

The Modern Fetish of Science and Technology

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Dialectical concatenation of topics

[There is no need to repeat at the beginning of each of our meetings the chronicle of the whole series, but it opened over ten years ago as a concatenated whole, so a link is useful and necessary. We are not dealing with topics chosen at random or isolated from each other, and their whole is being ordered into an organic and complete system. We can consider that some areas of this work of ours have already been satisfactorily arranged, although we do not mean to say that we should not return to them or give them further development. Other facets of the unitary Marxist doctrine have been dealt with in our meetings and have been addressed in the last ones to be completed in the present one.

It has been very evident in these meetings how the various topics dealt with interpenetrate and support each other. The study of the economic part, for example, serves to demonstrate Marx's threefold objective, i.e. the explanation of the mechanism of the modern industrial company, and the explanation of capitalist society as an economic whole; hence finally arriving at the supreme point, the demonstration of the programme of the communist form that will revolutionarily succeed capitalism, a programme that is built on continuous references to the succession of previous forms and the dynamic that in each of them, historically, the forces and forms of production and social classes have presented. Without such a generally historical view, even the economic science of capitalism with the prediction of its downfall would have been impossible.

The essential parts, economic, historical and political, would find a suitable place in the body of a unitary work expressed in theses, with good systematics and without repetition. And so would that part of the work of our last meetings that has strongly interested the comrades and which we have indicated for brevity as the 'critique of philosophy', since it is best defined as the critical demolition of all the ideologies of the enemy classes, up to that of the modern bourgeoisie. This ideology, which appeared with the glories of the Enlightenment, is today wrecking before our eyes in a lying and obscurantist science, whose deceptions far surpass those of the older classes and forms, before which the bourgeoisie has boasted to be the exponent of progress, civilisation, truth and wisdom, whereas it is no match for them, despite its highly advanced science and technology, useful only for the overproduction of commodities. The proletariat, through the work and conscious fault of the priests of the academies sold out to the false, is not sufficiently disenchanted with it today. It will be when it has conquered the revolutionary thesis that shows how the bourgeois form has given (and gives) more exploitation, dehumanisation, deception, than all the other forms and classes that have preceded it in history and are vilified by it.

This concatenation of topics and the connection between comrades in collective work means that our meetings increasingly have the typical character of a true revolutionary movement, one that privileges anonymous, impersonal, organic work, which is carried out in continuity, not exhausting itself in the round of periodic meetings, but extending throughout the entire arc of party activity. Thus, the general meetings represent the synthesis of a broader work, the fine-tuning, the summary balance of the results arrived at through work that is not academic, done at a desk, but carried out amidst the difficulties of daily life and the vicissitudes of the class battle. This synthesis is then reported in the newspaper and returns to the entire party. Thus the general meetings are not so much an opportunity to provide the groups with a 'finished product' as part of a process to give a new collective chisel stroke to a whole in formation that is necessarily half-finished].

The Communist Encyclopaedia: Semi-Finished Product in Continuous Elaboration

[We have seen the great picture of the passage from the primitive communist society to the successive forms - classist and therefore each with its own type of alienation between man and nature, between man and the tools of his labour, the products of his labour, his own conditions of biological development - up to the total and increasingly mortifying detachment in capitalist society. From this, by the same necessary determination, operating in the passages of history before, there will be the leap to the revolutionary repossession of harmony with nature, to communist society, on a higher plane. And the reflections of our study on the vital problems of the tactics and strategy

of the class party have been summarily illustrated and completed by reading powerful and little-known passages from Marx and Engels. But the discussion would be incomplete if we did not link this to themes that seem to be of greater concern, but which absolutely must be addressed and linked together. On the one hand, the development of the classical themes of Marxism; on the other, the question - made all the more topical by recent developments in technology and, in parallel, by the deafening international conformist propaganda about rockets and satellites - of the attitude of the Marxist revolutionary party to science. More generally in the face of the problems of knowledge, and of the opposition, not academic, not scholastic (and not even 'philosophical', but class and battle) between our world view, inseparable from communist doctrine, and the bourgeois world view, a reflection of the desperate preservation of the order of property and Capital. The publication in extenso of the various reports on this specific subject will begin in the next issues of the journal. Unfortunately, the paucity of our means has prevented us from doing so earlier.

The isolation of the proletariat, choked by triumphant opportunism, limits the number of our followers, [but it also draws a] steely line against all opposing sectors, so we make no distinction between near and far. Ours is the work of a small number of militants without protection and scheming, who wrest from the torment of their workforce the little they have to live on and the time they have to give to the party, so what should have been the material prepared for the themes of the Florence meeting was not ready and is not ready even now. We will therefore present the material as it is, and this is in keeping with our resolute affirmation that there is nothing literary or scholastic or academic in our work, which has no official schemes and programmes, does not produce polished and refined texts, but moves forward struggling amidst discomfort and shocks.

We work in fragments and are not building a communist encyclopaedia. Otherwise it cannot be, if the condition of our work is the deployment of enemy society and the decades-long defection of ranks of the forces in our camp. Encyclopaedias can be revolutionary even without being immovable systems of knowledge, and the bourgeois class has given examples that deserve the greatest consideration, not least because they are resolutely ultra-personal. Our encyclopaedia is the Communist Manifesto, The Capital, etc., and it should not deceive us that the waves of the enemy class's counter-attack (it still swears today, albeit hypocritically, on the now three-decade-old theses of its Tables) often reduce us to citing the Marx-Engels duo alone as the banner of millions and millions of past and future militants.

