

Science and Literature

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To talk about science and literature is to talk about human activity, broadly, in all its spheres, and also to talk about spheres, which are, according to common perception, antithetical to each other. The Random House Dictionary of the English Languages describes literature as, "Writing regarded as having permanent worth through its intrinsic excellence." Science is described as a branch of knowledge or study dealing a body of facts or truths systematically arranged and showing the operation of general laws." The terms intrinsic excellence" on the one hand and "study dealing with a body of facts" may well be the starting point for discussion. Here, roughly speaking, literature and science have been defined as dealing with the inner and the outer worlds of mankind respectively. Of course, one can cite numerous instances of overlapping, but one does get the idea that both, science and literature in a broad manner, are the two sides of the same coin – human faculty. Literary creativity as well as scientific creativity have almost coexisted as well as scientific creativity have almost coexisted and developed with the progress of human civilization. In the ancient times there was no clear cut demarcation between scientific and humanistic activities. The paintings in the caves and the beginnings of the use of fire were more or less simultaneous and complementary activities of man.

With the progress of mankind there has been a growing tendency to distance science and literature by the die-hards of the respective branches. One finds people making claims that science would not have been there if there had been no literary activity. It is so because, generally, literature is supposed to be about the dreams of man, his aspirations to soar higher and higher, his desire to catch up with the stars and the moon. Out of the dreams are produced deeds of man which are always able to meet a mere fraction of those dreams. Further, this leads people to associate science with reason and literature with imagination. One has to see whether both of them can be kept in such watertight compartments and whether they have anything to do with each other. But before that one has to analyse the similarities and dissimilarities between literary creativity and scientific creativity.

Claude Bernard said, "Art or literature is I and science is we." A literary work has a very prominent personal mark about it. "The mind which creates and the man who suffers," to lift a phrase from T.S. Eliot, both have a bearing upon the product of literature. On the contrary, scientific creativity tries to obliterate all personal nuances of the scientist. The focus is upon the created thing and not upon the creator. In fact, a scientist, in the long run, goes into oblivion because it is not always necessary to know about the man in order to understand his creation. But the same can not be said about a poet or a novelist or a playwright. Sometimes it is almost impossible to understand a piece of work of literature without knowing about the background against which that particular poem or novel came into being. In other words one can say that scientific creativity is objective in nature, whereas literary creativity is intensely subjective.

The other basic difference between science and literature is that while the former has an absolute value, the latter's value is relative in nature. Newton's Laws of Motion, Einstein's Theory of Relativity exist "there" separately and in most of the cases, of course with some exceptions, the merit of a scientific product is established by "itself". Pythagoras' theorems are proved entities and one does not have to compare them to Newton's Laws to know which is better! They exist in their own right. But in literature the longevity and the merit of a piece of work have to be established in relation to other existing pieces of work. It is so because whereas science arrives at conclusions, at solutions which can have universal application, in literature there is a "particular" tone about it which can at best have a universal appeal. In order to have a better understanding of Shakespeare, for example, it is almost essential to refer to ideas of Aristotle on the tragedy and read the tragic works of Sophocles and other writers. It is so because a piece of literature is open to numerous interpretations, subjective as it is, which may be even in sharp contrast to each other.

Though there are some differences in the scientific and literary creativity, yet the notion that only reason is the guiding force of science and imagination that of literature does not hold much water. It goes without saying that dreams to be

translated into deeds have to have both reason and imagination, and deeds to be concretised must have both faculties. Reason without imagination and vice-versa cannot provide anything intellectually satisfying and of permanent value. One must remember that before being a scientist or an artist one is a human being – one who possesses both faculties. To be a scientist or a humanist of some reckoning both faculties have to bloom. If one observes a piece of scientific product say, a motor car, one can come to know how much of imaginative care has gone through in the making of that sleek car. Similarly, an artist or a humanist has to develop his piece of work in a logical manner, in a rational manner so that his product satisfies both the intellect as well as emotion of the reader. The poems of the Metaphysicals, French Symbolists and the Imagists, with their wit and scientific imagery, can be cited, as examples of this complex interactive working of imagination and reason. In this context, one should necessarily recall the theories of Aristotle about a literary work. Aristotle insisted that a narrative should have “a beginning, a middle and an end.” Further he insisted on following the Unities of Time, Action and Place in a narrative. No doubt a literary genius like Shakespeare could violate the Unities of Aristotle, but still even in the works of such “violators” there has been a logical and rational development of action because, without these one cannot be convincing and successful.

