

The Role of the Archaeologist in Present-Day Society

Diogenes

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Introduction

As Alain Schnapp reminds us in his 1993 work *La Conquête du passé: Aux origines de l'archéologie*, archaeology is a scientific discipline which has existed since the most ancient times of human civilisation. It was already practised in ancient Egypt, in Mesopotamia, in China, in the Graeco-Roman world (see for example Lucretius on the origins of man). This perpetual interest in the lives of their predecessors has driven people throughout the ages to investigate the traces left by these ancestors, known through tales, handed down and still visible in the landscape. Then, from the time of the Renaissance onwards, more and more methodical excavations were undertaken, first by private collectors, then by the 18th century antiquarians, the 19th century prehistorians and the professional archaeologists of the 20th century. These investigations progressively enriched the information available to historians by the decipherment of ancient scripts, the revelation of the material culture represented by the objects discovered and finally by the reconstitution of archaeological sites and the recognition of former landscapes, territories and societies. In the light of this, it is worthwhile taking time to reassess the nature of archaeology's objectives in the modern day.

The French Petit Robert Dictionary defines archaeology as “the science of the vestiges of the past and specially the art and antique monuments” while the French Larousse Dictionary perceives it as “the science of art and monuments of the Antiquity”. Interestingly enough, the definition provided by the French Wikipedia is more detailed, stating that archaeology is “a scientific study with the objective to study and reconstitute the mankind history, from prehistory until the contemporaneous time, through the material culture that have been preserved, and which is sometimes necessary to excavate”.

These definitions show that archaeology as a scientific discipline is still young but one with a growing ambition as generation succeeds generation of archaeologists. While the two dictionaries put emphasis on the study of the material remains of mankind's past, broadly reflecting the approach of the 19th century, Wikipedia perceives it as a rearward projection of social history through the study of the material culture, which echoes the classical Marxist approach of the 20th.

Yet it is the etymology of the word itself along with Plato in the *Hippias Major* which gives us the best definition of “archaeology”: “ἀρχαιολογία” in Greek, meaning “knowledge of the past”. For such

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knowledge of the past also encompasses that of landscapes (environmental studies), territories (geography), societies (sociology), individual lives (anthropology), production and trade (economics), languages and writing (linguistics), handicrafts (technology), art (history of art) and belief systems, including burial practices (history of religions) etc. Archaeology thus involves reconstructing a vanished society by an exhaustive study of all its components, in short, reconstituting a whole system.

In the public arena, the archaeologist occasionally becomes worried by the popularity of certain themes that his work throws up which may be polemical or have a political or ideological resonance, such as the pursuit of cultural identity in a contemporary society, or even the re-invention of its past. For this reason he may rightly prefer to remain within his academic sphere, but then he may equally rightly be reproached for living in an ivory tower of erudition, most often for reasons of prudence and to avoid acknowledging any measure of social utility for his research. This difficulty that archaeology faces in the realm of the political is well known and is occasionally excoriated though most often passed over in silence. Though this circumstance should not be ignored, it does not however form part of what we are debating here. Rather we wish to pursue another theme which, to our knowledge, has rarely been addressed by archaeologists, and which also concerns their role in contemporary society, although no longer as regards the past but rather the future: the theme of understanding how societies of the past changed (whether successfully or unsuccessfully) so as to better understand the stakes involved in any changes (whether voluntary or forced) facing societies in the present and future.

The archaeologist's profession

Over the course of his relatively short career across time, the archaeologist was first simply a private scholar, most frequently of collector of artefacts, from the earliest activities until the 18th and early 19th centuries. In the second half of the 19th century, while still remaining an amateur, he evolved into a generalist archaeologist. After the generational and demographic collapse of the First World War, he progressively grew into a specialist in a period that was ever shorter and in a territorial area that became less and less extensive, reducing from continent-wide to a local region.

From the 1980s, the archaeologist was transformed into a laboratory specialist, and archaeology became sub-divided into archaeo-zoology, geo-archaeology, palaeo-botany, palynology, pedology, ceramology, funerary archaeology, archaeo-geography, palaeo-history, palaeo-metallurgy, traceology, etc. In short, as for medicine, the generalist has given way to the specialist. Nevertheless, the field archaeologist who unearths the data, and is both generalist and specialist, still leads the dance, even if heavy investment in a large dig over 10 to 20 years is scarcely worth the cost in comparison with a brief yet sensational article in *Nature*.

