

HIGHER PANTHEISM

by David Knight

Abstract. Romantic sensibility and political necessity led Humphry Davy, Britain's most prominent scientist in the first quarter of the nineteenth century, to pantheism: nature worship, involving for him a fervent belief in the immortality of the soul. Rapt with a vision of sublimity, from mountain tops or balloons, men of science in succeeding generations also found in pantheism a reason for their vocation and a way of making sense of their world. It should be seen as an alternative both to active participation in church life (like Faraday's) and to a gritty agnosticism (like Huxley's), indicating again how subtle and complex relationships were between science and religion in the nineteenth century.

Keywords: agnostic; Britain; Humphry Davy; Michael Faraday; Victor Frankenstein; James Glaisher; Thomas Henry Huxley; mountains; Nature; pantheism; Romanticism; science; sublime; Alfred Tennyson; John Tyndall; Victorians; worship.

Perhaps one reason why the Scientific Revolution—if there was one (Shapin 1996, 1)—happened in the West is that Nature was seen as the Creation (Barbour 1990, 17; Russell 1994, 13), as a comprehensible *it* rather than an unknowable *she*. Robert Boyle (1627–1691), a good Protestant who wanted no intermediary between himself and his God, duly denounced what he saw as Platonizing attempts to revive the notion of Nature as a demiurge, doing God's bidding as best she could (Boyle [1686] 1996). Boyle admired the great clock at Strasbourg and popularized the notion of the world as a great clock, with God as the clockmaker. For various reasons, this idea became less attractive by the eighteenth century—mechanical imagery went with absolute government (Mayr 1986, 82, 102–36)—but

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it was revived with William Harrison's triumph in making marine chronometers (Sobel 1996), which were eventually so compact that they looked like big pocket watches. For William Paley in his *Natural Theology* of 1802, human beings and animals were little watches living in an enormous watch, the best of all possible watches, in which all the parts worked smoothly together to produce the greatest happiness of the greatest number (Brooke 1991, 192).

Paley was an older contemporary of the Romantic generation that included William Wordsworth, Samuel Taylor Coleridge, and Walter Scott, and with the Romantic movement, worship of Nature returned—perhaps as the “higher pantheism” of Alfred Tennyson's later poem:

The sun, the moon, the stars, the seas, the hills and the plains—
 Are not these, O soul, the Vision of Him who reigns?
 Is not the Vision He? tho' He be not that which He seems?
 Dreams are true while they last, and do we not live in dreams?
 Earth, these solid stars, this weight of body and limb,
 Are they not sign and symbol of thy division from Him?
 Dark is the world to thee: thyself art the reason why;
 For is He not all but that which has power to feel “I am I”?
 Glory about thee, without thee; and thou fulfillst thy doom
 Making Him broken gleams, and a stifled splendour and gloom.
 Speak to Him thou for He hears, and Spirit with Spirit can meet—
 Closer is He than breathing, and nearer than hands and feet.
 God is law, say the wise: O Soul, and let us rejoice,
 For if He thunder by law the thunder is yet His voice.
 Law is God, say some: no God at all, says the fool;
 For all we have power to see is a straight staff bent in a pool;
 And the ear of man cannot hear, and the eye of man cannot see;
 But if we could see and hear, this Vision—were it not He?

(Tennyson 1953, 222–23)

Tennyson's poetry was much admired by Thomas Henry Huxley (Knight 1996a, 138), who concluded his Royal Institution lecture on *On the Origin of Species* in February 1860 with a quotation from the *Idylls of the King* and believed that *In Memoriam* was a good example of scientific method. These Victorian apostles of doubt and of agnosticism were thus not very far apart, and Huxley made sure that the Royal Society was officially represented at Tennyson's funeral. It would be a great mistake to think that the scientists of the nineteenth century were unaffected by, or unsympathetic to, Romanticism (Cunningham and Jardine 1990); rather they were heirs of both the Enlightenment and the Romantic movement, and this is visible in their spirituality.

