

The Irish response to Darwinism

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The response to Darwinism in Ireland, as elsewhere, was quite a varied one. It would certainly be a mistake to think that on one side there was a vocal majority of horrified, Bible-waving (or catechism-waving) creationists and on the other side a hard-pressed minority of scientifically minded, proselytizing Darwinists. In Ireland in the nineteenth century there existed, as elsewhere, a spectrum of responses, ranging from passionate endorsement to passionate rejection, and in between a number of different attempts at striking some kind of conciliatory balance, some kind of accommodation – or even some kind of positive standoff – between the claims of traditional belief and the claims of the new science. I have concluded that there were four fairly distinct classes of responders to Darwinism in Ireland – the pro-Darwinists, the outright objectors, the accommodators and the compartmentalists.

THE PRO-DARWINISTS

We can predict that most of the early defenders of Darwin will come from the educated elite, especially those who have been educated, or have educated themselves, in the sciences. What is clear from the scholarly work of David Livingstone, Greta Jones, John Wilson Foster, Peter Bowler and Miguel De Arce is that a small but influential number of Irish scientists, both professional and amateur, were receptive to Darwinism from the beginning.¹ The fact that Darwin was elected an honorary member of the Royal Irish Academy in 1866 is itself an indication that he had some influential supporters in Ireland. These early sympathizers included Robert Ball, for example, and William Ramsay McNab, both of whom were members of the Royal College of Science in Dublin. Ball, who held the chair of astronomy at the Royal College of Science, was among the first Irish converts to Darwinism. In a still very readable, even charming, essay on Darwinism, he reports that he can still remember the intense delight he felt when, as a student, he first read *Origin of species*. 'I was', he says, 'an instantaneous convert to the new doctrines, and have felt their influence during all my subsequent life'.²

¹ See D. Livingstone, 'Darwin in Belfast: the evolution debate' in J.W. Foster (ed.), *Nature in Ireland* (Dublin, 1997), pp 387–408; J.W. Foster, *Recoveries: neglected episodes in Irish cultural history, 1860–1912* (Dublin, 2002); G. Jones, 'Darwinism in Ireland' in D. Attis (ed.), *Science and Irish Culture* (Dublin, 2004), pp 115–138; M. DeArce, 'Darwin's Irish correspondence', *PRIA*, 108B (2008), 43–56; P.J. Bowler, 'Charles Darwin and his Dublin critics: Samuel Haughton and William Henry Harvey', *PRIA*, 109C (2009), 409–20. ² R.S. Ball, *In starry realms*

Of course, the outstanding pro-Darwinist of the nineteenth century has to be John Tyndall, best known to historians of Darwinism for the famous address that he delivered to the Belfast meeting of the British Association for the Advancement of Science in 1874. Tyndall was born in 1820 in the village of Leighlinbridge in Co. Carlow. In 1848, after spending some years with the Irish Ordnance Survey, he went to study science at the University of Marburg in Germany, graduating with a doctorate in 1851. In 1853, he was appointed professor of natural philosophy at the Royal Institution in London. He soon earned himself a reputation not only as a scientist but also as a campaigner in the cause of science, becoming the nineteenth-century equivalent of Richard Dawkins. What in fact makes his 1874 Belfast address so provocative is the missionary zeal with which he defends the scientific enterprise, especially against interference from not only religious authorities but also from the religious mind-set. In the address, he defends Darwin as part of a more general promotion of scientific practice and scientific method. More than that, he also declares a state of war between the scientific and the religious views of the world.

The most controversial feature of Tyndall's paper is its materialistic tenor. He begins by rewriting the history of Western thought from a naturalistic and materialistic perspective. He shifts the emphasis away from the traditionally time-honoured philosophers, including Plato and Aristotle, and brings into the limelight what we might call the more worldly thinkers, those who focus their attention on the earthly, physical world, and who do so without conjuring up too much in the way of supernatural entities or forces. The first beneficiary of his revisionary overview of Western intellectual history is the Greek philosopher, Democritus, whom he considers to have been, as Francis Bacon put it, a man of 'weightier metal' than either Plato or Aristotle.³ He recounts with approval the story that when Democritus visited Athens when Socrates and Plato were active there, he did so without making himself known to them. He also recounts with equal approval the harsh judgment that Democritus later passed on Socrates: 'the man who readily contradicts and uses many words is unfit to learn anything truly right'.⁴ When Tyndall summarizes the natural philosophy of Democritus, it is clear that he endorses the materialistic tenor of it. The principles enunciated by Democritus reveal his uncompromising antagonism 'to those who deduced the phenomena of nature from the caprices of the gods'.⁵ Among the other early thinkers praised by Tyndall are Epicurus and Lucretius. Epicurus had the aim of freeing the mind of man from superstition and the fear of death, while Lucretius is admirable for his courageous denial that the existence of structure in nature must be attributed to an intelligent supernatural designer. According to Tyndall, the Lucretian philosophy of nature is summed up best by Lucretius himself when he says that 'nature, free at once, and rid of her haughty lords, is seen to do all things spontaneously of herself, without the meddling of the gods'.⁶