Moscow, after the great theoretical restoration of Bolshevism which added the name of Lenin, in ridding itself with grandiose and ingenious movements of the remnants of the historical, anti-feudal task (the Russian key to the history of Europe), to the harsh path of the proletarian revolution, could have given us an integrated and inviolable encyclopaedia, but the urgencies of history prevented

this from the very first congresses: the prospect of revolution was, at that stage, at once too rich in generous illusions and treacherous pitfalls. One could not and would not stop, one went ahead accepting too many friends and allies and postponing selection until after victory. History has no choices but causes; and catastrophe followed. If we could not stereotype an encyclopaedia when we were too strong, we cannot claim to do so now that we are too weak. The plates in which the texts are cast in metal are reduced to flaps and passages, the substance of which is rigid and powerful, but the contours are from time to time incomplete and discontinuous. The revolution of generations to come will weld together the pieces that our limited but undaunted efforts connect to the weave of the already perfect original picture, as we will repeat a thousand times, over a century before today.

So not: 'philosophical part of Marxist theory', but 'critique of all philosophy up to bourgeois times'; and therefore 'critique also of science up to today'. If you like, in a positive sense, 'Marxist theory of human knowledge', which leads to the conquest of a knowledge no longer individual but of species, against which myths, philosophical systems and scientific baggage of class societies fall, all overcome and defeated, most of all and with most bitter condemnation the modern ones, deformed fetishes of technology and science in the bourgeois world].

An open study on the theory of knowledge

Already at the Paris Meeting, with the enunciation of very important economic and social theses, arguments were also made concerning those problems that current culture is wont to collect under the name of 'philosophical positions'. In the meetings in Turin, Parma, Milan and Florence, and also in the reports, we dealt with these issues at length. It only happened, as usual for the needs of our work, that the written account of the last meeting in Florence went as far as the treatment of Marxist economics, but did not go as far as the treatment of the 'philosophical' question that we dealt with there. Then his account will overlap with the account of the current meeting.

This always leads to some minor inconvenience: for example, there were comrades waiting for those texts. Perhaps the famous question we discussed regarding the hypothesis of the biblical description of the destruction of Sodom and Gomorrah could also be developed, namely whether one could imagine that this was the transmission of an ancient memory of the descent of space beings to earth. Some comrades would have liked to have those developments: when the time comes, we will get them. In any case, of course, we will not put in the whole biblical dossier that we used in Florence. We will take it up again at the end of the meeting. The summer months are also useful for us and we can do this work calmly.

At that third meeting in Florence, in addition to Marxist economics, about which we have said enough, we talked about the study of the Economic-Philosophical Manuscripts, we reconnected with the concluding part of the Milan report (reported extensively in the newspaper account) and we talked about the famous question of the unravelling of the millenary enigmas that have fatigued man; whose contrast, whose irreconcilability is brilliantly resolved by the new construction given by Marx's dialectical materialism on the famous contrasts of man - nature, senses - thought, motion - stillness, enjoyment - suffering, object - subject, idea - fact, etc. We talked about the value of science, of scientific socialism. We mentioned the subject of modern technology, to which we shall now return, and we set out our view, or rather tried to set out the view of the Marxist school, on the general problem of human knowledge.

If we hold that knowledge, ideology in all its manifestations, literature, religion, philosophy, are the superstructures superimposed on the fundamental structure of the forms of production, as we have said, making an historical scheme of the forms and modes of production, so we must be able to make an historical scheme of the superstructures. Just as our outline already contains, in its broad outlines, a history of technology, so it can also contain an outline of the history of science and that of philosophy, which is considered a separate subject; hence an outline of human knowledge. As human activity and tradition have evolved, so this derivative of it, which is knowledge, has developed in the course of the millennia, in the succession of historical epochs and in the concatenation of all the great arches of the bridge we have repeatedly spoken of. The key to our position, contrary to everyone else's, is this: that there is first action, then comes speculative thought. Knowledge did not come first and then action. Knowledge came later: after that came the system of written ideas, of disseminated ideas, of propagated ideas. All this came after certain concomitants in the systems of human events and acts had been determined.

This is the fundamental key. We then dealt with the problem by delving into the origin of thought. And we have addressed the question of whether thought somehow pre-existed nature. Since we have abolished the contrast between man and nature, so we can argue that nature thinks without man, we would find ourselves in the famous dilemma of whether the chicken or the egg came first. To this problem, the bourgeois scientist wanted to answer with the question of extraterrestrial thought coming from space. This allowed us to tell, even as an amusement and lightening, the story of the space travellers who, as they departed, by discharging their fuel, allegedly brought about the celestial flame described in the Bible, the one that destroyed Sodom and Gomorrah, as would also be proven by the new alleged confirmation from the famous manuscripts discovered near the Dead Sea.

