DOCTORAL THESIS

EPISTEMOLOGICAL CONSEQUENCES OF IDEOLOGICAL BIPOLARISM

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INTRODUCTION

The investigation into the epistemological consequences of ideological bipolarism, within the area of doctoral research titled Epistemology and philosophy of science, is an interdisciplinary enterprise, which combines theories and methods from the history of philosophy and sciences, modern and contemporary ideologies, the sociology of politics and knowledge, and from the theory and history of international relations. The core of this study has to do with the philosophical-ideological grounds and the socializing mechanisms used by the leaders of the post-war (capitalist and communist) “camps” in order to project their political values in the sphere of scientific knowledge and thus transforming it into a frontline in the Cold War.

Approaching ideological bipolarism from an epistemological perspective is meant to go beyond and supplement the traditional analyses of the post-war age, which have often been limited to the dispute between Soviet socialism and Western democratic doctrines, with its necessary extensions into the fields of economy (planning vs. free market) and the military (the Treaty of Warsaw vs. NATO). The thesis advanced herein claims that ideological bipolarism transcends politics, the economy and defence, permeating all the processes of identity reconstruction in the Eastern and Western societies after World War II. Thus, beyond the economic systems and the military blocks, bipolarism created two opposing anthropological models – the New Man (Homo Sovieticus) and the American Way of Life –, within which there emerged two different ways of organising scientific practices, according to ideologically grounded criteria and values: within the communist camp, proletarian science and the barefoot scientist took hold as expressions of the “engaged knowledge”, of atheist dialectical materialism; within the capitalist camp, bourgeois science assumed a type of ideological “neutrality”, without rejecting its rationalist-progressive dimension thereby.

The thesis is divided into three chapters: I. Philosophical and ideological perspectives on bipolarism; II. 20th century epistemologies in the context of ideological bipolarism; III. The sciences of the bipolar age. The first defines bipolarism as a constant and structuring phenomenon in human history (meaning that cultural binomials may be identified in all the ages, e.g. Greek-barbarian, civilized-primitive, rationalism-empiricism, materialism-idealism, etc.), but it insists on the features of post-war bipolarism, in its philosophical and ideological dimensions. Chapter II starts by outlining the modern concept of science in order to explain how it is interpreted from the viewpoint of Western epistemologies (deriving from philosophical pluralism) and that of the ideologised epistemology of the official Eastern philosophy. Finally, Chapter III discusses the evolution and destinies of four emblematic sciences in the Cold War age: physics and biology (from the positive area), and sociology and psychology, respectively (from the social area). In the case of each of these, the paper analyses how ideology used to interfere with scientific practice and the consequences of this phenomenon at the individual and social level.

Given the complexity and multifarious nature of the philosophical, scientific, and ideological information discussed, the thesis has a main reading thread (for the specialist reader), supplemented with ample footnotes (in which the readers who are less familiar with the history of science and philosophy may find definitions of concepts, theories, historical events, biographies of various philosophers, scientists, politicians, etc. and in which they may also identify the inner mechanisms underlying the elaboration of this study).
In the first chapter, in order to be able to highlight the epistemological consequences of ideological bipolarism, we thought it necessary to clarify the complex and tense relation established between philosophy, ideology and sciences – three fundamental cultural constructs in the modern age. Our hypothesis was that philosophy and ideology originate in the same type of critical awareness, in which the existence of man and of the world needs to be challenged, related to ideals, and shaped by them. By virtue of their basic unity, philosophy and ideology have intersected at various times in history, creating confusion and disappointment both for the thinkers secluded in their “ivory tower” and for the writers engaged on the civic and political front.

In the modern age, starting from the same themes and anxieties, the discourses of philosophy and ideology shaped their identity insisting on receivers and style rather than on finality (which remains eschatological in both cases): the former addressed the learned world of scientists, the “aristocrats” of reasoning, attached to the conservative order of hierarchical societies; the latter entered the middle-class, the pauper and the rebellious, the uneducated and the poorly alphabetized classes for whom any kind of change was better than the Establishment and for whom the idea of “equality” was the key to all the social issues of that time. Hence the essential differences between philosophy and ideology: one is contemplating, the other is active; one is elitist, the other is “popular”; one is tolerant and prone to dialogue, the other is Manichean and prone to monologue.

