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Curiously Parallel

The Nature of Culture

Humankind taken as a whole is becoming a mighty geological force.

Vladimir Vernadsky 1943: 19

How each member ought to act

The study of culture often begins with some notion of individual talent, inspiration, creative activity or expression. But that is not how culture itself emerged. This is how Charles Darwin connected culture and evolution:

After the power of language had been acquired, and the wishes of the community could be expressed, the common opinion how each member ought to act for the public good, would naturally become in a paramount degree the guide to action. But . . . our regard for the approbation and disapprobation of our fellows depends on sympathy, which . . . forms an essential part of the social instinct, and is indeed its foundation-stone. (Darwin 1871: 99)

The causal sequence is: sympathy (for others) → the social instinct → community → language → common opinion → individual action – in that order. First, evolved traits belonging to the whole population of the species (capacity for sympathy); next, an evolved ‘instinct’ for sociality and a mechanism for expressing it (language and culture); and only then a capability for individual action, itself steered by group values (dis/approbation of fellows).

Seen this way, individuality – our identity, as much as our actions – is an outcome of sociality, not its causal starting point; and language precedes individual action, rather than arising from it; language is not ‘behavioural’ in origin. Behaviour arises, in fact, from communication, among a population whose idea of how they ought to act derives from their perception of the ‘wishes’

‘opinion’ and ‘approbation’ of others, as Darwin put it. On this score, he writes that it is ‘hardly possible to exaggerate the importance during rude times of the love of praise and the dread of blame’ (1871: 131–2). He goes on to sketch a model of cultural evolution, which he sees as a process through which individual ‘moral sense’ is slowly developed and generalized as a communal ‘standard of morality’: ‘originating in the social instincts, largely guided by the approbation of our fellow-men, ruled by reason, self-interest, and in later times by deep religious feelings, and confirmed by instruction and habit’ (132). In short, culture sets the rules for individual action. This is a view to which evolutionary biology is beginning to return, and we use it as our starting point for cultural science – which is an interdisciplinary attempt to systematize the study of culture in the light of the most recent developments in evolutionary theory and complexity theory.

Darwin argues that any evolutionary advantage that may accrue from developing such a conscience benefits the group rather than the individual:

It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other men of the same tribe, yet that an increase in the number of well-endowed men and an advancement in the standard of morality will certainly give an immense advantage to one tribe over another. (Darwin 1871: 132)

Darwin views culture as the shared sense of conscience or moral standard arising from sociality, love of praise/fear of blame, reason, self-interest, religion, instruction and habit. Culture confers competitive advantage on the group or tribe (see Chapter 3: ‘Demes’) in which individuals grow and live. Individual talent, expression, imagination and aspiration are all involved, certainly, but they amount to a talent for sociality, born of ‘the love of praise and the dread of blame’, through which communities of non-kin learn to cooperate, in conditions of uncertainty and conflict, to ensure survival of the group, not the individual.

Curiously parallel

Darwin saw the relations between nature and culture as ‘curiously parallel’. He reckoned that ‘languages’ (culture) and ‘species’ (nature) were both evolutionary, by means of the same mechanism of ‘natural selection’. In *The Descent of Man* (1871), he wrote:

The formation of different languages and of distinct species, and the proofs that both have been developed through a gradual process, are curiously

parallel. . . . The survival or preservation of certain favoured words in the struggle for existence is natural selection. (Darwin 1871: 90–1)

Notice that Darwin describes not only the ‘formation’ but also the ‘proofs’ of both kinds of evolution as ‘curiously parallel’. In other words, he was claiming not only that culture is evolutionary just as biological species are, but also that the way we can know about this process is the same. He had a hunch that the explanation – the causal mechanism – for changes in languages was the same as the one for changes in species.

He was suggesting that the study of languages, and thence, the study of culture more generally, is an evolutionary science. In this book, we take up the challenge of Darwin’s hunch, and call the result ‘cultural science’. This is not simply an attempt to apply what is known about the ‘origin of species’ to culture but, more fundamentally, to rethink culture as an evolutionary process. We do not want to propagate yet more dogma in the field of cultural studies, and we do not claim to know in advance that ‘Darwin was right all along’, but we do think it is important to start with what Karl Popper calls a ‘bold hypothesis’, which is that the evolutionary process in question is Darwinian: culture evolves by natural selection, that is, we use the term ‘evolution’ literally, not metaphorically. We suspect that the *nature of culture* can be explained by examining it in relation to this claim.