Interesting bourgeois dichotomies

From all this we come to the concluding part on the comparative function of science and religion. Because here our solution is quite different from the bourgeois one: for us it is not true that religion represents ignorance and that, once science appears, religion disappears. Religion for us is but an anticipation of science, whereas it is the bourgeoisie [that treats science as a new religion]. We also came to the bourgeois comparison between art and science, responding to the question posed by some thinkers, who wondered why scientific findings were so frequently changeable and renewable, why scientific theories were generally transient and provisional, whereas the great products, the great masterpieces of artistic thought remained unchanged and moved through the millennia, preserving intact their charm, their power, their beauty.

We put forward the theory that the explanation was not the one put forward, namely that intuition was faster than intelligence. Our theory is that great works of art are the translation of languages emanating from enlightening epochs, which are epochs of revolution; whereas the transmission of scientific results is typical of epochs of human slumber. That would be the famous: *Quandoque bonus dormitat Homerus* (Sometimes even the good Homer falls asleep).

Homer would have arisen, according to our explanation, in a revolutionary epoch. And so did all the great poets. Dante arose at the birth of modern time for the Italian context, and Shakespeare for the English one. And their works have remained immortal because they were truly born in one of humanity's developing epochs (those epochs that others call 'progressive moments'), in those rare moments when humanity sprints towards new conquests, while science depends too much on material technology. Technology depends on the relations of forms of production. And on technology, as on its development and renewal, the preservation of forms of property and forms of production, such as the ways in which society and the state are organised, has a negative influence. Thus an anti-developmental, anti-progressive pressure is exerted; and this same pressure is exerted on so-called positive science.

That is why, in general, art is revolutionary and science is counter-revolutionary. That is why, in general, culture is conformist, reactionary, subservient to the ruling class. [The culture of an epoch appears as an isolated phenomenon that the artist seems to impersonate as an individual. After all, revolution always comes in advance, to minorities, avant-garde groups, small parties that go against the tide. When class revolutions have achieved their aims, then avant-garde culture becomes the general domain of the various schools, academies and churches, all equivalent forms of transmission of ideologies. Then culture, with art, becomes obscurantist and counter-revolutionary].

In our various reports, we have therefore extensively addressed the question of the ingenious definition of enigmas contained in the Economic-Philosophical Manuscripts of 1844. And we have insisted, and continue to insist, that this part of our critique, of how superstructures have evolved, meets perfectly, is perfectly connected to the other reports and the other reports that concern historical research, such as that on the forms of production prior to capitalism; or economic research, such as that on the present American structure and the present Russian structure, or on the general theory of capitalism contained in Marx's fundamental work.

In parallel, we carry out the critique of philosophical thought, and return to the famous question of the opposition of matter and thought. We have given, in the course of previous lectures, the explanation of the content of our dialectical materialism; and here is another demonstration that in a certain sense (as the bourgeois scientist quoted in Florence said) intuition comes before intelligence, and the first science to arise is what would seem, according to the system of the academics, the last, i.e. social science; whereas the science of nature is by its structure destined to proceed slowly. This in another view opposed, as we shall soon see, to that of the bourgeoisie.

On the famous opposition therefore of matter and thought, we have resolved the issue by saying that it is matter, it is the phenomena of matter that explain those of thought. But science has not yet been able to show us how this happens in the individual; it has not yet been able to show us how it happens that in the individual the roast portion with the salad enters and the theses we are going to enunciate come out; science has not yet been able to show us what process takes place in those mechanisms, in those organs of our body that serve for nutrition and digestion, between the absorption in general of external energies and the production of our thought. [A demonstration of our materialist and dialectical method was given in social science. Only later will this knowledge be transferred into the science of the individual, i.e. as in-depth knowledge of the physiology, biology, replacement, genetics and thought-formation of the individual as part of a community. And the individual, just as part of a whole, will later transfer it into the natural sciences].

I realise that I am enunciating a fine paradox - take it for what it is worth and forgive me if it sounds like nonsense for now - but it is quite possible that the very science of nature, the so-called exact science, i.e. physics, chemistry and those sciences that make most use of the mathematical algorithm to develop and which are now said to be going through a profound crisis, will come in the rear. How can this be explained? The first science that came close to revolutionary truth was the science of society. It gave us the certainty of the dependence of thought on matter and the environment. But the complete certainty, the proof, will only be reached later, in the global science of the social human organism [and a fortiori of the individual parts that make it up, with their

minute physiology, etc.]. It will probably still come later in the exact science of purely physical dynamics: from the science of cosmology to that of atomic and sub-atomic structures, which will carry with it all the present doubts; doubts which, we believe, will not be dissolved before the communist revolution. The first certainty is therefore in the most complex science, that of man as a society in revolution; then will come the science of man as an individual; and then again will come the science of the universe to the atom as a complete system, the complication of which the latest discoveries tend to prove ever greater. For now, the bourgeoisie explains by purely class and technological means. It searches indeterminately and contradictorily, and so far has only been able to discover one thing: the death, curse and destruction of mankind.

Fetish of science and technology

Science will certainly resume its useful cycle with respect to the current negative cycle. And here it is necessary to continue our fight against the fetish that the alleged development of technology and capitalist science has always exercised on the proletariat. It is a false myth that of continuous development, it is a complete illusion, which only stems from a social fact, namely that in order to force humanity to satisfy its needs by consuming a completely useless and nine-tenths harmful production, the expedients through which said production has been prepared are then boasted about. The gimmicks of such a science, which, in its complication, has come to completely lose that unitary path that can only lead to the path of truth, are articulated and entangled in an absurd manner.

