

## LIBERTY AND THE MACHINE

The truly great social drama of mankind has not been the oppression of the minorities by the majorities. This form of tyranny affects by definition only small groups of human beings, and if it has often assumed violent forms, it has nevertheless retained over the centuries its episodic character—excepting the case of the Jewish people.

The true social tragedy of historical times has consisted in the opposite phenomenon, and this form of tyranny has been at once universal and perennial. This has been the oppression of the majority by a minority, often infinitesimal.

Since the very beginning of human civilization—or more exactly, of an organized system of social life—a small “elite” has imposed its yoke, whip, law, on the vast majority of other men. This domination of large masses by a small number has appeared everywhere and at all times: from China to India, from Assyria to Egypt, from the Hellespont to the Pillars of Hercules, in classical antiquity as in the Middle Ages, and even in the modern period.

At all times, the mass of slaves, serfs or, simply, of the underprivileged has been numerically infinitely greater than the

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dominant class of the period. Slavery in antiquity is a particularly striking illustration of this numerical imbalance between the dominating and the dominated. It is well known that the number of slaves in Greece and Rome was two or three times the number of freemen.

If all the slaves in antiquity had revolted at once, in all places and at the same time, they would have easily crushed their masters under their weight. Such an onslaught would have precipitated the inevitable destruction of an unjust society and allowed mankind to gain several centuries in its struggle for a juster social order.

Why then did the slaves fail to rise, except in a sporadic, limited, and hence ineffective, manner? The adventure and, unfortunately, misadventure of Spartacus proved that it was possible to organize such an insurrection provided one really wanted it. The solution of the riddle is therefore to be sought in the absence of a strong enough will to be free, in a frame of mind where slavery is tacitly accepted. The slave's acceptance of his fate as part of the natural order of things is then the moral master-key to the social edifice of antiquity.

Why this resignation? Why did these men, deprived of the most elementary human rights, subjected to the most miserable and humiliating condition, fail to respond, and respond as a social class, to the call to freedom when the wide-open skies and the whole vast earth beckoned them? Why did they who ranked lower than the wild beasts who at least remained masters of their destiny in the fields or in the air, fail to hear the voice of nature in their breasts?

A little reflection on this troubling phenomenon, this perennial resignation of millions of people to the most atrocious fate imposed on them by a minority, is enough to lead one to a conclusion which, as paradoxical as it may seem, does honor to the "human species." No matter how low mankind may sink at certain times, it is nevertheless distinguished by this characteristic and eminently noble trait: Mankind does not revolt against suffering, but against whatever it considers unjust.

The slaves of antiquity did not muster up the necessary energy nor the will to revolt because such a revolt would not have had, in their own eyes, a strong enough moral backing.

The recovery of their liberty certainly answered to a very strong desire in them, but did not impose itself on their conscience as a moral duty. Hence it could only have the character of a strictly individual aspiration, and for this one does not easily expose oneself to the risk of armed insurrection. And how could they have joined to form a collective movement when this movement appeared, in their own judgement, to lack a common moral foundation?

For the crux of the matter is this: For ancient man, whether freeman or slave, the state of slavery was not contrary to the moral law. Aristotle's attitude towards the subject is familiar enough. How much more significant are in this respect the feelings of Socrates, the wise and gentle Socrates, the one and only prophet of the pagan world. Here is in effect what, according to Xenophon, he said to his son: "Has it ever occurred to you that, as it is unjust to sell one's friends into slavery *and just to sell one's enemies*,<sup>1</sup> so also is it unjust to be ungrateful to one's friends and just to be ungrateful to one's enemies?"<sup>2</sup> If a man like Socrates could pronounce the word "justice" over the atrocities that went by the name of slavery, it must be that slavery did not really touch the moral conscience of ancient man. And it was only in Israel, a notable and troublesome exception, that a reaction set in for the first time, though still very timidly, against this sacrosanct institution.<sup>3</sup>

This even makes one wonder how, under these conditions, this inveterate attitude, this bilateral acceptance of slavery as a just and necessary social law, could finally have disappeared. The spread of Christianity towards the end of the Roman Empire does not sufficiently explain this. For it is precisely as a result of such a psychological change that Christianity was able to assert itself. It cannot be denied that the rising Christian faith gave a powerful impetus to the vindication of the human

<sup>1</sup> Italics mine.