An extensive body of published work has sought to explain culture. While anthropology has focused on the culture of traditional societies, cultural studies starts by examining culture in contemporary societies, typically modern, competitive industrial and imperial nations: thus, literary culture; the creative and performing arts. It works towards a definition based on that perception. This long-standing tradition precedes Darwin, especially in Germany (Watson 2010) and Britain (Williams 1960), where the emergence of national literatures – in Germany’s case before the establishment of the nation – was accompanied by intensive and passionate theorizing about the nature and role of culture. Thinkers wanted to understand what was unique about particular times and places in the expansive, competitive context of industrialization and the ascendancy of the modern nation-state. Culture was thought to play a crucial role. That line of inquiry persisted into the contemporary period *as literature*, a running conversation among authors who were themselves significant literary figures, from Goethe and Coleridge, via Matthew Arnold, John Ruskin and T. S. Eliot, to Raymond Williams and Richard Hoggart (Hartley 2003).

We see this corpus of literature as pre-Darwinian, an attempt to ascribe *cause* to culture by studying its *effects*. Here, by contrast, we explain culture anew, as

a Darwinian concept. We take account of recent progress in the evolutionary and complexity sciences, and seek to produce what E. O. Wilson (1998) calls 'consilience' between them and the work on culture done in the humanities and creative arts. Our ambition is for the study of culture to achieve the kind of 'modern synthesis' that Julian Huxley (1942) achieved for the biosciences. If a 'modern synthesis' can be achieved for it, not only within the social sciences, such as psychology and anthropology, as has already been proposed (Mesoudi 2010, 2011), but right across the disciplinary spectrum, from the arts and humanities, via mathematically based complexity studies, to evolutionary sciences from biology to economics, then cultural science can be established as an evolutionary science.

The systematic study of Darwin's 'curiously parallel' origins of language and species can develop using the armamentarium of contemporary knowledge, rather than relying still on categories derived from German responses to political modernization in the eighteenth century, when the term '*Kultur*' began to be seen as the inner life of imaginative genius or spirit (culture), differentiated from '*Zivilisation*', the outer show of power (politics) and useful productivity (the economy) (Lepenies 2006: 4) – a distinction that was seized upon by literary Romantics and modernists like Coleridge and Arnold to provide for themselves a stick (culture) with which to beat industrializing and democratizing capitalism (civilization), together with its attendant knowledge and social (power) relations.

Culture doesn't arise from that distinction, however passionately one may want to criticize aspects of contemporary productive and associative life. How it does arise has been established in the evolutionary and complexity sciences, using causal sequence, not casuistry, but these insights have not carried across to cultural studies. Nor have the methodological implications of computational scale in data use and analysis been realized, despite widespread interest in the digital media among cultural critics, activists, practitioners and consumers. Pre-Darwinian cultural studies tries to explain culture by critiquing effects and agents, rather than causes and dynamic systems – it's like trying to explain the theory of electricity by asking who switched on the lights. But the means to understand how culture works as an evolutionary system, and how to study that system, are to hand.

Certain favoured words: Social Darwinism?

Darwin did not undertake systematic fieldwork or experimentation in relation to languages as he had in his famous studies of barnacles and Galapagos finches.

Nor did he have access to a well-established body of empirical evidence about the formation and evolution of languages, although he did rely on existing scholarship for his assertions.¹ At that time, linguistics was barely a descriptive discipline, never mind a scientific one. The study of historical changes in languages – known as philology – owed much to its own origins in the exegesis of sacred texts (for religious purposes) and in the investigation of the literary origins of European languages (for nationalistic and imperial purposes). Perhaps that is why the intriguing idea about the ‘curiously parallel’ evolution of nature and culture was not taken up at the time and has been largely forgotten, at least in the humanities, where Darwin’s very name can still cause shivers of revulsion, a hangover from mid-twentieth century rejection of fascist ‘social Darwinism’ (Hofstadter 1944).