In this piece of paper, at the point we have reached in the exhibition, I have put the title: The Fetish of Science and Technology. At the beginning of each of the great arcs, the great cycles of history, important religions and mystics were born in a noble form, only to end up in an ignoble fetishistic form. The god of the Sermon on the Mount is still a noble figuration of the destinies of mankind; according to Marx, the god of the priests, starting with the last feudalism, has survived magnificently in capitalism, with the current pope, an unproductive worker by definition, reduced to a pure image. Useful and conducive to development on the upward curve, degenerated on the downward curve, religions finally have pure fetish form.

Marx wrote a chapter to demonstrate the fetish character of the commodity. It, based on comparable value, was at first truly an achievement. When it was possible for an object, a penknife, a pair of scissors, to be quickly manufactured in thousands, becoming an article of commerce, so that all households were provided with them, at that moment it was a breakthrough. Because before, the same object was a complicated affair that everyone had to make themselves. Today the commodity has become a fetish and Marx demonstrates this in the most brilliant of his chapters.

The exchange value contained in it has suffocated its characteristic as a useful object, its initial human function. Just as the commodity was a fetish in Marx's time, and it was possible to demonstrate this in the forum of economic and social science, so we can say today that even the vaunted modern production technique and exact science have become a fetish, they are a mere caricature, a Freudian complex, the childbirth of an obscurantist environment, in the hands of a ganga in complete scheming. The aim is economic intrigue, the production of surplus value in a more ignoble form than that produced in the first manufactures, to which we have alluded in connection with their initial heroic phase.

Certainly, the ancients had meditated on the fact that human thought cannot pre-exist matter [but, not yet possessing the concept of evolution], they had had to imagine that there were entities, either natural or in the form of gods, who had created the cosmos and then man himself before man. For them, thought could only have existed before material bodies and before organic bodies in the form of a creative entity. As we have seen, the bourgeoisie, in order to solve this enigma, which we have dealt with by working on the myth of Sodom and Gomorrah, [have instead resorted to that surrogate of creation which is the Knowledge brought by extraterrestrials to primitive men]. But they do not only besiege us with the expedient of the anticipated evolution of a distant planet with respect to our Earth; with these ancient extraterrestrial peoples who have descended to Earth; with the results of a science that would have been brought to us thousands of years ago and unfortunately lost (we would not have reached it yet today): everywhere they come charging with the modern cult of quack science, worse than science fiction. Today they tell us of a thought that can be transmitted through space to seek 'peaceful coexistence', through radio-type telecommunications from one planet to another.

Until recently, our most 'direct knowledge' (an expression, as we shall soon see, inadequate and imbued with popular bourgeois university scientism) was limited to the Solar System. In reality, for example, the ancients knew [even without 'touching', and even now we know space better with machines and scientific deductions than by 'going to see' it in person]. Today, even science-fiction novelists must now admit, everyone has been admitting it for some time, that on the planets around the Sun, the existence not only of a humanity, but not even of some organic animal species, perhaps even a plant species, is inconceivable. On other planets, life forms such as those we know of are not scientifically conceivable, because all the physical conditions of temperature, magnetism, electricity and chemism of the atmospheres are such that they are irreconcilable with them.

Why is there any need to imagine other mankind?

Other populations, if they exist, must exist on planets belonging to other stars. So modern radio telescopes have been directed towards those stars that are less distant from Earth and probably have a system of planets. These instruments are designed to pick up electromagnetic waves instead of light radiation, among which may be signals emitted by a civilisation. The nearest stars, among which one might think that there are systems of planets around them, and perhaps one in conditions comparable to those of the Earth, thus at an equal degree of biological evolution, would be Mira Ceti and Alpha Eridani. Since the stars are now counted in the billions and each can have dozens or dozens of planets, the degree of probability [of finding one with suitable conditions] would be such that every now and then there might be a planet on which thinking beings live. However, it would have to be proved that from these systems, from their planets, there are teletransmitted signals that can be picked up by large modern detectors, by radio telescopes, so that they can be recorded and analysed. The scientists say that the investigation could reasonably have a result. They say that, at distances now measurable in light-years, for the largest and nearest of these stars, it is possible to receive some kind of signal.

While it is true that signals sent more than a million kilometres from Earth by the Sputniks and Luniks launched by the Russians, or the Pioneers launched by the Americans, have been picked up, it is very unlikely that one can reach the thousands of millions of kilometres, because the intensity of a signal, whatever it may be, transmitted spatially, even directionally, decreases with the square of the distance. It is very unlikely that an artificial radio signal originating from an inhabited planetary system, even one as relatively close as that conceivable for Mira Ceti or Alpha Eridani or another star not very far from the Earth, would be receivable, because the distance is such that, in my opinion, the signal would not arrive. If signals do arrive, they are signals due to cosmic radiation relying on interstellar energy sources about which we have very vague knowledge, and they are probably of such power that they are able to impress our receivers.