Thus, long before Huxley or Tennyson was born, the young Humphry Davy, experimenting in the 1790s in Bristol with laughing gas and other

drugs, had under Coleridge's tutelage a "distinct sympathy with nature," when "Every thing seemed alive, and myself part of the series of visible impressions" so that he would have felt pain in tearing a leaf from a tree (Knight [1992] 1998, 36, 9). He was asked by Wordsworth to read the proofs of the second edition of the *Lyrical Ballads*, putting in appropriate punctuation; and he wrote poems himself, including a rhapsody of uncertain date:

Oh, most magnificent and noble nature!
 Have I not worshipped thee with such a love
 As never mortal man before displayed?
 Adored thee in thy majesty of visible creation,
 And searched into thy hidden and mysterious ways
 As Poet, as Philosopher, as Sage?

Invited to London as Lecturer at the newly founded Royal Institution, Davy began his course in January 1802 with an inaugural lecture that made him famous, a feature of the London scene. Men and women of fashion flocked to hear him (Paris 1831, 90–94), and on lecture nights a one-way traffic system was inaugurated to reduce congestion in Albemarle Street, where he held forth.

Calling attention to scientific progress and its unlimited future possibilities and practical applications—he can be seen as the high priest of applied science (Berman 1978, 70)—he went in for sexy rhetoric: "Not content with what is found upon the surface of the earth, [the chemist] has penetrated into her bosom, and has even searched the bottom of the ocean for the purpose of allaying the restlessness of his desires, or of extending and increasing his power" (Davy 1839, 2:318). Searching into Nature's hidden and mysterious ways might involve worship, but it was also macho. Indeed the rhetoric of science has often involved images of warfare and aggression, of possession as though all knowledge were carnal. There is also some of the Baconian rhetoric of torture: the man of science is a "master, active with his own instruments" (Davy 1839, 2:319). There is nothing like a bit of such aggression or lust to bring a lecture to life, and this was safely pre-Victorian. Davy also had a more feminine imagery, which we are apt to think more appropriate to religion, of discovery regularly visiting the man of science. He did believe that humility of a kind was essential for science: an unwillingness to jump to conclusions and a readiness to drop preconceptions, in the Baconian tradition where science was refined common sense rather than the arrogant mathematical pursuit of recondite necessary truths.

Davy and his generation were living through a prolonged world war (1793–1815, with a brief truce in 1802), which had begun when the French began to export their Revolution of 1789, backed first with terror and then with the armies of Napoleon. There could be little doubt that in some sense scientific ideas lay behind the overthrow of state and church in

France: Diderot, Voltaire, and Rousseau were part of the intellectual origins of the revolution. Because the revolution took such a different turn from the American model, natural philosophers in Britain had to establish that science rightly understood did not entail materialism and atheism. The French called for liberty, equality, and fraternity. Liberty was no problem, for it was the birthright of every Englishman; equality was for Davy and his audience absurd, because modern science and capitalism were intertwined; but the scientific community could perhaps be a fraternity—though for women, science would be a spectator sport. It was essential for Davy and his contemporaries to show that in a free country, where religion and law were respected, science could flourish just as well as in Paris, then the world center of excellence. He was fighting the same war as Nelson and Wellington were, but on the intellectual front, in proving that chemistry depended on electrical force rather than matter.

At the end of his life, prematurely old at fifty after a stroke, visiting Italy and the Alps in search of health, Davy wrote a little book of dialogues essentially about science and religion, *Consolations in Travel* (see Knight 1996b). The book begins with a reverie in the Colosseum, in the manner of Edward Gibbon, and transport to the sphere of Saturn, the seventh heaven, in the manner of Saint Paul. There the author obtains a progressive vision of human history, and an assurance of immortality and reincarnation in progressively more ethereal bodies as we wear out our present machinery. Because he was writing dialogue, Davy could propose various doctrines and ideas, but the general message is clear. Like his friends Coleridge and Wordsworth in their great odes (on dejection and immortality), he was coming to terms with age, the associated loss of creative imagination, and death.

Davy's family was Anglican, and after a period of youthful materialism he returned to religion, but in what seems an impersonal and pantheistic form (Barbour 1990, 48; Reardon 1985, 5). He writes in *Consolations*:

The doctrine of the *materialists* was always, even in my youth, a cold, heavy, dull and insupportable doctrine to me, and necessarily tending to atheism. When I had heard with disgust, in the dissecting rooms, the plan of the physiologist, of the gradual accretion of matter and its becoming endowed with irritability, ripening into sensibility and acquiring such organs as were necessary, by its own inherent forces, and at last arising into intellectual existence, a walk in the green fields or woods by the banks of rivers brought back my feelings from nature to God; I saw in all the powers of matter the instruments of the deity; the sunbeams, the breath of the zephyr awakened animation in forms prepared by divine intelligence to receive it; the insensate seed, the slumbering egg, which were to be vivified, appeared like the new born animal, works of a divine mind; I saw *love* as the creative principle in the material world, and this love only as a divine attribute. Then, my own mind, I felt connected with new sensations and indefinite hopes, a thirst for immortality. . . . (Davy 1830, 219)

