, by face-reading. This sense of alienation permeates the

---

[56] '[T]he faces of animals seem chiefly capable of expressing rage and fear'. Bell, *Anatomy and Philosophy of Expression*, p. 138.

[57] Murray Baumgarten, 'Seeing Double: Jews in the Fiction of Scott Fitzgerald, Charles Dickens, Anthony Trollope, and George Eliot', in *Between 'Race' and Culture: Representations of 'the Jew' in English and American Literature*, ed. by Bryan Cheyette (Stanford, CA: Stanford University Press, 1996), pp. 44–61 (p. 48). See also Emmanuel Levinas, *Totality and Infinity: An Essay on Exteriority* (1961), trans. by Alphonso Lingis (Dordrecht: Kluwer Academic Publishers, 1991). The lasting image of Fagin as 'the shrewd penetrative Jew with his hawk-nose' is later utilised in George Jabet's physiognomic treatise (published under the pseudonym Eden Warwick). Jabet, *Nasology; or Hints towards a Classification of Noses* (London: Bentley, 1848), p. 177. Sharrona Pearl has demonstrated how representations of Jewish faces in nineteenth-century Britain are dynamic and various. A converted Jew is depicted differently to a 'natural' Jew; as Jews became more upwardly mobile visual representations conversely became increasingly explicit. Pearl, *About Faces: Physiognomy in Nineteenth-Century Britain* (London: Harvard University Press, 2010), pp. 134–44. The association of Jews with animals is both exposed and utilised in Art Spiegelman's graphic novel *Maus*; Judith Goldstein argues that while *Maus* functions as critique, Spiegelman's theriomorphism also works on the discomforting basis that some readers find it easier to sympathise with animal faces than humans. Judith Goldstein, 'Realism without a Human Face', in *Spectacles of Realism: Gender, Body, Genre*, ed. by Margaret Cohen and Christopher Prendergast (University of Minnesota Press, 1995), pp. 66–89 (p. 67).

culmination of the plot, as Fagin fails to read the faces of those around him. The description of Oliver as a trapped animal, surrounded by a 'heap' of ominous, disembodied faces, recurs, in curious form, as Fagin is presented in front of the judge: 'The court was paved, from floor to roof, with human faces. Inquisitive and eager eyes peered from every inch of space […] he seemed to stand surrounded by a firmament, all bright with gleaming eyes' (pp. 426–27). The implication of 'paved' is that the faces are packed so tightly together that the bodies are no longer visible: here, a crowd of diverse faces become one and, as with Bill's haunting, whole faces are reduced to eyes.[58] The emphasis on the pervasive and dominating power of faces as both determining agents and omnipresent watchers, (the 'vast amphitheatre of faces' (p. 77)), also extends to the reader, caught up in the cycle of observation, in front of which the action of the novel is conducted.

Juliet John argues that the representation of Fagin's fate has a contrary effect to that of Sikes: despite Sikes's villainy, it is paradoxically through his most inhuman actions that he is represented as most human, pursued to his death by both the crowd and his own guilt, his passionate emotional response and imaginative fervour (seeing Nancy's eyes, potentially staring out of Bull's-eye's face, in front of him) problematizing the repeated criticism that Dickens pays scant attention to 'innerness'.[59] Fagin, on the other hand, in John's words, is the 'archetypal passionless villain'.[60] However, it is not necessarily this representation of Fagin that determines his fate; rather, it is his detachment from those around him, specifically the failure of two-way interaction and sympathetic identification as enacted through the face, that ensures his condemnation. Dickens writes, 'he [Fagin] could glean nothing from their faces; they might as well have been of stone' (p. 428). While the observer's faces are here characterised as fixedly rigid and unmoving, like the idealised dead or sleeping physiognomic face, Fagin is not impervious to the collective wall of inscrutability that surrounds him, and he seeks interaction with individuals within it:

> There was one young man sketching his face in a little note-book. He wondered whether it was like […] There was an old fat gentleman on the bench […] He

[58] This scene poses a question about Dickens's relationship to his own mass audiences. Juliet John quotes a letter by Dickens to Angela Burdett-Coutts: 'I consider it a remarkable instance of good fortune that it should have fallen out that I should, in this Autumn of all others, have come face to face with so many multitudes' (27 October 1858). John, *Dickens and Mass Culture* (Oxford: Oxford University Press, 2010), p. 145.
[59] John, *Dickens's Villains*, p. 116.
[60] *Ibid.*, p. 118.

> wondered within himself whether this man had been to get his dinner, what he had had, and where he had had it. (p. 428)

Fagin attempts to individuate these characters, expressing some sympathetic, imaginative interest in their actions and histories; yet despite looking 'into their faces, one by one' (p. 427), Fagin cannot find any individual divergence in expression: 'in no one face — not even among the women, of whom there were many there — could he read the faintest sympathy with himself, or any feeling but one of all-absorbing interest that he should be condemned' (p. 427). His interest is 'fruitless' (p. 427), and these impervious, uniform physiognomies underscore that the creation of sympathetic exchange depends upon expressive interaction, or pathognomy: in this scene, it is not Fagin who is 'passionless', but the masses who surround him. Fagin is one of Linton's 'beasts […] dressed in human form', yet without the pathognomic response of others, he remains alienated and exiled from the 'LIFE' of the London streets of which he was once part. The importance of face-reading as relational experience, and two-way process, paying attention to the 'wild notes to be listened to', is again dramatized through the animal face.

The negative consequences of lacking face-reading capacity and the refusal of communicative pathognomic interaction are made clear. These inscrutable physiognomies provide tacit acknowledgement that it is through pathognomic interaction that sympathy is achieved, as is the case with the intermittent appearance of Oliver's expressive animal face. Yet the final scene allows the reader's response to Fagin to operate on a different level to those around him within the story. Cruikshank's accompanying illustration, 'Fagin in the Condemned Cell' [Figure 7.1], encapsulates the haunting, uncanny appeal of Fagin's expressive face, and wide-open, staring eyes. The process of sympathetically embodying and reflecting character is achieved not only through the final plate, but also through the artistic process itself. Cruikshank famously struggled with depicting this scene, although it was resolved when he caught sight of himself manifesting 'the whole attitude expressive of disappointment and despair in a chevalier-glass which stood on the floor opposite him'.[61] Cruikshank continued to mirror and identify with Fagin's pathognomy after the plate was published: as Jane Rabb Cohen notes, Cruikshank increasingly relished discussing and

[61] This is recalled in a letter to Horace Mayhew, cited: Frederic G. Kitton, 'George Cruikshank', in *Dickens and His Illustrators: Cruikshank, Seymour, Buss, "Phiz", Cattermole, Leech, Doyle, Stanfield, Maclise, Tenniel, Frank Stone, Topham, Marcus Stone, and Luke Fildes* (1899) (Honolulu: University Press of the Pacific, 2004), pp. 1–28 (p. 15).

dramatizing Fagin, and would huddle in 'the posture of "the Jew" — fiercely gnawing at his finger-nails, tossing his hair loosely against his head, and calling up a look of wild horror into his eyes'.[62] In Cruikshank's response, vivacity, 'pathos, poetry, caricature, and beauty' are restored. As in 'Our Next-Door Neighbour', the reader is enabled to stand apart from the text and can judge the narrative's exposure of how appropriate identification with faces has become, in itself, a dominating ideological enterprise, prioritising certain forms of reading and response over others.

Figure 7.1: 'Fagin in the Condemned Cell' (p. 431)

[62] Cuthbert Bede (pen name of the English clergyman and novelist, Edward Bradley), cited in Jane Rabb Cohen, *Charles Dickens and His Original Illustrators* (Columbus: Ohio State University Press, 1980), p. 23. As G. K. Chesterton astutely observes, 'in the doubled-up figure and frightful eyes of Fagin in the condemned cell there is not only a baseness of subject; but there is a kind of baseness in the very technique of it. It is not drawn with the free lines of a free man; it has the half-witted secrecies of a hunted thief. It does not look merely like a picture of Fagin; it looks like a picture by Fagin' G. K. Chesterton, *Charles Dickens: A Critical Study* (New York: Dodd Mead & Company, 1906), p. 112.

Conclusion

The Animal de-Faced and the de-Animalised Face

This thesis has demonstrated how eighteenth- and nineteenth-century representations of the animal face actively participate in classifications and transgressions of species barriers, and in the development of face-reading methodologies. The issues raised remain pertinent today, as faces continue to be studied across academic disciplines and discussed avidly in popular culture. In his work on faciality, the critic Daniel Black argues that 'the face is a shifting, multiplex, distributed and layered phenomenon. It is by far the most mercurial feature of the human body'.[1] I have established how this 'mercurial' quality incorporates not only definition of the face under observation, but also allows for definition of the observer, positioned on a scale that extends from detached watcher classifying through identification, to engaged participant seeking some form of responsive, face-to-face interaction. Frequently, the authors cited do not maintain a consistent or stable position regarding what faces signify; such evolving and shifting dynamics are further modified by their variable incorporations or rejections of the animal face.

Some of the theorists addressed in this thesis — for instance, Charles Bell and Elizabeth Eastlake — attempt to diminish the animal face significantly in comparison to the human. Guillaume Benjamin Duchenne's scientific experiments demonstrate the extent to which certain theorists have been prepared to go in order to exclude the animal. Yet the animal is revealed to be not only a motif that recurs throughout such writings, but also a means to continually challenge ideological preconceptions derived from the study of faces and to prompt transformation of observer responses. This is equally evident in the work of Johann Casper Lavater, whose determined animal–human taxonomic segregation and preference for the physiognomic clarity of dead faces over moving, pathognomic ones are undermined by his literal and metaphorical evocations of the animal in such discourses. To return to a point made in my Introduction, the twentieth-century philosopher, Emmanuel Levinas, defines the animal as devoid of ethical faciality, instead possessed of a 'pure vitality'.[2] In this thesis, one of the ways in which the animal face participates in and shapes face-reading discourse is specifically through this vitality, as the ideal of living, expressive

[1] Daniel Black, 'What is a Face?', *Body and Society*, 17.4 (2011), 1–25 (p. 1).
[2] Emmanuel Levinas, 'The Paradox of Morality', in *The Provocation of Levinas: Rethinking the Other*, trans. by Andrew Benjamin and Tamara Wright, ed. by Robert Bernasconi and David Wood (London: Routledge, 1988), p. 169.

response conducive to knowledge of the other begins to replace physiognomy's dominance. For Charles Darwin, this vitality is explicitly realised through his utilisation of the animal face as an emblematic marker for ongoing evolutionary processes. Two intertwining and co-dependent trajectories can be traced (allowing for exceptions along the way), from categorical species taxonomies to evolutionary border-crossings, and from prioritisation of the physiognomic, static, dead, or blank face, to the pathognomic, mobile, vital, and communicative face.

The animal face provides a lens to analyse how perceptions and implications of faciality in general can be processed and understood through a variety of different mediators: scientific observation, imaginative literature, and artistic production and reproduction. The dynamics between objective observation and interactive communication appear in face-reading discourses throughout a shifting focus from physiognomic to pathognomic analysis; however, these two dynamics are not limited to either methodology. Lavater's physiognomic observation is by no means objectively quantified, just as Duchenne's scientific experiments seek to recreate pathognomy while ensuring that the communicative process only operates in one direction. Equally, the subjectivity of the observer, while associable with pathognomy, is also implicated in and productive of physiognomy.