It is when Tyndall moves on to talk about the medieval period that he comes

(London, 1920), p. 344. ³ J. Tyndall, *Address delivered before the British Association at Belfast* (London, 1874), p. 3. ⁴ *Ibid.*, p. 4. ⁵ *Ibid.* ⁶ *Ibid.*, p. 9.

across most forcibly as a nineteenth-century version of Richard Dawkins. He sees the spirit of the middle ages, dominated by the church, as a menial spirit:

It was a time when thought had become abject, and when the acceptance of mere authority led, as it always does in science, to intellectual death. Natural events, instead of being traced to physical [causes], were traced to moral causes; while an exercise of the phantasy . . . took the place of scientific speculation. Then came the mysticism of the Middle Ages, magic, alchemy, the neo-platonic philosophy . . . which caused men to look with shame upon their own bodies as hindrances to the absorption of the creature in the blessedness of the Creator. Finally came the scholastic philosophy, a fusion of the least-mature notions of Aristotle with the Christianity of the West. Intellectual immobility was the result.⁷

Not until the sixteenth century does there occur (in Tyndall's view) the beginnings of a timely reaction against scholastic philosophy and its verbal wastes and intellectual haziness. The first of the new intellectual heroes is, of course, Copernicus, from whom Tyndall quotes the following defiant assertion: 'Not unto Aristotle, not unto subtle hypothesis, not unto church, Bible, or blind tradition, must we turn for a knowledge of the universe, but to the direct investigation of Nature by observation and experiment'.⁸ The pivotal year is 1543, when Copernicus published his epoch-making work on the movement of the heavenly bodies, at the same time bringing about the crash of Aristotle's closed geocentric universe. Copernicus is the first great stepping stone into modernity, towards a new, more intellectually honest and courageous understanding of the world. Other stepping stones along the way are Giordano Bruno, Descartes, Locke and Newton, all of whom attribute great causal powers to matter and motion, and who see the universe as the outcome of material and atomic forces, despite sometimes granting God a position as originator. And then at last, Tyndall arrives at the most eminent of the new thinkers, namely, Darwin. Predictably, he is full of admiration for Darwin, for his method, his persistence, his gifts of observation and comparison, and especially for the intellectual courage that led him to his revolutionary insight – namely, that small variations, where they benefit a living thing, will be selected for preservation and eventually lead to the emergence of new species. As far as Tyndall is concerned, the theory of natural selection removes once and for all the need to invoke acts of supernatural intervention, and this represents for him an important culmination in scientific, rational thinking about matter, nature and life.

Given his preparedness to set the principle of natural selection against the traditional creationist account of the origin of species, there can be no doubt that Tyndall was not only a pro-Darwinist but also some kind of Darwinist. This may seem like an odd thing to say, but it is in fact necessary to say it in the context of some work that has been carried on in recent years by Peter Bowler and other Darwin scholars

⁷ *Ibid.*, pp 12–13. ⁸ *Ibid.*, p. 18.

who have suggested that most nineteenth-century supporters of Darwin were not in fact genuine or true Darwinists.⁹ It is Bowler's contention that, despite assumptions to the contrary, Darwin's theory of natural selection did not begin to be widely accepted, even in the scientific community, until the twentieth century, after the rediscovery in 1900 of Mendel's work on genetics. All too often, according to Bowler, the early supporters of Darwin turn out to have been little more than pseudo-Darwinists, people who combined Darwinian rhetoric with attitudes that were really continuations of a pre-Darwinian understanding of evolution. These pseudo-Darwinists still thought in terms of a pre-Darwinian analogy between individual growth and the evolution of species. For them, evolution is developmental and progressive; it progresses not only from lower to higher forms of life, from simple to more complex forms of life, but also progresses towards a certain end or goal. Even as they were reading *Origin of species*, these early interpreters still believed that the history of life passes through a fixed sequence of stages towards a certain ultimate end. It is as if these early interpreters of Darwin are not getting the full Darwinian message, such is their commitment to an older conception or picture of evolution. Despite their pro-Darwinist rhetoric, these progressive evolutionists fail to appreciate the logic of Darwin's theory of natural selection – they fail to appreciate how haphazard, how open-ended, how undirected, how unpredictable natural selection actually is. Only in the twentieth century, after the synthesis of Darwinism with Mendelian genetics, did it become more and more apparent that the notion of preordained development and progress is more ideological than scientific. Contrary to the received assumptions of the early interpreters, natural selection does not follow some preordained pattern of development, and is certainly not goal-directed. There is no preordained pattern working itself out implicitly by means of natural selection. Natural selection doesn't do preordained plans. Indeed, natural selection, strictly understood, doesn't do progress at all, let alone progress in accordance with a preordained plan. As Richard Dawkins puts it, 'Evolution has no long-term goal. There is no long-distance target, no final perfection to serve as a criterion for selection, although human vanity cherishes the absurd notion that our species is the final goal of evolution'.¹⁰