<sup>2</sup> Xenophon, *Memorials*, bk. II, ch. II.

<sup>3</sup> This reaction appears notably in the custom of freeing all slaves every seventh, sabbatical, year, as well as in the extension of the rule of sabbatical rest to the slave.

rights of the slave. But the new religion could not have spread in the pagan world if the spirit of the age had not been ready to receive it. There was then, in the course of ancient history, a slow evolution which culminated in the moral revolution at the beginning of the Christian era. The slow meanderings of the spirit of liberty through the centuries have remained as obscure as the origins of every other major change. Perhaps the frequency of emancipations from the century of Augustus on can be considered as the sporadic coming-to-the-surface of this subterranean flux. From another point of view, the revolt of Spartacus and the "slave wars" which it triggered off might well argue that the slave had ceased to regard the acceptance of his fate as an absolute law. Spartacus' insurrection was no doubt a symptom, an omen of the impending collapse of the ancient world.

The suppression of slavery was certainly the greatest social transformation in human history. It was already great in itself, because of the triumph of the moral principle it embodied. It was to be even greater because of its effects: The industrial revolution and the advent of modern civilization were its direct descendents. This is easily seen, and will in any case be shown below.

But before we remind ourselves that the machine is the daughter of liberty (a fact that tends too frequently to be forgotten), it is useful to take up the question whether this radical transformation of the social order confirms or denies the Marxist teaching about the economic determination of historical developments. A passage in Aristotle lends itself particularly well to this little test. In the beginning of his *Politics*, Aristotle who was a very reasonable man declares that slavery would cease to be necessary if shuttles and plectres were to start moving by themselves. The illustrious tutor of Alexander the Great would no doubt have made an excellent Marxist nowadays<sup>4</sup> since, in this passage, he makes social transformation dependent on a change in the conditions of production.

Now what happened was the exact opposite. It was not

<sup>4</sup> This would not, incidentally, have been his only error, at least in my opinion.

the coming of the machine which freed the slave. But it was, quite to the contrary, the coming of free labor which preceded the machine, prepared the way for it and made its coming at once necessary and possible.<sup>5</sup> If a few technical discoveries in antiquity had sufficed to bring about the disappearance of slavery, mankind would not have had to wait so long. For these discoveries were then already within reach. Better still, they had already been made: The water-mill (which would have made Aristotle's shuttles work) was known to the ancient.<sup>6</sup> On the other hand, Hero and Vitruvius describe some instruments based on the principle of gearing—the principle behind pedometers, taximeters, etc. Hero, for his part, went so far as to discover the principle of the steam engine: a hollow sphere equipped with an escape valve, which began to turn automatically around an axis as soon as water was brought to a boil in a boiler attached to the apparatus.<sup>7</sup> To assemble these various elements into an industrial machine would under these conditions have been

<sup>5</sup> I am by no means unaware of the complex character of historical causation—the result of the action of multiple factors whose effects intertwine and react upon one another in such a way that what appears as the result of a given transformation can also be considered from a different point of view as one of its partial causes. Nevertheless, it is often possible to distinguish between the dominant causes, in whose absence the effect would not have occurred, and the secondary causes whose absence would have decreased or retarded the effect under consideration, but would still have made it occur. Now the historical connection between the disappearance of slavery and the coming of the machine allows us to disentangle the action of precisely such a dominant cause: All other conditions (with the exception of the disappearance of slavery) which have contributed to the coming of the machine in Europe were fully developed at one time or another in other civilizations on other continents, but did not there culminate in a technical revolution. A single factor which was present in Europe was lacking elsewhere, and this was the disappearance of slavery. In India, slavery was not legally abolished till 1843, and then by a decree of the Governor General, Lord Ellenborough. In China, slavery persisted till the beginning of this century. According to the principles of scientific analysis, the abolition of slavery should therefore be considered as the dominant cause of the coming of the machine.