In many ways, the fictional literary texts I have addressed often inform analysis and interpretation of the animal face, even if they do not always chronologically succeed the scientific and other nonfiction texts that have been discussed in this thesis. As Eastlake indicates, eye contact with the animal permits the communal meeting of human and non-human across the 'frontier' of species distinction and segregation: this phenomenon is explored further in the imaginative literature treated in this thesis.[3] While the non-fiction texts that I have used all provide a means to challenge, interrogate, or extend readings of the animal face, it is the fictional texts, along with Eliza Linn Linton's article which treats fiction as cultural production, that appear to most fully endorse incorporation of the animal face: in H. G. Wells's *The Island of Doctor Moreau*, this occurs to the extent that the un-animalised, un-expressive face appears alien.[4] These texts go beyond contributing to physiognomic and pathognomic classifications to explore fluctuating and dynamic human engagements with the animal face. In such interchanges, the novel-reader features as a

[3] Elizabeth Eastlake, 'Physiognomy', *The Quarterly Review*, 90.179 (December 1851), 62–91 (p. 84).
[4] '[T]hey seemed no more my fellow-creatures than dead bodies would be'. H. G. Wells, *The Island of Doctor Moreau* (1896), ed. by Mason Harris (Plymouth: Broadview, 2009), p. 173.

third-party mediating the relation between observer and observed; in so doing, the reader participates actively in the creation and identification of new ways to interpret and read animality.

This thesis focuses principally on visual representations of the animal face (the animal is visibly present). Beyond this, there are two potential areas for further research: animals with faces that are not immediately recognisable as such or appear significantly different to human faces, and animal faces that are entirely internalised and not dependent on an external manifestation. Chapter Three contains a brief analysis of how nineteenth-century scientific discourses increasingly recognised the animal as physiologically incorporated within the human, at the level of nervous and muscular constitution. In such discourses, the animal is rendered invisible, but ever-present. This is also the case in Darwin's theory of human evolutionary inheritance from the animal, although his scientific methodology ensures that he adheres to a model that prioritises visual evidence of human–animal commonality.

These potential areas of research are not restricted to scientific texts. One fictional text that is suggestive for exploring the tensions between the animal's non-face and the non-animal face is George Eliot's *Daniel Deronda* (1876). Prior criticism has read the recurrent depiction of Mallinger Grandcourt as insect-like and reptilian as signifying his lack of humanity.[5] Equally, in Eliot's text, the animal is not always explicitly identified, but is often assumed to be physiologically or biologically present. Angelique Richardson has proposed that Darwin's exploration of emotional response in *Expression of the Emotions in Man and Animals* provides a theoretical foundation for Eliot, allowing her to overcome prior difficulties in representing expression and emotional experience.[6]

While Richardson and other critics have referred to the performance of the symbolic animal in *Daniel Deronda*, focusing particularly on her heroine, Gwendolen Harleth, there is scope for further investigation of the unrecognisable and untaxonomically-traceable animal. If Grandcourt's insect-like physiognomy shows him to be metaphorically unevolved, Daniel Deronda's highly expressive face appears to have

[5] Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction*, 3rd edn (Cambridge: Cambridge University Press, 2009), p. 209; Barbara Hardy, 'Imagery in George Eliot's Last Novels', *The Modern Language Review*, 50.1 (January 1955), 6–14 (p. 12).
[6] Angelique Richardson, 'George Eliot, G. H. Lewes, and Darwin: Animals, Emotions and Morals', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013), pp. 136–71 (p. 140).

evolved past the animal.[7] As Melissa Anne Raines writes, 'what is unique about Daniel Deronda as a George Eliot character is that before the novel even begins, he has — even prematurely — reached a level of sympathetic human responsiveness that characters throughout George Eliot's fiction strive for'.[8] Like Oliver Twist, Deronda is frequently dismissed as an unsatisfactory hero, while his face, as with those encountered by Pendrick in Wells's novel, has potentially bypassed animality and humanity.[9] Yet, in contrast to these examples, Deronda is depicted as profoundly expressive. Whether these readings present a challenge to the ideal that it is specifically the animal face (adhering to a Darwinian model) that enables the exemplary transmission of sympathy between humans, requires further investigation.

[7] See for instance Karen B. Mann, 'George Eliot's Language of Nature: Production and Consumption', *ELH*, 48.1 (Spring 1981), 190–216; Chase Pielak, 'Hunting Gwendolen: Animetaphor in Daniel Deronda', *Victorian Literature and Culture*, 40 (2012), 99–115.
[8] Melissa Anne Raines, *George Eliot's Grammar of Being* (London: Anthem, 2011), p. 152.
[9] See Richardson, 'George Eliot, G. H. Lewes, and Darwin', p. 153, for analysis of contemporary disgruntled response to Deronda. Graeme Tytler writes that despite his sensitivity, Deronda never quite overcomes his 'priggish Englishness'. Tytler, '"The Lines and Lights of the Human Countenance": Physiognomy in George Eliot's Fiction', *George Henry Lewes Studies*, 37.37 (September 1999), 29–58 (p. 38).

Bibliography

Primary Sources

[Anon.], 'Nineteenth-Century Sentiment', *Saturday Review*, 24.627 (2 November 1867), 561–62

[Anon.], 'Sentimental Writing', *Saturday Review*, 10.252 (25 August 1860), 235–36

[Anon.], '*The Expression of the Emotions in Man and Animals*', *The Edinburgh Review*, 137 (April 1873), 492–528

[Anon.], '*The Expression of the Emotions in Man and Animals*', *The Journal of the Anthropological Institute of Great Britain and Ireland*, 2 (1873), 444–46

Allen, Grant, 'Aesthetic Evolution in Man', *Mind*, 20 (October 1880), 445–64

Barlow, Nora, ed., *The Autobiography of Charles Darwin, 1809–1882, with Original Omissions Restored* (London: W.W. Norton, 1993)

Barrett, Paul H., Peter J. Gautrey, Sandra Herbert, David Kohn, and Sydney Smith, eds, *Charles Darwin's Notebooks*, 1836–1844 (Cambridge: Cambridge University Press, 1987)

Bell, Charles, *The Anatomy and Philosophy of Expression as Connected with the Fine Arts*, 5th edn (London: Bohn, 1865)

Bray, Charles, *The Education of the Feelings* (London: Taylor & Walton, 1838)

Brewster, David, ed., *The Edinburgh Encyclopaedia*, 18 vols (Edinburgh: Blackwood; Philadelphia: Joseph and Andrew Parker, 1832)

Brun, Charles le, *A Series of Lithographic Drawings Illustrative of the Relation between the Human Physiognomy and that of the Brute Creation*, trans. by J.G. Legrand, Louis-Pierre Baltard (London: Carpenter, 1827)

Burnett, James, Lord Monboddo, *Of the Origin and Progress of Language*, 6 vols (Edinburgh: Balfour; London: Caddell, 1773–92)

Carpenter, William B., *Principles of Mental Physiology* (1847) in *Literature and Science in the Nineteenth Century: An Anthology*, ed. by Laura Otis (Oxford: Oxford University Press, 2002), pp. 370–73

Collins, Wilkie, *Heart and Science* (1883), ed. by Steve Farmer (Plymouth: Broadview, 1996)

Combe, George, *A System of Phrenology* (1819), 4th edn (Edinburgh: MacLachlan, 1836)

—— *The Constitution of Man considered in Relation to External Objects* (1828), 2nd edn (Edinburgh: Anderson, 1835)

Cooke, William, M.D., M.R.C.S., *A Commentary of Medical and Moral Life; or, Mind and the Emotions, Considered in Relation to Health, Disease and Religion* (London: Longman, Brown, 1852)

Darwin, Charles, 'A Biographical Sketch of an Infant', *Mind*, 2.7 (July 1877), 285–94

—— *The Descent of Man, and Selection in Relation to Sex* (1871), ed. by James Moore and Adrian Desmond (London: Penguin, 2004)

—— *The Expression of the Emotions in Man and Animals* (1872), ed. by Joe Cain and Sharon Messenger (London: Penguin, 2009)

—— *The Expressions of the Emotions in Man and Animals* (1872), ed. by Paul Ekman (London: Harper Collins, 1998)

—— *The Origin of Species* (1859), ed. by Gillian Beer (Oxford: Oxford University Press, 2008)

Darwin Correspondence Project, University of Cambridge: http://www.darwinproject.ac.uk/

Darwin, Francis, ed., *The Autobiography of Charles Darwin and Selected Letters* (New York: Dover Publications, 1958)

—— *The Life and Letters of Charles Darwin, Including an Autobiographical Chapter*, 3 vols (London: Murray, 1887)

Darwin, Francis, and A. C. Seward, eds, *More Letters of Charles Darwin*, 2 vols (London: Murray, 1903)

Dauberton, M., 'Observations on the Physiognomy of Animals', *Universal Magazine of Knowledge and Pleasure*, 113 (October 1803), 286–87

Descartes, René, *Discourse on Method* (1637), trans. by John Veitch (London: Dent, 1962)

Dickens, Charles, *'Gone Astray' and Other Papers from Household Words 1851–59*, ed. by Michael Slater (London: Dent, 1998)

—— *David Copperfield* (1850), ed. by Nina Burgis and Andrew Sanders (Oxford: Oxford University Press, 2008)

—— *Great Expectations* (1861), ed. by Graham Law and Adrian J. Pinnington (London: Broadview, 2002)

—— *Oliver Twist* (1838), ed. by Kathleen Tillotson (Oxford: Oxford University Press, 2008)

—— *Sketches by Boz: Illustrative of Every-day Life and Every-day People* (1836) (London: Hazell, Watson & Viney, 1934)

—— 'The Demeanour of Murderers', *Household Words*, 13.325 (14 June 1856), 505–07

—— 'The Noble Savage', *Household Words*, 7.168 (11 June 1853), 337–39

Dixon, Edmund Saul, ‘The Mind of Brutes’, *Household Words*, 7.177 (13 August 1853), 564–69

Duchenne de Boulogne, Guillaume Benjamin, *The Mechanism of Human Facial Expression* (1862), trans. and ed. by R. Andrew Cuthbertson (Cambridge: Cambridge University Press, 1990)

Eastlake, Elizabeth, ‘Physiognomy’, *The Quarterly Review*, 90.179 (December 1851), 62–91

Eliot, George, *Adam Bede*, ed. by Valentine Cunningham (Oxford: Oxford University Press, 1998)

—— *Daniel Deronda*, ed. by Terence Cave (London: Penguin, 2003)

—— *Middlemarch*, ed. by W.J. Harvey (Harmondsworth: Penguin, 1985)

—— *Mill on the Floss* (London: Penguin, 1994)

Fitzjames, Stephen, James, ‘Sentimentalism’, *The Cornhill Magazine*, 10.55 (July 1864), 65–75

Gall, Franz Joseph, *On the Functions of the Brain and each of its Parts*, trans. by Lewis Winslow, 6 vols (Boston: Marsh, Capen & Lyon, 1835) I *On the Origin of the Moral Qualities and Intellectual Faculties of Man*

Grandville, J. J., *Public and Private Lives of Animals* (1842) (London: Paddington Press, 1977)

Haeckel, Ernst, *Art Forms in Nature* (1899–1904) (New York: Dover Publications, 1974)

Haight, Gordon S., ed. *The George Eliot Letters*, 9 vols (Oxford: Oxford University Press; New Haven: Yale University Press, 1954–55)

Horne, Richard H., ‘More Dumb Friends’, *Household Words*, 5.109 (24 April 1852), 124–27

—— ‘The Hippopotamus’, *Household Words*, 1.19 (3 August 1850), 445–49

Hume, David, *A Treatise of Human Nature* (1740) (The Floating Press, 2009)

—— *Four Dissertations, I. The Natural History of Religion, II. Of the Passions, III. Of Tragedy, IV. Of the Standard of Taste* (London: Miller, 1757)

Huxley, Thomas Henry, *Evidence as to Man’s Place in Nature* (New York: Appleton, 1863)

—— ‘On the Hypothesis that Animals are Automata, and its History’, *Fortnightly Review*, 16.95 (November 1874), 555–80

Jabet, George, (pseudonym, Eden Warwick), *Nasology; or Hints towards a Classification of Noses* (London: Bentley, 1848)