As we move through the 21st century, then, what will be the role of the archaeologist?

- A specialist becoming even more specialised?
- An integrator of results supplied by different specialists working on data derived from excavations of its archaeological site?
- A project owner, officially employed by local collective authorities, overseeing the work of public or private companies undertaking on-site excavations and directed by field managers applying the norms and state-of-art standards of the profession?
- A conservator of the archaeological heritage, whether in a museum or in a region?

Archaeologists will no doubt be all of those things at once, swept along by an irreversible thrust linked to the rise of preventive archaeology which increasingly dominates the field and the budgets

of civil work companies as well as to the reconfiguration of archaeological research, which will tend to remain in its laboratories in a continuing process of differentiation between the various branches of archaeology. But whatever the future administrative and social configuration of the archaeology profession as a whole, the dissemination of archaeological knowledge will need to continue developing for the greater enjoyment of a general public ever more passionate about archaeology.

The history of archaeology provides numerous examples of the importance of bringing archaeology back to the society. We propose to detail here two such examples which seem particularly significant for the enormous impact that archaeology can have on society, one on the world scale and the other on a local scale.

The revelation of European prehistory through the Universal Expositions of the late 19th century

Between 1865 and 1912, over the course of about 50 years, the extent of humanity's past was revealed, proved and divided into periods. 1865 can be conventionally considered as the year in which the academic study of prehistory began, with the foundation in La Spezia (Italy) and in Neuchâtel (Switzerland) of the International Congress of Prehistoric Anthropology and Archaeology (the CIAAP from its French initials) by the Swiss Édouard Desor and the Frenchman Gabriel de Mortillet, who at the time was living as an exile in Italy. 1912 was the date of the final congress of the CIAAP which took place in Geneva and which saw the triumph of the propositions of Henri Breuil on the chronology of the Upper Palaeolithic. These congresses played a significant role in the dissemination of knowledge of prehistory in the academic world. But the role of the Universal Expositions, and notably those of Paris (1867, 1878, 1889) was even more significant for the revelation of the science of prehistory to the general public (Müller-Schlessel 2001). Both the scholarly world and the educated public were involved in this process, for congresses of the CIAAP also took place in Paris during the three universal expositions held there.

At the 1867 Universal Exposition, Gabriel de Mortillet organised a prehistory section within the "History of Work" exhibition. This was the foundation for the "industrial" classification of prehistoric material culture, which broke with the stratigraphic palaeontology of Édouard Lartet (Mortillet 1867).

At the 1878 Universal Exposition, the Prehistory section was incorporated within the exhibition entitled "Ancient Art". It was during a visit to this exposition that the Marquis de Sautuola, who was later to discover the cave paintings of Altamira, developed his passion for prehistory, along with many others. The Universal Exposition of 1889, which marked the centenary of the French Revolution and saw the inauguration of the Eiffel Tower, installed the hall of Prehistoric Industry in the Palace of the Liberal Arts.

By the time of the 1900 Universal Exposition, prehistory had already gained a secure place in the field of acquired and recognized knowledge. As proof one can cite the regret expressed by Adrien de Mortillet, Gabriel's son, of not having been able to get access to a larger site for showing off the extent to which knowledge of world prehistory had advanced by that time (Mortillet 1900).

In the space of some 25 years from 1865 to 1889, a very large number of prehistoric sites had been discovered throughout Europe, evidence of the very rapid spread of ideas and knowledge which was arousing among intellectuals of diverse social origins (academics, priests, doctors, lawyers, leading citizens, aristocrats, teachers etc.) and of varied beliefs (the non-religious, positivists, Catholics, Protestants) a passion for the discovery of the ancient past of man, whether as single individuals or as members of local, regional or national scholarly societies. But still, prehistory did not rest upon its laurels, and research back in time for the most ancient hominids went on apace,



Figure 1. Gabriel de Mortillet (1821–1898).