<sup>6</sup> Cf. Marc Bloch, "Avènement et conquêtes du moulin à eau," in *Annales d'histoire économique et sociale*, Nov. 1935, p. 541.

<sup>7</sup> Cf. P. M. Schuhl, *Machinisme et philosophie*, Paris, PUF, 2nd ed., 1947, pp. 7-8.

child's play, and nobody can pretend that the ancients lacked the necessary ingenuity. Now they did nothing of the sort, and Aristotle mentioned automatic shuttles only as an idle dream, to show all the better that slavery answered to a permanent necessity, and that its suppression could in a way only be envisaged for "tomorrow come never:" when shuttles would move by themselves.

Now if we adopt the Marxist point of view and look at the question solely from the economic side, then the discovery of the water-mill, of the moving power of steam, of systems for the transmission of energy, and in short, of all the constituent parts of an industrial machine, should have entailed the replacement of slave labor by mechanized production, if only partially. The economic interest, that *deus ex machina* of historical materialism, demanded in effect such a transformation. For even though a slave received no wages, he still had to be fed and clothed; he had to be cared for in case of illness if he was to be preserved, and after his death, which must have often been untimely in those times, he had to be replaced. The machine would have saved all these expenses, and it would not itself have cost much since it would have been built by slaves.

How then are we to explain the fact that the ancients and especially the Romans who were such great administrators did not even dream of using the machine in the economic sphere when it could have saved them such expenses? And why is it that Aristotle, who was such a fountain of ancient knowledge, did not even have the faintest idea, in speaking of supernaturally automated shuttles, that a simple water-mill would have sufficed without any divine intervention?

There is a profound psychological reason behind this "irrational" attitude. Slavery (if one dare say it) was part of the moral foundations of ancient society, and its disappearance would have been felt as a decline and would even, in a sense, have been a decline. For it is one of the greatest paradoxes of history (though not incompatible with the mysteries of human nature) that one of the noblest and most admirable sides of that extinct civilization was indissolubly united with its vilest and most odious side. According to the classical ideal, a free man must not be debased by purely physical tasks, and his mind

must remain a stranger to all utilitarian concerns. This eminently aristocratic conception lacked neither in nobility nor in grandeur. But it could only be realized at this stage of history through slavery. Nevertheless, the ancients were right on one point: A man cannot truly realize himself or his destiny except by freeing himself from bondage to material things. The same principle, incidentally, also inspired among the Hebrews the prohibition against all worldly activity and all manual labor on the day of the Sabbath, the day consecrated to the Lord. And Christ's famous remark to Martha, who was "careful and troubled about [too] many things," bears the imprint of the same fundamental principle. Christ, too, vindicated the freedom and the dignity of the spirit.

It is true that the ancients did not aspire to a moral and spiritual state in the Jewish or Christian sense when they demanded that every citizen be freed of all material fetters. What they wanted him to have was the dignity that comes from occupying oneself exclusively with "noble things:" primarily with war, with politics, the master passion of their times, and also with the arts, letters and philosophy. But even if this conception of the free man as having an exclusively spiritual vocation was thus limited to the social and intellectual life (in the widest sense of the term), it was not without its grandeur, and mankind has felt an enduring nostalgia for it since the ancient world disappeared. The cult of the "classical humanities" has no other explanation. It was not the need to preserve an international language in an otherwise divided world which assured, at the end of the Middle Ages, the continuance of Greek and Latin studies. For these studies have outlived the general use of Latin in public or international life. Later advocates sought to justify the continuance of these studies by appealing to an alleged aptitude, peculiar to Greek and Latin, for the formation of the intellect. But modern literature since the seventeenth century would constitute just as rich and interesting a mine, and the kind of intellectual gymnastics ensured by the teaching of ancient grammars could from this point of view be advantageously replaced by the study of mathematics. Classical studies form thus the object of a cult whose initiates continue to extol the virtue of their practice without always being able to explain it by