James, William, ‘What is an Emotion?’, *Mind*, 9.34 (April 1884), 188–205

Kant, Immanuel, *The Critique of Judgement*, trans. by James Creed Meredith (Oxford: Clarendon Press, 1982)

—— *The Moral Law: Groundwork of the Metaphysic of Morals* (1785), trans. by H. J. Paton (Abingdon: Routledge, 2005)

Kingsley, Charles, *The Water Babies: A Fairy Tale for a Land Baby* (1863) (London: Penguin, 2008)

Knight, Richard Payne, *An Analytical Inquiry into the Principles of Taste* (1805) (Farnborough: Gregg, 1972)

Hogarth, William, 'The Rake's Progress' (1735)

Lavater, Johann Casper, *Essays on Physiognomy: Designed to Promote the Knowledge and the Love of Mankind*, trans. by Thomas Holcroft, 3rd edn (London: Blake, 1840)

Lean, David, dir., *Oliver Twist* (Cineguild,1948)

Lewes, G. H., 'Dickens in Relation to Criticism', *Fortnightly Review* 11.62 (Feb. 1872), 141–54

—— *Problems of Life and Mind*, 5 vols (Boston: James R. Osgood, 1875–9), II, *First Series: The Foundation of a Creed* (1875)

—— *The Physical Basis of Mind* (1877) (London: Thoemmes Press, 1998)

—— *Studies in Animal Life* (London: Smith and Elder, 1862)

Linton, Eliza Lynn, 'Passing Faces', *Household Words*, 11.264 (14 April 1855), 261–64

Locke, John, *Some Thoughts Concerning Education* (1693) (London: J. and R. Tonson, 1779)

Machen, Arthur, 'The Great God Pan' (1890), in *Late Victorian Gothic Tales*, ed. by Roger Lockhurst (Oxford: Oxford University Press, 2005), pp. 183–233

Montaigne, Michel de, *The Complete Works of Montaigne*, trans. by Donald M. Frame (London: Hamilton, 1958)

Müller, Max, *Lectures on the Science of Language, delivered at the Royal Institution of Great Britain in April, May & June 1861* (London: Longman, Green & Roberts, 1862)

Orwell, George, *Collected Essays* (London: Secker & Warburg, 1961)

Paget, James, 'Physiognomy of the Human Form', *The Quarterly Review*, 99.198 (September 1856), 452–91

Partington, Charles F., *The British Cyclopedia of the Arts and Sciences* (London: Orr & Smith, 1835)

Pinnock, William, *The Guide to Knowledge*, 4 vols (London: Edwards, 1833–36) I (1833)

Pliny the Elder, *A Summarie of the Antiquities, and Wonders of the Worlde*, trans by I. A. (1566), Fig. 46r. www.eebo.chadwyck.com. [Accessed 21 July 2016]

Ramsay, George, *Analysis and Theory of the Emotions, with Dissertations on Beauty, Sublimity and the Ludicrous* (London: Longman, Green & Roberts, 1848)

Reed, Carol, dir., *Oliver!* (Romulus Films, 1968)

Reid, Thomas, *Essays on the Intellectual Powers of Man* (1785), ed. by James Walker (Boston: Phillips, Samson, 1855)

Reynolds, Joshua, *The Works of Sir Joshua Reynolds, Knight, Late President of the Royal Academy,* II (London: 1801)

Romanes, George J., *Animal Intelligence* (1882) (London: Kegan Paul, 1883)

Rousseau, Jean Jacques, *Discourse on the Origin of Inequality* (1755), trans by. Donald A. Cress (Indianapolis: Hackett, 1992)

—— *Émile* (1762), trans by. Barbara Foxley (London: Dent, 1974)

Sandford, Daniel Keyte, Thomas Thomson, and Allan Cunningham, eds, *The Popular Encyclopedia: A General Dictionary of Arts, Sciences, Literature, Biography, Ethics, and Political Economy* (Glasgow: Blackie, 1836)

Scargill, William Pitt, 'A Chapter on Faces', *The Athenæum*, 311 (12 October 1833), 682–83

Shakespeare, William, *Richard II*, in *William Shakespeare The Complete Works*, ed. by Stanley Wells and Gary Taylor, 2nd edn (Oxford: Clarendon Press, 2006), pp. 339–67

Shelley, Mary, *Frankenstein or, The Modern Prometheus* (1818) ed. by Marilyn Butler (Oxford: Oxford University Press, 2008)

Spencer, Herbert 'The Haythorne Papers No. VIII Personal Beauty', *Leader*, 5 (1854), 356–57

—— 'The Physiology of Laughter', *Macmillan's Magazine*, 5 (March 1860), 395–402

—— *The Principles of Biology*, 2 vols (London: Williams and Norgate, 1864–67), II (1867)

Spurzheim, Johann Casper, *Phrenology, or The Doctrine of the Mind; and of the Relations between its Manifestations and the Body* (London: Knight, 1825)

Sully, James, 'Illusions of Introspection', *Mind*, 6.21 (January 1881), 1–1

Thompson, Edward Pett, *The Passions of Animals* (London: Chapman and Hall, 1851)

Wells, H. G., 'Human Evolution as an Artificial Process', *Fortnightly Review*, 60 (October 1896), 590–95

—— *The Island of Doctor Moreau* (1896), ed. by Mason Harris (Plymouth: Broadview, 2009)

—— *The Island of Doctor Moreau* (1896), ed. by Patrick Parrinder (London: Penguin, 2005)

—— 'The Limits of Individual Plasticity', *Saturday Review*, 79 (19 January 1895), 89–90

—— '"The Mind in Animals": A Review of *An Introduction to Comparative Psychology* by C. Lloyd Morgan', *The Saturday Review of Politics, Literature, Science and Art*, 78 (22 December 1894), 683–84

—— 'The Province of Pain', *Science and Art*, 8 (February 1894), 58–59

—— 'Zoological Retrogression', *Gentleman's Magazine*, 271 (September 1891), 246–53

White, Charles, 'An Account of the Regular Gradation in Man, and in Different Animals and Vegetables; and from the Former to the Latter (London, 1799)', in *Slavery, Abolition and Emancipation: Writing in the British Romantic Period*, ed. by Peter J. Kitson Debbie Lee, Anne K. Mellor, and James Walvin, 8 vols (London: Pickering and Chatto, 1999), VIII *Theories of Race*, ed. by Peter J. Kitson, pp. 215–63

Secondary Sources

Ablow, Rachel, *The Feeling of Reading: Affective Experience and Victorian Literature* (Michigan: University of Michigan Press, 2010)

—— 'Victorian Emotions', *Victorian Studies*, 50.3 (Spring 2008), 375–77

Ahmed, Musaddeque, and Ping Liang, 'Study of Modern Human Evolution via Comparative Analysis with the Neanderthal Genome', *Genomics Inform*, 11.4 (2013), 230–38

Airaudi, Jesse T., 'A Slumber Sealed: Science and Idealism in Darwin's *Autobiography*', *South Central Review*, 2 (Summer 1985), 38–48

Alberti, Fay Bound, *Matters of the Heart: History, Medicine and Emotion* (Oxford: Oxford University Press, 2010)

Amigoni, David, 'Between Medicine and Evolutionary Theory: Sympathy and Other Emotional Investments in Life Writing by and about Charles Darwin', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013), pp. 172–92

—— 'Carving Coconuts, the Philosophy of Drawing Rooms, and the Politics of Dates: Grant Allen, Popular Scientific Journalism, Evolution, and Culture in the *Cornhill Magazine*', in *Culture and Science in the Nineteenth-Century Media*, ed. by Louise Henson and others (Aldershot: Ashgate, 2004), pp. 251–61

—— *Colonies, Cults, and Evolution: Literature, Science and Culture in Nineteenth-Century Writing* (Cambridge: Cambridge University Press, 2007)

Anger, Suzy, 'Introduction: Knowing the Victorians', in *Knowing the Past: Victorian Literature and Culture*, ed.by Suzy Anger (New York: Cornell University Press, 2001), pp. 1–22

Ariès, Philippe, *The Hour of Our Death*, trans. by Helen Weaver (New York: Knopf, 1981)

Armstrong, Isobel, *The Radical Aesthetic* (Oxford: Blackwell, 2000)

Ashton, Rosemary, *George Eliot: A Life* (London: Penguin, 1997)

Asma, Stephen T., *Stuffed Animals and Pickled Heads: The Culture and Evolution of Natural History Museums* (Oxford: Oxford University Press, 2001)

Aspiz, Harold, 'Phrenologising the Whale', *Nineteenth-Century Fiction*, 23.1 (1968), 18–27

Asquith, Pamela J., 'Why Anthropomorphism is *Not* Metaphor: Crossing Concepts and Cultures in Animal Behaviour Studies', in *Anthropomorphism, Anecdotes, and Animals*, ed. by Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany: State University of New York Press, 1997), pp. 22–34

Atterton, Peter, 'Levinas and Our Moral Responsibility Toward Other Animals', *Inquiry*, 54 (Dec, 2011), 633–49

Badmington, Neil, ed., *Readers in Cultural Criticism: Posthumanism* (Basingstoke: Palgrave, 2000)

Baker, Steve, *Picturing the Beast: Animals, Identity and Representation* (Manchester: Manchester University Press, 1993)

—— 'What does Becoming-Animal Look Like?', in *Representing Animals*, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002), pp. 67–98

Baldick, Chris, *In Frankenstein's Shadow: Myth, Monstrosity, and Nineteenth-Century Writing* (Oxford: Oxford University Press, 1992) [first pub. 1987]

Ballou, Emily, 'Darwin as Metaphor', *19: Interdisciplinary Studies in the Long Nineteenth Century*, 11 (2010), 1–17

Basnett, Kattie M., 'Reversing Domestication in Dickens: Forging Masculine and Domestic Types through the Cross-Species', *Dickens Studies Annual*, 44 (2013), 55–84

Bate, Jonathan, *The Song of The Earth* (London: Macmillan, 2000)

Baumgarten, Murray, 'Seeing Double: Jews in the Fiction of Scott Fitzgerald, Charles Dickens, Anthony Trollope, and George Eliot', in *Between "Race" and Culture: Representations of "the Jew" in English and American Literature*, ed. by Bryan Cheyette (Stanford, CA: Stanford University Press, 1996), pp. 44–61

Beer, Colin, 'Expressions of Mind in Animal Behaviour', in *Anthropomorphism, Anecdotes, and Animals*, ed. by Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany: State University of New York Press, 1997), pp. 198–209

Beer, Gillian, 'Darwin and the Growth of Language Theory', *Nature Transfigured: Science and Literature, 1700–1900*, ed. by John Christie and Sally Shuttleworth (Manchester: Manchester University Press, 1989), pp. 152–70

—— 'Darwin and Romanticism', *Wordsworth Circle*, 41.1 (Winter 2010), 3–9

—— *Darwin's Plots. Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction*, 3rd edn (Cambridge: Cambridge University Press, 2009)

—— 'Darwin's Reading and the Fiction of Development', in *The Darwinian Heritage*, ed. by David Khon (Princeton, New Jersey: Princeton University Press, 1985), pp. 543–88

—— *Open Fields: Science in Cultural Encounter* (Oxford: Oxford University Press, 1996)

—— 'The Face of Nature': Anthropomorphic Elements in the Language of *The Origin of Species*', in *Languages of Nature: Critical Essays on Science and Literature*, ed. by Ludmilla Jordanova (London: Free Association Books, 1986), pp. 207–43

—— 'Translation or Transformation? The Relations of Literature and Science', *Notes and Records of the Royal Society of London*, 44.1 (Jan., 1990), 81–99

—— 'Travelling the Other Way', in *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spray (Cambridge: Cambridge University Press, 1996), 322–37

Bekoff, Marc, 'Animal Passions and Beastly Virtues: Cognitive Ethology as the Unifying Science for Understanding the Subjective, Emotional, Emphatic, and Moral Lives of Animals', *Human Ecology Review*, 13.1 (2006), 39–59