The question we have to ask about Tyndall is this: is he a true Darwinist, according to Bowler's strict criteria, and not just a pro-Darwinist? Is he part of what Bowler calls the non-Darwinian revolution of the nineteenth-century? Or does he look ahead to the true, full-fledged, full-dress Darwinian revolution of the next century, when scientists and others begin to take on board all the implications of a theory of natural selection, and begin to question the whole notion of predetermined biological progress? It seems to me that Tyndall has a foot in both centuries, as far as the evolving interpretation of Darwin is concerned. One of the things that deterred the early interpreters from a whole-hearted endorsement of Darwin was

⁹ See P.J. Bowler, *The Non-Darwinian revolution: reinterpreting a historical myth* (Baltimore & London, 1988). ¹⁰ R. Dawkins, *The blind watchmaker* (London, 1988), p. 50.

their unhappiness with materialism, with the materialistic, non-theistic implications of Darwin's theory. But this is not a source of difficulty for Tyndall. From the very beginning of the address, it is clear that he is some sort of materialist. Secondly, Tyndall is not compromised by a desire to defend a scripture-friendly version of evolution. His enriched conception of matter and nature is intended as a kind of substitute for any form of theism or creationism. It should be said here that Tyndall is unlike Dawkins in one important respect – that is to say, he is sympathetic towards the religious sentiment or impulse. He makes the case for the 'naturalness' of the religious impulse, maintaining that religion is rooted in the emotional life, and therefore cannot be denied a role in human culture. At one point in his essay, he speaks of the 'mystery' that lies beyond the reach of science and to which the human mind returns 'with the yearning of a pilgrim for his distant home'.¹¹ He is not sympathetic towards the orthodox religions and their theologies, especially where these interfere with the practice of science. Science must be free to go its own way without hindrance from the dominant religions and their unscientific views of the world. We can see, then, that Tyndall is free of the kind of ideological pressures that caused some early supporters of Darwin to ignore the harsher implications of his theory of evolution by natural selection.

Was Tyndall a full-fledged Darwinist for all that? Did he succumb, after all, to some preconceived Victorian ideas? I believe he did. He was unable to resist the progressionist streak that was present in Victorian social ideology. The Victorians believed that they were at the cutting edge of new improving developments in the social and political world. They were therefore receptive to the idea of progress in nature as well as in society and were disposed to interpret Darwin in uncomplicatedly progressionist terms. One disconcertingly progressionist idea that crops up in Tyndall's address is the idea that everything that now exists somehow existed in a potential form before it evolved into its actual present state. He insists that there is a real continuity between inorganic and organic matter, as if the makings of life were already present in matter and were at the same time determined to emerge as they did: 'I discern in that Matter . . . that we have hitherto covered with opprobrium, the promise and potency of all terrestrial Life'.¹² Tyndall's Darwinism, then, is somewhat compromised by his commitment to a metaphysical, almost animistic, view of matter. At the same time, it would be wrong to call him a pseudo-Darwinist. He is a pro-Darwinist who is perhaps not as much of a Darwinist as he assumed himself to be; but he has resisted more of the ideological pressures of the Victorian period than most of his fellow scientists, and is entitled to be called a Darwinist, at least in the nineteenth-century sense of the term. If Darwin himself is some kind of Darwinist, then so is Tyndall.

¹¹ Tyndall, *Address*, p. 64. ¹² *Ibid.*, p. 55.

