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# Wordsworth and the scientific spirit

It has been widely accepted that Wordsworth's attitude to science is more or less that ascribed to him by A. N. Whitehead, who says:

He weakens his evidence by his dislike of science. We all remember his scorn of the man whom he somewhat hastily accuses of peeping and botanising on his mother's grave. Passage after passage could be quoted from him, expressing this repulsion. In this respect, his characteristic thought can be summed up in his phrase, 'We murder to dissect'."

And a later and more careful critic writes:

Wordsworth, apart from tributes to Newton, and some passages of cosmological reference which reflect the tradition of Cambridge Newtonianism, seems to make very little use of his scientific training.2

It is true that F. E. L. Priestley prefaces this judgment with a judicious account of the part played by the associationist psychology of Hartley in Wordsworth's poetry, and accepts this as 'one point of limited co-operation' between science and the poetry of Wordsworth. But there is no suggestion that the structure of nature as Wordsworth experienced it owed anything to science and to the geometrical studies which Wordsworth somewhat intermittently pursued at Cambridge.<sup>3</sup> In most commentaries of this kind, nature and science are represented as being, in Wordsworth's poetry, simple antitheses.

<sup>1</sup> A. N. Whitehead, Science and the Modern World (New York, 1925), p. 116.

<sup>2</sup> F. E. L. Priestley, 'Those Scattered Rays Convergent', in Science and the

Creative Spirit, ed. Harcourt Brown (Toronto, 1958), p. 77.

3 'William you may have heard lost the chance, indeed the certainty of a fellowship by not combating his inclinations, he gave way to a natural dislike of studies so dry as many parts of the mathematics, consequently could not succeed at Cambridge.' The Letters of William and Dorothy Wordsworth, The Early Years, ed. E. de Selincourt (Oxford, 1935), 1, 51, entry for 26 June 1791. See also Christopher Wordsworth, Memoirs of William Wordsworth (London 1851), 1, 14: 'I had a full twelve month start of the freshmen of my year, and so fell into an idle way.'

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That a nature which the human imagination 'half creates' must get its structure and form from the mind itself, and therefore from whatever scientific and geometrical concepts the mind can command, seems too often to be overlooked. It is perhaps too easily assumed that Wordsworth was opposed to the Newtonianism of the preceding age, and that his mathematical studies at school and at Cambridge were—as he himself seems at times to suggest—merely deadening influences upon his imagination.

Douglas Bush, for example, writes:

Wordsworth's thought or feeling is altogether non-scientific and is not concerned with evidences of design or indeed with much except his own response to the idea of unity of Being.<sup>1</sup>

It is true that Bush qualifies this in a footnote, in which he briefly refers to 'one exception' in Book vi of The Prelude, where Wordsworth records his interest in geometry and astronomy, and 'the profound pleasure and transcendent peace' he felt in them. But this does not affect the general view that Bush takes of Wordsworth's attitude to science. John Danby, in his study of Wordsworth, sees Newtonian mathematical and physical science as too mechanical to provide an adequate frame of reference for poetry in an age of chemistry, and suggests that Wordsworth attained a fusion of elements like that achieved by the chemist.2 This analogy undoubtedly provides a valuable insight, and implies that Wordsworth was seriously concerned with Newtonian science, even if his chief concern was to transcend it. Danby moreover pays Wordsworth the respect that is due to a mature intelligence, and discusses him as a conscious and deliberate artist. J. W. Beach as long ago as 1936 pointed out the relevance of Newton's concept of ether to a central passage in 'Tintern Abbey'; but this has had little effect upon the actual reading of the poem.<sup>3</sup> D. G. James, in the course of his demolition of the falsely scientific approach to poetry, on the other hand reproaches Wordsworth for expecting too much of

D. Bush, Science and English Poetry (London, 1950), p. 91.

<sup>&</sup>lt;sup>2</sup> John F. Danby, The Simple Wordsworth (London, 1960), p. 12.

<sup>&</sup>lt;sup>3</sup> J. W. Beach, The Concept of Nature in Nineteenth-Century English Poetry (New York, 1936), pp. 76-87.