not only in Europe but more particularly in the rest of the world, notably the Dutch East Indies (the discovery of Java Man (*Pithecanthropus erectus*, now reclassified as *Homo erectus*) by Eugène Dubois in 1891), in South Africa (the Taung child (*Australopithecus africanus*) discovered by Raymond Dart in 1924), in China (the so-called Peking Man of Zhoukoudian (originally *Sinanthropus pekinensis*, now reclassified as *Homo erectus pekinensis*) discovered by Black, Pei and Teilhard de Chardin in the late 1920s and early 1930s), in East Africa (the *Homo habilis* of the Olduvai Gorge, discovered by Louis and Mary Leakey in the early 1960s) right up until the most recent discoveries (*Orrorin tugenensis* in Kenya in 2000; the hominid named Toumaï (*Sahelanthropus tchadensis*) in Chad in 2001; the Dmanisi hominids (*Homo georgicus*) in Georgia from 1991; the so-called “Flores Man” (*Homo floresiensis*) in Indonesia in 2003; the hominid fossils of Atapuerca in Spain, 2008), allowing the reconstruction at an ever accelerated rhythm of a human phylogenesis which is still going on in time and space. Since the 1960s, human palaeontology has been like a cliff-hanger soap opera which so excites the general public that journalists publish the new discoveries more quickly than the scientists can publish the results of their studies. In contrast to the 19th century the mechanism by which this knowledge is spread has been reversed.

The Lubny (Ukraine) Museum of Yekaterina N. Skarzhynskaya

The story of this museum (Suprunenko 2000) began in the 1870s with the development in the Ukraine of a national cultural movement situated at the crossroads between archaeology, history and ethnography and within the framework of social reformist ideas fostered by local intellectuals. At the forefront of these was G.S. Kyriakov (1805–1883), a landed aristocrat with a vast estate at Gontsy, and whose house and park, which were entirely destroyed after the Russian Revolution, stood on the edge of the plain, just above the valley slope where the Gontsy palaeolithic site is to be found. After studies at the Lycée Richelieu in Odessa and the usual service in the army of men of his class, Kyriakov retired to his lands at Gontsy, while still playing a leader's role amongst the reformist aristocracy of Lubny, notably in favour of the liberation and education of the peasantry. A permanent member of the Russian Geographical Society, he took part in the 3rd Russian Archaeology Conference in Kiev in 1874. He undertook excavations of Scythian and Rus burial mounds. It is in fact to Kyriakov that we owe the very discovery of the Gontsy palaeolithic site, which he took at first for a palaeontological site due to the abundant discoveries of mammoth bones there; it was not until 1871 that he identified the little pieces of black flint that his children were playing with as remains of Old Stone Age tools. In 1873 he invited F.I. Kaminski, a Lubny teacher but more especially a very active archaeologist in the area and a prominent member of the social reformist movement, to undertake some excavations at Gontsy.

Yekaterina Skarzhynskaya, née Reiser (1852–1932), who had been a pupil of the prestigious Bestuzhev School of Saint-Petersburg and was the wife of the major-general N.G. Skarzhynski, himself also an important landowner of the Lubny region, came under the influence of the Russian social critic D.V. Stasov, who initiated her into the ideas of social reformism. The year 1874 marked the beginning of her initiative to bring together at a single venue various private archaeological and ethnographic collections. In 1881, in her house at Kruglik, near Lubny, she set up a museum with such a set of collections donated by amateur collectors of the district, including Kyriakov's, presenting them in glass cases with explanatory panels and a printed catalogue. An inventory of more than 4,000 archaeological items was established over the 25 years of the museum's existence, and there were 37,000 items in all. Entry was free. From 1882 a team of conservators was set up, with F.I. Kaminski as director and S.K. Kulzhynsky as scientific secretary. By 1900, the museum was attracting the impressive number of 300 visitors per day. Skarzhynskaya also set up an elementary school, a library, and arranged for conferences, lectures and readings of scientific works; she also developed assistance for the training and employment of disabled people. In 1900 it was calculated that she had spent more than 300,000 roubles of her personal fortune in archaeological researches and for the running of the museum. She tried unsuccessfully to have the museum transferred to the city of Lubny, which did not wish to or was not able to assume its running costs. The political events of 1905 forced her into exile at Lausanne in Switzerland at the age of 53, where she would remain until 1914, under the surveillance of the Tsarist secret police. In the meantime, the museum collections were transferred in 1906 to the museum of Poltava, where they remain today.

