

The new technologies and designer archaeology

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All those who, like myself, practise their profession with enthusiasm, will greet, with satisfaction, the news of any technical advance that can accelerate the development of their discipline. However, that enthusiasm needs to be tempered by the caution that comes with experience, a caution, which I suggest should be maintained, until it has been ascertained whether the newly available technology meets our scientific standards and requirements, or rather, hails from the latest, para-scientific consumer fads and the communications market. Ideally, this caution should persist, until we have discovered whether the "progress on offer", merely serves to mask archaeological problems, by dressing them up, or wrapping them, in the most expensive and alluring products, manufactured by the most, sought-after companies. If this turned out to be the case, in a relatively short period of time archaeology would come to be perceived as the dictated fashion of the day, either opulent and spendthrift or meagre and mean. Such caution advises us, now, more than ever before, to remember the story of the emperor's "new clothes", that all his subjects were obliged to say they could see, so as not to appear ignorant. Only an innocent child, who had not yet learned to play the game, dared to speak the truth, and say that "the king had no clothes on".

What I propose, therefore, is that we should keep our focus keen and clear, trained on what we are really after, so that the techniques for seeing do not cancel out our capacity to look.

My premise is that archaeology is a historical science, which deals with the concrete, material remains that social practices leave or have left behind; from these remains, it abstracts concepts, which group together, it establishes categories, which link concepts and things to the time and space, which define them, and attempts to test those categories against concrete reality, in order to learn about the past, present and future. Its proposed objective is to investigate societies through History, and through their own individual histories, on the basis of material evidence.

So far, I have discussed the ideal objective, stated according to the premise of material reality. However, archaeological science cannot hope to achieve this objective, without the means of scientific production.

This conference marks an attempt to bring together different resources, that can be applied to archaeology, and which our society has implemented, as a result of its own requirements for material and ideological production. These resources come, in most cases, from other branches of science, whose technology can be used to further research in archaeology.

The first issue to be discussed is the genealogy of these resources, inasmuch as they are potential means of

archaeological production. Means, which were conceived for one particular purpose, may also be used for others, since the subject using those means is apparently independent of the object, to which they are applied. However, we cannot afford to be over-optimistic, concerning their neutrality in the scientific process, and we should state, straight away, that the means are not mere, passive elements in that process.

Researchers use this or that instrument, not only according to the segment under observation: on the contrary, they are also obliged to emphasise, in their research, the aspects, peculiar to the new tools they are using. The observer should be aware that the means, themselves, open up new avenues of research, and that these new avenues have been opened, in response to interests and intentions, other than those of the observer. Thus, technical means involve a kind of targeted research, since they derive from interested and mutually dependent links, between the subject (market) and the object (products).

The majority of technological resources presented in this forum, are typical of the so-called, Third Industrial Revolution. Computers and advanced telecommunications media are termed "transversal" technologies, because they increase productivity in all the sectors, to which they are applied¹. This has paved the way for increased rates, for capitalist profit, at a time when the accumulation of capital, based on the products from the Second Industrial Revolution (steel and automobiles), has peaked out. Control of these "transversal" technologies, in fact, entails a monopoly of world production, which, at the present time, is exercised by the United States and its G7 customers.

On the other hand, it would be a mistake to accept that "high technology" originates solely from private initiatives, which put their trademark on the packaging. First, we should never forget that the research, which made the development of these technologies possible, has been financed, to a great extent, by the syphoning off of public funds to private enterprises, in the central capitalist countries. Second, the production and assembly of the components, which make up these technological wonders, are carried out by a growing body of slave labourers in the Third World. Finally, and so as to lose, albeit symbolically, our last shred of innocence, we should remember that, in many cases, these technologies were originally destined for military use, and have subsequently been "civilianised": in connection to this, we might mention instruments for teledetection and global positioning by satellite, as well as geographical data systems. Therefore, we suspect that the means at our disposal are less neutral than they seem, because they have been created, empowered, and "paid for" by, and for, a set of specific -

¹ See N. Chomsky and H. Dieterich: The Global Village

always hegemonic - interests; in other words, the interests of the oligarchies, which make us believe that the demand creates the supply. It is, therefore, vital to establish a criterion of independence from the means that we use, even though both ends and means are intimately related to the material conditions that bring them about.

In order to suggest what the archaeology of tomorrow will look like, we must first investigate the archaeology of today, an unfathomable problem, if we do not investigate the framework of material conditions, within which our discipline moves. As we do so, we see that, because it is a by-product of the scientific hierarchy, archaeology, today, polarises the same contradictions as the society, in which our so-called science is rooted.