Darwin was a man of his times, using the language of his times, in seeking to explain the ‘descent’ (evolution) of ‘man’ (humanity) from ‘lowly’ (previously evolved) animals. He took for granted not only that humanity was superior, but also that ‘savage’ (premodern) tribes, such as the natives of Tierra del Fuego (‘Fuegians’) whom he’d encountered during his voyage on the *Beagle* (Figure 1.1), were ‘inferior’ (at an earlier stage of material development) to civilized communities such as his own society, with a less well-developed ‘moral sense’. Here is part of the concluding passage of *The Descent of Man*:

The main conclusion arrived at in this work, namely that man is descended from some lowly organised form, will, I regret to think, be highly distasteful to many. But there can hardly be a doubt that we are descended from barbarians. The astonishment which I felt on first seeing a party of Fuegians on a wild and broken shore will never be forgotten by me, for the reflection at once rushed into my mind – such were our ancestors. (Darwin 1871: 618–19)

Lowly . . . distasteful . . . barbarians . . . wild and broken . . . ancestors – the rhetoric seems to require a primitivist and racist interpretation. But Darwin is actually trying to make the opposite point; namely that the behaviour of supposedly ‘lowly’ animals can be nobler than that of humans. He preferred the idea of descent from a monkey or a baboon compared with,

. . . a savage who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency, and is haunted by the grossest superstitions. (Darwin 1871: 618–19)

¹ He chiefly credits Charles Lyell’s *Principles of Geology*; and of course Alfred Russell Wallace independently discovered the principle of natural selection (*On The Tendency of Varieties to Depart Indefinitely from the Original Type*, 1858), spurring Darwin to publish his own synthesis.

Figure 1.1 ‘Such were our ancestors’. Fuegian Yapoo Tekeenica at Portrait Cove, as encountered by Charles Darwin during his voyage on the *Beagle*. Frontispiece to Robert Fitzroy’s *Narrative of the Surveying Voyages of His Majesty’s Ships Adventure and Beagle*, Vol II. London: Henry Colburn, 1839. Drawing by Conrad Martens.² Note that the portrait shows seven persons (including an infant) and a dog, as well as a dwelling, food, transportation and hunting gear – it depicts a culture or basic demic unit (see Chapter 3), not an individual. Despite this the Fuegian is posed as a kind of Victorian *paterfamilias* (*manqué*), the better to highlight his ‘barbarian’ state.

Darwin was grossly mistaken if he thought that torture, sacrifice, murdering children, enslaving women, indecency and superstition were confined to Fuegians, and were absent in civilized cultures. Since that time, it has become all too clear that the list of atrocities he personifies in the image of ‘a savage’ from

² Image is in the Public Domain. Online sources include: www.lindahall.org/events_exhib/exhibit/exhibits/darwin/48_fitzroy.shtml; and www.sciencephoto.com/media/150851/enlarge.

South America characterizes human behaviour across any known boundary of race or creed, especially in times of war (see Chapter 4 : ‘Malvoisine’). But it is clear that Darwin was resisting the temptation to presume that, ‘having risen, though not through his own exertions, to the very summit of the organic scale,’ humanity had escaped its origins:

We must, however, acknowledge, as it seems to me, that man with all his noble qualities, with sympathy which feels for the most debased, with benevolence which extends not only to other men but to the humblest living creature, with his god-like intellect which has penetrated into the movements and constitution of the solar system – with all these exalted powers – Man still bears in his bodily frame the indelible stamp of his lowly origin. (Darwin 1871: 619)

So closes *The Descent of Man*. Thus, even while freely using the language of ‘exalted powers,’ he rejected the ideas of writers like Herbert Spencer, Thomas Malthus and his own cousin Francis Galton, insofar as these established the tenets of ‘social Darwinism’. Note that the last words of the book are ‘lowly origin’. Instead, his faith in socially ‘impelled’ self-improvement led him to posit ‘the social instincts’ as an antidote to the savage ones:

The social instincts, which must have been acquired by man in a very rude state, and probably even by his early ape-like progenitors, still give the impulse to some of his best actions; but his actions are in a higher degree determined by the expressed wishes and judgment of his fellow-men, and unfortunately very often by his own strong selfish desires. (Darwin 1871: 109)

The take-out lesson from Darwin’s own attempt to subject ‘human nature’ to evolutionary analysis is that the ‘survival of the fittest’ did not entail exterminating the supposedly ‘unfit’ among humans but, on the contrary, it required sympathy with and a judicious ability to learn from others, especially ‘lowly’ ones. It required a clear-eyed willingness to observe the ‘indelible stamp’ of evolution as the *condition* for the achievement of the modern, liberal qualities of sympathy, benevolence and intellect. The key evolutionary trait is not selfish competitiveness but what we would now call ‘social learning’ (Konner 2010: 350–1; 500–17):