Bell, Michael, *Sentimentalism, Ethics and the Culture of Feeling* (Basingstoke: Palgrave, 2000)

—— *The Sentiment of Reality: Truth of Feeling in the European Novel* (London: George Allen & Unwin, 1983)

Benedict, Barbara M., 'Physiognomy and Epistemology in late Eighteenth-Century Sentimental Novels', *Studies in Philology*, 92.3 (1995), 311–28

Benson, James D., '"Sympathetic" Criticism: George Eliot's Response to Contemporary Reviewing', *Nineteenth-Century Fiction*, 21.4 (March, 1975), 428–40

Benston, Kimberly W., 'Experimenting at the Threshold: Sacrifice, Anthropomorphism and the Aims of (Critical) Animal Studies', *PMLA*, 124 (2009), 548–56

Berger, John, *About Looking* (London: Bloomsbury, 2009)

Berlant, Lauren, 'Introduction', in *Compassion. The Culture and Politics of an Emotion*, ed. by Lauren Berlant (London: Routledge, 2004), pp. 1–14

Berland, Kevin, 'Inborn Character and Free-Will in the History of Physiognomy', in *Physiognomy in Profile: Lavater's Impact on European Culture*, ed. by Melissa Percival and Graeme Tytler (Newark: University of Dellaware Press, 2005), pp. 25–38

Black, Daniel, 'What is a Face?', *Body and Society*, 17.4 (2011), 1–25

Blount, Margaret, *Animal Land: The Creatures of Children's Fiction* (London: Hutchinson, 1974)

Botting, Fred, *Making Monstrous: Frankenstein, Criticism, Theory* (Manchester: Manchester University Press, 1991)

Bown, Nicola, ‘Crying over Little Nell’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 4 (2007), 1-13

Bradshaw, G. A., ‘An Ape Among Many: Animal Co-Authorship and Trans-Species Epistemic Authority’, *Configurations*, 18.1–2 (Winter 2010), 15–30

Bräuer, J., and others, ‘Making Inferences about the Location of Hidden Food: Social Dog, Causal Ape’, *Journal of Comparative Psychology*, 120 (2006), 38–47

Brennan, Teresa, *The Transmission of Affect* (Ithaca: Cornell University Press, 2004)

Brooke, John Hedley, ‘The Relations between Darwin’s Science and his Religion’, in *Darwin and Divinity, Essays on Evolution and Religious Belief*, ed. by John Durant (Oxford: Blackwell, 1985), pp. 40–75

Brooks, Peter, *The Melodramatic Imagination: Balzac, Henry James, Melodrama and the Mode of Excess* (London: Yale University Press, 1976)

Brown, Daniel, ‘Victorian Poetry and Science’, in *The Cambridge Companion to Victorian Poetry*, ed. by Joseph Bristow (Cambridge: Cambridge University Press, 2000), pp. 137–59

Brown, Laura, *Homeless Dogs and Melancholy Apes: Humans and other Animals in the Modern Literary Imagination* (Ithaca: Cornell University Press, 2010)

Browne, Janet, ‘Constructing Darwinism in Literary Culture’, in *Unmapped Countries. Biological Visions in Nineteenth Century and Culture*, ed. by Anne-Julia Zwierle (London: Anthem Press, 2005), pp. 55–69

—— ‘Darwin and *The Expression of the Emotions*’, in *The Darwinian Heritage*, ed. by David Kohn (Princeton, New Jersey: Princeton University Press, 1985), pp. 307–26

—— ‘Darwin and the Face of Madness’, in *The Anatomy of Madness: Essays in the History of Psychiatry*, ed. by W. F. Bynum, Roy Porter and Michael Shepherd, 3 vols (London: Tavistock Publications, 1985–88), I (1985), pp. 151–65

—— ‘Making Darwin: Biography and the Changing Representations of Charles Darwin’, *Journal of Interdisciplinary History*, 40.3 (Winter 2010), 347–73

Burdett, Carolyn, ‘Is Empathy the End of Sentimentality?’ *Journal of Victorian Culture*, 16 (August 2011), 259–74

—— ‘Psychology/Aesthetics in the Nineteenth Century’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 12 (2011), 1–6

—— ‘“The Subjective Inside us can turn into the Objective Outside”: Vernon Lee’s Psychological Aesthetics’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 12 (2011), 1–31

Campbell, John Angus, ‘Nature, Religion and Emotional Response: A Reconsideration of Darwin’s Affective Decline’, *Victorian Studies*, 18 (December 1974), 129–74

Cantor, Geoffrey, and others, ‘Introduction’, in *Culture and Science in the Nineteenth-Century Media*, ed. by Louise Henson and others (Aldershot: Ashgate, 2004), xvii–xxv

Carey, John, *The Violent Effigy: A Study of Dickens' Imagination* (London: Faber and Faber, 1973)

Carlisle, Janice, 'Spectacle as Government: Dickens and the Working-Class Audience', in *The Performance of Power: Theatrical Discourse and Politics*, ed. by Sue-Ellen Case and Janelle Reinelt (Iowa City: University of Iowa Press, 1991), pp. 163–80

Chammat, Mariam, Aurélie Foucher, Jacqueline Nadel, and Stéphanie Dubal, 'Reading Sadness beyond Human Faces', *Brain Research*, 1348 (2010), 95–104

Charise, Andrea, 'G. H. Lewes and the Impossible Classification of Organic Life', *Victorian Studies*, 57.3 (2015), 377–86

Chesterton, G.K., *Charles Dickens: A Critical Study* (New York: Dodd Mead, 1906)

Clark, Bruce, *Posthuman Metamorphosis: Narrative and Systems* (New York: Fordham University Press, 2008)

Clark, David, 'On being "The last Kantian in Nazi Germany": Dwelling with Animals after Levinas', in *Animal Acts: Configuring the Human in Western History*, ed. by Jennifer Ham and Matthew Senior (London: Routledge, 1997), pp. 165–98

Clark, Stephen R. L., *Animals and Their Moral Standing* (London: Routledge, 1997)

Clark, Timothy, 'Dickens through Blanchot: The Nightmare Fascination of a World without Interiority', in *Dickens Refigured: Bodies, Desires and Other Histories*, ed. by John Schad (Manchester: Manchester University Press, 1996), pp. 22–38

Clayton, Jay, 'Victorian Chimeras, or, What Literature Can Contribute to Genetics Policy Today', *New Literary History*, 38.3 (Summer 2007), 569–91

Cohen, Jane Rabb, *Charles Dickens and His Original Illustrators* (Columbus: Ohio State University Press, 1980)

Cohen, William A., *Embodied: Victorian Literature and the Senses* (Minneapolis: University of Minnesota Press, 2009)

Cohn, Elisha, *Still Life: Suspended Development in the Victorian Novel* (Oxford: Oxford University Press, 2016)

Cole, Jonathan, *About Face* (Cambridge, Mass.: The MIT Press, 1998)

Collins, K. K., 'G. H. Lewes Revised: George Eliot and the Moral Sense', *Victorian Studies*, 21.4 (Summer 1978), 463–92.

Colp Jr., Ralph, 'Notes on Charles Darwin's 'Autobiography'', *Journal of the History of Biology*, 18 (Autumn 1988), 357–401

—— *To Be an Invalid. The Illness of Charles Darwin* (Chicago: University of Chicago Press, 1977)

Cooper, Melinda, 'Monstrous Progeny: The Teratological Tradition in Science and Literature', in *Frankenstein's Science, Experimentation and Discovery in Romantic*

Culture, 1780-1830, ed. by Christina Knellwolf and Jane Goodall (Ashgate: Surrey, 2008), pp. 87–97

Cosslett, Tess, *Talking Animals in British Children's Fiction, 1786–1914* (Hampshire: Ashgate, 2006)

Cousins, Mark, 'The Ugly [Part 2]', *AA Files*, 29 (Summer 1995), 3–6

Crary, Jonathan, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: The MIT Press, 1993)

Creaney, Conor, 'Paralytic Animation: The Anthropomorphic Taxidermy of Walter Potter', *Victorian Studies*, 53.1 (Autumn 2010), 7–35

Curl, James Steven, *The Victorian Celebration of Death* (Devon: David and Charles, 1972)

Dames, Nicholas, *The Physiology of the Novel: Reading, Neural Science, and the Form of Victorian Fiction* (Oxford: Oxford University Press, 2007)

Danahay, Martin, 'Wells, Galton and Biopower: Breeding Human Animals', *Journal of Victorian Culture*, 17.4 (December 2012), 468–79

Danahay, Martin A., and Deborah Denenholz Morse, 'Introduction', in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Deborah Denenholz Morse and Martin A. Danahay (Hampshire: Ashgate, 2007), pp. 1–12

Danta, Chris, 'The Future will have been Animal: Dr Moreau and the Aesthetics of Monstrosity', *Textual Practice*, 26.4 (2012), 687–705

Daston, Lorraine, 'Intelligences: Angelic, Animal, Human', in *Thinking with Animals: New Perspectives in Anthropomorphism*, ed. by Lorraine Daston and Greg Mitman (New York: Columbia University Press, 2005), pp. 37–58

—— 'The Empire of Observation, 1600–1800', in *Histories of Scientific Observation*, ed. by Lorraine Daston and Elizabeth Lunbeck (Chicago: The University of Chicago Press, 2011), pp. 81–114

—— 'The Image of Objectivity', *Representations*, 40, Special Issue: Seeing Science (Autumn 1992), 81–128

Daston, Lorraine and Peter Galison, *Objectivity* (Brooklyn: Zone Books, 2007)

Daston, Lorraine and Greg Mitman, 'Introduction', in *Thinking with Animals: New Perspectives in Anthropomorphism*, ed. by Lorraine Daston and Greg Mitman (New York: Columbia University Press, 2005), pp. 1–14

Davidson, George, *Roget's Thesaurus of English Words and Phrases* (London: Penguin, 2002)

Davis, Hank, 'Animal Cognition Versus Animal Thinking: The Anthropomorphic Error', in *Anthropomorphism, Anecdotes, and Animals*, ed. by Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany: State University of New York Press, 1997), pp. 335–47

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

Davis, Philip, 'Victorian Realist Prose and Sentimentality', in *Re-Reading Victorian Fiction*, ed. by Alice Jenkins and Juliet John (Basingstoke: Palgrave, 2002), pp. 13–28

Dawson, Gowan, *Darwin, Literature, and Victorian Respectability* (Cambridge: Cambridge University Press, 2007)

—— 'Literature and Science under the Microscope', *Journal of Victorian Culture*, 11 (Autumn 2006), 301–15

—— 'The Cornhill Magazine and Religious Monthlies in Mid-Victorian Britain', in *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004), pp. 123–50

Dawson, Gowan, Richard Noakees, and Jonathan R. Topham, 'Introduction', in *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004), pp. 1–33

Day, Matthew, 'Godless Savages and Superstitious Dogs: Charles Darwin, Imperial Ethnography, and the Problem of Human Uniqueness', *Journal of the History of Ideas*, 69.1 (January 2008), 49–70

Dear, Peter, 'Romanticism and Victorian Scientific Naturalism', *European Romantic Review*, 26.3 (2015), 329–40

Deleuze, Gilles, and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (1988), trans. by Brian Massumi (London: Continuum, 2004)

Dellamora, Richard, 'Pure Oliver: or, Representation without Agency', in *Dickens Refigured: Bodies, Desires and Other Histories*, ed. by John Schad (Manchester: Manchester University Press, 1996), pp. 55–79

Derrida, Jacques, *The Animal That Therefore I Am*, trans. by David Willis, ed. by Marie-Louise Mallet (New York: Fordham University Press, 2008)

—— *The Beast and the Sovereign*, trans. by Geoffrey Bennington (Chicago: University of Chicago Press, 2009)

Desmond, Adrian and James Moore, *Darwin* (London: Penguin, 1992)