Nowadays, science (including archaeology) and the debate in society, in general, oscillate between the poles and radical tensions, surrounding the concepts of causality and indeterminism, particularity and totality, and reason and sensitivity. At the same time, we see the simultaneous emergence of philosophies and practices, which aim to deconstruct those polarities, their purpose being to refute identities, by means of *différences*², to dispense with human beings, by means of scattered multiplicities, and to question common objective situations, by vindicating the self as the peculiar and intimate starting-point. This latter path of subjective idealism, which is highly fruitful in the proliferation of *collage* texts, is grounded in the exaltation of the critical, free-thinking individual, but is based on the self-sufficiency, which comes from being a conscious or unconscious by-product of the oligarchy and its power; such an individual has, or is endowed with, the material conditions, by means of which he can carry out this critique of segregation (ideally, changing everything, while substantially changing nothing, regarding material conditions), perpetuating asymmetries and social differences, and defending the politics of tolerance, which basically "respect" the gulf in material conditions, separating those who dictate from those who accept being dictated to, in order to survive.

Many of my colleagues and I suspect (with good reason) that the technological means, we import into our science, are suffused with that subjective idealism, which derives from all the theoretical tendencies, upheld by the patriarchs of "single thought"³. These patriarchs, who, acting as the masters of ceremonies for idealistic stances, defend the diversity of ideas, while at the same time, taking care to ensure that material differences are left unchanged. We suspect that the applications, we incorporate into archaeological research, are the product of and, at the same time, the producers of the new style of life, in which rigorous, scientific observation takes second place to the accurate, graphic transfer of images, or the precision or definition, with which they are processed. This subterfuge makes them more suitable for reproducing the desired lifestyle of the ruling classes, of our late capitalist society, and which offers products that, as soon as they are put on the market, require consumers; and, if they are not consumed, the train of development will grind to a

halt. The question is: under what conditions should we catch that train, change its destination, or act, in order to avoid being run down by it?

The main problem which concerns me is: what is involved in the production of new technologies, and how does it consume us?

We belong to a society, which ideally presents itself as a "global village" and which, thanks to the development of the media, imposes a forum, that is in all places, at all times. In this forum, single or uniform thought is not a probability, nor does it pose a paradox, as regards the supposed, free thought of individuals, put forward by the constitutions of western democracies. The strength of "single thought" lies in that it allows all free, individual expression, as long as it respects the pattern of hegemonic thought. Both the democratic consensus, concerning the free exchange of information, and the tension of confrontation conform to this way of seeing the world, since all confrontation requires, like consensus, a space in which conciliation or negotiation can take place, as well as a power structure, that can safeguard the rules. And what better forum could there be than that of a single, and, supposedly, plural thought, which crystalises into an idea of equal opportunity (that is anathema to material difference), and avoids the unprescribed and unprofitable resolution of diversity! That is why single thought is not a probability, just as it is not probable that 200 multi-nationals can control more than a quarter of the world's economic activity. The single thought is an ideological option, the symbol of a universe of forms, which continually strives to ensure that we are characterised by this historical asymmetry.

It appears paradoxical that the development of communications, or information, can lead us to the totalitarian, blind alley of the "single thought" and the "global village". The supposed paradox, at least, illustrates that the development of those media has nothing to do with what they actually communicate, or rather, that the development has been possible, because the channels of communication have, to quote a famous phrase by the dictator Francisco Franco, been "fastened and well-fastened".

All hegemonic systems have chinks in them; and, the crack in the giddy development of communication allows us to slip through, just as these suggestions of mine have found their way into a pragmatic meeting, to discuss instrumental methodologies: are those of us, who hold academic office, the only ones who can achieve such a thing, or perhaps, it is only those who enjoy the right, material conditions, who can raise these issues with clarity and greater official authority, that is to say, without the need for some insurance policy, since they already enjoy the safety net of an institutional, life insurance policy?

This meeting gives us a unique opportunity to acquaint ourselves with a number of technological means, capable of solving many of our archaeological problems. However, these means will not determine the kinds of historical questions, we wish to ask; they will not even provide us with the way to formulate those questions. The means do not automatically construct the world; but, only through their dialectical relationship with the social conditions, which give rise to them, can the world be constructed. Nevertheless, the

² See J. Derrida. *De la Grammatologie*. Paris 1967.

³ Successful term proposed by I. Ramonet, director of *Le Monde Diplomatique* ("La Pensée Unique")

use of those means will open up a wide new set of problems, since every instrument, as a subject of information, adds new matter to the world, and, as such, deserves attention. That attention should hinge, not on the means themselves, but rather, should investigate the dialectic of the social relations, in which it originates. This investigation is, in itself, an archaeological problem, with which we can properly concern ourselves, as even the means, in question, may hail from some archaeological version of the single thought, that defender of the diversity of ideas, which all the while ensures that material differences are maintained (or go unnoticed).