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He was right in his perception that what knowledge science can give is 'secondary' and abstract. But he was not true enough to his own experience to conclude with a recognition of what is, from the point of view of the imaginative life, the unimportance of scientific knowledge.<sup>1</sup>

Some of the disagreements that exist on this point perhaps arise from the ambiguity of the word 'science'. It is clear that Wordsworth felt the greatest reverence for Newton, and that this respect was more than merely conventional. When Wordsworth condemns 'science' he almost always refers primarily to the moral 'science' of the age, and in particular to Godwinism. In 'A Poet's Epitaph', which is often quoted as evidence of Wordsworth's hostility to natural science, Wordsworth's objection is to the 'philosopher' who would 'botanise/Upon his mother's grave.' Here the 'philosopher' is included with the politician, the lawyer, the soldier and the physician as one who is too busy to be wise. The poet on the other hand does not seek to analyse and probe into human life, but is

> Contented if he might enjoy The things which others understand. (55-6)

In 'Expostulation and Reply', which also seems to repudiate science, Wordsworth insists on the importance of a process of learning by idleness—a process known to educational psychologists as 'gestation'.

> 'Nor less I deem that there are Powers Which of themselves our minds impress; That we can feed this mind of ours In a wise passiveness.' (21-4)

This poem was, we are told, addressed to Hazlitt, who at the time was busy with his Essay on the Principles of Human Action, and Wordsworth says that the poem 'arose out of a conversation with a friend who was somewhat unreasonably attached to modern books of moral philosophy.'2

There is in these poems a firm rejection of the moral and psychological 'science' of Wordsworth's day; and in Book

<sup>1</sup> D. G. James, Scepticism and Poetry (London, 1937), pp. 167–8.
<sup>2</sup> The Poetical Works of William Wordsworth, ed E. de Selincourt and Helen Darbishire, 5 vols (Oxford, 1940-9), IV, 441, n. This edition is referred to throughout, together with Wordsworth's Prelude, ed. E. de Selincourt, 2nd ed. revised by H. Darbishire (Oxford, 1959).



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XIII of *The Prelude* Wordsworth suggests that such speculative studies lack

A more judicious knowledge of the worth
And dignity of individual man,
No composition of the brain, but man
Of whom we read, the man whom we behold
With our own eyes. (80-4, 1850)

Nor is this an appeal to a vague mysticism. Imagination, for Wordsworth is

but another name for absolute power, And clearest insight, amplitude of mind, And Reason in her most exalted mood. (*The Prelude*, xiv, 190, 1850)

Though he rejects the moral 'science' of Godwin, and increasingly resists the psychological system of Hartley, Wordsworth insists on the close relationship between poetry and science. Even the 'necessity of producing immediate pleasure', which was for Coleridge the distinguishing mark of poetry as opposed to science is not allowed to make any fundamental difference:

We have no knowledge, that is, no general principles drawn from the contemplation of particular facts, but what has been built by pleasure, and exists in us by pleasure alone. The man of Science, the Chemist, and the Mathematician . . . know and feel this.<sup>2</sup>

The difference between science and poetry, for Wordsworth, lies in a difference of language; the scientist is a lonely specialist, while the poet speaks to all men:

The Man of science seeks truth as a remote and unknown benefactor; he cherishes and loves it in solitude: the Poet, singing a song in which all human beings join with him, rejoices in the presence of truth as our visible friend and companion.<sup>3</sup>

In *The Excursion*, Wordsworth attacks, not scientists or science, but those who arrogantly lose their sense of wonder and become too sure of themselves. Here the claim is that science ought to awaken wonder, and it is only those who misuse science who are condemned. When men have learned to

<sup>&</sup>lt;sup>1</sup> S. T. Coleridge, *Biographia Literaria*, ed. J. Shawcross, 2 vols (Oxford, 1907), 11, 9-10.

<sup>&</sup>lt;sup>2</sup> Poetical Works, 11, 395. <sup>3</sup> Ibid. 396.



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respect the complexities of the world, science will serve its true end of illuminating the mind:

Science then
Shall be a precious visitant; and then,
And only then, be worthy of her name:
For then her heart shall kindle; her dull eye,
Dull and inanimate, no more shall hang
Chained to its object in brute slavery;
But taught with patient interest to watch
The processes of things, and serve the cause
Of order and distinctness... (IV, 1251–9)

There is no radical hostility to science here, but only a hope—no doubt too sanguine—that moral and psychological philosophers might be found with some of the humility and some of the understanding of the world's complexities that Newton, for example, conspicuously showed.

B. Ifor Evans has argued persuasively that Wordsworth was 'sympathetic to science but hostile to technology', and he quotes a Fenwick note on 'This lawn a carpet all alive', composed by Wordsworth in 1829:

Some are of opinion that the habit of analysing, decomposing, and anatomising, is inevitably unfavourable to the perception of beauty. People are led into this mistake by overlooking the fact that such processes being to a certain extent within the reach of a limited intellect, we are apt to ascribe to them that insensibility of which they are in truth the effect and not the cause. Admiration and love, to which all knowledge truly vital must tend, are felt by men of real genius in proportion as their discoveries in natural Philosophy are enlarged; and the beauty in form of a plant or an animal is not made less but more apparent as a whole by more accurate insight into its constituent properties and powers. A Savant who is not also a poet in soul and a religionist in heart is a feeble and unhappy creature.

