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Literature and Science vs History of Science

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Twelve years ago I was chatting to an ancient historian over lunch. He asked what I had been working on. When I told him about my approach to Victorian poetry he remarked that, like most literature academics these days, I was really a historian myself. At the time I felt quite self-satisfied. My first ambition had been to become a historian, and a historian's approval still seemed the mark of proper scholarly rigour. Nowadays I am not so sure. Literature and science scholars routinely and rightly draw on work in History of Science to build up their understanding of the state of scientific knowledge and the concerns of scientific debates within the periods they are studying. Even so, we should be cautious about deferring too readily to the authority of History of Science, in case we allow its priorities, assumptions and methodologies to circumscribe the work that we can do in our own field. Historicist literary criticism does not need to be held to account according to the standards of what is after all a different discipline. We have our own approaches to the past, which need to be as rigorous as we can make them, but we should not be bound by the methodology of historians of science, nor to their findings if the past we discover through our research does not look quite the same as theirs. We should not even feel compelled to foreground historical context at all, so long as we are aware of it and do not dismiss it in ignorance.

History of Science is a discipline which traces in meticulous and precise detail the practices of individual scientists, the intricacies of particular debates, the politics of institutions, and the emergence of ideas. The detail which historians of science require for the recovery of these aspects of past science is not necessarily available to scholars working on the interface between literature and science. It is rare for us to be able to show precisely how such-and-such a novelist or poet or dramatist came to know about this or that scientific idea, and even rarer that we can demonstrate when and how a particular scientist read a given poem or novel or saw a given play. The documentary sources often do not exist and where they do they may not be especially revealing. We have it on Thomas Hardy's own authority that he was "among the earliest acclaimers of *The Origin of Species,*" (Hardy 153) and we know from a letter that George Meredith attended the meeting of the British Association for the Advancement of Science in Cambridge in 1862 at which T. H. Huxley demolished Richard Owen's claim that the human brain was unique in including a hippocampus minor (Cline 1: 165). But even in the case of these two writers who are routinely discussed as responding to evolutionary theory in their work there are only a few isolated glimpses like these to bolster from outside interpretations grounded very largely in the internal evidence of the works themselves. By their very nature as fiction or poetry, these literary works rarely identify specific sources or make direct pronouncements, so the critic's role is typically to tease out by inference their scientific implications. We depend, then, upon sources that cannot sustain the kind of definite claims that historians of science are often able to make. Yet if we are discouraged from putting forward interpretations because they are not sufficiently empirically robust, we may end up consigning to oblivion that very substantial tranche of the past's engagement with science which has not left a firm enough imprint to be traced in more definite lines.

This may seem alarmist. The very fact that there are numerous books and articles on Hardy and science would seem to give the lie to any suggestion that such work is disallowed. Yet it remains the case that if we want our work to gain a wider hearing beyond ourselves – if we want literature and science to be taken as seriously as a discipline as History of Science is, indeed if we want historians of science to take as much account of our work as we do of theirs – then we need to defend our own practices, to explain how and why it is that we make the claims we do, and what our work contributes that History of Science on its own may lack. At the same time, we need to make it clear that the standards of judgement for the two disciplines, although equivalent, are not the same.

The nature of the engagement between literature and science is often nebulous, at least on first impressions. To give an example from my own recent research, the Pre-Raphaelites repeatedly cite science as a model for their art in the essays published in their short-lived periodical *The Germ*, which ran for four issues in 1850. However, they do not define clearly what they mean by science, nor precisely how they imagine that art should go about imitating its practice. One approach to this question, grounded in the methodology of History of Science, would be to try and place Holman Hunt, Frederick George Stephens, Dante Gabriel Rossetti and the other Pre-Raphaelite artists, critics and poets in relation to contemporary debates on scientific method between William Whewell, John Stuart Mill, George Henry Lewes and others. This would be to presuppose that the Pre-Raphaelites read these debates, however, or at least that they had their own precise understanding of scientific method that could be formulated in the same terms. But there is little evidence to suggest that this is the case. What they did have was an idea of science which, though vague, was nevertheless of central importance both to their rhetoric and to their conception of their own practice. To try to place this idea precisely within the history and philosophy of science is to chase a chimera, yet to assume therefore that there is nothing interesting or rigorous that can be said without this kind of precision is to fail to recognise the key significance of science to the most original and influential Victorian art movement. In case this reads as though I am attacking a straw-man, it was on just these grounds that a piece of work I wrote on this subject was turned down for publication by a major English Literature journal.