rational argument. The virtue is more "felt" than understood, and the reasoned justifications to which it is customary to resort in its defense are too vague to be convincing. In reality, the real virtue of classical studies lies elsewhere. Surely the key to its whereabouts is to be found in the very term "humanities" which is used to designate these studies. Greek and Latin introduce us to a civilization which, once the veil is cast over the horrors of slavery, offers us nothing less than a "model of humanity" according to which man can completely realize his aristocratic vocation. It is a model of a society where there are, in a sense, shoes but no shoemakers, for the latter, like all those who are engaged in servile tasks, are virtually absent, excluded from the world these literary works conjure up for our contemplation.<sup>8</sup> A future citizen who becomes familiar with the ancient authors in their own language penetrates, through the portals of the school, into the intimacy of a world with which he can identify, a world where all bondage to material things seems to be missing and the ties seem cut which, like an umbilical cord, attach man to his animal origins.<sup>9</sup> Classical studies can therefore be beneficial even nowadays, for they remind us of the non-utilitarian ends of human life. There resides their "mysterious" virtue. They keep alive in us a keen awareness of a social ideal to be attained, an ideal which ancient society could only artificially prefigure, but which our modern society is called upon to realize in radically different ways.

The task of raising man above bondage to material things, though plainly justified in itself, has nevertheless led the ancients, along the ill-omened road of slavery, to hold all manual labor in absolute contempt. G. Glotz points out that the infamy attached to manual tasks forced the state of Epidaurus to have

<sup>8</sup> The same was true of the Egyptian world. Cf. P. Jaccard, *L'histoire sociale du travail*, Paris, Payot, 1960, p. 31: "Egypt dreamt no more than Greece or Rome of dedicating monuments to labor or to the workingman... The fellahs and the artisans were never, except incidentally, represented on the frescoes of the tombs, on bas-reliefs or common pottery."

<sup>9</sup> This is certainly an unnatural vision, a kind of magical illusion, which can only arise because of the distance in time which separates us from these ancient societies. This is why the advocates of classical education do not accord the same formative value to the study of modern literature.



them carried out by public slaves as a governmental service.<sup>10</sup> Aristotle taught that, in the ideal City, no artisan was to enjoy civic rights.<sup>11</sup> Plato similarly held that the quality of citizenship was incompatible with the practice of a mechanical trade, for that which pertains to the artisan or to manual labor is, in his words, shameful and deforms the soul at the same time as the body.<sup>12</sup> This contempt was so intense that it spread beyond manual labor itself to everything connected with it in one way or another. Seneca stressed the fact that all the inventions of his time, like the use of transparent window-panes, central heating, shorthand, were without exception the work of the vilest of slaves.<sup>13</sup> The machine began to interest the ancients only when it could be made to serve the ends of war, like the catapults and such other engines of destruction as the famous lenses that enabled Archimedes to set enemy ships on fire.

The varied fortunes of the wheel in the ancient world can serve as further confirmation for this truth. While the use of plain disks which turned on their axes had spread among the Mediterranean peoples as early as three thousand years before Christ, the Mexican Indians were still ignorant of it four thousand years later. This phenomenon is seemingly inexplicable, and all the more so as the Mexicans possessed children's toys equipped with wheels.<sup>14</sup> That they should not have thought, under these conditions, of adopting so simple an expedient to facilitate transportation, seems astounding. But some light is thrown on this mystery if we reflect that the horse was just as unknown to them. It was therefore impossible for them to construct chariots similar to the ones used in warfare by the Assyrians and Egyptians. For these call in fact for fast runners, and oxen and other draft animals will not do at all.<sup>15</sup> But

<sup>10</sup> G. Glotz, *Le travail dans la Grèce ancienne*, Paris, 1920, p. 194.

<sup>11</sup> *Politics*, IV, 3.

<sup>12</sup> *Republic*, VI, 495 E, VII, 522 B, IX, 590 C.

<sup>13</sup> *Letter to Lucilius*, 88 and 90.

<sup>14</sup> Cf. P. Jaccard, *loc. cit.*, p. 27.

<sup>15</sup> An exception must be made for elephants who, though slow, are little vulnerable because of their size and the thickness of their skins.

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the use of the wheel to ease the toil of humble men was of no real interest to them. They therefore scorned this technical advance, as the ancient peoples of Asia would have done if it had not been for "man's noblest conquest."