Scientists have made this hypothesis in practice: if we can pick up a signal that does not have random oscillations and alternations, due to natural phenomena, but is a signal designed because it has regularity in its intermittencies, a kind of Morse signal, just to give an idea, [then we are dealing with extraterrestrial intelligence]. The fact that we cannot decipher [the signals coming to us from space], say the scientists, is a purely physical-technical problem, not a theoretical one, because if we can get this signal to be picked up by our apparatus, we will always be able to understand whether it has an order or not. [We can even decipher it as we wish].

It is a bit like when the police, in the Rome trial of the communists in 1923, deciphered some of our cryptograms. They boasted that they could

decipher any cryptographic writing. Then we defended ourselves by saying that it was true, that any cryptographic writing could be deciphered; but it was equally true that it could be deciphered in any way they wanted to decipher it. So even if they had deciphered them, that was not judicial proof to convict us: it was they who had managed to put all those letters in a certain order. And we quoted the famous Gulliver novel in which a guy is convicted because he had written a sentence that said: 'My brother Tom has haemorrhoids'. Anagramming this sentence into English resulted in 'I will make the king Tom dead' and it became evidence to hang the man because he had written on that piece of paper that he wanted to kill the king. Cryptograms can be deciphered with a little good will, but you get out of them whatever you want, not what you can read with our key, which only we have. This was a defensive manoeuvre on the part of defendants who did not want to be made fools before the bourgeois judicial mechanism, proving that their deciphering did not lead to evidence.

Everywhere the same matter for every form of life

However, these scientists claim that [a message from an extraterrestrial intelligence] can always be recognised. Actually, this is an old idea that we too had, in the early enthusiasm for the October Revolution: if a signal could be transmitted into space, it would return with the answer. It went back to the excitement Schiaparelli had felt one night, observing Mars, when with his telescope he thought he saw the famous linear blobs that he called 'canals' and that seemed to represent the principal regular polygons, Pythagoras' theorem, etc. This would have proved that there were inhabitants of Mars and that they thought as we do.

It would have been a demonstration, in another way, that all thinking mankind born on the different planets [have a unitary theory of knowledge], construct the same mathematics, the same geometry, and therefore have the same norm in counting, in arranging notes and musical intervals, etc. Therefore, by capturing their language, it would be possible to decipher it as a coded message. This, however, is true up to a point, because we could instead argue that if thought arises from matter, and if knowledge is a function of the development of the species, we can at most say that all exchanges of thought, all the languages of all the peoples of the Earth, have a common origin and can be reduced to one another.

[But this may not hold true between different planets, even between very different determinations even on Earth. For] this unity has not yet been arrived at even here. [Why, for example, if all languages on Earth have the same determinations, are there some that resist decipherment?] The Etruscan and Minoan languages have yet to be read. The thesis of the universal unity of thought is a relapse into the idealistic assumption that whoever thinks, whoever writes, whoever processes a message to determine communication between

thinking elements, applies a fundamental standard. In the case of music, for example, there should be the same standard everywhere, born from the notes of Guido d'Arezzo. One could return to this. Now, it would be very difficult to prove [that different determinations produce equal results, it would be somewhat anti-materialistic. The knowledge coming from extraterrestrial space and suitable for Earth's humanity] is evidently an arbitrary assumption made in an idealistic spirit, purely fanciful, serving to stuff the skulls of today's people. One would return to the idealistic fundamental assumption: 'In the beginning was thought' or the [Word].

[Only by materialistic means and with a good handling of dialectics could a unity of results be arrived at on the basis of invariant determinations. However, it is a matter of identifying them and the way could be this: our materialism tells us that thought proceeds from matter. We do not know how it could happen that a hypothetical universal thought, common to the inhabitants of all the galaxies, arises from the same matter, but it is certain that matter has a unique constitution throughout the Universe]. Chemically, it is divided into certain types of molecules; they are distinguished according to the composition of the atom, according to its pattern, which is becoming more and more complicated, with its very numerous particles (protons, neutrons, electrons, etc.); the whole universe is made up of the same particles which, when combined, give rise to all elements, including those that serve life. Of this all men are made, all their cells, all their molecules. And all men are but cells of all societies, which present themselves with the same geological stratification as Roger's social tableau of class, and within these layers there may be the same system of knowledge. If matter is the same throughout the universe, knowledge too, after all, could be the same throughout the universe.

And this would be true for our knowledge, for thought, for the words that go round in our heads and come out of my mouth at this moment, everything would proceed from a complex elaboration that takes place in our organism, in its animal life, in symbiosis with the vegetable life, which in turn is based on the mineral world, the atoms, etc. Something like this we could say [overturning idealistic assumptions], if we discovered that we could pick up an intelligible signal from some planet millions of millions of kilometres away from us. Certainly not that we would then have proof of the existence of a god who predates all solar systems and all their planets, a god creator of planets, of suns, of humanity; who believed in locating them somewhere in the universe, many or few, [but moulded in his own image and likeness and therefore all twins].

You conquer the State, not Science

When we developed the criteria of art and science, we were alluding to the mysticism of science [as irrational adherence to a programme deemed eternal]. We say that art and religion anticipated science [that we know] by millennia and

millennia; they were the unique science and manifested themselves far more truthfully than the first scientific conaties of the Pythagoreans, the Atomists or the Eleaticians; transitory conaties, which fell under successive conquests up to the beginning of bourgeois society, with the quite different arrangements of Galileo, Newton, Lavoisier. Today everything is still revolutionised with new theories, boasted by the ultra-modernists, while the ancient achievements of art-religion-science have remained stable.