THE OUTRIGHT OBJECTORS

There was, of course, a highly critical response to Tyndall's Belfast address, mainly from those who felt that their time-honoured religious beliefs were under attack. Negative responses came from all the religious denominations in Ireland, from representatives of Roman Catholicism, from members of the Church of Ireland, from Presbyterians. A couple of months after Tyndall delivered his address, the Irish Catholic bishops issued a pastoral letter in which they condemned, in highly emotive terms, the emergence of a materialistic approach to life among scientists and other intellectuals. They accuse the 'professors of materialism' of obtruding blasphemy 'upon this Catholic nation'.¹³ They use Tyndall's classical references against him, arguing that his supposedly scientific materialism is nothing more than a reiteration of the doctrines of a petty school of pagan philosophy that was long ago rejected not only by the early Christians but also by 'the very flower of human intelligence'. What most concerns the bishops is Tyndall's positioning of science within a materialistic framework. They accept that science is a worthy enterprise but insist that it is limited in its scope, that it is confined to matters of empirical cause and effect and should not range into areas where it has no competence, such as those areas of metaphysical concern that are the provenance of faith and theology. It is not possible for a scientific discovery to overturn revealed doctrine or dogma, for

it will be found that the bloated discovery which creates [an apparent contradiction] is but an ephemeral theory, and not the truth: or, if its truth be beyond gainsay ... then the doctrine with which it is in conflict, will be found to be but a theological opinion, and not a dogma.

They cite the authority of the Vatican document *De Fide Catholica*, in which it is stated that there can be no real conflict between faith and reason, 'since the God who reveals mysteries and infuses faith is He who gives to the soul of man the light of reason; and God cannot deny Himself, nor can truth ever contradict truth'. The bishops also attack the new scientific materialism on the grounds that it offers a reductive, deterministic, mechanical view of the human personality, that it eliminates the soul, free will, and conscience from the scheme of things, and that it reduces the human being to the status of an instinctive automaton: 'In such a system, all moral dignity absolutely disappears from humanity, for neither truth remains, nor duty, nor charity, nor self-sacrifice'.¹⁴ Interestingly, the pastoral letter makes only a passing dismissive reference to the theory of natural selection; it does not dwell on Darwinism specifically, despite the fact that Tyndall spends a good part of his address defending it.

For a more extensive critique of Darwinism, I am going to look at the work of

¹³ Cardinal P. Cullen, et al., 'Pastoral address of the archbishops and bishops of Ireland', *IER*, 11 (Nov. 1874), 49–62 at 49. ¹⁴ *Ibid.*, pp 52, 62, 61, 55.

Fr Jeremiah Murphy, who published a series of anti-Darwinist articles in the *Irish Ecclesiastical Record*. Born in 1840 in Inniscarra, Co Cork, Murphy was ordained to the priesthood in 1871 and became parish priest in Macroom in 1897. He was a regular contributor to newspapers and other publications before he entered the Darwin debate in the 1880s with a series of articles attacking Darwinism, especially the Darwinism of *The descent of man*, the claims of which concerned him rather more than those of *Origin of species*. Murphy is interesting because he is an outright objector – in other words, he will have no truck with attempts to strike any kind of compromise between religion and the theory of evolution, especially as far as The origin of the human species is concerned. Murphy attacks Darwinism as if it were no more than a rival belief-system that is seeking to draw supporters away from a traditional religious belief-system based on revelation and scripture. He begins by trying to discredit Darwin's claim to belong to the community of scientists, arguing that fixity of species is the idea that is most generally accepted by the scientific community, that there is no evidence to support the notion of transmutation of species, that the evidence provided by experiments in artificial selection indicates that, while varieties can be cultivated within species, there is not a single case of artificial selection of a new species, that, in the natural world, the geological and fossil record supports fixity rather than transmutation of species, and that, as far as the notion of transmutation goes, the record is most defective precisely where it is most sadly needed.

As well as attempting to undermine Darwin's credentials as a scientist, Murphy also highlights the more fundamentally counter-intuitive nature of Darwin's theory. Murphy considers it contrary to good sense and good observation that Darwin should minimize the difference between man and ape. No superficial resemblance at the level of skeletal structure or anatomy can be taken to imply a resemblance at the level of mind and behaviour. There is not only a difference of kind rather than degree between man and ape, but in fact an enormous difference in kind between the appetites and instincts of the simian brute and the intellectual, creative, spiritual and moral faculties of the human being. It is contrary to experience itself to claim, as Darwin does, that the human faculties are merely a development out of pre-human brute capacities. Murphy goes on to list some of the faculties he has in mind, faculties for which there is no simian equivalent, no equivalent in any earlier form of life, even to the smallest degree:

Man has surveyed the extent of the heavens and the ocean's abyss . . . The fury of the storm, the darkness of night, time and distance are yielding to man's intellectual powers. And yet Darwin dares the audacious assertion that man's mental powers differ from those of the brute, not in kind but in degree! Surely every page of man's history stamps upon Darwin's degrading system a verdict of contemptuous condemnation.¹⁵

¹⁵ J. Murphy, 'Darwinism', *IER*, 3rd ser., 5 (Sept. 1884), 594.