It is thus the very spirit of ancient civilization which opposed the invention of machines. No one desired the disappearance of slavery, for the liberty and dignity of the slave owners rested on that institution. Even a partial replacement of slave labor by mechanized production would have been considered as an assault on the foundations of the social and moral order of the period. Thus a certain superior form of civilization found itself condemned, first to arrested development and then to death, for the very reason, viz. slavery, that had for a while made its growth possible. By paralyzing technical progress, slavery did not allow the ancient world to solve the ever more complex problems created by the evolution of social life. It is true that technology is not enough to guarantee the survival of a civilization. We are only too well aware of this today. But a society deprived of the resources of industry can only sink in the end into the stagnation of a slow death.

Modern civilization, on the other hand, has derived its strength from the machine and been assured by it of its progress. The power which the machine conferred upon the European world, and the bad use which Europe then made of her technical superiority, have led us to forget that this supremacy which is nowadays being contested had a moral origin. Thus it may not be a bad idea to remind ourselves in these times that the machine, the sceptre of European primacy, is the fruit of liberty. It is because Europe abolished slavery at home that she was able to enjoy an unprecedented technological power and thus to rise above all other continents. The history of the industrial revolution clearly testifies, as we shall see, to this spiritual kinship which makes the machine the legitimate child of liberty, sired by the religious renewal of Christianity.<sup>16</sup>

<sup>16</sup> I think it necessary at this point to draw a very sharp distinction between the historical role of the Church as such and that of the Christian faith. In the course of the centuries, the established church has too often made itself the servant of the state and of the ruling classes and has, for this reason, been an instrument of political reaction, ready to justify the actions of the established

While slavery, in the scarcely attenuated form of serfdom, persisted for a long time still in the feudal countryside, it was promptly and completely abolished by the nascent bourgeois society of the towns. A dictum of Germanic law is particularly revealing in this respect: *Stadtluft macht frei* (city air makes free). This is a perfect translation of this liberating force, a force due, not to economic considerations, but to the psychological climate of an urban society deeply imbued with the religious spirit.<sup>17</sup> For Christianity had rehabilitated the humble folk and made labor honorable. In virtue of the legal principle just cited, every fugitive serf who found asylum in a town became free at the end of one year and one day, and from that moment on could no longer be reclaimed by his master. It was in this way that, in the towns of Europe and for the first time in the history of mankind, a society was born that knew only free workingmen.<sup>18</sup> This unheard-of situation was promptly to produce

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authorities while preaching to the masses the acceptance of a miserable fate in this world. But the spirit "bloweth where it listeth," and it is generally outside the constituted churches (no matter incidentally what these may be) that the true faith and the creative religious spirit find their expression. In Europe, the true spirit of Christianity (an outgrowth of the Jewish faith) manifested itself in the monasteries on the one hand and in the urban religious fraternities on the other. And I am thinking especially of the latter when I speak here of the emancipatory social action of Christianity, which was to lead in the end to the triumph of the principles of the French Revolution.

<sup>17</sup> Chivalry affirmed its Christianity only through the crusades, which is to say, through acts of war, and it will perhaps be conceded that this is not the most profound expression of the spirit of Christ. In fact, feudal society had remained impregnated, on the social plane, with the pagan spirit. This is also shown by its attitude towards labor: "In a certain sense," observes H. Pirenne, "the ancient idea that labor was below the dignity of a free man survived among the chivalry." (*Histoire de l'Europe*, Paris, 1936, p. 113).