Returning to Lubny in 1914, she would die there at the age of 80 in 1932, at the start of the great induced famine of 1932–1933, which decimated more than 20% of the Ukrainian population. The three great figures associated with her in the museum project were Kaminski (1845–1891), Kuhlzhynsky (1867–1943) and V.G. Lyaskoronski, who took over Kaminski's position. Up until his death at 46 from tuberculosis in 1891, Kaminski undertook numerous archaeological excavations in the region, particularly at Gontsy, to which he brought the geologist Feofilactov, with whom he had presented a paper on the prehistory of Gontsy at the 1874 Kiev Russian Archaeological Congress. He also excavated Scythian burial mounds, Bronze Age necropolises and Iron Age forts.



Figure 2. Y.N. Skarzhynskaya (1852–1932). By permission of O.B. Supronenko.

He drew up the first archaeological map of the region. As an evolutionary archaeologist, he organised the lay-out of the museum's collection according to a culturally evolutionary framework: Stone Age, Bronze Age, the Greek and Scythian period, the arrival of the first Slavs. Kuhlzhynsky, who was initially a teacher at the high school in Lubny, then the scientific secretary of the museum, was an ethnographer whose main work was devoted to pysankas (painted eggs). He accompanied Yekaterina Skarzhynskaya into exile in Switzerland and saw to her needs up until the time of her death in Lubny in 1932. When she died, he raised and adopted her grand-children, the future geologists Vadim and Vsevolod Skarzhanski. Kuhlzhynsky died at Lubny in 1943, during the German occupation.

It was in this way, then, that between 1870 and 1890, in the small town of Lubny in the Poltava district of the Ukraine that the archaeology of a region was discovered, identified by period, mapped, catalogued, preserved and taught in a museum specially built to allow access to all.

Could our own society disappear?

The archaeologist is one who has a profound knowledge and understanding of the past. He understands that civilisations are mortal, to paraphrase the words of Paul Valéry, who had composed this observation at a time immediately following the carnage of the First World War. This perception is no doubt not quite the same for the historian, whose perspective covers a shorter time frame. Thus, the historian of France has seen the country rise again from all the darkest periods of her history. But this consciousness of potential mortality re-emerges in the anxieties of our society every time a catastrophic event occurs, whether on a local level (like an earthquake or epidemic), a national level (war, revolution, economic crisis) or, as threatens today, on a global level (a world war, pandemic, global economic crisis, climate change).

It was at the end of 2008 that the worldwide public understood that our society could disappear under the effects of two events in particular: the first in the short term: a financial crisis, the second in the longer term: a change in the world's climate.

The crisis that hit in 2009 was a financial crisis, associated with dubious practices involving excessive debt levels (and the epidemic spread of this debt through the securitisation of loans) and unregulated speculation in an ever greater number of fields: energy, real estate, raw materials and even food, along with an excessive amount of money in circulation and the existence of multiple tax havens. This crisis, which could have brought down the whole international banking system, was only able to be mitigated through massive financial backing from the wealthiest nations which had to act as the bankers of last resort (instead of simply controlling the banking system) and prop up the banks' own funds, either by taking on even greater debt themselves, or by effectively printing money (for the stronger currencies). If, by the end of 2009, the crisis seemed to have been brought under some control, even if not cured, an economic recession had been unleashed that was unprecedented in history (apart perhaps from that of 1929), from which only a few emerging nations seemed to have come out of by the beginning of 2010. Economic downturn, negative growth, collapses in share prices, bankruptcies, impoverishment and greater indebtedness have been this recession's consequences in Western countries, but the third and fourth world economies have suffered even more. A corollary to the economic crisis has been the social crisis: rising unemployment, strikes and riots, social instability, anxiety, a turning inwards and a rise of hatreds, which may well be followed by political crises involving the destabilisation of democracies, the rise of totalitarian demagoguery, or wars arising out of populist, fundamentalist or nationalist movements of the most dangerous sort.

Such a reasoning is not historical (the adage that history tends to repeat itself can be of no reassurance here) but systemic (the same causes lead to the same effects). And archaeology has taught us that civilisations can in fact disappear as a consequence of internal breakdown without war or invasion needing to be invoked as a cause (Renfrew & Cook 1979; Doran 1990). It teaches us also that many of those that did disappear following a war or invasion were attacked at a moment of internal weakness of sufficient gravity to render them unable to resist external aggressions. It would appear that the stochastic determinism of the process is more significant than the pure chance of the event.