Murphy has no doubt that Darwinism is essentially anathema to anyone who really believes in scripture. He disagrees fundamentally with those who claim that scripture can be reinterpreted in the light of new scientific thinking. Revelation is Revelation, as far as Murphy is concerned, and does not lend itself to convenient reinterpretations. New interpretations will merely undermine the traditional moral authority of a religion that has based itself in scripture, traditionally understood. Murphy published an article specifically criticizing one innovative attempt to bring scripture into line with Darwinism. The English zoologist and convert to Catholicism, St George Jackson Mivart, had suggested that the body of the first man – the evolutionary Adam – had evolved along the lines described by Darwin, that this first biological man was indeed produced by evolution from a lower animal, and that when the process of evolution had reached the desired level of perfection, the Creator had infused a distinctively personal soul into that first evolved man, and subsequently into all his descendents. In this way, wrote Mivart,

we find a perfect harmony in the double nature of man, his rationality making use of and subsuming his animality; his soul arising from direct and immediate creation, and his body being formed at first ... by derivative or secondary creation, through natural laws.¹⁶

It was not necessary, according to Mivart, to believe that God had directly and immediately created Adam and Eve. It was possible, in Mivart's view, to take a figurative message from Genesis and to use science to fill in the details in a way that was consistent with the figurative message about God's creative intervention in the process.

This sort of compromising approach is repugnant to Murphy, for whom it is simply wrong to re-read the Genesis account as merely symbolic or figurative. To read it in such a way is to deprive it of its truth, moral authority and status as a divinely inspired communication:

So direct, so precise ... is the scriptural account of man's creation, that, if the evolution theory were true, the sacred writers, if they intended to deceive us, could not have chosen language better calculated to effect that end.¹⁷

He refers to several passages that imply God's immediate formation of the bodies of Adam and Eve, passages that leave no room for an alternative meaning. In other words, if Darwin's theory is true, then the language of Genesis, which is clear and not at all obscure or figurative, would have to be seen as false, as misleading, as deceitful. Here we see Murphy having the courage of his convictions. He is prepared to stake his religious belief on a literal understanding of Genesis; prepared to set this literal understanding against everything that Darwinism can throw at it; prepared even to

¹⁶ St G.J. Mivart, *On the genesis of species* (New York, 1871), p. 305. ¹⁷ J. Murphy, 'Evolution and faith', *IER*, 3rd ser., 5 (Dec. 1884), 761.

say that if Darwinism should be verified in the future, then Genesis would have to be seen as untrue.

Of course, it was not merely leading members of the Catholic Church who reacted negatively to Darwinism. In all the other Christian churches in Ireland you find strong objectors to the new theory. One of the strongest objectors in the Church of Ireland was also in fact a scientist, and used scientific rather than religious language to express his objections.

Samuel Haughton, a fellow county-man of John Tyndall's, was born in the town of Carlow in 1821. He was ordained into the Church of Ireland, and became professor of geology at Trinity in 1851. Though he had no objection to a theory of evolution as such, he did have a very strong objection to the idea of natural selection and to the idea that one species could transmute, by small variations, into another. He has the distinction of being the earliest Irish critic of Darwinism, having published a very negative review of *Origin of species* in the *Natural History Review* in 1860. His main argument is that the study of animal anatomy reveals such a well-designed arrangement of bone, joint and muscle – such a well-designed arrangement of every feature of every part to the overall function of the animal – that any variation in any part of the organism would lead to a decrease in efficiency, and so the very idea of progress through variation is simply contrary to observed fact.¹⁸