The problem with archaeology, both in an absolute sense and in its spatio-temporal peculiarities, is not formulated through means, but through the historical research, which relies on them, and on the work accumulated by other material conditions, which employed means of another kind.

None of the technological means, on display at this meeting, were created from within the field of archaeology, a fact which illustrates the scant impact that our science has on society and confirms that the fetish value of objects continues to underlie the public's understanding of this discipline. I fear that there is currently a movement to attract the public with technological, super-productions, which give dimension to the playful idealism of the contemplation of the object, by means of another, cybernetics-based contemplation of the illustration of that same object, which has lost the "charm" of being old.

There is a danger that our public face will become a mere simulacrum, behind which is hidden our own technocratic image, consisting of drawings, photography, animation, or three-dimensional images, and which will gradually become the identity card of all those who forget that it is merely a club-membership card.

In my opinion, archaeologists' interest in new technologies does not stem, merely, from a wish to see their work illustrated, using the most, up-to-date methods. This conference can provide us with a good opportunity, to show that we use the means, at our disposal, in order to investigate society, and not simply to see it, without actually looking at it.

We shall have to listen very closely to those of our colleagues, who have been courageous enough to board the train of development, in order to determine whether the destination, to which they intend to take us, is the same one proposed by the social hegemony, which permitted the train, the tracks and the stations to be built. If so, then the use of that train automatically implies the perception that development requires no other tracks or destinations.

Who proposed the construction of that train in the first place? With what aims? What underlies the line of its application to archaeology, and why? What are the objectives of archaeological research: to find the means to illustrate, or the means to investigate? If the latter is the case, which new segments do those means allow us to investigate?

Our society is educating girls and boys, through new means, that form part of the same package: computers, multi-media texts... We are forging physical and metaphysical links,

between ourselves and those new objects, which will, in their turn, shape new individuals, who will become virtual subjects, unless they are fashioned into social beings, by relations and practices of another kind.

I am sure that this conference will be an opportunity to discover that what is being proposed, in the various communications, will not support the emergence of a virtual archaeology, and that the technological means, presented and used here, are useful for the purposes of research, and not merely, to show what has been extracted from the associations of observed phenomena, thanks to complex computer programs. We shall see that the use of these means has been of fundamental importance, in verifying historical hypotheses. Hopefully, the various communications, during this conference, will show us that the contribution of archaeological cybernetics is not to lure us into a kind of Persian market, where we can marvel at, consume, and export all the wonders of the world, but rather, to provide us with independent, instrumental methods, capable of validating or, at least, facilitating the historical explanation, that all scientific archaeology seeks to give.

It would be equally reassuring to find alternative ways of opening up that world to everybody (alternatives which would lead the new technologies out of the competitive markets, in which they are produced), or to find some explanation, capable of solving the paradox, between the production market (in which they are created) and the marketplace of knowledge (which they may herald). This latter marketplace will continue to be marked by inequality, as long as there are some archaeologists, who do not have access to those means. While realising that it is very difficult for archaeologists to propose changes to social systems, I feel that it is also part of our mission to conduct an archaeological analysis of who it is, that enjoys the material conditions, and why we are privileged, and at the expense of whom, or what.

I'm afraid that it may be our own alienation, which causes us to construct alienated discourses on the past.

Let us consider how far the development of the means of production, in the form of new technologies, takes us away from the objectives of archaeological research. Let us analyse the new proposal of scientific communication, advocated by the Third Industrial Revolution. Just as television (with very little opposition on our part) has ceased to be a mere means of communication and has become one more member of all our families, so computers (aside from providing us with the best system we have been able to devise for creating archives, documentation and data sorting) may become the indispensable mechanism, underpinning all social order. They may even dictate that social order, under the guise of components in the game of probabilities for oligarchic social reproduction.

My concern is not the result of an obsolete stance, aimed at standing in the way of technical progress, or putting humanistic stumbling blocks in the path of technological development. On the contrary, what worries me are the absurdities, obscured by the misuse of certain technological means, in fields where they do not solve problems, in the contexts to which they are applied; for example, I cite the misguided use of funds, in school and university libraries,

which result from the need to replace existing computers and networks every few years.