Wordsworth's quarrel, in short, is not with science and scientists, but with those persons of 'limited intellect' who rely on the analytical process exclusively. 'Men of real genius' find that their perception of beauty is enlarged, not diminished, by an increase of analytical knowledge. When in 'The Tables Turned' Wordsworth rejects 'our meddling intellect' and declares that 'we murder to dissect' he shows a momentary

<sup>1</sup> B. Ifor Evans, Literature and Science (London, 1953), p. 56.



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impatience not only with science, but with art and learning also:

Enough of Science and of Art; Close up those barren leaves; Come forth, and bring with you a heart That watches and receives.

This is a necessary reminder that science, literature, and learning are not the whole of life, and that direct experience of the world should not be sacrificed to them. The poem is a rhetorical admonition, and its rejection of all learning and all the arts has been given a disproportionate weight in the interpretation of Wordsworth's poetry. 'The Tables Turned' is after all only one side of a dramatic dialogue; if Wordsworth had taken its sentiments seriously he must have rejected poetry along with science. It is possible that too much has been built on what is after all a humorous defence of a poet's right to be lazy.

It is, however, not to Wordsworth's opinions that we must turn if we wish to get a clear idea of the significance of Newton and of mathematical and physical science in his work. We shall learn this best from those passages in *The Prelude* and elsewhere that show the enkindling of the poetic imagination by science. From these we may judge of the degree to which a scientific view of the universe entered into the very texture of Wordsworth's imagination. The third book of *The Prelude* offers a more personal and at the same time a more thoroughly imagined account of the process by which the world as it is described by science may be given human and moral significance. This passage follows a description of Wordsworth's rooms in St John's College—a description which is more than mere biographical detail or local colour:

The Evangelist St. John my patron was:
Three Gothic courts are his, and in the first
Was my abiding-place, a nook obscure;
Right underneath, the College kitchens made
A humming sound, less tuneable than bees,
But hardly less industrious; with shrill notes
Of sharp command and scolding intermixed. (46–52,1850)

There is little feeling here for the romance of the gothic; Wordsworth's 'abiding-place' is 'a nook obscure' with a



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disturbing noise from the kitchens below. The shrill confusion of the kitchens is transformed into something more than a merely querulous biographical detail by what immediately follows:

Near me hung Trinity's loquacious clock,
Who never let the quarters, night or day,
Slip by him unproclaimed, and told the hours
Twice over with a male and female voice.
Her pealing organ was my neighbour too;
And from my pillow, looking forth by light
Of moon or favouring stars, I could behold
The antechapel where the statue stood
Of Newton with his prism and silent face,
The marble index of a mind for ever
Voyaging through strange seas of Thought, alone.

(53-63, 1850)

The contrast must be deliberate; in the gothic court and below the 'obscure nook' there is noisy human involvement in immediate tasks; but Wordsworth hears the harmonious proclamation of the hours by the clock of Trinity, and by the light of 'moon or favouring stars' he can see the bust of Newton with 'his prism and silent face', alone with his thought.

The opposition is a significant one. It is one of the implied antitheses which give a hidden structural strength to passages in Wordsworth which are mysteriously better than they seem. In this context, the enclosed, private, obscure life of the individual is lived in a confusion of business in which no clear pattern can be discerned; the life of the perceiving mind is set against this in the figure of Newton, whose grand synthesis of space and time is illustrated by the images of ordered time and of ordered space in the clock and the prism. The opposition is passionately felt; who can doubt, reading these lines, the attraction for Wordsworth of the science which brought 'order

<sup>1</sup> The last lines of this passage appear as follows in the original version of 1805:
And, from my Bedroom, I in moonlight nights
Could see, right opposite, a few yards off,
The Antechapel, where the Statue stood

Of Newton, with his Prism and silent Face. (56–9

Though less striking as poetry, these lines convey more of the intensely personal feeling with which Wordsworth contemplated Newton. The insistence on the personal relationship in space to the statue 'right opposite, a few yards off', is offered with unselfconscious enthusiasm. The very lack of elaboration when Newton is mentioned conveys a sense of his immense significance.



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and relation' into the world, and into the movements of the moon and stars?

A strikingly similar passage may be found in the seventh book of *The Prelude*, 'Residence in London':

Private courts,
Gloomy as coffins, and unsightly lanes
Thrilled by some female vendor's scream, belike
The very shrillest of all London cries,
May then entangle our impatient steps;
Conducted through those labyrinths, unawares,
To privileged regions and inviolate,
Where from their airy lodges studious lawyers
Look out on waters, walks, and gardens green.