—— *Darwin's Sacred Cause: Race, Slavery, and the Quest for Human Origins* (London: Penguin, 2009)

Desmond, Jane, 'Displaying Death, Animating Life: Changing Fictions of "Liveness" from Taxidermy to Animatronics', in *Representing Animals*, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002), pp. 159–79

Dixon, Thomas, 'Educating the Emotions from Gradgrind to Goleman', *Research Papers in Education*, 27.4 (May 2012), 481–95

—— '"Emotion": The History of a Key Word in Crisis', *Emotion Review*, 4.4 (October 2012), 338–44

—— *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003)

—— *The Invention of Altruism: Making Moral Meanings in Victorian Britain* (Oxford: Oxford University Press, 2008)

—— *Weeping Britannia: Portrait of a Nation in Tears* (Oxford: Oxford University Press, 2015)

Donald, Diana, *Picturing Animals in Britain: 1750–1850* (Yale: Yale University Press, 2008)

Douglas, Mary, *Natural Symbols: Explorations in Cosmology*, 2nd edn (London: Routledge, 2003)

—— *Purity and Danger: An Analysis of the Concepts of Pollution and Taboo* (1966) (London: Routledge, 1991)

Dror, Otniel E., 'Seeing the Blush: Feeling Emotions', in *Histories of Scientific Observation*, ed. by Lorraine Daston and Elizabeth Lunbeck (Chicago: The University of Chicago Press, 2011), pp. 326–48

Duncan, Ian, 'Darwin and the Savages', *The Yale Journal of Criticism*, 4.2 (1991), 13–45

Dutoit, Thomas, 'Re-Specting the Face as the Moral (of) Fiction in Mary Shelley's *Frankenstein*', *MLN*, 109.5 (December 1994), 847–71

Ekman, Paul, 'Darwin, Deception and Facial Expression', *Annals New York Academy of Sciences*, 1000 (2003), 205–21

Elias, Norbert, *The Loneliness of the Dying*, trans. by Edmund Jephcott (Oxford: Blackwell, 1985)

Elliott, Kamilla, '*Oliver Twist* and the Survival of the Cutest' (Unpublished), pp. 1–35

Elliott, Nathan R., 'Phrenology and the Visual Stereotype in Charlotte Brontë's *Villette*', *Nineteenth Century Studies* (2008), 41–55

Ellis, Haydn D., Angela H. Quayle, and Andrew W. Young, 'The Emotional Impact of Faces: Face Specific Changes in Skin Conductance Responses to Familiar and Unfamiliar People', *Current Psychology: Developmental, Learning, Personality, Social* 18.1 (Spring 1999), 88–97

Ellis, Markman, *The History of Gothic Fiction* (Edinburgh: Edinburgh University Press, 2000)

Endersby, Jim, 'Sympathetic Science: Charles Darwin, Joseph Hooker, and the Passions of Victorian Naturalists', *Victorian Studies*, 51 (Winter 2009), 299–320

Engelstein, Stefani, *Anxious Anatomy: The Conception of the Human Form in Literary and Naturalist Discourse* (New York: State University of New York Press, 2008)

Epstein, Josh, '"Neutral Physiognomy": The Unreadable Faces of *Middlemarch*', *Victorian Literature and Culture*, 36.1 (2008), 131–48

Erle, Sibylle, *Blake, Lavater and Physiognomy* (London: Legenda, 2010)

Feder, Helena, *Ecocriticism and the Idea of Culture: Biology and the Bildungsroman* (Surrey: Ashgate, 2014)

Ferguson, Christine, *Language, Science and Popular Fiction in the Victorian Fin-de-Siècle: The Brutal Tongue* (Aldershot: Ashgate, 2006)

Fix Anderson, Nancy, 'Linton, Elizabeth [Eliza] Lynn (1822–1898)', database entry, in *Oxford Dictionary of National Biography* (Oxford University Press, first published 2004) <http://www.oxforddnb.com/index/16/101016742> [Accessed 24 April 2017]

Flach, Sabine, 'Communicating Vessels: on the Development of a Theory of Representation in Darwin and Warburg', in *Darwin and Theories of Aesthetics and Cultural History*, ed. by Barbara Larson and Sabine Flach (Surrey: Ashgate, 2013), pp. 109–24

Fleming, Donald, 'Charles Darwin, the Anaesthetic Man', *Victorian Studies*, 4 (March 1961) 219–36

Flint, Kate, 'Origins, Species and *Great Expectations*', in *Charles Darwin's The Origin of Species: New Interdisciplinary Essays*, ed. by David Amigoni and Jeff Wallace (Manchester: Manchester University Press, 2005), pp. 152–73

Foucault, Michel, *Discipline and Punish: The Birth of the Prison* (1975), trans. by Alan Sheridan (London: Penguin, 1991)

—— *Madness and Civilization: A History of Insanity in the Age of Reason*, trans. by Richard Howard (New York: Random House, 1988)

—— *The Archaeology of Knowledge* (1969), trans. by A. M. Sheridan Smith (Oxon: Routledge, 2002)

—— *The Birth of the Clinic: An Archaeology of Medical Perception* (1963), trans. by Alan Sheridan, (London: Routledge, 2000)

—— *The History of Sexuality. Volume One: An Introduction* (1976), trans. by Robert Hurley (London: Allen Lane, 1979)

—— *The Order of Things: An Archaeology of the Human Sciences* (London: Routledge, 2002)

Freud, Sigmund, *Beyond the Pleasure Principle*, trans. and ed. by James Strachey (London: The Hogarth Press and the Institute of Psychoanalysis, 1971)

—— *Civilization and its Discontents*, trans. by Joan Riviere, ed. by James Strachey (London: The Hogarth Press and the Institute of Psychoanalysis, 1975)

—— *Introductory Lectures on Psychoanalysis*, trans. and ed. by James Strachey (London: Norton, 1989)

Fudge, Erica, 'A Left-Handed Blow: Writing the History of Animals', in *Representing Animals*, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002), pp. 3–18

—— *Animal* (London: Reaktion, 2002)

—— *Brutal Reasoning: Animals, Rationality, and Humanity in Early Modern England* (Ithaca: Cornell University Press, 2006)

—— Fudge, *Perceiving Animals: Humans and Beasts in Early Modern English Culture* (Basingstoke: Macmillan, 2000)

—— 'The Animal Face of Early Modern England', *Theory, Culture & Society*, 30.7/8 (2013), 177–98

—— 'The Human Face of Early Modern England', *Angelaki*, 16.1 (2011), 97–110

Fugate, Jennifer M. B., Harold Gouzoules, and Lisa Feldman Barrett, 'Reading Chimpanzee Faces: Evidence for the Role of Verbal Labels in Categorical Perception of Emotion', *Emotion*, 10.4 (2010), 544–54

Fulkerson, Richard P., '*Oliver Twist* in the Victorian Theatre', *The Dickensian* 70 (May 1974), 83–95

Fulweiler, Howard W., '"A Dismal Swamp": Darwin, Design and Evolution in *Our Mutual Friend*', *Nineteenth Century Literature*, 49.1 (June 1994), 50–74

Gallagher, Catherine, 'George Eliot: Immanent Victorian', *Representations*, 90.1 (Spring 2005), 61–74

Garrard, Greg, *Ecocriticism* (Oxon: Routledge, 2004)

Garton, Stephen, 'The Scales of Suffering: Love, Death and Victorian Masculinity', *Social History*, 27 (January 2002), 40–58

Gerbino, Giuseppe, 'Reflection: Music and Sympathy', in *Sympathy: A History*, ed. by Eric Schliesser (Oxford: Oxford University Press, 2015), pp. 102–06

Gibson, Robin, *The Face in the Corner: Animals in Portraits from the Collections of the National Portrait Gallery* (London: National Portrait Gallery Publications, 1998)

Gigante, Denise, 'Facing the Ugly: The Case of *Frankenstein*', *ELH*, 67.2 (Summer 2000), 565–87

Gilbert, Sandra and Susan Gubar, *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination*, 2nd edn (Yale: Yale University Press, 2000)

Gill, James E., 'Theriophily in Antiquity: A Supplementary Account', *Journal of the History of Ideas*, 30.3 (July–September 1969), 401–12

Gilman, Sander L., *Seeing the Insane* (Lincoln, Nebraska: University of Nebraska Press, 1996)

Giustino, David de, *Conquest of Mind: Phrenology and Victorian Social Thought* (London: Croom Helm, 1975)

Glavin, John, 'Dickens and Theatre', in *The Cambridge Companion to Charles Dickens*, ed. by John O. Jordan (Cambridge: Cambridge University Press, 2001), pp. 189–203

Glendening, John, '"Green Confusion": Evolution and Entanglement in H. G. Wells's *The Island of Doctor Moreau*', *Victorian Literature and Culture*, 30.2 (2002), 571–97

Goldstein, Judith, 'Realism without a Human Face', in *Spectacles of Realism: Gender, Body, Genre*, ed. by Margaret Cohen and Christopher Prendergast (University of Minnesota Press, 1995), pp. 66–89

Gombrich, E. H., 'On Physiognomic Perception', *The Visual Arts Today*, 89.1 (Winter 1960), 228–41

Goodbody, Alex, and Kate Rigby, eds, *Ecocritical Theory: New European Approaches* (Charlottesville, Virginia: University of Virginia Press, 2011)

Gray, Beryl, 'George Eliot, George Henry Lewes and Dogs', *The George Eliot Review*, 33 (2002), 51–63

—— *The Dog in the Dickensian Imagination* (Surrey: Ashgate, 2014)

Gray, John, *Straw Dogs: Thoughts on Humans and other Animals* (London: Granta Books, 2003)

Gray, John, *The Silence of Animals: On Progress and other Modern Myths* (London: Penguin, 2013)

Gray, Richard T., *About Face: German Physiognomic Thought from Lavater to Auschwitz* (Detroit: Wayne State University Press, 2004)

Gross, Daniel M., 'Defending the Humanities with Charles Darwin's *The Expression of the Emotions in Man and Animals* (1872), *Critical Inquiry*, 37 (Autumn 2010), 34–59

Gross, James J., and Robert W. Levenson, 'Emotional Suppression: Physiology, Self-Report, and Expressive Behaviour', *Journal of Personality and Social Psychology*, 64.6 (1993), 970–86

Guerrini, Anita, 'Animal Experiments and Antivivisection Debates in the 1820s', in *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780–1830*, ed. by Christina Knellwolf and Jane Goodall (Ashgate: Surrey, 2008), pp. 71–85

Harari, Yuval Noah, *Sapiens: A Brief History of Humankind* (London: Vintage, 2014)

Haraway, Donna, *The Companion Species Manifesto: Dogs, People and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003)

—— *When Species Meet* (Minneapolis: University of Minnesota Press, 2008)

Hardy, Barbara, 'Imagery in George Eliot's Last Novels', *The Modern Language Review*, 50.1 (January 1955), 6–14

Hare, Brian, and others, 'The Development of Social Cognition in Dogs', *Science*, 298.5598 (22 November 2002), pp. 1634–36

Harrison, Peter, '"Science" and "Religion": Constructing the Boundaries', in *Science and Religion: New Historical Perspectives*, ed. by Thomas Dixon, Geoffrey Cantor, and Stephen Pumfrey (Cambridge: Cambridge University Press, 2010), pp. 23–49

Hartley, Lucy, ‘A Science of Beauty? Femininity, Fitness, and the Nineteenth-Century Physiognomic’, *Women: A Cultural Review*, 12.1 (2001), 19–34

—— *Physiognomy and the Meaning of Expression in Nineteenth-Century Culture* (Cambridge: Cambridge University Press, 2001)

Hearnshaw, L.S., *A Short History of British Psychology* (London: Methuen, 1964)

Hofreiter, Michael, ‘Drafting Human Ancestry: What does the Neanderthal Genome tell us about Hominid Evolution?’ *Human Biology*, 83.1 (2011), 1–11