The imperatives of the market mean that machines become obsolete, at the same rate that competition, among multinationals, leads to the introduction of improvements in their products. This social cost means that the budgets, allotted to the academic infrastructure, are also affected, as regards other vital aspects to the proper education of social beings, including the recruitment of additional qualified teachers, the improvement of library or laboratory stocks (for both teaching and research purposes), as well as a large number of other, student-oriented services, which do not require hi-tech means.

Critical rigour requires that we define our position, regarding society's expectations of archaeologists, making it clear to the social authorities, exactly what the needs of archaeology are. We agree that while social government requires technical experts, to bring down management costs and step in as trouble-shooters, such figures have little in common with scientific, historical research. Therefore, for our part, and in order to avoid being a mere by-product of the government, we should express to our governments, our own scientific-methodological requirements in the training of those experts, together with a level of professional skill, that is not confined to the indiscriminate knowledge of techniques and apparatus.

Nowadays, computers are necessary, although social education and training were always necessary, with or without computers. The possession of these powerful, technological resources will not, in itself, enable us to enhance the quality of life, nor of scientific research, or the system of social relations; we shall merely resolve, thereby, quantitative problems of processed information and spare a small number of individuals, concentrated in the West, the effort of classifying, sorting and processing data. We shall also have the advantage of illustrating reality, in the most faithful manner we can, though illustrating is not synonymous to emulating (nor do these two concepts necessarily imply development). They may, in fact, constitute a giddy spiral, which obliges us to think that the only thing we can be sure of is that we cannot get off the treadmill.

It is not the speed, with which data is processed, that will allow us to solve our problems; rather, it is a parallel and genuinely, independent experiment, that will enable an explanation for them to be found. Experiment involves a proposition from outside the data, from a reality/perception/abstraction sphere of relations, which creates, in our thoughts, a synthesis, that overcomes the subject/object dialectic.

Computers are not simultaneously the subject, object, and possible relationships, that these may engender, but they are made to look as if they did, in fact, embody that relational synthesis. The hardware simulates an object, which is subjectivised in the software. According to the advertising that we absorb, computer programs would appear to be like little leprechauns, or angels, solving all our multiplication problems, without our having to learn our times tables. This leads to a perception, which causes us to think that machines

(with their little program-producing leprechauns inside, now on sale in the shape of computer applications) are, for the price of a few hundred thousand pesetas, going to succeed in the tasks, that our social or scientific education has failed to achieve.

One needs only to look at the power, reflected on the face of any receptionist, secretary or researcher, answering our enquiries from behind a computer screen; it is as if the computer contained the magic key to all the answers, as if its user had access to some super-human power. Yet this power is only a metaphor for the social values, imposed by the West, and for its control over all other societies, and which is, despite appearances, the most human of powers: that which allows us to own an almost pocket-sized copy of the world, a little device, which proposes us to be the ideal proprietors of a concrete universe, to which we have access, but which we can only enjoy in a virtual sense.

As individuals, who both produce and consume knowledge, we are obliged to marshal all the theoretical arguments possible, in order to understand why we are confining ourselves to consuming alien realities, and why we are being forced to measure our own realities, in terms of those other means. Those arguments need to be able to determine the extent, to which the present schizophrenia of the media is swerving us from the prospect of producing new realities. To sum up, we suggest that rigorous scrutiny should be applied to any archaeological cybernetics, that does not propound its instrumental relation to social archaeology.

The eruption of technology into the social sciences and everyday life, in general, involves two, age-old, ethical and scientific positions. The first stems from wary, traditional humanism and equates technology with "dehumanization", expressing contempt for the new formal languages, while the second considers technification to be intrinsically positive, and welcomes any new product, that allows any kind of advance, or anything that at least resembles it, in whatever field. Both of these liberal tendencies go hand in hand with the property of things, with the ideas and ideal of competition, which, in any case, uphold the market, as the only forum for exchange, which can give rise to social values. Both make ends and means equal, and argue in favour of supposedly pure schools of archaeology (the former being essentialist, whereas the latter is aseptic). And, both advocate success as the basic indicator of quality.

On the contrary, we propose an archaeology, which aims to give an account of the material conditions, that social reality needs, in order to reproduce itself, while being receptive to the technological innovations, that such an objective requires. It must be a rigorously social archaeology, which, by means of scientific criticism, will avoid the situation, whereby archaeologists are forced to approach their work from a narrowly descriptive, archivist or cartographic perspective, supporting a technological future as philatelic and idealistic as traditional archaeology. A future, whose only attraction is the better quality of its snapshots and its more sophisticated recording techniques. A future, which augurs didactic methods, characterised by the strong imprint of media competition, aimed at achieving social success, proclaimed by eye-catching images, that are easy to look at and digest, and that are empty of any kind of social content.

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