Chapter 19

THE BALANCE BETWEEN CULTURAL AND TECHNICAL EDUCATION

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I. AN AGE-LONG PROBLEM

During the nineteenth century and down to the middle of the twentieth century, the balance between education designed to achieve cultural objectives and technical education seemed to have been irrevocably lost. A choice apparently had to be made between the ideal of developing personality founded on cultural values and the ideal of technical skill capable of taming the forces of nature. Many were the humanists who defended the traditional ideal of culture by treating modern technology as the apocalypse of our age. On the other hand, those who called themselves technocrats rejected cultural values and placed their whole faith in technical prowess. Faced with this alternative, man had either to be ‘spiritualized’ by culture and remain ignorant of all technical matters, or else ‘technicalized’ and remain ignorant of culture. Consequently, schools had to train either spiritualized humanists or barbarian technicians.

And yet, ever since the age of Greek civilization, the basic ideal had been to combine cultural values with technical skills. This was the spirit in which Plato had interpreted the Greek myths in his Critias dialogue. In describing how the gods shared the earth between them so that each might care for his own portion, Plato revealed the special rôle emanating from the co-operation of Athene, the goddess of wisdom, and Hephaistos, the god of technical skills. In another of his dialogues, the Protagoras, Plato gave a further definition of the same idea, associating it with the interpretation of the myth of Prometheus. This dual aspect of the development of human civilization, personified by Athene and Hephaistos, stems from the action of Prometheus, the benefactor of mankind, and not from the will or the grace of the gods. After all living creatures had already received their gifts, apart from man who alone remained...
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‘naked and destitute with nothing to cover him and nothing with which to defend himself’, Plato tells us that Prometheus stole from Hephaistos and Athene first wisdom, the mother of arts, and then fire, for without it no one could possess wisdom or make use of it. ‘And in this way he endowed mankind.’ This marked the starting point of human civilization.

This concept, showing the co-operation between humane learning and technical science to be rooted in the wisdom of man, found its most eloquent expression at the time of the Renaissance. The conviction that the human mind is empowered with two great wings inspired the thinking of Leonardo da Vinci when he associated painting with philosophy and poetry, and mechanics with mathematics. It was the same belief that Bacon expressed towards the end of the Renaissance period, when he tried to depict man’s development in history in terms of scientific and technical progress. In the seventeenth century Comenius was thinking along the same lines when he claimed that schools and teachers should function as correctly as machinery. Later still, we find d’Alembert introducing the Great Encyclopaedia of the ‘sciences, arts and skills’ and setting the creative imagination of the geometrician alongside the creative imagination of the poet. It was he, too, who said that ‘of all great men, it is Archimedes who should be placed beside Homer’.

II. THE EFFECTS OF MODERN TECHNOLOGY

It is to these ideas and these aspirations that we are reverting today, now that technical progress is confounding the grim prophesies which had previously led us to believe that man and his civilization would be annihilated by technique. We can now see quite clearly that modern technology is more and more in harmony with man and human values. It is only when technology is imperfect that it is in conflict with beauty; it is technology developed along wrong lines that condemns men to an unhealthy way of living and to monotonous and exhausting slave-labour. These errors are being corrected by modern technical progress: machines and their products are restoring the lost contact with art; men’s work is ceasing to be a mechanical function in the service of the machine and now calls for specifically human training and human accuracy; towns and factories are insisting on their share of air and sunshine; nature is being saved from devastation. ‘The era that lies ahead of us, the era of automation and of robots, opens up prospects of the reconciliation