But as love, sympathy and self-command become strengthened by habit, and as the power of reasoning becomes clearer, so that man can value justly the judgements of his fellows, he will feel himself impelled, apart from any transitory pleasure or pain, to certain lines of conduct. (Darwin 1871: 110)

Our only organon³

With hindsight, it is evident that Darwin's hunch about the parallelism of natural and cultural evolution was worthy of the 'judgements of his fellows'. But the state of knowledge about culture at the time was simply not ready for such a 'bold conjecture'. So his hunch was not yet capable of 'proofs'. It did, however, qualify as part of what Karl Popper has called 'the logic of scientific discovery':

Bold ideas, unjustified anticipations, and speculative thought, are our only means for interpreting nature: our only organon, our only instrument, for grasping her. And we must hazard them to win our prize. Those among us who are unwilling to expose their ideas to the hazard of refutation do not take part in the scientific game. (Popper 2002: 279–80)

In his own lifetime, Darwin's theory of evolution by natural selection was marked more by prescience than by 'proofs'. But exposing that theory to the 'hazard of refutation' has indeed enabled the 'advance of science'. Subsequent discoveries (e.g. genes, DNA, the genome code) and a century or more of accelerating growth in knowledge, especially in the biosciences, have tended to confirm his theory in respect of species. It is well past time for culture too to be 'interpreted' by the same means; and for various preceding and existing attempts to do just that to be synthesized into an approach that doesn't just add to cultural studies but reorganizes the field of study.

Darwin did not conduct sustained empirical work into languages. His hunch that they evolved by natural selection could have been ignored for scientific reasons: a 'lack of evidence'. But given the state of scholarship in the period, and its use for sectarian (religious) and partisan (nationalistic) ends, a more likely explanation is that the intellectual soil on which he cast this idea was not fertile enough to sustain it. The problem was not with Darwin or his bold idea; it was with those who studied culture and their ideas.

The claim that culture forms and develops by a gradual process, which may be expressed as a law (of natural selection), turns languages, and thence culture, into a set of systems that behaves, changes and grows according to internal laws and mechanisms. In turn, that conceptualization seems to deny a creative role both to human agency (inspiration, genius, originality) and to spiritual

³ The Greek word 'organon' means instrument, tool, organ. It is the name given to Aristotle's works on logic. Sir Francis Bacon published *The New Organon* in 1620 (<http://ebooks.adelaide.edu.au/b/bacon/francis/organon/>). Popper writes of 'bold ideas' as 'our only organon' in this tradition.

or metaphysical causation (ideas coming from external sources; supernatural, spiritual or divine).

In some ways the implications of this idea – that meaningfulness evolves by natural selection – were even more provocative than Darwin's work on the origin of species, because it decentred both God and the individual human consciousness from a position of causation in the creation and development of meaning, relationships and identity, and in the growth of knowledge and expression more generally. If the 'survival or preservation of certain favoured words' in a language follows the rule of heritable 'variation, selection, retention', then it would seem to have little or nothing to do with the will or intentions, much less the identity or ideology, of those individuals who utter the words.

Nature versus culture?

In Darwin's day, secular thinkers and spiritual leaders alike saw culture as an expression of something 'higher' than the gradual working out of a struggle for survival. In those days, when they heard the word 'culture', they were likely to reach for their bibles, or for Shakespeare. In other words, they credited the 'fitness' of words to God or Art, not to evolution, during a period when art itself was being sacralized, in opposition to mere 'civilization', that is, industry, modernity, urban life, politics. This approach to culture as a modern substitute for religion caught on among the theorists of 'high' culture, from Matthew Arnold⁴ to Kenneth Clark.⁵ Culture was 'the best that has been thought and said' – it was not to be confused with worldly getting and gaining, where one might expect to find evidence of the competitive 'survival of the fittest'.