<sup>18</sup> The contrast between the town, the oasis of free labor, and the country, where servitude persisted, became only more pronounced with time. It is well known that there were still serfs in France on the eve of August 4, 1789, and all peasants remained, according to the hallowed phrase, *corvéables et taillables à merci* (liable to forced labor and taxable at discretion), which, from the economic point of view at any rate, hardly differed from servitude. These facts force one to make the strongest reservations in connection with Commander Lefebvre de Noëttes's widely known thesis that it was the invention of the shoulder collar which, by increasing the force of traction of the horse, became the principal

equally unheard-of results: a flowering of technical inventions culminating in the industrial revolution. Technical progress made its appearance as soon as the towns of Europe assumed a certain size. The "journeymen" were not, of course, always satisfied with their fate, and their revolts were frequent. But it is

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cause of the disappearance of slavery. For the question then arises why human servitude should have disappeared so soon in the towns—where relatively little use was made of the horse and where the introduction of the shoulder collar could therefore have had only a very limited influence—whereas it was to persist for centuries still, in a scarcely attenuated form, in the countryside where the use of the horse was yet a universal and everyday practice. Besides, as Jérôme Carcopino noted quite correctly in his preface to the second edition of Commander Lefebvre des Noëttes's work (*L'attelage et le cheval de selle à travers les âges*, A. Picard edition, Paris, 1931, p. iv), there were "emancipations of serfs on a more or less massive scale within the domains of the last Carolingian and the first Capetian kings before the harness had been improved. And conversely, do we not know of countries, like the United States and Brazil, where slavery continued after the improvement of the harness?" But the essential question from the point of view which I am here adopting is whether technical progress, be it a matter of harnessing or of more advanced expedients, was the cause or the effect of the liberation of the workingman. If all that was necessary to deliver the enslaved portion of mankind was to perfect the collar of the horse, one ought to raise the question why the Romans who, like all the ancients, were great experts in physical culture and for whom the play of muscles held no secrets, should have failed to notice that the force of traction resided in the shoulders of the horse and not in his neck. Could such "inadvertence" on the part of the ancients be the reason why hundreds of millions of men suffered the martyrdom of slavery for thousands of years? The true cause that prevented the ancients from perfecting the harness was the same as that which led the Romans to neglect the practical applications of steam power (though they were acquainted with it) or that which kept the ancient Mexicans from making use of the wheel (though they, too, knew it) for traction: It was complete indifference to the misery of the masses of men. What allowed the harness to be perfected, as it made all the other inventions of European technology possible, was the change in attitude towards the workingman, in a Europe more or less converted to Christian principles. The movement of human liberation had to precede invention, in the countryside as well as in the towns. Invention is in fact the birthright of the free man; for it is the daughter of hope, and hope is not given to the slave, who is well aware that if his labor were to become easier as the result of a technical improvement, he would be transferred to harder tasks of which there is never a scarcity. As to the "vile slaves" to whom Seneca attributed certain technical inventions of his time, these were cultivated slaves, as the mention of stenography shows—slaves who constituted the thin upper, privileged, layer of the enslaved world and who were therefore by no means representative of their class as a whole.

precisely by revolting against unsatisfactory working conditions that they revealed themselves as free men, for a slave does not rebel. Now it might appear at first sight that it was the necessity of paying higher wages and thus, of replacing costly labor, which led to the invention of the machine, and a Marxist would not hesitate to make this inference. However, a study of the facts forces one to the conclusion that, in the great majority of cases, the first machines were not invented by the employers who had a material interest in them, but by the workers themselves who were anxious to lighten their tasks. Wyatt who built the first spinning machine was a carpenter by trade.<sup>19</sup> Hargreaves who perfected it and devised the "spinning-jenny" was a weaver. A little later, Crompton, himself an artisan, conceived the "mule-jenny."<sup>20</sup> Similarly in the metal-working trades, the originators of the great technical improvements—men like Newcomen and Potter—were workingmen; and from their ranks came also the Scottish mechanic James Watt, the creator of the modern steam engine. "Most inventions and discoveries which were soon to multiply in Holland, Germany and England were," as P. Jaccard observes, "the work of men of modest condition,... who were themselves more concerned with the public good than with their own personal profit. All of them strived, since the seventeenth century, to reduce the crushing burden of labor which rested on the mass of the workers."<sup>21</sup> In those cases where the inventor was not himself a workingman, it was the desire to improve the lot of the working classes that moved him. "Bacon and Descartes," writes Schuhl,<sup>22</sup> "wanted to build a science capable of diminishing and easing human labor." This concern, so entirely foreign to the Greeks and Romans, was on the contrary at the bottom of the rise of modern technology.