Hollington, Michael, ‘Monstrous Faces: Physiognomy in *Barnaby Rudge*’, *Dickens Quarterly*, 8.1 (March 1991), 6–15

—— ‘Physiognomy in *Hard Times*’, *Dickens Quarterly*, 9.2 (June 1992), 58–66

—— ‘The Live Hieroglyphic: Physiologie and Physiognomy in *Martin Chuzzlewit*’, *Dickens Quarterly*, 10.1 (March 1993), 57–68

Holubetz, Margarete, ‘Death-Bed Scenes in Victorian Fiction’ *English Studies*, 1 (1986), 14–34

Horowitz, Alexandra, *Being a Dog: Following the Dog into a World of Smell* (New York: Scribner, 2016)

Howell, Philip, *At Home and Astray: The Domestic Dog in Victorian Britain* (London: University of Virginia Press, 2015)

Huber, Ludwig, ‘How Dogs Perceive and Understand Us’, *Current Directions in Psychological Science*, 25.5 (2016), 339–44

Hughes, Kathryn, *George Eliot: The Last Victorian* (London: Fourth Estate, 1998)

Hunter, Ceri, ‘Moving Beyond Signs: The Crisis of Language in *Daniel Deronda*’, *George Eliot Review: Journal of the George Eliot Fellowship*, 36 (2005), 17–23

Ingold, Tim, ed., *What is an Animal?* (London: Routledge, 1994)

Irvine, William, *Apes, Angels, and Victorians: Darwin, Huxley, and Evolution* (New York: Meridian, 1959)

Ito, Takashi, ‘Between Ideals, Realities and Popular Perceptions: An Analysis of the Multifaceted Nature of London Zoo, 1828–1848’, *Society & Animals*, 14.2 (2006), 159–78

James, W. L. G., ‘The Portrayal of Death and the Substance of Life: Aspects of the Modern Reader’s Response to Victorianism’, in *Reading the Victorian Novel: Detail into Form*, ed. by Ian Gregor (London: Vision Press, 1980), pp. 226–42

Jann, Rosemary, ‘Evolutionary Physiognomy and Darwin’s *Expression of the Emotions*’, *Victorian Review*, 18.2 (Winter 1992), 1–27

Jardine, N., J. A. Secord and E. C. Spray, eds, *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996)

John, Juliet, *Dickens and Mass Culture* (Oxford: Oxford University Press, 2010)

—— *Dickens's Villains. Melodrama, Character, Popular Culture* (Oxford: Oxford University Press, 2003)

Jordanova, Ludmilla, *Sexual Visions: Images of Gender in Science and Medicine between the Eighteenth and Twentieth Centuries* (Madison: University of Wisconsin Press, 1989)

—— 'The Art and Science of Seeing in Medicine: Physiognomy 1780–1820', in *Medicine and the Five Senses,* ed. by W. F. Bynum and Roy Porter (Cambridge: Cambridge University Press, 1993), pp. 123–33

Juengel, Scott, J., 'Countenancing History: Mary Wollstonecraft, Samuel Stanhope Smith, and Enlightenment Racial Science', *ELH*, 68.4 (Winter 2001), 897–927

—— 'Face, Figure, Physiognomics: Mary Shelley's *Frankenstein* and the Moving Image', *NOVEL: A Forum on Fiction*, 33.3 (Summer 2000), 353–76

Kalof, Linda and Amy Fitzgerald, eds, *The Animals Reader: The Essential Classic and Contemporary Writings* (Oxford: Berg, 2007)

Kaminski, Juliane, Linda Schulz, and Michael Tomasello, 'How Dogs Know When Communication is Intended for Them', *Developmental Science*, 15.2 (March 2012), 222–32

Kaplan, Fred, *Sacred Tears: Sentimentality in Victorian Literature* (Princeton, New Jersey: Princeton University Press, 1987)

Kearney, John P., 'Time and Beauty in *Daniel Deronda*: "Was She Beautiful or not Beautiful?"', *Nineteenth-Century Fiction*, 26.3 (December 1971), 286–306

Kenyon Jones, Christine, *Kindred Brutes: Animals in Romantic Period Writing* (Aldershot: Ashgate, 2001)

Ketabgian, Tamara, '"Melancholy Mad Elephants": Affect and the Animal Machine in *Hard Times*', *Victorian Studies*, 45.4 (2003), 649–76

King, Stephanie L., and Vincent M. Janik, 'Bottlenose Dolphins Can Use Learned Vocal Labels to Address Each Other', *Proceedings of the National Academy of Sciences of the United States of America*, 110.32 (6 August 2013), 13216–21

Kitton, Frederic G., 'George Cruikshank', in *Dickens and His Illustrators: Cruikshank, Seymour, Buss, "Phiz", Cattermole, Leech, Doyle, Stanfield, Maclise, Tenniel, Frank Stone, Topham, Marcus Stone, and Luke Fildes* (1899) (Honolulu: University Press of the Pacific, 2004), pp. 1–28

Knoll, Elizabeth, 'Dogs, Darwinism, and English Sensibilities', in *Anthropomorphism, Anecdotes, and Animals*, ed. by Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany: State University of New York Press, 1997), pp. 12–21

Kosofsky Sedgwick, Eve, *Touching Feeling. Affect, Pedagogy, Performativity* (Durham: Duke University Press, 2003)

Krasner, James, *Visual Perception and the Representation of Nature in Post-Darwinian Narrative* (Oxford: Oxford University Press, 1992)

Kreilkamp, Ivan, ‘Dying like a Dog in *Great Expectations*’, in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Martin A. Danahay and Deborah Denenholz Morse (Aldershot: Ashgate, 2007), pp. 81–94

—— ‘Petted Things: *Wuthering Heights* and the Animal’, *The Yale Journal of Criticism*, 18.1 (Spring 2005), 87–110

Kucich, John, ‘Death Worship among the Victorians: *The Old Curiosity Shop*’, *PMLA*, 95 (January 1980), 58–72

—— *Repression in Victorian Fiction. Charlotte Bronte, George Eliot and Charles Dickens* (Berkeley: University of California Press, 1987)

—— ‘Scientific Ascendancy’, in *A Companion to the Victorian Novel*, ed. by Patrick Bratlinger and William B. Thesing (Oxford: Blackwell, 2002), pp. 119–36

Kuhn, Thomas S., *The Structure of Scientific Revolutions* (1962) (Chicago: University of Chicago Press, 2012)

Landsbury, Coral, ‘Gynaecology, Pornography and the Anti-Vivisection Movement’, *Victorian Studies*, 28 (Spring 1985), 413–37

Laqueur, Thomas W., ‘Bodies, Details and the Humanitarian Narrative’, in *The New Cultural History*, ed. by Lynn Hunt (Berkeley: University of California Press, 1989), pp. 176–204

Larson, Barbara, ‘Introduction’, in *Darwin and Theories of Aesthetics and Cultural History*, ed. by Sabine Flach and Barbara Larson (Surrey: Ashgate, 2013), pp. 1–16

Latour, Bruno, and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts*, 2nd edn (Princeton, New Jersey: Princeton University Press, 1986)

Lauster, Martina, ‘Physiognomy, Zoologoy and Physiology as Paradigms in Sociological Sketches of the 1830s and 40s’, in *Physiognomy in Profile: Lavater’s Impact on European Culture*, ed. by Melissa Percival and Graeme Tytler (Newark: University of Dellaware Press, 2005), pp. 161–79

Lawrence, Elizabeth A., ‘Neoteny in American Perceptions of Animals’, in *Perceptions of Animals in American Culture*, ed. by R.J. Hoage (Washington: Smithsonian, 1989).

Leach, Edmund, *Social Anthropology* (London: Fontana, 1982)

Ledger, Sally, ‘“Don’t Be So Melodramatic!”: Dickens and the Affective Mode’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 4 (2007), 1–14

—— ‘Dickens, Natural History and *Our Mutual Friend*’, *Partial Answers: Journal of Literature and the History of Ideas*, 9.2 (June 2011), 363–78

Levinas, Emmanuel, ‘The Name of a Dog, or Natural Rights’, in Levinas, *Difficult Freedom: Essays on Judaism* (1963), trans. by Seán Hand (London: Athlone Press, 1990), pp. 151–53

—— ‘The Paradox of Morality’, in *The Provocation of Levinas: Rethinking the Other*, trans. by Andrew Benjamin and Tamara Wright, ed. by Robert Bernasconi and David Wood (London: Routledge, 1988), pp. 168–80

—— *Totality and Infinity: An Essay on Exteriority* (1961), trans. by Alphonso Lingis (Dordrecht: Kluwer Academic Publishers, 1991)

Levine, George, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Cambridge, Mass.: Harvard University Press, 1988)

—— *Darwin Loves You: Natural Selection and the Re-enchantment of the World* (Princeton: Princeton University Press, 2006)

—— *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002)

—— *Realism, Ethics, and Secularism: Essays on Victorian Literature and Science* (Cambridge: Cambridge University Press, 2008)

Levins, Richard, and Richard Lewontin, *The Dialectical Biologist* (Cambridge, Mass.: Harvard University Press, 1985)

Lévi-Strauss, Claude, *The Savage Mind* (London: Weidenfeld and Nicolson, 1966)

Lightman, Bernard, ‘Science and Culture’, in *The Cambridge Companion to Victorian Culture*, ed. by Francis O’Gorman (Cambridge: Cambridge University Press, 2012), pp. 12–42

—— *Victorian Popularizers of Science: Designing Nature for New Audiences* (Chicago: University of Chicago Press, 2007)

Lyon, John B., ‘“the Science of Sciences”: Replication and Reproduction in Lavater’s Physiognomics’, *Eighteenth-Century Studies*, 40.2 (2007), 257–77

Macdonald, Tara, ‘“red-headed animal”: Race, Sexuality and Dickens’s Uriah Heep’, *Critical Survey*, 17.2 (2005), 48–62

Mangum, Teresa, ‘Dog Years, Human Fears’, in *Representing Animals*, ed. by Nigel Rothfels (Bloomington: Indiana University Press, 2002), pp. 35–47

Mann, Karen B., ‘George Eliot’s Language of Nature: Production and Consumption’, *ELH*, 48.1 (Spring 1981), 190–216

Mason, Emma, ‘Feeling Dickensian Feeling’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 4 (2007), 1–19

Masson, Jeffrey and Susan McCarthy, *When Elephants Weep: The Emotional Lives of Animals* (London: Vintage, 1996)

Mayer, Jed, ‘The Expression of the Emotions in Man and Laboratory Animals’, *Victorian Studies*, 50 (Spring, 2008), 399–417

—— ‘Ways of Reading Animals in Victorian Literature, Culture and Science’, *Literature Compass*, 7 (2010), 347–57

McHugh, Susan, *Animal Stories: Narrating Across Species Lines* (Minneapolis, MN: University of Minnesota Press, 2011)

McKenzie, Alan T., *Certain Lively Episodes: The Articulation of Passion in Eighteenth-Century Prose* (Athens, Georgia: University of Georgia Press, 1990)

Meyer, Jürgen, 'Surgical Engineering in the Nineteenth Century: *Frankenstein, The Island of Dr Moreau, Flatland'*, in *Unmapped Countries. Biological Visions in Nineteenth Century and Culture*, ed. by Anne-Julia Zwierle (London: Anthem Press, 2005), pp. 173–82

Middleton, Peter, *The Inward Gaze: Masculinity and Subjectivity in Modern Culture* (London: Routledge, 1992)

Midgley, Mary, *Animals and Why They Matter* (Athens: University of Georgia Press, 1983)

—— *Beast and Man: The Roots of Human Nature* (1978) (London: Routledge, 1995)

—— *Science as Salvation: A Modern Myth and its Meaning* (London: Routledge, 1992)