“Atheism” still implied, as it had in the seventeenth century, a way of life rather than a speculative system—indifference to the Ten Commandments

and the prospect of a Last Judgment. But there was indeed materialistic and evolutionary medical teaching in London by 1830 (Desmond 1989, 1–25), long before Charles Darwin's *On the Origin of Species* (1859) or even Tennyson's famous stanza from *In Memoriam* (1851) on humanity, Nature's last work (Tennyson 1982, 80):

Who trusted God was love indeed
And love Creation's final law—
Tho' Nature red in tooth and claw
With ravine, shriek'd against his creed.

What his religion brought Davy was thus belief in design and benevolence, coupled with a feeling for divine inscrutability that made him impatient with Paleyan reasoning, and particularly a belief in immortality, especially important to a Romantic genius. On isolating potassium in 1807, he had danced about the laboratory in ecstatic delight; joy in nature and in science as well as awe were appropriate to Nature's votary. There were exciting dangers too in the manly activities of the laboratory: Davy was nearly killed by inhaling carbon monoxide and was injured in explosions. And Nature's worshipper could become a benefactor to humanity, as Davy proved with his work in agriculture and later on the safety lamp for miners (1815), which made him one of the most famous men of his day. He had begun to fulfill Bacon's promise that through science the consequences of the Fall would be mitigated if not removed.

For the Darwin family, Unitarianism was a feather bed to catch a falling Christian (Desmond and Moore 1991, 5). For Davy—and, as the nineteenth century wore on, for others—pantheism filled that role. It had the advantage of not requiring attendance at public worship on Sundays or having to listen to sermons; nature could be adored in the green fields, with rod and line beside a trout or salmon river, in the sublimity of Alpine summits and passes, at great scientific meetings, or in the laboratory. The doctrine was loose and accommodating; it pointed toward the Church Scientific and the New Reformation of Thomas Henry Huxley (Desmond 1994–97), where men of science would be the new clerisy, presiding over an educated and responsible laity and dealing with plagues (God's punishments for ignorance and laziness) through waterworks rather than prayer. In the shorter term, it enabled devotees to distance themselves from organized religion, with its dogmas, denominationalism, and close connection with educational systems based on catechisms and classics. In Davy's and the young Huxley's England, the ancient universities of Oxford and Cambridge were Anglican bodies with religious tests, so self-made scientists working in London saw them as muzzled by a party line and were consequently attracted to a loose and personal religion without a personal God.

Davy's greatest pupil was Michael Faraday, who came similarly from a humble background but whose character, outlook, and ambitions were very different from Davy's. He was a Sandemanian (Cantor 1991), one of

a small sect, now extinct, of biblical literalists, without clergy, who did their best to keep themselves unspotted by the world. Faraday thus avoided high office in scientific institutions and did not dine out unless he felt it was his duty to do so. As an elder in the church, he preached on Sundays and was impeccably orthodox in his religious beliefs. He was thus unlike Davy, who both enjoyed hobnobbing with the mighty and was happy to accept responsibility within the scientific community, and who grumbled at the end of his life that he had not had sufficient honor and recognition. Faraday would have had little sympathy with the natural religion Davy admired in lines written at Tivoli:

Thy faith, O Roman! was a natural faith,
 Well suited to an age in which the light
 Ineffable gleam'd thro' obscuring clouds
 Of objects sensible,—not yet revealed
 In noontide brightness on the Syrian mount.
 For thee, the Eternal majesty of heaven
 In all things lived and moved,—and to its power
 And attributes poetic fancy gave
 The forms of human beauty, strength, and grace. . . .
 I wonder not, that, moved by such a faith,
 Thou raisedst the Sybil's temple in this vale,
 For such a scene was suited well to raise
 The mind to high devotion,—to create
 Those thoughts indefinite which seem above
 Our sense and reason, and the hallowed dream
 Prophetic.—In the sympathy sublime,
 With natural forms and sounds, the mind forgets
 Its present being,—images arise
 Which seem not earthly,—'midst the awful rocks
 And caverns bursting with the living stream,—
 In force descending from the precipice,—
 Sparkling in sunshine, nurturing with dews
 A thousand odorous plants and fragrant flowers.
 In the sweet music of the vernal woods,
 From winged minstrels, and the louder sounds
 Of mountain storms, and thundering cataracts,
 The voice of inspiration well might come. (Davy 1839, 1:185)