<sup>19</sup> Cf. Schuhl, *loc. cit.*, p. 47.

<sup>20</sup> *Ibid.*

<sup>21</sup> P. Jaccard, *Histoire sociale du travail*, Paris, Payot, 1960, p. 175. The same observation is to be found in Schuhl (*loc. cit.*, p. 44). Compare this with Seneca's remark, cited above, about the technical inventions which were "the work of the vilest of slaves."

<sup>22</sup> *Loc. cit.*, p. 44.

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It was by suppressing slavery, the backbone of ancient civilization and for a while the force behind its expansion, that modern society forged the tool it needed to bring to fruition a dream which had flowered once among the Greeks and Romans—the dream of the “Athenian republic” where every citizen would be an aristocrat of the spirit. For the power of the machine is unlimited, and judiciously used (and we shall return to this point; this goes without saying), it will enable men to break the “umbilical cord” of their species which still attaches them to their animal origins: their bondage to material things. Although automation is still in its infancy, it has already shown that the need to resort to human labor can be reduced to hitherto unsuspected proportions. Of course, a certain amount of manual labor will always be indispensable. But the point is not so much to do away partly with physical effort, for such effort may even be beneficial, as to keep mechanical work from enslaving men, as it has up to now always enslaved the vast majority of our fellows. For a man who finds himself obliged to devote all effort and all thought to ensuring his physical survival, is not completely a human being; he still remains subject to the law that governs the animal world.<sup>23</sup>

As the daughter of liberty, the machine is at the same time the most powerful means of liberation ever conceived by man. And this is perfectly logical, for the liberating religious spirit of the medieval guilds has in some way, in delivering the slave and in creating the machine, breathed its own spirit into it.

But it so happened that, at the beginning of its history, the machine, though created by the will to liberate, turned against man, its creator. The machine behaved in this like a natural force which maltreats man inasmuch as it has not been tamed and subjected to his law. Instead of shortening the working hours, the machine in its beginnings lengthened them.

<sup>23</sup> Henceforth there is nothing visionary about this vision. Thanks to the development of the machine, observes Schuhl, “the philosopher’s dream would at last come true; the state would no longer comprise any but free men in the full sense of the word; all would have all the time they needed for cultivation, instruction, meditation and also for the practice of sports” (*loc. cit.*, p. 106). And the author concludes that “it is up to the men of our time to restore the notion of leisure to its full value.”

Instead of liberating the worker and improving his lot, it rendered him even more miserable than before.

It can be said that the bourgeois society of the nineteenth century, in usurping the machine for its own sole benefit, was guilty of a moral fraud: It turned the invention away from its liberating aims for which it had been conceived by its creators. Instead of continuing to employ the same number of workers by shortening the working day, the bourgeoisie lengthened the working day by reducing thousands of human beings to unemployment, and subsequently exploited their misery by reducing wages to the starvation level. Such an attitude was in fact not very far removed from the mentality of the slave-traders. It marked thus a considerable moral setback as compared with the spirit of the medieval corporations.

It is not surprising that such abuses of the machine should have given birth to the idea that the use of the machine had to be wrenched away from the selfish and arbitrary control of individuals. One did not have to be a very great genius to proclaim, under these conditions, the collectivization of the means of production. The soil had been thoroughly prepared for this idea to germ and to bear fruit. The truth is that mankind has not yet finished paying for the errors and crimes committed by the first newly rich of the industrial era in their ferocious egotism. This was the original sin of the bourgeoisie, and ever since, the progress of Europe and the world has lain under that curse.

But the question still arises whether socialization of the means of production would solve the problem and restore the machine to its mission: to liberate mankind.

The first and most forceful objection to the collectivization of the means of production is that it necessitates the intervention, and presupposes the omnipotence, of the state. For it seems that by charging the state with the regulation of the economic life, one destroys at once the liberty of the individual. From there, one can only go from Scylla to Charybdis: To save man from being oppressed and exploited by the economic powers of private capital, one subjects him to the tyranny of an omnipresent state, and liberty is, once again, the sacrificial victim.