Miele, Kathryn, 'Horse Sense: Understanding the Working Horse in Victorian London', *Victorian Literature and Culture*, 37 (2009), 129–40

Mitchell, Robert W., Nicholas S. Thompson, and H. Lyn Miles, eds, *Anthropomorphism, Anecdotes, and Animals* (Albany: State University of New York Press, 1997)

Mitchell, Rosemary, 'Eastlake, Elizabeth, Lady Eastlake (1809–1893), database entry, in *Oxford Dictionary of National Biography* (Oxford University Press, online edn, May 2008) <http://www.oxforddnb.com/index/8/101008415> [Accessed 4 October 2014]

Molnár, Csaba, Péter Pongrácz, and Ádám Miklósi, 'Seeing with Ears: Sightless Humans' Perception of Dog Bark provides a test for Structural Rules in Vocal Communication', *The Quarterly Journal of Experimental Psychology*, 63 (2010), 1004–13

Moore, Grace, 'Beastly Criminals and Criminal Beasts: Stray Women and Stray Dogs in *Oliver Twist*', in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Martin A. Danahay and Deborah Denenholz Morse (Hampshire: Ashgate, 2007), pp. 201–14

Morgentaler, Goldie, *Dickens and Heredity: When Like Begets Like* (Basingstoke: Macmillan, 2000)

Morley, John, *Death, Heaven and the Victorians* (London: Studio Vista, 1971)

Morton, Timothy, *Shelley and the Revolution in Taste: The Body and the Natural World* (Cambridge: Cambridge University Press, 1995)

Muelder Eaton, Marcia, 'Laughing at the Death of Little Nell: Sentimental Art and Sentimental People', *American Philosophical Quarterly*, 26.4 (October 1989), 269–82

Nagel, Thomas, 'What Is It Like to Be a Bat?', *The Philosophical Review*, 83.4 (October 1974), 435–50

Nash, Richard, ‘Animal Nomenclature: Facing Other Animals’, in *Humans and Other Animals in Eighteenth-Century British Culture: Representation, Hybridity, Ethics*, ed. by Frank Palmeri (Aldershot: Ashgate, 2006), pp. 101–18

—— ‘Joy and Pity: Reading Animal Bodies in Late Eighteenth-Century Culture’, *The Eighteenth Century*, 52.1 (Spring 2011), 47–67

Nash, Richard and Ron Broglio, ‘Introduction’, *Configurations*, 14.1–2 (Winter–Spring 2006), 1–7

National Antivivisection Society, website, <http://www.navs.org.uk/home> [Accessed 31 March 2017]

Nestor, Pauline, ‘The Science of the Mind’, in *George Eliot in Context*, ed. by Margaret Harris (Cambridge: Cambridge University Press, 2013), pp. 264–70

Noble, Mary, ‘Darwin among the Novelists: Narrative Strategy and *The Expression of the Emotions*’, *Nineteenth Century Prose*, 38 (Spring, 2001), 99–126

O’Conner, Ralph, ‘Reflections on Popular Science in Britain: Genres, Categories and Historians’, *Isis*, 100 (June 2009), 333–45

—— *The Earth on Show: Fossils and the Poetics of Popular Science, 1802–1856* (London: The University of Chicago Press, 2007)

O’Farrell, Mary Ann, *Telling Complexions: The Nineteenth-Century English Novel and the Blush* (Durham, NC: Duke University Press, 1997)

Olney, James, *Metaphors of Self: The Meaning of Autobiography* (Princeton: Princeton University Press, 1972)

Ortiz Robles, Mario, *Literature and Animal Studies* (Oxon: Routledge, 2016)

Otis, Laura, ed. *Literature and Science in the Nineteenth Century: An Anthology* (Oxford: Oxford University Press, 2002)

—— ‘Monkey in the Mirror: The Science of Professor Higgins and Doctor Moreau’, *Twentieth-Century Literature*, 55.4 (Winter 2009), 485–509

Otter, Chris, *The Victorian Eye: A Political History of Light and Vision in Britain, 1800–1910* (Chicago: University of Chicago Press, 2008)

Panksepp, Jaak, ‘Affective Consciousness: Core Emotional Feelings in Animals and Humans’, *Consciousness and Cognition*, 14 (2005), 30–80

Paradis, James G., *T. H. Huxley: Man’s Place in Nature* (Lincoln, Nebraska: University of Nebraska Press, 1978)

Parrinder, Patrick, *Shadows of the Future: H. G. Wells, Science Fiction and Prophecy* (New York: Syracuse University Press, 1995)

Pasquale, Giovanni di, and Fabrizio Paolucci, *Uffizi: Le Sculture Antiche: La Guida Ufficiale* (Florence: Firenze Musei, 2001)

Paxton, Nancy L., *George Eliot and Herbert Spencer: Feminism, Evolutionism, and the Reconstruction of Gender* (New Jersey: Princeton University Press, 1991)

Pearl, Sharrona, *About Faces: Physiognomy in Nineteenth-Century Britain* (London: Harvard University Press, 2010)

Pearsall, Ronald, *The Forms and Faces of Victorian Cruelty* (London: Hodder and Stoughton, 1975)

Pepperberg, Irene, 'An Avian Perspective on Language Evolution: Implications of Simultaneous Development of Vocal and Physical Object Combinations by a Grey Parrot (*Psittacus erithacus*)', in *Language Origins: Perspectives on Evolution*, ed. by Maggie Tallerman (Oxford: Oxford University Press, 2005), pp. 239–61

Philmus, Robert M., and David Y. Hughes, eds, *H. G. Wells: Early Writings in Science and Science Fiction* (Berkeley: University of California Press, 1975)

Pick, Daniel, *Faces of Degeneration: A European Disorder, c.1848–c.1918* (Cambridge: Cambridge University Press, 1989)

Pielak, Chase, 'Hunting Gwendolen: Animetaphor in Daniel Deronda', *Victorian Literature and Culture*, 40 (2012), 99–115

Pinch, Adela, 'Emotion and History. A Review Article', *Comparative Studies in Society and History*, 37 (January 1995) 100–09

—— *Strange Fits of Passion: Epistemologies of Emotion, Hume to Austen* (California: Stanford University Press, 1996)

Piper, Ross, *Animal Earth: The Amazing Diversity of Living Creatures* (London: Thames and Hudson, 2013)

Plung, Daniel L., 'Environed by Wild Beasts: Animal Imagery in *David Copperfield'*, *Dickens Quarterly*, 17.4 (2000), 216–23

Pollock, Mary Sanders, 'Ouida's Rhetoric of Empathy: A Case-Study in Victorian Anti-Vivisection Narrative', in *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture*, ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005), pp. 135–59

Pollock, Mary Sanders and Catherine Rainwater, 'Introduction', in *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture*, ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005), pp. 1–17

Porter, Roy, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (London: Harper Collins, 1997)

Post, Felix, 'Creativity and Psychopathology: A Study of 291 World-famous Men', *British Journal of Psychiatry*, 165 (1994), 22–34

Prodger, Phillip, *Darwin's Camera: Art and Photography in the Theory of Evolution* (Oxford: Oxford University Press, 2009)

—— 'Illustration as Strategy in Charles Darwin's *The Expression of the Emotions in Man and Animals*', in *Inscribing Science: Scientific Texts and the Materiality of Communication*, ed. by Timothy Levine (Stanford: Stanford University Press, 1998), pp. 140–81

Raines, Melissa Anne, *George Eliot's Grammar of Being* (London: Anthem, 2011)

Reed, Edward S., *From Soul to Mind: The Emergence of Psychology from Erasmus Darwin to William James* (New Haven: Yale University Press, 1997)

Richards, Graham, *Putting Psychology in its Place: A Critical Historical Overview* (Hove: Psychology Press, 2002)

Richardson, Angelique, 'George Eliot, G. H. Lewes, and Darwin: Animals, Emotions and Morals', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Amsterdam: Rodopi, 2013), pp. 136–71

Richter, Virginia, *Literature after Darwin: Human Beasts in Western Fiction, 1859–1939* (Basingstoke: Palgrave, 2011)
Ritvo, Harriet, 'Calling the Wild: Selection, Domestication, and Species', in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Surrey: Ashgate, 2013), pp. 262–80

—— *The Animal Estate: The English and other Creatures in the Victorian Age* (Cambridge, Mass.: Harvard University Press, 1987)

—— *The Platypus and the Mermaid: and other Figments of the Classifying Imagination* (Cambridge, Mass.: Harvard University Press, 1997)

Roger, Jacques, *Buffon: A Life in Natural History*, trans. by Sarah Lucille Bonnefoi, ed. by L. Pearce Williams (Ithaca: Cornell University Press, 1997)

Rosch, Eleanor, 'Principles of Categorization', in *Cognition and Categorization*, ed. by Eleanor Rosch and Barbara B. Lloyd (Hillsdale, New Jersey: Lawrence Erlbaum, 1978), pp. 27–48

Rowe, Stephanie, '"Listen to me": *Frankenstein* as an Appeal to Mercy and Justice, on Behalf of the Persecuted Animals', in *Humans and Other Animals in Eighteenth-Century British Culture: Representation, Hybridity, Ethics*, ed. by Frank Palmeri (Aldershot, Hampshire: Ashgate, 2006), pp. 137–52

Ruston, Sharon, *Creating Romanticism: Case Studies in the Literature, Science and Medicine of the 1790s* (Basingstoke: Palgrave, 2013)

—— *Literature and Science* (Woodbridge: Brewer, 2008)

—— 'Natural Rights and Natural History in Ann Barbauld and Mary Wollstonecraft' in *Literature and Science* ed. by Sharon Ruston (Cambridge: Brewer, 2008), pp. 53–71

—— '"What Was I?": *Frankenstein*, Natural History and the Question of What it Means to be Human', *La Questione Romantica*, 3.1 (2011), 81–92

Ryan, Vanessa L., ‘Fictions of Medical Minds: Victorian Novels and Medical Epistemology’, *Literature and Medicine*, 25.2 (Fall 2006), 277–97

—— ‘Reading the Mind: From George Eliot’s Fiction to James Sully’s Psychology’, *Journal of the History of Ideas*, 70.4 (October 2009), 615–35

—— *Thinking without Thinking in the Victorian Novel* (Baltimore: John Hopkins University Press, 2012)

Rylance, Rick, ‘Convex and Concave: Conceptual Boundaries in Psychology, Now and Then (But Mainly Then)’, *Victorian Literature and Culture*, 32.2 (2004), 449–62

—— *Victorian Psychology and British Culture 1850–1880* (Oxford: Oxford University Press, 2000)

Savage-Rumbaugh, Sue, Kanzi Wamba, Panbanisha Wamba, and Nyota Wamba, ‘Welfare of Apes in Captive Environments: Comments on, and by, a Specific Group of Apes’, *Journal of Applied Animal Welfare Science* 10.1 (2007), 7–19

Scanlon, Taylor M., ‘The Face of the Crowd: Reading Terror Physiognomically in Charles Dickens’s *A Tale of Two Cities*’, *The Victorian*, 2.3 (September 2014), 1–12

Schmitt, Cannon, *Darwin and the Memory of the Human: Evolution, Savages, and South America* (Cambridge: Cambridge University Press, 2009)

—— ‘Victorian Beetlemania’, in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Martin A. Danahay and Deborah Denenholz Morse (Hampshire: Ashgate, 2007), pp. 35–51

Scholz, Susanne, ‘Evolution, Heredity and Visuality: Reading Faces with Thomas Hardy’, in *Reflecting on Darwin*, ed. by Eckart Voigts, Barbara Schaff and Monika Pietrzak-Franger (Surrey: Ashgate, 2014), pp. 41–55

Secord, James A., *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago: University of Chicago press, 2000)

—— *Visions of Science: Books and Readers at the Dawn of the Victorian Age* (Oxford: Oxford University Press, 2014)

Sen, Sambudha, ‘Hogarth, Egan, Dickens, and the Making of an Urban Aesthetic’, *Representations*, 103.1 (Summer 2008), 84–106.