In spite of the features listed above, philosophy was not completely free of bipolar manifestations. In modern times, the dispute between rationalism and empiricism confirmed it. Then the situation got worse: during the latter part of the 20th century, the philosophies developed by Soviet-type societies subscribed to the communist ideology, trying to justify the totalitarian, egalitarian, and collectivist order. Symmetrically, most of the philosophies in the democratic West (analytical philosophy and logical empiricism, the philosophy of life, pragmatism, transcendental phenomenology, existentialism) were seen as backgrounds for right-wing ideologies, justifying the order of reasonable liberty, in a status society based on individualism and competition. Thus positioned, philosophies ended up in a Manichean-flavoured type of reductionism, which led to the conviction (supported by propaganda) that the Soviet area was characterised by historical and dialectical materialism while the Western world was prone to philosophical idealism (a category encompassing a wide array of different conceptions whose common denominator was the concern with spiritual life and the finite nature of existence). Actually, things were and have remained much more complicated, at least in the Western world, where the most significant philosophical projects have turned out to be the ones which have criticised idealism, getting closer to the phenomena of language and scientific knowledge.

The bipolar structure of ideological movements originates in modern times as well; it is based on the opposition between the conservative tendency of European aristocracy and the rebellious nature of the bourgeoisie. After the French General Assembly of 1789 established that the bourgeoisie should sit on the left side of the Parliament room and the aristocracy on the right, the modern world retained the idea that being a “leftist” meant being a supporter of revolutionary change in public order, proclaiming – formally – the citizens’ equality and freedom, abolishing class privileges, rejecting the idea of divine-right sovereignty and upholding the people’s instead; on the contrary, being a “rightist” meant defending the unequal order of a pyramidal and traditionalist society in which the monarchs’ authority, coming from God, could not be contested. Naturally, in the
idea box of the left there were also rationalism and atheism, scientism and progressism, while the right was associated with religious tradition, prudence and scepticism relative to the reason’s capability of changing the world in a systematic and beneficial manner. What is more, we could also say that both also assumed the status of “meritocracies”: whereas the left opted for the “merit of coming from the ranks of the people”, the right preferred the “merit of belonging to the aristocracy”.

Compared with its numerous initial meanings, the ideological gap between the left and the right was reduced (after the emergence of Marxism) to a predominantly economic dimension or, more precisely, to “economic ethics”: thus, the idea took hold that left-wing doctrines are in theory protective of the poorer classes, whose unfair status, imposed by the rich exploiters, is accounted for and who are promised, if not prosperity, then at least revenge against the rich. The “left” thus comes waving the flag of economic equality and social justice, of “punishing” those who, for ages, have lived in luxury at the expense of the destitute. The “right” adheres to natural order, inequalities justified by personal qualities (converted into “social usefulness”), individual freedom, etc.

The philosophies and ideologies circulating during the Cold War – summed up by the cleavages materialism-idealism and left-right – generated more than some systemic arrangements and institutional structures (at the state and super-state level); they laid the foundation of some ways of life, of some human types specific to the capitalist and communist camps. Thus, in the Western world, daily life unravelled within the coordinates of the expression the American Way of Life (consisting of individual freedom, competition, religious tolerance, hedonism); in the Eastern world, the model adopted was the “New Man” – Homo Sovieticus (characterised by social regimentation, “socialist contest” and “patriotic labour”, atheism, sense of sacrifice, and deliberate austerity). Naturally, the two models had their own projections at the epistemological level.

Chapter II

20TH CENTURY EPISTEMOLOGIES IN THE CONTEXT OF IDEOLOGICAL BIPOLARISM

Devoted to the epistemological projections of Western and Eastern philosophies, Chapter II starts with a clarification of the concepts of science and epistemology, approached from a historical and structural viewpoint. In this context, we underline the fact that, over the last two centuries, in the attempt to refine the ways in which the world functions, scientists have constantly created new areas of study, starting from the great fields of existence (matter and spirit). It is thus that the sphere of science has come to encompass tens, if not hundreds of disciplines with an academic status, included in one of the two major fields of knowledge defined by the neo-Kantian: the sciences of nature and the sciences of the spirit. Within them, there was an initial dominant movement of autonomisation of ever new sciences (or rather disciplines), through their detachment from the body of the already established ones. Then, starting with the 1950s, a process of re-aggregation of scientific knowledge began, under the sign of the paradigm represented by the General Systems Theory (GST), by cybernetics, by inter- and trans-disciplinarity.

