

Discourse on the Motives That Ought to Encourage Us to the Sciences

Montesquieu

The difference between great nations and savage peoples is that the former have applied themselves to the arts and sciences, while the latter have totally neglected them. Perhaps most nations owe their existence to the knowledge that the arts and sciences provide. If we had the mores of the American savages, two or three European nations would soon devour all the others; and then perhaps some people conquering our world would boast, like the Iroquois, of having devoured seventy nations.

But leaving aside savage peoples, if a Descartes had come to Mexico or Peru one hundred years before Cortez and Pizarro, and if he had taught these peoples that men, composed as they are, are not able to be immortal; that the springs of their machine, as those of all machines, wear out; that the effects of nature are only a consequence of the laws and communications of movement, then Cortez, with a handful of men, would never have destroyed the empire of Mexico, nor Pizarro that of Peru.

Can it be said that this destruction, the greatest history has ever known, was only a simple effect of the ignorance of a principle of philosophy? It can, and I am going to prove it. The Mexicans did not have firearms, but they had bows and arrows, which is to say they had the arms of the Greeks and Romans. They did not have iron, but they had flint, which cut like iron, which they placed at the tip of their weapons. They even had excellent military tactics: they made their ranks very compact, and as soon as a soldier died, he was immediately replaced by another. They had a generous and intrepid nobility who, more than Europe's nobility, envied the destiny of those who die for glory. Moreover, the vast extent of their empire gave the Mexicans a thousand means to destroy the foreigners, supposing they were not able to defeat them outright. The Peruvians had

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the same advantages; indeed, wherever they defended themselves, wherever they fought, they did it with success. The Spaniards even expected to be exterminated by those small tribes who had the resolve to defend themselves. How, then, were they so easily destroyed? All that appeared new to them—a bearded man, a horse, a firearm—had upon them the effect of a power invisible, which they believed they were incapable of resisting. It wasn't courage the Americans lacked, but only the hope of success. Thus, a bad principle of philosophy—the ignorance of a physical cause—paralyzed in a moment all the forces of two great empires.

Among us, the invention of the cannon gave such a slight advantage to the nation that first made use of it that it still hasn't been determined who actually was first. The invention of small telescopes helped the Dutch only once. We have learned to see in all these effects only pure mechanism; and so, there is no technological improvement that we cannot counter by another improvement.

The sciences are therefore very useful, in that they cure peoples of destructive prejudices. Since we can hope that a nation which has once cultivated the sciences will continue to do so, enough so as not to fall into the degree of coarseness and ignorance that brings ruin, we are going to speak of other motives that ought to engage us to apply ourselves to them.

The first is the inner satisfaction of seeing the excellence of one's being develop, and of making an intelligent being more intelligent. The second is a certain curiosity that all men have, and that has never been so reasonable as in this century. We hear it said every day that the bounds of human knowledge have become infinitely extended, that the learned are astonished to find themselves so learned, and that the magnitude of success has made them sometimes doubt its reality. Should we take no part in this good news? We know that the human spirit has progressed very far: will we not see where it has been, the path it has made, the path that remains to it, the attainments on which it congratulates itself, those that it aspires to, and those that it despairs of acquiring?

A third motive that ought to draw us toward the sciences is the well-founded hope of succeeding. What makes the discoveries of this century so admirable are not the simple truths that one finds, but the methods for finding them. Methods are not stones for the edifice, but instruments and machines for building the whole thing.

One man prides himself on having gold; another prides himself on knowing how to make it; certainly the truly rich one would be he who knew how to make gold.

A fourth motive is our own happiness. The love of study is almost the only eternal passion in us; all other passions leave us, as this pitiable machine that gives them to us approaches its ruin. Ardent and impetuous youth, which flies from one pleasure to another, is able sometimes to experience pure pleasure, because before we have time to sense the thorns of one, we enjoy the next. As we age, the senses offer us voluptuousness, but almost never pure pleasure. It is then that we sense that our soul is the principal part of ourselves. It is as if the chain that attaches the soul to the senses had been broken, so that pleasure now resides in the soul alone, completely independent.

If in this time of life we do not give our soul suitable occupations, the soul—which is made to be occupied but is not—will fall into a terrible ennui that leads us toward annihilation; or if, revolting against nature, we stubbornly seek pleasures not made for us, they seem to retreat with our approach. Gay youth glories in its happiness, and insults us without ceasing. As youth feels all its advantages, it makes us feel them too; in the liveliest company all joy is theirs, the regrets are ours. Study cures us of these difficulties, and the pleasures it yields do not remind us that we are getting older.

We need a form of happiness that can go with us through all life's stages: life is so short that we ought to reject any felicity that does not last as long as we do. An idle old age is the only burden; old age in itself is not, for if old age degrades us in one world, it benefits us in another. It is not the old man who is insupportable, it is the man—the one who chooses to perish of boredom or to go from one gathering to the next seeking every pleasure.

Another motive that ought to encourage us to apply ourselves to study is the utility that our society is able to draw from it. We will be able to add conveniences to the many we already have. Commerce, navigation, astronomy, geography, medicine, and physics have received a thousand improvements from the works of those who have preceded us. Is it not a splendid aim to work to leave behind us men more fortunate than we have been?

We will not, like Nero's courtier, deprecate the unjust centuries before those in which the sciences and arts flourished. *Miron, qui fere hominum animas ferarumque oere deprehenderat, non invenit hoeredem.** Our century may be just as ungrateful as another; but posterity will do us justice and pay the debt of the present generation.

* TRANSLATOR'S NOTE: The Latin, from Petronius (*Satyricon* 88.5), reads "Myron, who nearly captured the souls of men and beasts in bronze, did not find an heir." Myron was a renowned Hellenistic sculptor (fl. 480-440 B.C.).

Upon the return of his ships, a rich merchant is pardoned for laughing off as useless the person who led him, as by the hand, through the immense seas. One understands that a proud warrior, full of honors and titles, disdains the Archimedes of our day, who have called his courage into question. The men with formed designs who are useful to society—the men who love it—want very much to be treated as if they were in charge.

Having spoken of the sciences, let us say a word about *belles-lettres*. The books of pure spirit, like those of poetry and eloquence, have at least general utility; and these sorts of benefits are often greater than particular ones.

We learn in them the art of writing, the art of formulating our ideas, of expressing them nobly, in a lively manner, with force, grace, order, and a variety that refreshes the spirit.

Hasn't everyone at some time seen men who, by dint of application to their art, would have been able to advance it very far, but who, because they lacked education, could neither formulate nor develop an idea? They lost all the benefit of their labors and talents.

The sciences touch one another; the most abstract inform those which are less so, and the body of the sciences in its entirety is related to *belles-lettres*. The sciences gain much from being treated in an ingenious and refined manner; it makes them less dry and wearisome and puts them within reach of all minds. If Father Malebranche had been a less enchanting writer, his philosophy would have remained in the confines of a college, as in a sort of netherworld. There are Cartesians who have read only the *Mondes* of Fontenelle; this work is more useful than a stronger work because it is the most serious that most are able to read.

One must not judge the utility of a work by the style the author has chosen: often puerile things are said gravely, while very serious truths are said with bantering wit.

But, apart from these considerations, books that refresh the spirit of honest men are not without utility. Such reading is the most innocent amusement of men of the world, since it almost always displaces entertainments, debauchery, slanderous conversations, and the projects and maneuverings of ambition.