THE ACCOMMODATORS

All the members of this group argue that evolutionary theory is consistent, after all, with religious belief. They are prepared to revise Darwin's conception of evolution to the point where it can allow for divine intervention, even if this intervention is very indirect and rather different from the kind of intervention described in scripture. They are also prepared to interpret scripture in such a way that it does not necessarily rule out an evolutionary account of the origin of species. The most impressive of the Irish accommodators was Joseph John Murphy, a Belfast-born businessman, the owner of a linen mill, who was greatly interested in both science and theology. The topic that most concerned Murphy was the relationship between science and religious belief. His own father had been a Quaker but he himself was drawn towards a more mainstream position and eventually became an active member of the Church of Ireland. Murphy produced a number of substantial works on the theme of the relationship between science and religion, but especially on the implications for faith of the claims of evolutionism, supposing these claims to be true. The most important of his books is his *Habit and intelligence*, of which there are two editions, and which has been described as 'the most considered and expansive appraisal of the new biology' to be published during the nineteenth century.¹⁹

¹⁸ See S. Haughton, 'Biogenesis', *Natural History Review*, 7 (1860), pp 23–32; repr. in D.L. Hull (ed.), *Darwin and his critics* (Chicago, 1973), pp 217–28. ¹⁹ D. Livingstone, 'Darwin in Belfast: the evolution debate' in J.W. Foster (ed.), *Nature in Ireland* (Dublin, 1997), p. 392.

Murphy goes a long way with Darwin – he accepts that species have not been separately created but have all been ‘derived by descent, with modification and variation, from one, or at most a small number, of germs’.²⁰ At the same time, while being prepared to accept so much of the theory of evolution, Murphy declares that he is not a believer in Darwin’s version. He refuses to accept that the purely mindless, mechanical principle of natural selection is enough to account for the whole complex process of modification whereby highly organized forms emerge from unorganized ‘germs’. He maintains that there is an organizing intelligence at work in and through the process of modification, that this ‘organizing intelligence co-exists and co-operates with the unintelligent forces through all life’, and that this principle of intelligence ‘is most dominant in the highest forms of life’.²¹ He has no doubt that life, like matter or energy, has had its origins in the direct action of a creative intelligence – that, while all species are descended from a few original germs, these few germs ‘were originally vitalized by Creative Power’.²² He is equally convinced that the spiritual nature enjoyed by human beings was also a direct result of the same creative power. His argument exploits the scientific ‘fact’ that there is no significant *physical* difference between the human brain and the brain of the ape. The human brain shows no anatomical superiority over that of the highest apes, yet there is no doubting the great mental, intellectual and spiritual superiority of the human mind over that of the apes. This strongly suggests that superior human mentality must have a source other than the purely physical process of natural selection, which produces only the ape-like physical human brain. Considered as possessors of brains, there is no significant difference between ape and human; considered as possessors of minds, there is all the difference in the world. Brains may be the creatures of natural selection, but minds, despite their relationship to brains, must come into existence in accordance with the action of a different principle. He writes: ‘I do not see any improbability in the belief that the same Creative Power which at the beginning created matter, and afterwards gave it life, finally . . . completed the work by breathing into man a breath of higher and spiritual life’.²³

Against Darwin, then, he argues that there is a guiding intelligence at work in and through the process of modification. This organizing intelligence is unconsciously immanent in all organic life, including plant life, emerging only into full consciousness in the highest form of life, such as we find it in the human species.²⁴ One of the most interesting points that Murphy makes is that there is no essential difference between conscious and unconscious intelligence, stating at one point that ‘the instinctive intelligence which constructs the cells of the bee; and mental intelligence of man; are all fundamentally the same’.²⁵ There is an important sense in which intelligence was unconscious before it was conscious, and even that it was organic before it was instinctive or sentient. Wherever there is successful adaptation of means to ends, there is some degree or kind of intelligence at work:

²⁰ J.J. Murphy, *Habit and intelligence*, 1 (London, 1869), p. 205. ²¹ *Ibid.*, p. 337. ²² *Ibid.*, p. 328. ²³ *Ibid.*, p. 331. ²⁴ *Ibid.*, p. 337. ²⁵ Murphy, *Habit and intelligence*, 2 (London, 1869), p. 162.

There is no more clear and definite instance of the adaptation of means to purpose in the whole organic creation than the structure of the iris, enabling it to contract, involuntarily and spontaneously, in order to protect the retina against too much light. The formation of the iris is a case of unconscious intelligence, and its action in closing against the light is a case of unconscious motor intelligence.²⁶

What is interesting about Murphy's concept of an organizing intelligence is that he does not always link it to an orthodox religious conception of divine power, but talks about it as a force that might work in and through nature and life in any case. Even when he uses the term 'Creative Power', it is not necessarily to be understood as identical with the personal God of scripture. It is open to the reader to give it a pantheistic interpretation, though Murphy dissociates himself from such an approach. What is instructive about Murphy's attempt at accommodation is that it shows the kind of price that has to be paid for sustaining religious belief in the face of Darwinism. It means not only an adjustment in one's understanding of the supernatural but also in one's understanding of evolution. Something must give on either side. Some critics of Murphy might say that he is compromised twice over, that he falls between two stools, but he himself would have said that he has sought to preserve the best of two worlds, the religious and the scientific, without having to forsake one for the other.