We obviously do not believe that art is as exact and powerful as science as an analytical medium; but as a means of synthesis it certainly anticipated science, it was an early appearance of science. The same can be said of ancient mysticism, which is confused with art. Early religion is art, song, dance, harmony with nature. The first manifestations of the recognition of a god - that is, of a primordial entity as an intuitive way of assessing the complexity of the phenomena that the cosmos unfolds around us - develop in forms that have of image, sound, music, song, dance, a unified conception. The first poems are sung, not yet written. And it is said that the blind aedo Homer (and the rhapsodes who represented him, there were several), went around the cities singing his compositions, partly because he could not yet write them down, since writing was not yet widespread. Since only mnemonic transmission existed, the poetic and sung form was better remembered and repeated as it was. In this, too, art was far ahead of science, which had to wait centuries, millennia, to rationally use and fix writing, to arrive at printing, typewriters and mimeographs with which we, very humbly, duplicate our texts. The primitive transmission was by a simple system, singing and then fixing the composition in poetry. Perhaps singing was born before the articulated sentence, just as poetry was born before prose, art and religion were born before science.

None of this has been in vain. On the contrary, the great advancements have been the result of the few, vital and fruitful turning points that have periodically occurred along the long path travelled by mankind. Art therefore is revolution. Scientific and academic conformism is fetish, it is deformation, it is lecture recited from memory, said as the ignorant pupil may stutter when reciting notions without mastering human language. This happens in all schools, in all sacristies, in all modern academies and universities.

Today, the modern fetish of science and technology dominates. The mentality whereby proletarians should Gramscianly seize bourgeois science, [the school in which it is sanctified or the factory in which it is used] is a completely bourgeois and counter-revolutionary mentality. True, one could turn to that certain passage from Marx or Lenin, one could find numerous quotations, in which they state that these results of modern industrial technology have been useful, have served humanity to make one of its leaps forward. Compared to two hundred years ago, we resolve the question [with the dialectical union of opposites]. The first proletarians posed it in the sense that they wanted to

destroy the machines. It was then a preferable attitude [as opposed to becoming slaves to them]. Evidently that first position was a truly revolutionary position compared to the point of inversion, degeneration and inflexion we have reached in this epoch. The self-styled proletarian party has taken many steps backwards from that situation in which the proletarians had the courage to despise machinism. [At that time, however, Marx and Lenin, on the basis of communist theory, had to convince the proletariat that this new form of the production process was amenable to use by communist society; that it could be used to serve man rather than enslave him. Science and technology, liberated, could be completely antithetical to this society and used in a completely revolutionary manner and in accordance with the needs of humanity].

Instead, the so-called communists of today reason quite differently. They repeat with the bourgeois that science has a very recent origin, just 360 years ago. [Everything before that was not science]. They put 360 years in place of 360 centuries, indeed millennia, during which humanity must have lived and reproduced its existence to ever higher stages. During which it has built itself piece by piece. Certainly not by placing one pebble on top of another, but by building its first monuments to knowledge and then blowing them up to immediately build others, synthesising the results in an immense history of doing, undoing and knowing. These pseudo-communists are so bourgeois intus et in cute, that for them, even today, everything began 360 years ago with the scientific revolution of Galileo, Descartes and Newton. No one more than us is an admirer of Galileo and the revolutionary effort that his thought made. Many times we have used examples from his thought for party work. But Galileo himself shows that his scientific maturity was possible precisely because he had well digested the efforts made by his predecessors, including Aristotle, and others who came long before him.

Without a universal vision you are dead

This gentarella says: by now we must feel that we are inhabitants of the cosmos because today's man, through modern science, knows in a very different way than ancient man and in the cosmos he now knows how to go there. This is not true! The opposite is true! We do not know how to go into the cosmos even with our thoughts, and we continue to speak enormous nonsense, demonstrating our limitations. The ancients, on the other hand, firmly believed that there were no limits [to man's possibilities and they felt themselves to be part of the cosmos, other than to go there. When they realised they were thinking], they split man into body and soul, placed the thinking man in an imponderable entity, and left it free to roam the cosmos, there, in the heavens, among those stars on which the gods had installed themselves to direct our actions. [As hard determinists, they believed it was the stars that governed man's life, not his thoughts]. Now, however, with thought we can no longer lift ourselves off the ground, assuming Sputniks and Pioneers can.