When they thought about nature, as opposed to culture, they were as likely as not to imagine, as Thomas Hardy (1915) did in his poem about the sinking of the *Titanic*, something that is alien and uninterested in humanity's vainglorious creations – something 'grotesque, slimed, dumb, indifferent', in Hardy's words – that was nevertheless implacably hostile to the 'Pride of Life' that motivates human

⁴ Matthew Arnold is still taken to be the touchstone for the concept of culture in British intellectual discourse. For instance, in a BBC Radio 4 series *The Value of Culture* (2012–13) Melvin Bragg devoted the entire first episode (over 40 minutes of airtime) to Arnold (www.bbc.co.uk/podcasts/series/tvoc).

⁵ Kenneth Clark's landmark *Civilisation: A Personal View* (1969) provoked John Berger's influential riposte, *Ways of Seeing* (1972). Clark's series has been reissued: www.telegraph.co.uk/culture/tvandradio/bbc/8311680/Kenneth-Clarks-Civilisation-returns-in-HD.html. For Berger versus Clark, see: www.ejumpcut.org/archive/onlinessays/JC20folder/WaysOfSeeing.html.

individuals and society alike. An adversarial relationship was imagined between an indifferent but hostile nature that needed taming, civilizing, domesticating, and so on – especially the land and peoples of recently acquired colonies in ‘wild’ Africa, Australasia, the Americas and Asia – as opposed to a divinely or artistically inspired human culture, where the ‘struggle’ for survival takes the form of philosophical, artistic, or otherwise imaginative endeavour, created by uniquely talented individuals striving for enlightenment and ‘perfection’ (Arnold 1869).

It wasn’t simply that the idea of natural selection painted God out of the picture, but that it dethroned ‘the mind’ as well. The idea of individual identity, at the heart of Western knowledge since the Renaissance at least, and given wide credence through the notion of the Cartesian ego, was incompatible with the idea of evolution. Evolution and individuals don’t mix. Evolution requires populations; individuals and their notions and fancies are but carriers for genes and random vehicles for adaptation. It seemed to culture’s first theorists that individuals – with their language, culture, Pride of Life; their meanings, identities, social relationships; their technologies, institutions and networks; their imaginative, descriptive and argumentative expression – cannot be ‘known’ by evolutionary means. It seemed unthinkable that the ‘exalted powers’ (social and intellectual) noted by Darwin could have been ‘caused’ by a mechanism other than the individual mind. Indeed, Darwin’s own mentor, the geologist Charles Lyell, posited that culture *halts* evolution. For that idea he coined the popular phrase ‘mind over matter’:

It may be said that, so far from having a materialistic tendency, the supposed introduction into the earth at successive geological periods of life – sensation, instinct, the intelligence of the higher mammalia bordering on reason, and lastly, the improvable reason of Man himself – presents us with a picture of the ever-increasing dominion of mind over matter. (Lyell 1863)

Small wonder that Darwin’s hint of ‘curiously parallel’ evolutionary mechanisms for species and for languages fell on stony ground. Folk were having a hard enough time coping with the implications of biological evolution to take on the same idea in culture; asking, as the Bishop of Oxford famously inquired in 1860, whether Darwin claimed descent from a monkey on his grandmother’s side or his grandfather’s.⁶

⁶ See *Wikipedia*: Samuel Wilberforce.

Caught knapping

The idea that modern humans had evolved at all took certain individuals among those modern humans by surprise. It took them *aback*. There is a curiously compelling work of art that sums up the moment when all this knowledge began to dawn on the population, not only on scientists. Think of it as the moment of collision among numerous complex systems, and the meaningfulness that was generated when, for the first time in history, this new idea became meaningful to the ordinary person, within the domain of 'ordinary culture' (Williams 1958).

It is William Dyce's painting called *Pegwell Bay, Kent – a Recollection of October 5th 1858* (Figure 1.2; and see cover image). The painting was executed some time between that date and 1860. It was bought 'for the nation' by the Tate Gallery in London in 1894. In 2009 it travelled to the United States as part of an exhibition related to Darwin's bicentenary and the sesquicentenary (150 years)

Figure 1.2 'Eerie beauty . . . gnawing anxiety'. *Pegwell Bay, Kent – a Recollection of October 5th 1858*, c. 1858–60, William Dyce (1806–64). © Tate Britain.⁷ Used with permission.