There is nevertheless one solution, and it does not lie in a

compromise. I believe that the socialization of production is in fact inevitable, indispensable and just, but that it can be achieved perfectly well without detriment to individual liberty. Here too, automation opens up a new perspective: By reducing the length of economic activities, it restricts the sphere of intervention by the socialist state. It would not matter if economic life were regulated by public authority if these regulations could affect only a limited part of our activities. Once a man had completed his three or four hours of daily economic activity, he would be free to organize his life as he pleased for the rest of the day. Automation offers for the future a solution of the antithesis between liberty and socialization, by permitting us to realize the one without sacrificing anything essential to the other.

If the principle of the socialization of the means of production, in the form it has been given up to now, has led to the installation of totalitarian regimes, it has done so for more than one reason. It is not just that our society is still technically so underdeveloped that it has not yet been redeemed by automation—that our bondage to material things has not yet been restricted to the area it should ordinarily occupy in human life, viz. to a minimum. I believe that the totalitarian tendencies in modern society have an altogether different source, and that their deepest root is really biological in nature.

The totalitarian trend is a particular, and perhaps the most significant, manifestation of the anguish of modern man. It is not by accident that the tendency to totalitarianism in our world is directly proportional to our irreligion, the immediate cause of that anguish. I will not repeat what I have said elsewhere<sup>24</sup> about the nature of human anguish and the biological basis of religious life. I will confine myself, as far as this essay is concerned, to remind the reader that every living being is haunted by the fear of death. In a beast, this fear remains unconscious; but man, and this is the terrible ransom he has had to pay to achieve the conscious life, does not escape the brutal confrontation with what the prophet called "the king of terrors." Against this terrible and paralyzing vision—this prevision—there

<sup>24</sup> In *La révolution originelle*, Paris, Vrin, 1958.



is no refuge outside the religious life, and whoever rejects the latter finds himself delivered without mercy to the former.

To understand now the attractiveness of totalitarianism, we need only consider that a species as such is not achieved by death, for it perpetuates itself beyond its ephemeral members. The icy hand of death is poised on the individual, while the species laughs it off. The more pronounced the individuality, the more terrifying the ineluctable end. The earthworm does not lose much by disappearing as an individual, for it hardly exists as such: It is almost confounded with its species. Now man is the most individualized of all creatures, and therefore the most menaced by death. It can even be said that, without religious hope, man is not a viable creature: The prospect of a certain end is such as to destroy in him every real spring of action. What good is it to toil and suffer when one day everything must vanish without leaving a trace?

Thus a human being deprived of religious support finds his individuality a cause of increasing suffering. It is therefore not surprising to find among the increasingly irreligious masses the need to rid oneself of the dead weight of one's individuality. It is then that men seek to merge, through totalitarianism, with the collective whole, that is to say, with the species that does not die. By submitting wholly to the authority of the state, they renounce to some extent their individuality and diminish at the same time the part played by what, in them, is most exposed to attack by physical death. Death hurts their individuality, and they try to tear out the wounded part, as an animal abandons a member seized by a pursuing enemy. A man tormented by death tends, through totalitarianism, to drown himself in the collective whole, thus seeking refuge in the bosom of the species over which death has no dominion.

It can therefore be asserted that the adoption of a totalitarian form for the realization of the modern communal idea is due to the temporal coincidence of the two movements. The communal idea could be realized perfectly well with due respect for individual liberty, as is shown by the example of the Israeli kibbutzim. But the blind urge of the irreligious masses to merge in a collective whole has led to the realization of a totalitarian form of communism, and the partisans of that

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form of government have, quite logically, looked upon religion as opposed to the very foundations of their social system.

Nevertheless, if the ancient ideal is to be realized, socialization is indispensable. Only socialism can insure the full growth of the human personality, for it alone can suppress material concerns. I have said above in what form I envisaged it. But to attain this goal, we must conjure away the totalitarian deviation, and for this, there is no other means than to make man regain the religious equilibrium within his soul. Thus the social dream which I just sketched and which seemed so close a little while ago, recedes again into the distance, to the still far-away prospect of a solution to the actual religious crisis of mankind. We are thus faced again with the problem, but perhaps also with the truth.