Shafe, Laurence ‘Why is the Peacock’s Tail So Beautiful?’ in *Darwin and Theories of Aesthetics and Cultural History*, ed. by Sabine Flach and Barbara Larson (Surrey: Ashgate, 2013), pp. 37–52

Shaffer, Elinor S., ed., *The Third Culture: Literature and Science* (Berlin: Walter de Gruyter, 1998)

Sherwin, Paul, ‘*Frankenstein:* Creation as Catastrophe’, *PMLA*, 96.5 (October 1981), 883–903

Shookman, Ellis, ed. *The Faces of Physiognomy: Interdisciplinary Approaches to Johann Casper Lavater* (Columbia: Camden House, 1993)

Shortland, Michael, 'The Power of a Thousand Eyes: Johann Casper Lavater's Science of Physiognomical Perception', *Criticism: A Quarterly Journal for Literature and the Arts*, 28. 4 (Fall 1986), 379–408

Shuttleworth, Sally, *Charlotte Bronte and Victorian Psychology* (Cambridge: Cambridge University Press, 1996)

—— *George Eliot and Nineteenth-Century Science: The Make-Believe of a Beginning* (Cambridge: Cambridge University Press, 1984)

—— 'The Language of Science and Psychology in George Eliot's *Daniel Deronda'*, in *Victorian Science and Victorian Values: Literary Perspectives*, ed. by James Paradis and Thomas Postlewait (New York: The New York Academy of Sciences, 1981), pp. 269–98

—— 'Tickling Babies: Gender, Authority and Baby Science', in *Science in the Nineteenth-Century Periodical*, ed. by Geoffrey Cantor and others (Cambridge: Cambridge University Press, 2004), pp. 199–215

Sirjeantson, Richard, 'The Passions and Animal Language', *Journal of the History of Ideas*, 62.3 (July 2001), 425–44

Sivasundaram, Sujit, 'Imperial Transgressions: The Animal and Human in the Idea of Race', *Comparative Studies of South Asia, Africa and the Middle East*, 35.1 (May 2015), 156–72

Slater, Michael, 'On Reading *Oliver Twist*', *The Dickensian*, 70 (May 1974), 75–81

Sliwinski, Sharon, 'The Gaze Called Animal: Notes for a Study on Thinking', *CR: The New Centennial Review*, 11.2 (2011), 61–81

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

Smith, Julie A., 'Sensory Experience as Consciousness in Literary Representations of Animal Minds', in *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture*, ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005), pp. 231–46

Snow, C. P., *The Two Cultures and the Scientific Revolution* (1959) (Cambridge: Cambridge University Press, 1993)

Snyder, Peter J., and others, 'Charles Darwin's Emotional Expression 'Experiment' and his Contribution to Modern Neuropharmacology', *Journal of the History of the Neurosciences*, 19 (2010), 158–70

Solomon, Robert C., *True to our Feelings: What our Emotions are Really Telling Us* (Oxford: Oxford University Press, 2007)

Somppi, Sanni, and others, ‘Dogs Evaluate Threatening Facial Expressions by their Biological Validity: Evidence from Gazing Patterns’, PLoS ONE, 11.1 (13 January 2016), 1–16

Soper, Kate, ‘Nature and Culture: The Mythic Register’, in *Becoming Human: New Perspectives on the Inhuman Condition,* ed. by Paul Sheehan (Westport, CT: Praeger, 2003), pp. 67–80

—— ‘Passing Glories and Romantic Revivals: Avant-garde Nostalgia and Hedonist Renewal’, in *Ecocritical Theory: New European Approaches*, ed. by Alex Goodbody and Kate Rigby (Charlottesville: University of Virginia Press, 2011), pp. 17–29

—— *What is Nature? Culture, Politics, and the Non-Human* (Oxford: Blackwell, 1995)

Sorabji, Richard, *Animal Minds and Human Morals: The Origins of the Western Debate* (Ithaca, NY: Cornell University Press, 1993)

Spray, Emma, ‘Political, Natural, and Bodily Economies’, in *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spray (Cambridge: Cambridge University Press, 1996), 178–96

Stedman, Gesa, *Stemming the Torrent. Expression and Control in the Victorian Discourses on Emotions, 1830–1872* (Hampshire: Ashgate, 2002)

Steeves, H. Peter, ‘Lost Dog, or, Levinas Faces the Animal’, in *Figuring Animals: Essays on Animal Images in Art Literature, Philosophy and Popular Culture,* ed. by Mary Sanders Pollock and Catherine Rainwater (Basingstoke, Hampshire: Palgrave, 2005), pp. 21–35

Stevens, Robert L., ‘Darwin’s Humane Reading: The Anaesthetic Man Reconsidered’, *Victorian Studies*, 26 (Autumn 1982), 51–63

Stiles, Anne, ‘Literature in “Mind”: H. G. Wells and the Evolution of the Mad Scientist’, *Journal of the History of Ideas*, 70.2 (April 2009), 317–39

Stimilli, Davide, *The Face of Immortality: Physiognomy and Criticism* (Albany: State University of New York Press, 2005)

Stoddart, Judith, ‘Tracking the Sentimental Eye’, in *Knowing the Past. Victorian Literature and Culture*, ed. by Suzy Anger (New York: Cornell University Press, 2001), pp. 192–211

Strange, Julie-Marie, *Death, Grief and Poverty in Britain 1870–1914* (Cambridge: Cambridge University Press, 2005)

Szasz, Thomas S., *The Manufacture of Madness. A Comparative Study of the Inquisition and the Mental Health Movement* (London: Routledge & Kegan Paul, 1971)

Tallerman, Maggie, ed. *Language Origins: Perspectives on Evolution* (Oxford: Oxford University Press, 2005)

Tapper, Richard, ‘Animals, Humanity, Morality, Society’, in *What is an Animal?,* ed. by Tim Ingold (London: Routledge, 1994), pp. 47–62

Tester, Keith, *Animals and Society: The Humanity of Animal Rights* (London: Routledge, 1991)

The British Museum: Collection Online (2017) <http://www.britishmuseum.org/collectionimages/AN01550/AN01550256_001_l.jpg> [Accessed 18 April 2017]

Thomas, Keith, *Man and the Natural World: Changing Attitudes in England 1500–1800* (London: Penguin, 1983)

Tomalin, Claire, *Charles Dickens: A Life* (London: Penguin, 2012)

—— *The Life and Death of Mary Wollstonecraft* (London: Penguin, 2012)

Townshend, Emma, *Darwin's Dogs: How Darwin's Pets helped form a World-changing Theory of Evolution* (London: Frances Lincoln, 2009)

Turner, James, *Reckoning the Beast: Animals, Pain and Humanity in the Victorian Mind* (London: John Hopkins University Press, 1980)

Tytler, Graeme, 'Lavater and Physiognomy in English Fiction, 1790–1832', *Eighteenth-Century Fiction*, 7.3 (1995), 293–310

—— *Physiognomy in the European Novel: Faces and Fortunes* (Princeton, NJ: Princeton University Press, 1982)

—— '"The Lines and Lights of the Human Countenance": Physiognomy in George Eliot's Fiction', *George Henry Lewes Studies*, 37/37 (September 1999), 29–58

Van Wyhe, John, *Phrenology and the Origins of Victorian Scientific Naturalism* (Aldershot: Ashgate, 2004)

Voskuil, Lynn M., *Acting Naturally. Victorian Theatricality and Authenticity* (Charlottesville: University of Virginia Press, 2004)

Vrettos, Athena, 'From Neurosis to Narrative: The Private Life of the Nerves in *Villette* and *Daniel Deronda*', *Victorian Studies*, 33.4 (Summer 1990), 551–79.

Waal, Frans de, *Are We Smart Enough to Know How Smart Animals Are?* (London: Granta, 2016)

—— *Chimpanzee Politics: Power and Sex among Apes* (1982) (Baltimore, John Hopkins University Press, 2007)

—— *Primates and Philosophers: How Morality Evolved* (New Jersey: Princeton University Press, 2006)

Watt-Smith, Tiffany, 'Darwin's Flinch: Sensation Theatre and Scientific Looking in 1872', *Journal of Victorian Culture*, 15 (2010), 101–18

Wechsler, Judith, *A Human Comedy: Physiognomy and Caricature in Nineteenth-Century Paris* (London: Thames and Hudson, 1982)

Wheeler, Michael, *Death and the Future Life in Victorian Literature and Theology* (Cambridge: Cambridge University Press, 1990)

White, Jim, ‘A Twist in the Tale: Courtesy of Animal Rights Fanatics’, *The Telegraph*, 10 October 2005, Comment <http://www.telegraph.co.uk/comment/personal-view/3620260/A-twist-in-the-tale-courtesy-of-the-animal-rights-fanatics.html> [Accessed 24 April 2017]

White, Paul, ‘Becoming an Animal: Darwin and the Evolution of Sympathy’, in *After Darwin: Animals, Emotions, and the Mind*, ed. by Angelique Richardson (Surrey: Ashgate, 2013), pp. 112–35

—— ‘Darwin’s Emotions: The Scientific Self and the Sentiment of Objectivity’, *Isis*, 100 (December 2009), 811–26

—— ‘Darwin Wept: Science and the Sentimental Subject’, *Journal of Victorian Culture*, 16 (2011), 195–213

—— ‘Reading the Blush’, *Configurations*, 24.3 (2016), 281–301

—— ‘The Emotional Economy of Science’, *Isis*, 100 (December 2009), 792–97

—— ‘The Face of Physiology’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 7 (2008), 1–22

—— *Thomas Huxley: Making the Man of Science* (Cambridge: Cambridge University Press, 2003)

Williams, Linda Ruth, *Critical Desire: Psychoanalysis and the Literary Subject* (London: Edward Arnold, 1995)

Willis, Martin, *Literature and Science* (London: Palgrave, 2015)

Wilson, Bee, *Consider the Fork: A History of how we Cook and Eat* (London: Penguin, 2013)

Wilson, Elizabeth A., *Psychosomatic: Feminism and the Neurological Body* (Durham, North Carolina: Duke University Press, 2004)

Winter, Sarah, ‘Darwin’s Saussure: Biosemiotics and Race in Expression’, *Representations*, 107.1 (Summer 2009), 128–61

Winyard, Ben and Holly Furneaux, ‘Dickens, Science and the Victorian Literary Imagination’, *19: Interdisciplinary Studies in the Long Nineteenth Century*, 10 (2010), 1–17

Wolfe, Cary, *What is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010)

Wood, Paul B., ‘The Science of Man’, in *Cultures of Natural History*, ed. by N. Jardine, J. A. Secord and E. C. Spray (Cambridge: Cambridge University Press, 1996), pp. 197–210

Woodall, Joanna, ‘Introduction: Facing the Subject’, in *Portraiture: Facing the Subject*, ed. by Joanna Woodall (Manchester: Manchester University Press, 1997), pp. 1–25

Woodward, William R., and Mitchell G. Ash, eds, *The Problematic Science: Psychology in Nineteenth-Century Thought* (New York: Praeger, 1982)

Wright, T.R., ‘From Bumps to Morals: The Phrenological Background to George Eliot’s Moral Framework’, *The Review of English Studies*, 33.129 (1982), 34–46

Young, Robert M., *Darwin’s Metaphor: Nature’s Place in Victorian Culture* (Cambridge: Cambridge University Press, 1985)

—— *Mind, Brain, and Adaptation in the Nineteenth Century* (Oxford: Oxford University Press, 1990)

Youngquist, Paul, *Monstrosities: Bodies and English Romanticism* (Minneapolis: University of Minnesota Press, 2003)

Zirker, Angelica, ‘Physiognomy and the Meaning of Character in *Our Mutual Friend*’, *Partial Answers: Journal of Literature and the History of Ideas*, 9.2 (June 2011), 379–90