Archaeology can furthermore reveal to us the main causes of such collapses:

- A natural catastrophe (earthquake, volcanic eruption, flood)
- A change in the climate (such as the prolonged dry period at the end of the 3rd millennium BCE or the Little Ice Age of the 14th and 15th centuries)
- An alteration to the environment through human activity (deforestation, soil exhaustion, erosion etc.)

- An economic collapse (productivity and trade)
- A financial crisis (depletion of gold and silver mines)
- A demographic crisis (epidemics, ageing populations, social exodus or displacement)
- Chronic insecurity (constant raiding, pillage, banditry, piracy, terrorism etc.) and so on.

But no social crisis occurs without there being equally a moral crisis and one of governance. For archaeology instructs us also that societies can surmount these potentially lethal circumstances, whose outcome is not always unavoidable, by drawing upon their own internal resources involving two principal processes:

- the process of governance
- the process of societal attitudes.

Societal attitudes play a great part in determining whether the society will tip into collapse or will achieve a recovery. Once again, archaeology can instruct us on several types of negative attitudes which lead towards collapse:

- A low opinion of governments and politicians (hence of democracy itself)
- A fear of investment in favour of keeping money in savings and bonds
- The spread of corruption to all levels of society
- The rejection of the notion of progress (hence a refusal to envisage change in the society and the locking in of established order and privilege)
- A distrust of science (whence a sense of the uselessness of acquiring knowledge and skills)
- The re-assertion of the exoteric over the esoteric in religions (whence a return of intolerance and of messianic movements)
- The triumph of the communication medium over communication content, of virtual worlds over the real world, of manipulation over elevation (whence a perception of the uselessness of initiative, of pursuing excellence, or of self-investment).

One may therefore consider whether what was true for the end of the Roman Empire (Rostovstev 1998) or the eve of the French Revolution (Tocqueville 1980) could equally be so for the 21st century.

Acting locally for a global preservation of cultures

140 years after Yekaterina Skarzhanskaya in Lubny, shouldn't we be following her example? The process of globalisation is bringing in its train the progressive but alas inescapable disappearance of local, regional and even national cultures. Biologists have been warning us of the loss of plant and animal diversity, and today we are ready to respond to this particular threat. But what are we doing in the face of the equally predicted loss of cultural diversity: of languages (50% of the around 6,700 languages still spoken today will have disappeared by the end of this century), the folk traditions (tales, stories, songs, music, dances, beliefs, customs, rituals, festivals, traditional skills etc.), the traditions around food (recipes, local plants, fruits, vegetables, flowers, spices, cheeses and dairy products, meat, bread etc.), the diversity of agriculture, horticulture and stock raising, traditional artisans' skills (for utensils, tools, weapons), various industries, and so on. The remorseless process of globalisation which is giving birth to a monocultural colossus with feet of clay should not cause us to forget the wealth of culture and heritage that our history has bequeathed us, and

from which it is still possible to draw resources to enable us to emerge from our crises. So is it not urgent that we establish a worldwide conservatory of cultures, analogous to the inventories of monuments and artistic treasures and to archaeological maps? And to enrol in this enterprise, archaeologists, ethnologists, anthropologists and all scholars of good will? Would the idea of dedicated “houses of cultural heritage”, similar to the Houses of Culture that André Malraux set up to facilitate cultural activities, be a step towards achieving this goal?

Acting globally for an archaeology of the future

By studying past climates from the stratigraphic archaeological evidence as well as from core samples from beneath glacial lakes, seas, oceans and polar icecaps, climatologists have been able to describe then explain the laws of climate variation (thus demonstrating Milankovitch’s climate variation theory). This mathematical modelling allows them to predict future climate patterns. Humans’ modification of the landscape began with the Neolithic revolution around ten thousand years ago, while his modification of the climate began in the mid-19th century with the Industrial Revolution. This data forms the basis for current work on predictions of climatic change in the near future (IPCC Report 2007).