(180-8, 1850)

In both passages there is a strong contrast between private obscurity, assailed by the busy clamour of the kitchen or of commerce, and the view from the window by which the mind escapes from the 'labyrinths' into a world of order and relation. But in the second passage the mathematical and scientific achievements of Newton are replaced by 'waters, walks, and gardens green'. This is not to suggest that the two worlds of science and of natural beauty are interchangeable for Wordsworth; but it is clear that they are very closely allied. It is not surprising that Wordsworth tells us in Book vi of The Prelude that he hesitated between poetry and 'geometric truth' when deciding upon his vocation. Here the 'waters, walks, and gardens green' are of course not untouched 'nature', but are the harmonious products of human organizing power; and we shall see that Wordsworth never loses the sense, even when writing of nature at her wildest, that the human mind is an active agent in all perceived order and beauty.

Both passages imply very strongly the distortion of human life in being merely busy without a clear vision of the universal context in which human activity goes on. The workers in the kitchen are as busy as bees, but they lack the natural harmony of the bees. The 'female vendor's scream' in the London scene suggests a radical perversion of life by greedy and disorientated activity. This may be contrasted with the 'male and female voice' with which the clock of Trinity tells the hours; this is



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not a mere oddity of detail, but a suggestion of the harmony in human life fostered, as Wordsworth believed, by an unclouded vision of the whole pattern of the universe. How this is possible is not, and cannot be, made fully clear in any one poem; but it is the theme of many poems, each of which adds its own illumination of a theme that is a central preoccupation of the poet's.

The passage which immediately follows in Book III of *The Prelude* after the description, quoted above, of Wordsworth's rooms in St John's College, describes the poet's feeling:

that I was not for that hour, Nor for that place. (81–2, 1850)

He found that, though

Far from those lovely sights and sounds sublime With which I had been conversant, (94–5, 1850)

his mind 'drooped not':

I felt

What independent solaces were mine, To mitigate the injurious sway of place Or circumstance, how far soever changed In youth, or to be changed in manhood's prime; Or for the few who shall be called to look On the long shadows in our evening years, Ordained precursors to the night of death. As if awakened, summoned, roused, constrained, I looked for universal things; perused The common countenance of earth and sky: Earth, nowhere unembellished by some trace Of that first Paradise whence man was driven: And sky, whose beauty and bounty are expressed By the proud name she bears—the name of Heaven. I called on both to teach me what they might; Or turning the mind in upon herself Pored, watched, expected, listened, spread my thoughts And spread them with a wider creeping; felt Incumbencies more awful, visitings Of the Upholder of the tranquil soul, That tolerates the indignities of Time, And, from the centre of Eternity All finite motions overruling, lives In glory immutable. (100-24, 1850)



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The search for the universal overriding order is not directed only to earth and heaven, but inwards to the mind. In the context it can hardly be doubted that the aspiration was to an achievement akin to that of Newton, yet including not only the physical universe, but also the mind of man. For an achievement which would equal in the realm of imagination what Newton achieved in science, the young Wordsworth needed a sympathetic power by which he could penetrate in feeling into the world of sense. This faculty he records himself as possessing in the highest degree:

To every natural form, rock, fruit or flower Even the loose stones that cover the high-way, I gave a moral life: I saw them feel, Or linked them to some feeling: the great mass Lay bedded in a quickening soul, and all That I beheld respired with inward meaning. (130–5, 1850)

This can scarcely be understood as it stands. But Wordsworth's poetry affords, as I shall show later, sufficient examples of the process to leave us in no doubt of what was involved. In the meantime it is enough to note this essential element in the poetic experience, and to note also that Wordsworth makes no mystery of it:

Some called it madness—so indeed it was, If child-like fruitfulness in passing joy, If steady moods of thoughtfulness matured To inspiration, sort with such a name. (149–52, 1850)

W. H. Garrod, in an influential essay on Lucy, offered what seems to me to be gratuitous aid to those who dismiss Wordsworth as eccentric or fey:

The truth is that, when Wordsworth tells us that rocks and stones and trees are alive, we do not stop to attend; still less when he merely hints it . . . When Wordsworth says that he *saw* the stones *feeling*—a phrase astonishing in its bare power—I believe him. I credit that sight to 'the poet's eye'. I

This implies a literalness in the original that is surely not there; the claim to have 'seen' the stones feel comes immediately after:

Even the loose stones that cover the high-way, I gave a moral life. (131–2–, 1850)

<sup>1</sup> H. W. Garrod, The Profession of Poetry (Oxford, 1929), p. 84.