In brief, the birth of a new science was conditioned by the delimitation (at times artificial, at times fully justified) of a specific object of research and by the definition of a specific methodological system, to which concepts and theories were also added. In their wake, new “currents”, “circles”, and “schools” emerged, organisations scientific in nature, useful to the progress of human knowledge. On the other hand, the process of multiplication of sciences produced many redundant approaches, overestimated the importance of one-dimensional analyses and complicated
the already thick classification systems. Under these circumstances, it is easy to understand why we are forced to come back over and over again to the question: what is science?

The answers to this question may be provided by epistemology. It is able to tell us both what a scientific endeavour is and what it should be, making use of the concept with the most resounding “success on the intellectual arena” (in both Cold War camps): paradigm. From the viewpoint of analytical philosophy, paradigm could be put besides the terms of traditional metaphysics due to its vague content. But for the historians of sciences, for sociologists and for the creators and users of science (regardless of their field), this concept meets the need to outline, without useless preciousness and without simulating scientific rigour – the framework within which human knowledge manifests at a given moment. Thus paradigm gets to represent not only the sum of the concepts and theories accepted as valid within a science but also the expression of a particular attitude of scientists towards the phenomena and themes that they selected as relevant. In Thomas Kuhn’s terms, it is the “disciplinary matrix”. Looking at the context in which scientific knowledge is carried out, it is not far-fetched to include into the sphere of the concept of paradigm the quasi-institutional network created against the background of a science: professional organisations, associations, movements, congresses, journals, university departments, schools of thought, etc. At the same time, paradigm encompasses the moral and cultural values, in a wide sense, shared by the members of a scientific community. This complex reality forged by the scientific world extends, naturally, into the less learned layers of society, through the mechanisms of science and technology popularization – from school books to “mass consumption cultural goods”. In these circumstances, paradigm is equal to a true philosophy, with a view of the world, a sense of the age; it is the “pool” of knowledge, meanings, beliefs and values which brings together learned men and simple men, in the perpetually unfinished endeavour to understand the world around us.

In order to investigate the world of science, the Western epistemology in the bipolar era operated on two main questioning fronts: one was the general theory of knowledge, developed within the framework of analytical philosophy; the other was the philosophy and history of science (through the theories of Popper, Bachelard, Kuhn, etc.). Within traditional Western epistemology (based on conceptual analysis) there settled the idea that a problem which is epistemological par excellence is the foundation of our opinions or knowledge. Traditionalist epistemologists manifested as “normativists” and “internalists” at once. But these two features adjacent to the endeavours of traditional epistemology generated reactions from an alternative movement, generically known as “naturalized epistemology”. Within this trend, there are four particular projections: evolutionist epistemology, genetic epistemology, procedural epistemology and social epistemology. Besides several other “schools” (emerged recently, after the Cold War), these approaches stand out by the fact that they see science not so much as an abstract edifice of well-constructed concepts and thoroughly verified hypotheses but rather as the result of human interests which are not always rational, logical. Therefore, science is nothing but an ideology, among many other possible ideologies; and epistemology, dealing with science, is itself an ideology – one concerned with decoding the manner in which it may serve to justify moral and political options.

In the communist camp, the epistemology derived from historical and dialectical materialism could not acknowledge that it was itself an ideology, because the philosophy that founded it did not proclaim itself as such either, but actually defined itself as a science of the general laws of nature and society. In the Marxist acceptation, ideology (just as religion) is “reversed” knowledge, a counterfeited version of reality, and, finally, – the opium of the people! But, having had the inspiration of being Marxist, ideology may itself be scientific...

Marx and Engels, and within the tradition of their epistemology, all leftist thinkers (but not only them) treated science in the manner taught by 18th century Enlightenment philosophers: Science is mainly a way of getting emancipated from religion and its institution (the Church), it is the drug that cures the human spirit of unfounded fears, illusions and the overwhelming feeling of
predestination”, unleashing the desire of self-accomplishment; Science is a factor of progress for the individual and for society in its entirety as well.