Similarly, might not archaeologists, with the assistance of all researchers in the human sciences, be able to unlock the processes governing contemporary societies and thus foresee as well those of societies of the future from their knowledge of those of the past? The archaeologist can bring a contribution to present-day society not only because he has knowledge of the depths of time and so is aware of the mortality of civilisations, but especially because he can tell us why civilisations have died by employing the methodological skills he has developed since the beginnings of the archaeology discipline in his work of systemic reconstruction of societies (Djindjian 1991). The archaeologist can today provide answers to the following questions:

- Why are we as we are today? Thus, who are we really? Could we have been any different?
- How and why have civilisations disappeared? Could their history have been modified? How can man change his destiny?

Our students of philosophy are often asked to consider the following topic: “If history does not repeat itself, what use is there in knowing the past?” In such a case, archaeological knowledge would only be knowledge of the past as past, and would not serve to allow us to derive general laws that may be valid for all time. The topic naturally invites students to quote especially from Nietzsche, Kant, Hegel or Marx. The archaeology students of a Human Sciences university who had been recently given this topic almost unanimously replied that archaeology was part of the human sciences and not of the natural sciences. Archaeology could thus only know the past as the past and could not take interest in the future. The apparent determining factor behind these opinions (for we are here rather in the domain of hermeneutics rather than science) was the belonging to a particular academic tradition (that of the human sciences), presently influenced by currents of postmodernism, or else that the students’ choice of university studies in archaeology disclosed a lack of interest in modern-day society, rather than the subject itself to be addressed. Perhaps if the same question were posed to archeometricians or, if one may be permitted a neologism, to archaeo-environmentalists, the answer might have been different.

The general public, along with politicians, have recently been fascinated by reading Jared Diamond’s 2005 book *Collapse. How Societies Choose to Fail or Succeed* which analyses the causes for the disappearance or change of several present-day and past societies. The book has had

an enthusiastic reception from ecologists (man is presented as the victim of his own destruction of the environment) but has also aroused negative reactions from all ideological horizons (with accusations of Malthusianism and catastrophism). But it is thanks to Diamond that the general public has been made aware of a subject that had already been addressed by archaeologists for more than 30 years (Renfrew & Cooke 1979; Tainter 1988, 2006; Yoffee & Cowgill 1988; Redman et al. 2004) or by historians (Le Roy Ladurie 2004). The examples chosen by Diamond in the collapse of the Mayan civilisation, that of Easter Island, of the Anasazi Native Americans of New Mexico or in the failed settlement of Greenland (and North-Eastern America) by the Vikings are, besides, so well known and constantly tossed around that they have lost among the archaeological community the generic power that Diamond brings to them when he addresses the general public.

There nevertheless exists an optimistic slant to the same topic, that of adaptations that have been successful. The approach to these is furthermore more favourable for the registering of archaeological data, because a successful transition offers a wealth of data from both the environment prior to the crisis as from the subsequent one, whereas a collapse leaves us with a dearth of significant data from the post-crisis situation, leading to the risk of exaggerating the amplitude of the collapse through, for example, the absence of monumental constructions in the period after. Such transition archaeology does not yet exist as a new sub-speciality of archaeology itself, but it no doubt has a fine future of problematics ahead of it. Among these may be the transition between the Middle and Upper Palaeolithic Ages and the issue of the “arrival of modern man”, the transition from an economy of hunter-gatherers to an economy of cultivators and herders, the emergence of a nomadic pastoral economy in the steppe regions, the transition of societies out of the end of the Neolithic period into the Bronze Age in the Near-East, in the Caucasus and in Europe, the urbanisation of societies, the invention of writing, the growth of city-states etc.

The understanding of the transition processes of the “revolutions” of past societies can assist us in meeting the major challenges that await world society in the 21st century: the environmental risk arising out of the effects on the climate of industrial production since the second half of the 19th century, the steady depletion of the reserves of fossil fuels, the inevitable further economic development of nations, even the most disadvantaged, the growth in the world’s population. This transition will represent a new “revolution”, the like of which humanity has already known several over the course of its prehistory and history. The archaeologist can be of great use in providing a relative perspective for the fears that will arise at the outset of a difficult transition period, one in which all participants must direct themselves towards the future and not remain locked into rigid and ultimately suicidal structures. Thus, the steady reduction in the mass of the Arctic polar icecap is of great worry for populations, but have they been informed that the same phenomenon occurring 400,000 years ago (OIS 11) allowed early man (*Homo erectus*, *Homo ergaster*) to spread across the whole earth outside of the Americas?