We have an intellectual responsibility to ensure that our work is as rigorous on our own terms as we can make it. This was made painfully clear to me when I gave a paper on Darwinism and poetry several years ago in Sheffield. I took Robert Bridges's poem "Poor Poll," written in 1921, as my text, reading it as a meditation on the cultural impact of Darwin's ideas (albeit one addressed to a pet parrot). I drew attention to Bridges's emphasis on kinship between different species, to his use of the language of adaptation and environment, to the recurrence of monkey imagery, to hints at geological time, to the ways in which the parrot is identified with the church and churchmen, to the narrative thread in which a British sailor to South America unseats her from paradise, and so on. Afterwards a professor of linguistics took me to task for doing what, as she saw it, all literary critics do, which was to impose my own reading onto the text. In this case I would still defend my reading, taking support from the knowledge that Bridges responded to Darwin directly and repeatedly in other experimental poems he wrote after 1900, from *Now in Wintry Delights* (1903) to *The Testament of Beauty* (1929). But the experience itself brought home to me how important it is to be sure that the interpretative claims we make are robust and convincing. By prioritising the literary texts themselves we can offer readings of them that are internally consistent and persuasive. If the evidence is there in the texts, it

does not ultimately matter whether or not there is supporting evidence elsewhere. Even so, we should be frank about the nature of that evidence, and not be betrayed into making claims it cannot support. It is better to admit that the material we are working on cannot be precisely inserted into debates on the history of science than to assert on the basis of flimsy analogies or passing resemblances that Hunt took Whewell's side against Mill or vice versa, or that Rossetti had any given physicist in mind when he used the term 'ether' in "The Blessed Damozel." By not over-reaching ourselves as historians of science we can make the case more convincingly that our own methods and sources reveal things about the reception and reworking of scientific ideas, and about their implications and significance, that History of Science alone cannot discern with the same subtlety.

As well as having its own methodologies, History of Science has a firm ideology. It defines itself against the familiar Whig view of science as the progressive discovery of knowledge still favoured by many scientists themselves. This is essential if History of Science is not to be merely the tame chronicler of science itself. But it can nevertheless lead to certain aspects of the past being given priority over others. Historians of science such as M. J. S. Hodge, Peter Bowler, Jim Secord, James Moore and others rightly object to Darwin being treated as of paramount and unique importance within Victorian biology merely because he happened (in some regards) to get things right. They have devoted themselves to understanding Darwin's own thinking *in toto*, not merely those bits of it that have been vindicated by subsequent science, and to recovering the evolutionary theories of his antecedents, contemporaries and successors, which jostled with his own for attention and authority in the nineteenth and early twentieth centuries. This work has been intensely interesting and immensely valuable. This has led, however, to a situation where, in Hodge's words, "historians are now agreed" that natural selection 'was accepted hardly at all for nearly half a century after Darwin's death" (Hodge 114). As a literature scholar approaching evolution in this period through the writings of novelists, poets and indeed scientists themselves, this conclusion appears to me to be patently false. Echoing Theodosius Dobzhansky's famous adage that 'Nothing in biology makes sense except in the light of evolution,' a great deal of late Victorian and Edwardian culture makes no sense if we presume that natural selection was an idea with no currency. H. G. Wells's science fiction, Hardy's novels and poetry, the rise of eugenics and Huxley's counter attack in *Evolution and Ethics*, Edwin Ray Lankester's columns in the *Daily Telegraph* and the interventions by *Nature* into the debates round Darwin's legacy at his centenary – all bear witness to the vitality of natural selection as an idea both within biology and in the wider culture during the so-called 'eclipse of Darwinism' around the turn of the century. From outside History of Science, it looks as though the intellectual ideology of the discipline itself has so shaped its perspective as to determine the picture of the past that the historians see. If we see the past from a different angle, we should not be ashamed to own it, nor to supplement their picture with our own. Equally, we should be cautious about depending too heavily on the authority of historians whose angle of vision differs markedly from that of our own subjects – the authors and readers of the works we are discussing.

There is one final sense in which we should feel free to emancipate ourselves from the History of Science, which is to consider how far we want our own enquiries to defer to history at all. We may choose to take not only the culture of science, historically conceived, as our subject, but science itself. 'Presentism' is a dirty word in the lexicon of historicist criticism, and clearly we must not forget that the present,

like all moments, is embedded in history, both diachronically and synchronically. But for all that History of Science is right to call into question the linear, progressive model of the growth of science, while progress may not be linear, current science remains nonetheless our best approximation to knowledge of the workings of the universe. We read literature first and foremost in the present moment too – if it did not live for us today, then the study of literature would be just a branch of archaeology. Literature in its broad sense – the deliberate, creative and imaginative use of language – is humanity's most sophisticated device for exploring its own condition. Science itself and the knowledge that science gives us also falls within that purview. Poets, novelists, dramatists and scientists themselves respond to new knowledge as they receive it. If the broad foundations of that knowledge remain in place, for all that the details may have changed, their responses remain as pertinent today as they were when they were first set down. By reading literature alongside science today, we can explore what it is to live in the world science reveals to us, not for the present moment only, but for as long as that science remains a satisfactory account of the world we live in.

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