The Science of Literature and the Literature of Science

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It is common to distinguish between the creative imagination of the poet or novelist and the objective reasoning of the scientist. Nowadays we know that scientists are driven by the same kind of fierce passions that we find in writers, and that their discoveries are often the products of the same kind of imaginative leap that characterizes the solution of a problem in mathematics or physics. Unfortunately, little of this knowledge has been allowed to inform the teaching and general discussion of science, which is still held to be distinguished its truth, while literature and the arts are regarded as rather leisurely kinds of indulgence in the pleasures of the imagination.

The artist, of course, knows that he is as much engaged in the pursuit of truth as any scientist, and that the products of his labour are as important and valuable as the work of any technologist. Like mathematicians, artists may work introspectively, on problems generated in the mind. Equally often, however, they start their work like a research scientist with intense and accurate observation of the world around them. And, like scientists and manufacturers, composers, sculptors, potters and painters are among the most innovative users of advanced technology, and even writers, most obdurate of the tribe of Luddites, have taken with various degrees of enthusiasm to the electronic wordbox, with results which are yet to be described by the more analytically minded of their critics. I wonder whether the plain style of Thomas Keneally's recent novels is due to his conversion to technology, or whether the broken back of The Fear

might have been repaired if he had had recourse to the possibilities of instant recall and recasting made possible by the word-processor he now uses.

Erasmus Darwin, grandfather of the naturalist, saw both literature and science as branches of the same art of prophecy, and his lines on the coming nation of Australia foretold Peace, Art and Labour joining to build the new technoligcal utopia on the shores of Sydney Cove. For him, Art included Science, and there is no doubt that he would have seen the Bridge and the Opera House as fulfilling his vision of Hope. In the succeeding two centuries, however, Art has withdrawn from the camp of the optimists, and writers have offered a croaking chorus of pessimism to counterpoint the joyful odes to progress offered up by their scientific counterparts. The use of the products of science in this century has too often proved the pessimists correct.

Although Coleridge's distinction between fancy and imagination goes back to the time of Governor Macquarie, the claims to exclusive truth made by science seem to make writers and literary critics even more uneasy than Charles Darwin made the theologians. Religion came to terms with science by recognizing that they had separate domains, but literature has tried to take science into itself. Structuralism in its various forms has destroyed the romantic notion that literature is produced by the true spirit of life working through the imagination of a writer of genius. Instead, the writer is now seen merely as the instrument by which a given society reproduces

its values, and the task of the critic is seen to be the exposure of the class interests which produce these values and which the writer protects. Distinctions between good and bad literature vanish, as all writing can be read a a system of signs revealing the underlying social structures. Literary criticism, if it remains, becomes a branch of the science of sociology, and the writer a mere case study.

This way of studying literature as a system of signs has become known as semiology or semiotics. There is a slight distinction between the two terms, but that need not concern us here. The important fact about this form of study is that it recongizes both that we know nothing except what we learn through language, and that the form of language determines the nature of what we know. In this latest manifestation of the old mediaeval debate about freewill and predestination human consciousness is reduced to a mere product of the evolutionary biology which gave our hunting and gathering ancestors' speech as a byproduct of their social organization. The complex forms of that speech, its integration of song and dance, reproduced the movements and organization of the hunt and thus created society in its image. As the inner pressures and contradictions of this society have led it to change through the millenia, so the patterns of our language and arts have changed, but we are never able to escape from the particular consciousness these impose on us. All we do becomes a text, and semiotics provides the science by which we may understand it. This understanding is itself however no better than a game, for by its own principles semiology itself can only be a product of its own society, and the understanding

it gives us cannot enable us to change anything. This dismal conclusion is equally true of every other branch of science and technology, which can evolve only according to the laws of the society which produces it, and is not amenable to human hopes or fears. If we are to have a science and tourism led revival, it will have nothing to do with weither Mr Dawkins or Mr Keating, and everything to do with an evolutionary process that began when we first learned to speak.

The challenge to this dismal determinism comes, however, not only from science, but from literature itself. If we forget the theorists and look at the work of the writers themselves, we find that like the scientists they are driven by an urge to discover the patterns of truth. Australian writers have recognized the scientist, alongside the painter and the musician, as the pathfinders who lead us furthest along the path of this quest. Gwen Harwood's Professor Eisenbart escapes into physics from his torments of love and age, only to find science itself nourishing his rage with the power to sweep away the world and its confusions. The exiled mathematician in David Malouf's story 'Southern Skies' sublimates his loneliness and sexuality by communicating his vision of the eternal dance of the stars. Douglas Stewart, in poems like 'The Peahen' and 'The Silkworms', meditates on the sheer wonder of the world uncovered by evolutionary biologists. In his poem on the life and work of Rutherford he goes further to the realization of the wonder of the scientist himself, the man who disciplines his speculating thought to

"- - - a shrinking.

How to get mind and hand so small - - -

That in one final thrust of concentration

They would be able to move inside an atom."

(Collected Poems, p.96)

The remainder of this poem is a study of the way that background, personality, history and knowledge combine to produce this man whose thought does not merely uncover the world, but changes it, through his own genius, but also through the capacity for simple, painstaking work that he shares with everyone else. The poet shows the universe of science not as something external to us, merely awaiting our discovery, but as itself the final achievement of the human mind.

In Rosemary Dobson's work the wonder of this achievement becomes a major subject. Her sequence of poems in Over the Frontier (Angus and Robertson, 1978) or devoted to the marvel by which we make things and ideas, pots and theorems, each one suggesting by its existence the one we have still not made or discovered, the one which will be even closer to truth or perfection. She delights in the "wonderful, wonderful and yet again wonderful - - - setting-out and proving of Sutton's Equation" on the dispersal of pollen and the

"absolutely overriding significance

of biological circumstances in the study of

human society." (p.23)

Yet equally she enjoys contemplating the dissidents who "weary of the continual examination / of human sexual attraction in the study of cultural origins" and settle instead for mere acceptance

of the world around them as expressed in the unexplained delight of birdsong. The natural wonder of birdsong is, for her, an image of what the world offers to us and what we create for ourselves in it, even in hoaxes like Piltdown Man, who, having been named, continues to exist in our consciousness:

"Piltdown Man is quite disproved.
He never lived and he never loved.
A gravel bed's a private place -
but whom (and what with) to embrace.

(p.24)

The science of semiotics can show how a poem like this is a mere creation of late capitalist society, with its romantic longings for an earlier age of the individual, but the poet herself sees how science itself, rather than reducing the world to a series of dry formulae, is itself the product of our collective and individual mind. Like the arts, it is the way we live in the world, make it our own. Piltdown Man may have been a hoax, and the birdsong a mere expression of sexuality and territoriality, but they are also means by which we make ourselves at home in the world. We know the world only through signs, but the signs themselves are our own creation. It is in their study that material and human studies, the sciences and the arts, come together. Through our invention of the physical sciences we have created instruments by which the universe speaks to us. Through the human sciences and the arts, we speak to ourselves, to the being which the long evolution of the universe has produced. In listening to the two voices, the physical and

the material, we create ourselves.