But things were not that simple after all! As long as science was seen as a product of that time and of the conflicting interests of social classes, Marx and Engels could not attribute it a “class nature”. This was not necessarily opposed to the “objectivity” of science, but it rather expressed its condition of an instrument (or even weapon) in someone’s hands: in the hands of the bourgeoisie, science was a factor of progress only within the boundaries described in the Manifesto of the Communist Party; only in the hands of the proletariat would it become the force that helped overcome the age of exploitation and private property, on which any form of domination is founded. Therefore, according to its favourite promoters and users, science got the ideological labels of “bourgeois” and “proletarian”.

The systematic use of the expressions “bourgeois science” and “proletarian science” dates from the 1920s; Nikolai Ivanovich Bukharin does so in the Theory of historical materialism. Popular manual of Marxist sociology (1921). According to the Russian philosopher, the bourgeois scientists reject the class nature of their scientific endeavour, claiming that they produce a “neutral science”, situated above contingency, universal and perpetually valid. On the other hand, Marxist scientific theory, which guides the proletariat, assumes its class nature and reveals as such the bourgeois one as well, because science is the result of social practice. From this approach Bukharin deduced that proletarian science was superior to the bourgeois one!

But the superiority proclaimed by the Soviets was false. The science developed by the Western world throughout the 20th century was actually the “normal science” whereas the self-proclaimed “proletarian” science lingered – in its principles, methodology and contents – at the level of mid-19th century thought. Just like Marxist-Leninist ideology, which was stuck in the simplistic schemes of class struggle and the “legitimacy” of the working class’ final victory, Soviet science isolated itself in an area where scientific arguments were being replaced by ideological convictions; this kind of scientific enterprise was looking for certainties (against the relativistic sense that dominated the 20th century), was marked by the idea that man could change the world (changing even human nature!) and that the ultimate proof of scientificity was resided in “serving the people”.
Chapter III

THE SCIENCES OF THE BIPOLAR AGE

After a state of “cold conflict” was established between the communist and the capitalist camp, the difference between exact sciences and the sciences of the spirit (a difference which in the 19th century was based on methodological issues) acquired an ideological connotation, meaning that the former were seen as relatively independent from politics while the latter were treated as subjective undertakings, meant to manipulate people and to serve those in power. Social sciences were the most affected by the East-West ideological cleavage because they could be accused of relativism and ideological (axiological, in a wider sense) bias; they looked “suspicious” from the start because they were related to philosophy as well. But exact sciences were also subjected to political judgements and filters as their practical, technological results were extremely important for the economic and military competition between the Soviets and the Westerners. Moreover, the theories specific to exact sciences could have created philosophical conceptions able to contradict the official materialism of the Soviet camp.

20th century physics excelled in two main theoretical areas: the theory of relativity and quantum physics. The former had been advanced by Albert Einstein, while the other had been created by a group of German, English, French and Italian scientists (with no Russian among them!). The fact that the USSR was not leading the revolution taking place in physics bothered the leaders in Kremlin; but it was rather a question of pride. The greatest “danger” identified by the communists when looking at the new theories in physics was that they reinterpreted traditional materialism (a physical entity could be at the same time a particle and a wave); Marxist determinism did not escape this either, since it had to face the theory of indeterminacy. Hence a “turn” towards idealism or, in the Soviet age, idealism was harshly criticised as a crime against the socialist order.

The main ideologist in Stalin’s time, the propaganda secretary Andrei Zhdanov wanted to “protect” Soviet physics against the risk of being contaminated with the theories of Western quantum physics, which he deemed to be “devices” that instigated to idealism. After such a condemnation of quantum physics it was to be expected that the Russian scientists who accepted Western theories would be immediately sent to Siberia. However, things took a different turn. The atomic bomb – that Stalin needed to keep the balance of power with the USA – could not be built without quantum physics. For this reason, scientists such as Igor Kurchatov or Andrei Sakharov were allowed to work in their laboratories, being exempt from the ideological judgment they deserved…

Biology also experienced some critical moments due to the interference of ideology. In its case, theoretical (in fact, ideological) disputes were supplemented by the schemes of some pseudoscientists who desired to get managing positions within the existing biological research institutes. The most notorious case is the attack against neo-Mendelian genetics orchestrated by Trofim Lysenko.