THE COMPARTMENTALISTS

This group contains those who do not see a need to either modify religious belief in the name of science or modify Darwinism in the name of religious belief. They argue instead for the relative autonomy of the two provinces of human thought – the religious and the scientific – and do not therefore see the need for any kind of compromise or accommodation on either side, given the fact that each province works with its own logic and within its own conceptual framework. An early effort to offer a compartmentalist approach is to be found in *Science and revelation: their distinct provinces*, a pamphlet published in 1874 by the Donegal-born Presbyterian minister, Josiah Leslie Porter, in which he argues that the scientist, dealing with what lies before him, cannot usefully address questions of ultimate origin, while the theologian, for his part, 'does not attempt to intrude his dogmas into the field of science'.²⁷ Revelation, he maintains, does not give a scientific cosmology or touch on geology or 'enter into the mysteries of molecular physics, or the development of the life-germ'; instead 'it reveals to the eye of faith that other world after which our higher nature longs'.²⁸

²⁶ *Ibid.*, p. 2. ²⁷ J.L. Porter, *Science and revelation: their distinct provinces* (Belfast, 1874), p. 35. ²⁸ *Ibid.*, pp 35–6, 38.

One of the most intriguing of the Irish compartmentalists was the feminist campaigner and social reformer, Frances Power Cobbe, who criticized Darwinism from an ethical rather than from a defensively religious point of view. Cobbe was born at Newbridge House, Donabate, Co. Dublin, in 1822, but moved to London in the 1860s, where she took an active part in Victorian cultural life, becoming acquainted with John Stuart Mill, John Tyndall, Matthew Arnold and Charles Darwin. Her thought is dominated by her moral convictions; her objections to Darwinism are motivated by those convictions. In her autobiography, she tells a revealing story about a conversation and subsequent correspondence she had with Darwin. The story is that while Darwin was working on *The descent of man* he happened to mention to her that he was trying to formulate a view on the moral sense in the human species. She immediately advised him to read Immanuel Kant's *Groundwork of morals*. Although it seems that Darwin did not express any great interest in Kant's book, she nevertheless sent him a copy shortly after their conversation. On returning the book some time later, Darwin pointed out the contrast between Kant and himself: 'the one man a great philosopher looking exclusively into his own mind, the other a degraded wretch looking from the outside through apes and savages at the moral sense of mankind'.²⁹

In her essay, 'Darwinism in morals', Cobbe draws on Darwin's self-humbling distinction in order to identify two great and mutually opposed schools of thinkers, namely, those who study human beings from the 'inside' and those who study them from the 'outside'. She opts to belong to the former school, insisting that a philosophy that dwells exclusively on the outer facts of anthropology, regardless of human consciousness, 'must be worse than imperfect and incomplete. It resembles a treatise on the Solar System which should omit to notice the Sun'.³⁰ For her, human consciousness is not only a fact in the world but also the greatest and most defining fact about human nature, one that it is scientifically and morally irresponsible to ignore or to approach reductively. Her quarrel with Darwin is that his approach is too reductive. Interestingly, she agrees with Darwin's theory of evolution, and even sings its praises. She declares that she is not only prepared to accept Darwin's 'fairy-tale of science' but says that she takes a degree of intellectual pleasure in its novelty and originality. She wonders why any 'free mind' should have purely religious objections to Darwin's views, and suggests that when the orthodox creationist account is compared with that of the slow evolution of order, life and intelligence from 'the immeasurable past of the primal nebula's "fiery cloud"', we have no language to express how infinitely more religious is the story of modern science than that of ancient tradition'.³¹ Nevertheless, she finds that Darwin's doctrines, considered from the ethical point of view, are 'the most dangerous which have ever been set forth since the days of Mandeville'.³² Darwin's reduction of the moral sense to the level of

²⁹ F.P. Cobbe, *Life of Frances Power Cobbe by herself*, 2nd ed. (London, 1894), pp 125–6.

³⁰ F.P. Cobbe, *Darwinism in morals and other essays* (London, 1872), p. 126. ³¹ *Ibid.*, pp 2–3.