[However, there would already be sufficient elements in today's science to go beyond the banally linear conceptions of most scientists and their ignorant political pupils. Einstein, for example, introduced a new conception of the infinitude of space. Previously, we believed we could proceed from one body to another across the void according to a straight line and absolute references. Starting from the earth according to a straight line, we could sink into space in an infinite path, never reaching its limits and encountering astral bodies that were part of discrete sets, galaxies and star systems, made up of separate objects. Einstein, on the basis of Riemann and many others, proved instead that not only does space have its own curvature, but that the entire universe is not made up of separate objects but by a dialectic between mass and energy, whereby there is an infinite correlation between what we consider objects and the fields in which they are immersed. In our feeble minds, the word 'wave' requires a medium that waves, like sea water or the air in which a sound is transmitted, facts that are entirely mechanical and known. The medium does not travel, but quivers, trembles, and it is the wave that is transmitted from one point to another. Not only that: even the movement of a mass cannot be understood without there being, at the same time, gravity, i.e. curvature of space. So the ancients were right, against the modern devotees of the separateness of things: we are indeed an integral part of the universe, we are never separated from it. In space it is not possible to trace flat geometric figures, or polyhedra, cylinders, cones, as the geometers from Euclid onwards believed: one can only trace trajectories, curved by the infinite interaction between the elements in space itself. If for these gentlemen bourgeois scientists, the magnificent joining of the millennial bridge between the knowledge of the future and that of humanity's uncorrupted past is nothing, and it all boils down to the last 360 years, then they can really shut up shop, it's really over for them. They could even trace science back to Stalin's victory in Russia or, better, Khrushchev's speech at the 20th Moscow Congress].

When work is human, it is joy and satisfaction

These gentlemen of the universities and academies cannot manage to have a universal view of the facts, let alone understand their own society. They are specialists, the product of the social division of labour. The school is the specific factory that produces them for the preservation of bourgeois society. For the ancients, art, science and labour were one; for the moderns, there is a gulf between one and the other. Everything that existed in a society that had not yet reached the exaggerated division into classes, up to and including the Renaissance, was the result of 'art', i.e. conscious activity, not derived from the simple course of nature.

[Let us artificially skip the steps and strains of this ladder longer than the one Abraham saw. Marxism has always in its criticism linked the great golden periods of art to the great events of the transition between modes of production.

Human history is a continuous accumulation of knowledge and thus of social productive force. Superimposed on this continuous path is, without contradicting it, the broken path of social forms. It is precisely because there is this dialectical overlapping of apparently opposing dynamics that we can confidently investigate transformations using the same method. The 'principle of recurrence' that authorises us to treat the infinite series of numbers with that method is not evident, it is not axiomatic, it is not demonstrable by logical deduction, and therefore it is not to be found in the categories of the spirit, where we need only fish for it. It is a result achieved empirically by the collaboration of innumerable beings in the life of the speaking, singing and counting species, pardon the pun. Well, just as the principle of recurrence contains the most arduous theorems of high arithmetic and all mathematics, so in the seven notes of Guido d'Arezzo lies Beethoven's Ninth Symphony. The complexity and height depend on the length and richness of the long journey. That the Ninth Symphony was written at all is extraordinary. But it is no less extraordinary that anyone can perform it. Without it, it could not move even men who do not have a common language. Its universal value was therefore not given at the start, but is the arrival of a long journey, of endless walkers, of the process of production and reproduction of the species, in a word of human labour].

Marx himself says in the Grundrisse that when labour is human, it becomes joy, satisfaction. He holds Fourier in high esteem for having foreseen as the supreme goal not only the suppression of capitalist distribution, but the suppression of the capitalist mode of production, and their replacement by a more evolved form. For us, 'free time' does not exist. Work time is at the same time life time, as much dedicated to play as to higher activities; it evidently transforms the one who enjoys it into a new subject, and as such it also applies to the immediate process of production. This process, in the man of the future, will be at the same time discipline, applied exercise, experimental science, creative science that is materially objectified for 'our' man, the one who will participate in all the socially accumulated science.

The process of the formation of man, insofar as work claims not to be separated into manual and intellectual practice, with full freedom of movement between the sectors of human knowledge - as in agriculture - will also be an exercise. To think well, one must also have a healthy body, as the ancients used to say. Perhaps we will have the young people carry a few sacks of grain on their shoulders, to keep them in good shape. And to those, after they have carried the sacks we will say: now go and rest so that you can better read the philosophers, the scientists of the past, etc.

No more division between art, science and work

There is a 17th-century Bohemian writer-economist, John Bellers, pluricited by Marx, who is really ahead of his time. He said that education must also involve productive work:

'Idle learning is little better than learning idleness... physical labour was originally instituted by God... Work is as necessary for the health of the body as food for life, for the pains one saves by idleness are later found in ailments... Work adds oil to the lamp of life, while thought kindles it... A childishly foolish occupation leaves the minds of children dull.'

Bellers uses God to give himself authority, but you have heard how beautiful this phrase is: work feeds the lamp and thought kindles it. One idles today and accumulates the diseases that will fuck him up when he is old. To sum up: first work, then thought, first action, then science. For humanity it is history, for the individual it is social relations. Listen to this other famous passage. I will read it to you, it is by Marx:

'The division of labour also offers the first example of the fact that as long as men are in natural society, as long as there exists, therefore, the split between particular interest and common interest, as long as activity, therefore, is divided not voluntarily but naturally, man's own action becomes a power foreign to him, overpowering him, subjugating him, instead of being dominated by him. That is, as soon as work begins to be divided, each person has a determined and exclusive sphere of activity that is imposed on him and from which he cannot escape: he is a hunter, a fisherman, or a shepherd, or a critic, and he must remain so if he does not want to lose the means to live; whereas in the communist society, in which each person has no exclusive sphere of activity but can perfect himself in any branch he likes, society regulates general production and precisely in this way makes it possible for me to do this today, that tomorrow, to hunt in the morning, fish in the afternoon, herd cattle in the evening, criticise after lunch, as I feel like it; without becoming either a hunter, a fisherman, a shepherd or a critic.'