Lysenko was an agronomist interested in finding new means to modify plants in order to increase their productivity and resistance. For instance, he wanted to modify the vegetation cycle of winter wheat so that it could also be planted in spring and in the process pass from the vegetative state to the reproductive one. In this respect, Lysenko advanced the procedure of jarovisation or vernalisation (described for the first time by the American John H. Klippart, almost a century before). The technical solution promoted by Lysenko was soon embraced by the leadership of the Communist Party and by Stalin himself. However, in practice, jarovisation was not producing the intended results and most of the seeds were actually rotting as a result. But the theory of jarovisation went beyond the framework of science and agricultural technology; it was an ideological instrument in the fight against Western science and in the attempt to create a new model of a scientist: one who
does not spend his entire time doing nothing but read and stare into the microscope, who does not allow himself to be seduced by idealistic philosophies, and who devotes himself to mankind’s well-being doing something that can actually modify and “rule” the nature.

The Soviets’ acceptance of the false genetic theory of jarovisation was ideologically grounded. Lysenko’s followers criticised “reactionary bourgeois genetics” because it claimed that all the characteristics of a living organism are transmitted from a generation to the next with the help of genes – a chromosome segment that remains stable regardless of the subsequent number of gene combinations. From the perspective of proletarian science, genes were a matter of pure invention! The supporters of the chromosome theory of heredity were also criticised because they rejected the idea that acquired characteristics are hereditarily transmitted and the “supremacy” of environmental factors. Finally, the theory of genetic mutations was also rejected because it contrasted with the ideology of permanent evolution. Based on these “ideological counts”, a true geneticist, Nikolai Vavilov (who had created the Leningrad seed-bank) was sent to die in prison (as a “foreign operative and enemy of the people”) while an impostor, Lysenko, got to be in charge of the Academy of Agricultural Sciences.

Let us now have a look at the faith of social sciences! During the period of ideological bipolarism, the Western world put the social sciences from the Soviet camp under the umbrella of their identity with Marxism-Leninism (i.e. communist ideology) whereas the East put the social sciences from the capitalist world under the sign of “bourgeois domination”, as justifying an order based on exploitation. As a matter of fact, these sciences were being accused of ideological goals and intentions that they had never wanted or advanced themselves. Their epistemological status was placed in a dangerous area (between the production of objective truths and of propaganda speeches), where everything was possible – from a placement on the rostrum of class struggle to marginalisation, official liquidation and public condemnation.

During the Cold War, sociology evolved naturally and without any hindrance from the West. The themes and the methodology of Western sociology were very seriously influenced by the realities of bipolarism. The researchers in this field focused on the new social movements (proletarian revolutions, anti-colonial national movements, migration – especially the brain drain –, protests generated by environmental, feminist and pacifist themes), on the condition of the individual in the industrial society, on the power to influence the mass-media, on social stratification and its reproduction through education systems, etc.

But how did things evolve in the East? Here, the history of persecution began in Lenin’s time, in the 1920s, when only some studies in social statistics and the rationalisation of economic governance were still allowed. After the War, with the instatement of pro-Soviet governments in East-Central European countries, in 1948, sociology became the new science non grata in the entire camp, with the notable exception of Tito’s Yugoslavia. Less than a decade later, when the crimes and abuse of Stalin’s regime were unearthed, sociology re-emerges as a discipline of study but its Marxist boundaries are clearly delimited, both in its research themes and methods and in its political engagements. Tolerated by the Party, sociology starts to analyse the socio-political, economic and cultural phenomena of the socialist world (rural-urban migration, work relations in industrial and agricultural environments, the reconfiguration of the relations established between nationalities, religiousness levels among Soviet peoples, youth problems, etc.). In spite of the important output of sociological studies, it should be noted that the epistemological status of sociology did not improve; on the contrary, the discipline got fragmented into many applied studies without managing to produce consistent syntheses, paradigms and methodologies in exchange. Another phenomenon visible in Soviet sociology was its being “invaded” by so-called specialists who came from other fields with the firm belief that if they applied a questionnaire or made an observation the success would be effortlessly warranted. Virtually everyone who had a higher education degree and a professional relation with a given social environment (companies, in a kolkhoz, hospitals, schools, professional or political organisations) thought they were capable of producing sociological opinions.
Psychology also had an uncertain and problematic status in the East-West confrontation. The two competing powers were aware that even if wars are made with conventional and, in extremis, nuclear weapons, it would have been preferable to win by subtler and less costly means, such as those proper to psychology. Of course, psychological warfare was not new: rumour, disinformation, induction of permanent insecurity, the psychosis of betrayal and conspiring, or psychological torture had already been used for centuries. But in the context of 20th century psychological science new military opportunities also emerged: some tried to push espionage to the next level; others attempted to create the “ultimate soldier”; everyone wanted to improve their propaganda techniques; there were research programs aiming to achieve psychological control over the leaders of the other side or at least analyse them from a psychiatric viewpoint in order to use their weaknesses.