⁷ Tate: www.tate.org.uk/art/artworks/dyce-pegwell-bay-kent-a-recollection-of-october-5th-1858-n01407.

of his *On the Origin of Species*. More recently it was on display again in Tate Britain's exhibition 'Pre-Raphaelites: Victorian Avant-Garde' (2012–13).⁸

It does what art can do: it presents to the spectator, that point of observant intelligibility that is projected out of the painting itself (Lotman and Shukman 1982), an image of some very complex systems coming together into one meaningful experience. The specific place and time given in the title, *Pegwell Bay, Kent* (near Ramsgate, in SE England) and *October 5th 1858* (it was a Tuesday), suggest that a unique event is depicted. It's hard to see in the yellowy sky over the chalk cliffs, but hanging there is Donati's Comet, one of the brightest of such visitors from outer space of the nineteenth century. On this date in 1858 it was nearing its perihelion, or closest point to the sun, and was thus at its brightest. A wandering star, visible in the pervasive glare of an autumn afternoon when no stars should be seen, draws attention to the infinities and scale of the cosmos, and to our ignorance of it, at a time when its enormity was just beginning to be guessed at by the general public.

Despite its portentous presence, the figures in the foreground don't seem to be taking much notice. Instead, they are looking down; checking the wave-cut platform at low tide, as idly curious people are wont to do. But here too, enormity lurked. For Pegwell Bay was a popular source of fossilized sea urchins and other shells, as well as crinoid stems, readily found in the chalk and flint of the cliffs and foreshore, in some places hundreds of feet thick, which are made of fossilized Cretaceous foraminifera and other marine creatures in their countless millions piled upon trillions.

No doubt it was a game for children to find the bigger fossils; but for the artist, William Dyce, it was a dreadful portent. Dyce was a 'High Church Anglican' and an anti-evolutionist (Rothstein 2009), completing this 'recollection' of 1858 during the very year when Darwin's *On the Origin of Species* (1859) was published. Recollecting a moment just prior to this, the artist seems to be depicting a lost innocence, before the true import of fossils – that the earth was millions of years older than biblical accounting imagined – became clear, even to children.

Above them, the comet; below them, the chalk. Observing them, their father, for the figures in the painting are his family – his son, wife and her two sisters (Barringer 1999). At the domestic level, Dyce seems to be doing no more than

⁸ The exhibition, at the Yale Center for British Art, New Haven, was called 'Endless Forms: Charles Darwin, Natural Science and the Visual Arts': <http://britishart.yale.edu/exhibitions/endless-forms-charles-darwin-natural-science-and-visual-arts>. For the Tate exhibition see: www.tate.org.uk/whats-on/tate-britain/exhibition/pre-raphaelites-victorian-avant-garde. The painting also featured in a 2005 Tate-BBC exhibition called 'A Picture of Britain': www.tate.org.uk/whats-on/tate-britain/exhibition/picture-britain.

depicting the Victorian craze for visiting seaside resorts: a comforting, middle-class pursuit of leisure and relaxation that brought trainloads of holidaymakers to the Kent coast from teeming London, and a new prosperity to towns like Ramsgate. William Dyce wasn't the only member of the educated classes to make the trip. Augustus Pugin, radical architect and Gothic revivalist, most famous for the interior design of the British Houses of Parliament, had recently been buried in the Abbey he'd built on Ramsgate's clifftop, faced with black and forbidding but beautifully knapped local flint from these cliffs.⁹ The town was later a favourite destination for Karl Marx and his own beloved daughters, who made a regular pilgrimage to the Ramsgate sands. Marx's daughter Jenny gave birth to Marx's grandson Edgar in Ramsgate (McLellan 2006).¹⁰

But Dyce is not comforted by high Victorian prosperity and his status as bourgeois paterfamilias. The attention to pebbly detail in this painting displays the very latest advances in 'scientific precision and imaginative grandeur' that the Tate exhibition associated with the Pre-Raphaelite movement (one of whose luminaries, Dante Gabriel Rossetti, would be buried in nearby Birchington-on-Sea). But his artistic and aesthetic modernism was not matched by his personal belief system. Like the sage Prospero in Shakespeare's swansong *The Tempest*, he is caught between times, staging the very changes that will lead to the supersession of his own knowledge – and his powers.¹¹ Like Prospero, he seems to be asking his child: 'What seest thou else/ In the dark backward and abysm of time?'¹² Unlike Prospero, Dyce may have dreaded what they would find there – a dethroned ancestry, certainly, but one reaching eons further back than a wronged father, dethroning the deity and humanity as a whole, as its ancestry began to stretch all the way back to the very urchins being prised out of the chalk by the children. Was Dyce painting a picnic, or a premonition of modernism's 'heart of darkness' – 'the horror, the horror'.