It is the usual concept that returns. Here there is a bit of controversy with Stirner, whom Marx and Engels called Sancho because he was the proponent of individualism, of the single ego, of the man who towers over everything and who naturally composes unique works such as Mozart and Raphael:

'Here, as always, Sancho has bad luck with his practical examples. He thinks that no one could 'do your musical compositions for you, execute the paintings you sketch. No one can replace Raphael's works'. But Sancho should know that someone else, and not Mozart composed and drafted most of Mozart's Requiem, that Raphael personally executed the least of his frescoes. He imagines that the so-called organisers of work want to organise the total activity of each individual, whereas they themselves distinguish between directly productive work, which must be organised, and work that is not directly productive. But in this

work they do not think, as Sancho imagines, that everyone should work in the place of Raphael, but that anyone who has the makings of a Raphael should be able to develop without hindrance'.

Who knows how many Mozarts and how many Raphaels could not develop so far because they were foolishly locked in a workshop, in an atelier, doing another job.

'Sancho imagines that Raphael executed his paintings independently of the division of labour that existed in Rome in his time. If he compares Raphael with Leonardo da Vinci and Titian, he will see how the former's works were conditioned by the flourishing of Rome at the time, which had reached its full development under Florentine influence, how Leonardo's works were conditioned by the situation in Florence, and Titian's, later, by the quite different development in Venice. Raphael, like every other artist, was conditioned by the technical advances in art made before him, by the organisation of society and the division of labour in his city, and finally by the division of labour in all the countries with which his city was related. That an individual such as Raphael could develop his talent depends on the division of labour and the cultural conditions of the men derived from it. By proclaiming the uniqueness of scientific and artistic work, Stirner here still places himself far below the bourgeoisie. Even now it was deemed necessary to organise this 'unique' activity. Horace Vernet would not have had time to paint the tenth part of his pictures if he had considered them to be work 'that only this unique one can accomplish'. In Paris, the great demand for vaudevilles and novels gave rise to an organisation for the production of these articles that always gives better results than its 'unique' competitors in Germany. In the field of astronomy, men like Arago, Herschel, Encke and Bessel found it necessary to organise themselves for joint observations and only after doing this did they arrive at some satisfactory results.'

Even now brain trusts have been devised, as you know. We can let art, literature, go for now. Then in the written account we will develop this concept of art-science-work. We got the last passage from Marx and Engels from the Costes edition a few years ago, I don't remember if we had used it before. A few more words on the unproductive class and then one last bit of closure. In a passage from his work *The Wealth of Nations* Adam Smith gives free rein to his hatred of the unproductive class:

'The labour of some of the most respectable orders of society is, like that of domestic servants, unproductive of any value, and is neither fixed nor realised in any durable object or commodity for sale... The sovereign, for instance, with all the civil and military officers who are subordinate to him, the whole army and the whole navy, are unproductive workers... In the same class must be numbered as much some of the most serious and important professions as some of the most frivolous: on the one hand ecclesiastics, lawyers, doctors, men of letters of all kinds; on the other hand comedians, jesters, musicians, singers, dancers, etc. '

Here, however, Smith in his time had not put engineers. We have decreed that engineers must go and keep company with all these other gentlemen. It is, that of Smith, the language of a still revolutionary bourgeoisie that has not yet subjugated all society, when the state and even the church were not yet justified as mere organs of administration and management of the interests common to all the bourgeoisie. I did not read Marx's piece on unproductive workers, where he takes two examples to demonstrate who the unproductive worker is in the capitalist sense: the pope and, sorry, the whore. Since all unproductive workers fall under parasitic production costs, they must be reduced to the bare minimum. The idea is of historical interest since it developed diametrically opposed to the conceptions of antiquity and those of the absolute or aristocratic monarchy that emerged from the revolution of the Middle Ages [societies that had not yet achieved the concept of a budget in value]. But as long as the bourgeoisie is revolutionary, it denounces unproductive workers and takes away the wages of all parasites. When the bourgeoisie then gains ground, takes over the state, there it concludes a compromise with its former enemies. At the very moment when the ideologues put themselves at its service it recognises them as its own flesh and blood, it makes them its own representatives everywhere in organs that reflect its own image.

When the bourgeoisie, as it consolidates its power, becomes sufficiently evolved and is not content merely to produce, but also wants to consume the products hitherto reserved for the educated classes, here is when it refines its taste and begins to produce ideology of its own. As intellectual labour becomes increasingly at its service, the bourgeoisie strives to justify not only ideologically, but also economically, those it has hitherto fought against. The zeal of economists, who are like feudal priests, the zeal of professors and scientists, to prove their productive utility and justify their fat salaries, stands out among them all.

Then there is Marx's criticism of Ricardo which corresponds well, as we said yesterday with Julian's report, [to today's situation, i.e. the continuous increase of the middle classes due to the great availability of surplus value, an availability which swells the ranks of artists, professors and scientists] who, by placing themselves between workers, capitalists and landowners, weigh on the working class, reinforce social peace and ensure the power of the ruling class.