But should it take up this role, this archaeology of overshoot and collapse may run the risk of becoming rapidly either suspected of purveying ideological presuppositions or else a victim of political manipulation. It is therefore essential that it be established on an unimpeachable cognitive, methodological and technical platform. Such a platform already exists. The modelling, through simulation by multi-agent systems (MAS) (Ferber 1995; Woolridge 2002) of past societies enables significant advances to be made today in the systematic modelling and simulation of societies in general. These studies are still only in their initial stages. But they represent an extremely promising line of research. J. Doran was the precursor for the application of this technique to archaeology (Doran 1990; Doran & Palmer 1995). This approach presents the great advantage of encouraging us to identify and characterise the processes underlying the systemic functioning of our societies, whether present or past. These processes have links to the great scientific disciplines,

the exact sciences (technologies), the natural sciences (the animal and plant world within its environment), the economic sciences (productivity, trade and finance), the social sciences (governance, belief systems, codes, traditions) and the human sciences (attitudes). The problematic facing us thus no longer belongs more to one academic discipline over another but to all – in short, to the system as a whole.

Translated from the French by Colin Anderson

References

- Diamond, J (2005) *Collapse: How Societies Choose to Fail or Succeed*. London: Penguin Books.
- Djindjian, F (1991) *Méthodes pour l'archéologie*. Paris: Armand Colin.
- Doran, J E (1990) "Computer-based Simulation and Formal Modelling in Archaeology: A Review", in A Voorrips (ed.), *Mathematics and Information Science in Archaeology : A Flexible Framework*, pp. 93–114. Bonn: Holos.
- Doran, J E and Palmer, M (1995) "The EOS Project: Integrating Two Models of Palaeolithic Social Change", in N Gilbert and R Conte (eds), *Artificial Societies*, pp. 103–125. London: UCL Press.
- Ferber, J (1995) *Les Systèmes multi-agents: Vers une intelligence collective*. Paris: InterEditions.
- IPCC (2007) *Synthèse du quatrième rapport (AR4) des groupes I, II et III du GIEC*. Internet site www.ipcc.ch.
- Le Roy Ladurie, E (2004) *Histoire humaine et comparée du climat: Canicules et glaciers, XIII^e–XVIII^e siècles*. Paris: Fayard.
- Mortillet, G de (1867) *Promenades préhistoriques à l'Exposition universelle*. Paris: Reinwald.
- Mortillet, A de (1900) "Exposition Universelle de 1900: Catalogue de l'exposition de la Société d'Anthropologie de Paris", *Bulletins de la Société d'anthropologie de Paris*, 1(1): 254–294. Paris: Reinwald.
- Müller-Schessel, N (2001) "Fair Prehistory: Archaeological Exhibits at French Expositions Universelles", *Antiquity*, 75: 391–401.
- Redman, C, James, S, Fish, P and Rogers, J D (2004) *The Archaeology of Global Change : The Impacts of the Humans on their Environment*. Washington: Smithsonian Books.
- Renfrew, C and Cooke K L (eds) (1979) *Transformations: Mathematical Approaches to Culture Change*. New York, San Francisco, and London: Academic Press.
- Rostovtseff, M I (1998) *Histoire économique et sociale de l'empire romain*. Laffont: Bouquins.
- Schnapp, A (1993) *La conquête du passé: Aux origines de l'archéologie*. Paris: Le Livre de Poche.
- Suprunenko, O B (2000) Археологія в діяльності першого приватного музею України: Лубенський музей К.М. Скаржинської. Kiev-Poltava : Кол.авт. НАН України. Інститут археології.
- Tainter, J (1988) *The Collapse of Complex Societies*. Cambridge: Cambridge University Press.
- Tainter, J (2006) "Archaeology of Overshoot and Collapse", *Annual Review of Anthropology*, 35: 59–74.
- Tocqueville, A de (1980) *On Democracy, Revolution and Society*. Chicago: University of Chicago Press.
- Woolridge, M (2002) *An Introduction to MultiAgent Systems*. Chichester: Wiley and Sons.
- Yoffee, N and Cowgill, G (1988) *The Collapse of Ancient States and Civilisations*. Tucson: University of Arizona Press.