Davy's personal beliefs were painfully worked out in his last wanderings, when he found himself spared long enough to look for a meaning for his life and to move from science toward wisdom. Besides Faraday, he had a fictional pupil: Victor Frankenstein. Mary Shelley's model for Professor Waldman, Frankenstein's teacher, was Davy, whom she had known in London. Like Davy, he declared of chemists that "they penetrate into the recesses of nature, and shew how she works in her hiding places. . . . The labours of men of genius, however erroneously directed, scarcely ever fail in ultimately turning to the solid advantage of mankind" (Shelley 1994, 41–43). A sorcerer's apprentice who fails to mother his ill-begotten off-

spring, the optimistic Frankenstein is transformed from victor to victim; and the book is about the folly of playing God, the need for moral responsibility in science, and the ambiguities of progress.

Tennyson also doubted science and progress as much as he did religion, for example, in his two great poems on Locksley Hall, where “Forward, forward let us range,/ Let the great world spin for ever down the ringing grooves of change” is set against life in some timeless tropical Eden. While in the later poem, “Evolution ever climbing after some ideal good,/ And Reversion ever dragging Evolution in the mud” balance each other out, we end with what should be a message of hope, “Love will conquer at the last” (Tennyson 1953, 95–96, 525, 527). But there is no place here for confident faith, and finding a meaning to life is a painful and uncertain process, involving golden and leaden echoes, never finished until death.

Some men of science found the sublime when they took the wings of the morning and actually ascended into the heavens in a balloon. Thus, the eminent astronomer and meteorologist James Glaisher wrote:

I have experienced the sense of awe and sublimity myself, and have heard it on all sides from aeronauts, who have both written and said the same. For my part, I am an overwrought, hard-working man, used to making observations and eliminating results, in no way given to be poetical, and devoted to the immediate interest of my pursuit, and yet this feeling has overcome me in all its power. I believe it to be the intellectual yearning after the knowledge of the Creator, and an involuntary faith acknowledging the immortality of the soul. (Glaisher 1864, 11–12; Knight 1996c)

Glaisher’s interests were very wide, but by the 1860s science was becoming a specialized activity, with undergraduate degrees available in the various sciences. The position of scientists in Britain was much stronger than it had been in Davy’s day, and in 1870 it received a boost from the Franco-Prussian War, which the more scientific nation won. The effect was comparable to that of Sputnik in 1957. But science might still be seen either as materialistic, because there were worries now about German influences, or as a merely technical activity, normal science, in which important questions were simply not raised. This would not measure up to the standard of a liberal education suitable for a gentleman.

John Tyndall, successor to Davy and Faraday at the Royal Institution, took it upon himself to deal with both of these objections. Through the nineteenth century, Davy’s view that science was a creative process (and with this the hypothetico-deductive idea of method) gained increasing favor among intellectuals (Smith 1994, 11–44, 168–74); and in 1870 Tyndall addressed the British Association for the Advancement of Science on “The Scientific Use of the Imagination.” He ended with an encomium on geologists in particular but scientists in general:

Their business is not with the possible, but with the actual—not with a world which *might* be, but with a world that *is*. This they explore with a courage not unmixed with reverence, and according to methods which, like the quality of a

tree, are tested by their fruits. They have but one desire—to know the truth. They have but one fear—to believe a lie. And if they know the strength of science, and rely upon it with unswerving trust, they also know the limits beyond which science ceases to be strong. They best know that questions offer themselves to thought, which science, as now prosecuted, has not even the tendency to solve. They have as little fellowship with the atheist who says there is no God, as with the theist who professes to know the mind of God. “Two things,” said Immanuel Kant, “fill me with awe: the starry heavens, and the sense of moral responsibility in man.” And in his hours of health and strength and sanity, when the stroke of action has ceased, and the pause of reflection has set in, the scientific investigator finds himself overshadowed by the same awe. Breaking contact with the hampering details of earth, it associates him with a Power which gives fulness and tone to his existence, but which he can neither analyse nor comprehend. (Tyndall 1899, 2:134, 197)