It should be said that psychology also had numerous non-military applications, which were at least as important in the functioning of the two camps: in the fields of work, group and leadership relations, mass-media, assessment of intellectual output, professional recruitment, space-travel preparation, etc. All these uses seemed to secure for psychology a privileged scientific, social and political positions, both in the Western and the Eastern world.

However, beyond its apparent strategic position in the Cold War, psychology still had to deal with many issues relative to its inner structuring and even identity! In the 1950s, only a handful of people knew what psychologists were supposed to do; and out of those who knew, even fewer recognised their social usefulness. Both in the Soviet and in the Western propaganda, psychology was caricaturised, reduced only to some of its applications that were harshly criticized by the ideologists of the two camps: the Soviets used to say that in the capitalist world psychologists (psychiatrists, above all) were dealing with the anxieties of the rich, who were lying on their sofas so that some Freudian frauds would remind them of the Oedipus complex and explain life exclusively on sexual impulse. In turn, the Westerners accused communist psychology of being an instrument of torture that helped get rid of the dissident (by committing them into “mad” houses) and that made people obey and act as a shapeless mass.

One of the most important stakes in the psychological warfare of the Cold War was to control the mechanisms through which social representations were formed. The leaders on both sides were extremely interested in changing the perceptions about those officially labelled as enemies, in creating judgment schemes that would get instantly activated (as in Pavlov’s or Skinner’s experiments) so that when the Westerner heard of the Soviet he would immediately “see” the image of depersonalised brute with no morals or God and when the Soviet heard of the Westerner he would immediately create the image of an exploiting vampire, incurably hedonistic, incapable of selfless patriotic deeds. The construction of the perceptions about the enemies in one’s own camp followed the same logic: in the 1950s and the 1960s, a real frenzy accompanied the circulation of such images as that of the rich kulak, the small bourgeois, the “social parasite” or the “saboteur” within the communist society just as in the West (especially in the USA) there was much talk about infiltrated communist traitors!

Besides being used at the societal level to form social representations, the methods of psychology were frequently used in individual cases in order to “normalize” those who proved to be reluctant or even hostile to the established social order. Political prisoners were thus subjected to behavioural change (“therapy”) experiments (as in the “Piteşti case”). Both sides contrived various means of psychological torture in order to squeeze information from exposed spies. During the Cold War, psychology was also used to produce psychotropic drugs and to create propaganda strategies for radio stations, in psychotronic espionage.
CONCLUSIONS

The conclusion of our thesis is that the labelling sciences from a class perspective (bourgeois and proletarian) is not just an ordinary antinomic couple in the long line of civilisational, religious, philosophical and epistemological bipolarisms. This epistemological cleavage stands out by a series of features that are not to be found in any of those which preceded it. Thus, its foundations are exclusively ideological, having nothing in common with the substance of the scientific phenomenon (object, method, rules of inference, capacities and cognitive processes). Its effects are maximal at the societal level, affecting to the same extent the informational contents of the sciences, the interpretation of the results, the selection of the theories which “deserve” to be included in the basic educational corpus, the social and political positioning of the scientist in relation with the other social classes, the government’s control over the funding of the “scientific business” and state control over the dissemination of knowledge.

The binomial bourgeois science-proletarian science proved to be a profoundly artificial one and, subsequently, incapable of leading to the academia’s solid adhesion to the Manichean delimitation between good (socialist) science and bad (capitalist) science. Since it was not founded on deep-seeded longstanding beliefs (like those in the religious area, for instance) and it was not based on actually divergent scientific theories but rather only on the political will of a totalitarian regime that wished to overturn the order and values of the free world, epistemological bipolarism disappeared from the contemporary cultural arena along with the communist regime that had generated it.

But there are still unanswered questions about the causes leading to its birth, the conditions which, in the 20th century, allowed that intellectuals get the same treatment as during the Inquisition, intellectual fraud be tolerated (or even stimulated) and discourse strategies be used to forge the history of science and to reinterpret it in a Manichean key.
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