It is noteworthy that Dyce has placed the family group in distracted – individualist – isolation; although posed as a group, none seems to be interacting with the others, and they're all looking in different directions, attention caught by different sources of perplexing information in this familiar but alien environment, united only in their style of attire and activity. They are shown as individuals, not

⁹ But see: www.telegraph.co.uk/culture/art/architecture/8992250/Saving-the-Gothic-master-Pugins-greatest-glory.html.

¹⁰ For Edgar, see: www.canterbury-archaeology.org.uk/#/marx/4557757142.

¹¹ Once he has achieved the marriage of his daughter, thereby securing the continuation of society, Prospero abjures his magical (scientific) knowledge: 'And deeper than did ever plummet sound/ I'll drown my book'. Shakespeare, *The Tempest* V, i.

¹² Shakespeare, *The Tempest* I, ii (<http://shakespeare.mit.edu/tempest/tempest.1.2.html>).

yet individualists, hanging somewhere in temporal eternity (with the fossils) and spatial infinity (with the comet), gaining little succour from their own company, but nonetheless forming, with the unseen artist and observer, the basic family unit of a tribe or 'we'-group. Whether he was an anti-evolutionist or not, Dyce has depicted his family *in* nature, with a typically Pre-Raphaelite attention to detail; details that reveal more than the artist knows.

The power of place to condense layers of meaningfulness attends Pegwell Bay itself, for this otherwise unremarkable bit of coast is the legendary landing-place of Hengist and Horsa, reputed Saxon 'conquerors' of Britain. It is also the historical site of the landing of St Augustine, who brought Christianity to the Saxons (there's a commemorative cross in nearby Ebbsfleet).¹³ And (thanks to sponsorship by the *Daily Mail*), it is also the permanent home of the replica Viking longship *Hugin*, which was rowed and sailed thither from Denmark in 1949 to celebrate 1,500 years since the Viking invasions. The Romans landed here too. Their earliest 'capital city' was at Richborough (Rutupiæ), opposite Pegwell Bay where the sun is setting in Dyce's painting; they are dimly remembered in Ramsgate's own name ('Romans Gate').¹⁴ In other words, Pegwell Bay is the very gateway through which outside influences have been communicated to the 'English' since time immemorial. It's also where co-author Hartley spent much of his childhood, completing an A-Level Geography project about these very cliffs while soaking up the atmosphere, which was soon noisy, futuristic and bristling with jet-age energy, because a Hoverport was built there to accommodate the giant SRN4 Hovercraft that could get one to France in half an hour.¹⁵

All of this meaningfulness condenses into the painting (including, for spectators, that which post-dates it). It still has the power to unsettle the thoughtful viewer, because everyone, from the artist to the contemporary observer, knows that this carefully crafted vision has the wrecking ball of Darwinian 'creative destruction' hanging over it:

The image has an eerie beauty, but it also reflects a gnawing anxiety about the mismatch between the ageless and the temporal, the divine and the mortal, an anxiety not unlike the kind Darwin's theories can still inspire. (Rothstein 2009)

That gnawing anxiety remains today in a continuing 'mismatch' between individual consciousness and the scale of cosmic space-time. The painting

¹³ The site's connection with St Augustine would not have been lost on 'devout Anglican' Dyce: www.wsos.org/articles/2009/jul2009/darw-j22.shtml

¹⁴ See: www.visitthanet.co.uk/viking/thedms.asp?dms=13&venue=3150257.

¹⁵ It ran from 1969 to 1987: www.britishpathe.com/video/stills/prince-philip-opens-hovercraft-at-ramsgate.

catches the moment when evolution and ordinary culture were linked in ‘public thought’ for the first time:

The cliffs and comet and shells allude to the lumbering processes of the ancient earth against which daily experience – the ebb of tides, the attentions of a distracted child in the painting’s foreground, the recollections of the artist himself – plays itself out. (Rothstein 2009)

In the following chapters, we shift the long lens of evolutionary analysis from the ‘lumbering processes of the ancient earth’, observable in cliffs and comet, to the here-and-now of ‘daily experience’, in an attempt to make the study of culture itself into an evolutionary science.