³² *Ibid.*, p. 11.

social or sympathetic animal instincts fails to do justice to the fundamental, irreducible and principled requirements of morality. The physiology of instincts cannot begin to 'explain' the awe-inspiring imperatives of conscience or the tremendous sentiments of repentance and remorse. The idea of right – that she calls 'the sacred obligation of Rightfulness' – belongs to a category wholly distinct from that of either social utility or animal instinct. Repentance and remorse have no ancestral precursors in the behaviour of even the higher non-human animals. The transition from an instinctive social sense to a sense of moral obligation does not have a natural or evolutionary history. In *The descent of man*, Darwin had derived conscience from the dissatisfaction that individual human beings experience when they act against their social instincts:

Hence after some temporary desire or passion has mastered man's social instincts, he will reflect and compare the now weakened impression of such past impulses, with the ever-present social instinct, and he will then feel that sense of dissatisfaction which all unsatisfied instincts leave behind them. Consequently, he resolves to act differently for the future – and this is conscience.³³

It is just this sort of grounding of conscience in animal instinct that Cobbe rejects as unacceptable and distortingly reductive.

It looks as if Cobbe has argued herself into a paradoxical situation here. On the one hand, she accepts Darwin's theory of evolution, yet criticizes it on moral grounds. If Darwin's theory is true, how can she have a moral objection to it, even if it should have unpalatable implications? The apparent paradox is reduced if we interpret her as a compartmentalist with regard to the relationship between Darwinism and ethics. It is perfectly clear that she has no difficulty with Darwin's theory of evolution, considered as the best available scientific account of the origin of species, including the human species. What she objects to is the intrusion of the scientific method into an area where it has no business going – that is, into the kinds of human relationships and interactions that are grounded in ethical values and that are best understood from an ethical point of view rather than from the point of view of biology or science in general. How we think when we are in human, ethical mode is going to be different from the way we think when we are in objective, scientific mode. To try to yoke the two modes together, or to try to derive the ethical from the biological, is a mistake. The two areas are not continuous with each other. There is separate work to be done in each area, using different language and concepts, and applying different criteria.

Of all the positions examined so far, it is perhaps that of Cobbe that would benefit most from being brought into contact with some contemporary philosophical perspectives. One contemporary perspective that seems potentially open to her

33 C. Darwin, *The descent of man, and selection in relation to sex* (Princeton, NJ, 1981), p. 392.

point of view, and that she in turn would, I think, have endorsed, is that of emergentism. In philosophy, emergentism is an alternative to reductionism. The reductionist sees even the most complex organism as no more than the sum of its evolutionary parts, while the emergentist will say that each new species of organism brings something irreducibly new into the world – new structures, new behaviour, new experiences, new styles of life, new ways of being in the world. Not everything can be traced back without remainder to an earlier form of life, or an earlier function; to be too mechanically reductive is contrary to the spirit of evolution, since the whole achievement of evolution is the trying out of new ways of doing things, new ways of surviving, new ways of living. In the case of human beings, this new way of surviving and being will include modes of consciousness, of experience, of response that are more than just complex variations on primitive precedents. Reference to such precedents is necessary to explain how things originated and subsequently developed to varying degrees, but it is not sufficient for a full understanding of what is really new about each late-comer to the natural world, including the late-comer that is the human species itself. At some point, differences of degree become differences of kind, and it is these differences that are recognized, in the case of human beings, in the development of an ethical discourse that is not reducible to the discourse of biology.

Another contemporary, and even more radical, perspective that is potentially congenial to Cobbe's position is that of internal realism, a philosophical perspective defended by the American philosopher, Hilary Putnam.³⁴ According to Putnam, it is not possible for human beings to have a purely or absolutely objective relationship to reality, or to arrive at one true description of reality. What counts as real, or as an object, or even as 'the world', is relative to, or internal to, one or other of the different conceptual frameworks that human beings have historically devised in the course of their attempts to provide answers to the different kinds of questions they find themselves asking. Since human beings are not all-seeing, all-knowing gods capable of an absolute standpoint outside reality, they should accept that they are capable only of constructing changing versions of reality from within their historical human situations, with no one version – the religious version, for example, or the scientific version – occupying a privileged position in relation to the others. Arguably, what Cobbe would have found congenial about internal realism is that it would have enabled her to argue that what really and truly matters within a scientific framework is different from what really and truly matters within an ethical or religious framework. In each case, the language is different, the mode of thinking is different, the conception of reality is different, and, ultimately, what counts as 'truth' is different.

³⁴ See H. Putnam, *Reason, truth and history* (Cambridge, MA, 1981); H. Putnam, *Representation and reality* (Cambridge, MA, 1996), ch. 7.