Locke’s theory, which appeared in the seventeenth century about “human understanding” caused a stir when it stated that mind has no creative faculty of its own. It does not act, but only reacts to the experiences which it goes through in the outer world. This mechanistic explanation of human mind was resented, and lightly so, by the Romantics like Blake and Coleridge who went to the other extreme by hammering the point that man has a creative, an imaginative faculty of his own – and that is more important. Actually reality stands somewhere between them. At the outset it was mentioned that science and literature broadly cover all the aspects of human activity because they together cover two major faculties of human mind – imaginative and rational. That is why we have many instances of science influencing literature and literature anticipating science.

Stories concerned with the flight of human beings to the planets are very old in origin; the first was Lucian’s True History written in the second century A.D. and others were written by Kepler (1634), Bishop Francis Godwin (1638), John Wilkins (1638) and Cyrano de Bergerac (1657). But these stories were only types of voyage imaginaire and it is only in the nineteenth century that Romances featuring space travel on a pseudo-scientific basis developed. The stories of Edgar Allan Poe, Jules Verne and in the twentieth century those of H.G. Wells produced a flood of that kind of fiction. Many of the scientific advances these writers imagined have, in fact, already been achieved. One can also say that modern day unmanned and remote-controlled spacecrafts could very well have been anticipated by the one described as “Pushpak Viman” in Valmiki’s Ramayana. Thus these works are living

testimony to the fact that literary creativity sometimes anticipates and influences scientific creativity.

Similarly the Deism of the eighteenth century, reflected, though not without reservations, in Pope’s Essay on Man, was at least as much the result of the mechanist ideas implicit in Newton’s Principia Mathematica as of Locke’s Essay Concerning Human Understanding. In the nineteenth century the discoveries of the geologists led by Sir Charles Lyell reinforced later by the evolutionary theories of Darwin and Huxley, led to a whole genre of literature concerned in one way or another with the doubts which scientific discovery was casting on fundamental Christian beliefs. Another aspect of the literary relationships of science and technology is the theme of social and industrial reform in a mass of nineteenth century verse and prose fiction protesting at man’s misuse of technology following on the industrial revolution. Novels of Charles Dickens, Thomas Hardy, D.H. Lawrence etc. in English Literature are cases in point. In fact scientific temper crept into English literary criticism also in the twentieth century. L.A. Richards’ Principles of literary criticism and Practical Criticism tried to do away with the background of a poem while evaluating it and analyse it as a clean state. T.S. Eliot also advocated that a critic’s focus should not be on the “poet but poetry” and wanted an artist to be as detached and impersonal regarding his piece of work as a scientist is during the creative process.

Having said that science and literature are complementary in nature, we can verify it with our personal experiences also. Scientific discoveries and inventions have made our life—our material life—quite comfortable. But material life is just one aspect of a human life. In fact an overdose of materialism may make human life almost animalistic and human personality shallow. In *The Waste Land*, T.S. Eliot deplors the same devastating impact of materialism. To counterbalance it, to make human personality and life wholesome there has to be an equal dose of things which enrich the mental and the intellectual faculty of man. If the sensitive aspect of man is not taken care of there, is bound to happen an imbalance between Man and Nature. Here literature and the humanistic creativity do and should come to our aid. Notwithstanding the claim of C.P. Snow, the novelist, in his famous and controversial book *The Two Cultures* that science & literature are entirely two different “cultures”, to sum up, one can say that though the very mass and intricacy of knowledge necessitates specialisation, yet the search of all scientists and humanists alike, is for truth. That search can be best described in the following lines with which William Blake begins his *Auguries of Innocence*: To see a World in a Grain of Sand

And a Heaven in a Wild Flower
Hold Infinity in the palm of your hand
And Eternity in a hour.

Reference Books

- [1] Literature and Science – Author : Aldous Huxley.
- [2] Frankenstein – Author : Mary Shelley.

- [3] Science, Literature and Film in the Hispanic World.
- [4] The Voyage of the Beagle – Author : Charles Darwin.
- [5] How we became posthuman – Author : N. Katherine Hayles.
- [6] On the Origin of Species – Author : Charles Darwin.