Reverence and *awe* were words used by Davy nearly seventy years earlier: Tyndall’s faith in science was very strong, but so was his pantheism (Barton 1987). Because he was an ally of Huxley, and because in 1874 he declared at another British Association meeting, in Belfast, that “We claim, and we shall wrest from theology, the entire domain of cosmological theory,” he is often counted among agnostics (Lightman 1987) or scientific naturalists, but this is not quite true. Historians might think that, as Victorian Britain could be described by Germans as the land without music, because of its dearth of eminent composers, so it could be called the land without theology. Who then were the theologians in Tyndall’s sights? It seems again as if he meant denominational spokesmen, quarrelling and pontificating at a time when religion and politics were intimately intertwined in Britain, and hoped that pantheism could distance its believers from such unseemlinesses. Outsiders might well marvel at that time how these Christians hated each other.

Tyndall was an intrepid mountaineer, with several first ascents to his credit. His ice axe is preserved in the museum at Zermatt in Switzerland, and a subpeak of the Matterhorn is named after him. In rhetoric owing something to Alexander von Humboldt (Humboldt 1850), he described, for example, the night before the first ascent of the Weisshorn:

An intensely illuminated geranium flower seems to swim in its own colour which apparently surrounds the petals like a layer, and defeats by its lustre any attempt of the eye to seize upon the sharp outline of the leaves. A similar effect was here observed upon the mountains; the glory did not seem to come from them alone, but seemed also effluent from the air around them. This gave them a certain buoyancy which suggested entire detachment from the earth. They swam in splendour, which intoxicated the soul, and I will not now repeat in my moments of soberness the extravagant analogies which then ran through my brain. (Tyndall 1906, 231–32)

Upon the summit, he opened a notebook to make a few observations, but “soon relinquished the attempt. There was something incongruous, if not profane, in allowing the scientific faculty to interfere where silent worship was the ‘reasonable service’” (1906, 240).

Tyndall sometimes took friends mountaineering, but usually he climbed with one or two local guides—forgotten heroes, like the assistants who did so much research for great Victorian scientists (Geison 1995, 234–56). Climbing was not wholly unlike communing with nature in the laboratory. And sometimes he preferred to be alone:

. . . the right to do so ought to be earned by long discipline. As a habit, I do deprecate it; but sparingly indulged in, it is a great luxury. There are no doubt moods when the mother is glad to get rid of her offspring, the wife of her husband, the lover of his mistress, and when it is not well to keep them together. And so, at long intervals, it is good for the soul to feel the influence of that “society where none intrudes.” . . . The peaks wear a more solemn aspect, the sun shines with a more effectual fire, the blue of heaven is more deep and awful, the air seems instinct with religion, and the hard heart of man is made as tender as a child’s. In places where the danger is not too great, but where a certain amount of skill and energy are required, the feeling of self-reliance is inexpressibly sweet, and you contract a closer friendship with the universe in virtue of your more intimate contact with its parts. (Tyndall 1906, 257)

Tyndall’s writings about the mountains are masterpieces in their way, full of feeling and language that must have made him a worthy successor to Davy and Faraday as a public lecturer on science. Pantheistic experiences, however, can be thus described but not readily shared. A congregation making its way up toward the Matterhorn could not have felt like Tyndall, alone with his own solitariness amid the sublime majesty of creation.

Davy, Faraday, and Tyndall all escaped to the Alps, or to other mountains and wildernesses, for refreshment (and to get fit) after hard work in London. By Tyndall’s time, the Alps in the summer holidays were becoming full of writers and intellectuals, professors and professional men, and often their wives, too, for whom mules were the cable cars of the late nineteenth century. The spiritual fuel there acquired might keep a pantheist going for several months, as it did with Tyndall. But pantheism is probably not a faith that makes it easier to confront the quotidian and the humdrum. Davy used it in facing lonely and premature old age; the less privileged could not aspire to long foreign holidays. Nevertheless, pantheism seems to have played an important role as an expression of elite scientific spirituality for those who found the churches uncongenial, and no doubt it still does, though perhaps modern physics has made Nature more of an unknown god than she seemed to Davy, Glaisher, or Tyndall.

NOTE

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