

WHY ARCHAEOLOGY, IN ALL OF ITS COMPONENTS, IS A SOCIAL SCIENCE

It is often said – and I have written it myself – that archaeology resides at the interface between the humanities and natural science. Does this mean that it is on the point of tipping indifferently over onto one or other side? Can we say that, like a border, it does not really belong to anyone, to neither of these two types of science? Is it in an intersection, to use a set theory term, with elements common to both fields? Or rather, a bridge which provides a connection, and therefore a relationship and not a discipline? Could it be a hybrid science, made up of two very different elements, “abnormally” joined?

Things, methods and results are basic elements found in all sciences: so what of all that is shared? Or is this sharing deceptive? Whatever about the formal aspects, the effects appear to provide evidence. For example: what do two journals, such as the *Revue Archéologique* published in France by the PUF and the international *Journal of Archaeological Science*, have in common? Another example: is the distribution of archaeologists in France across two CNRS institutes not also a consequence of this heterogeneity? And finally, in relation to training, the variety of possible educational paths must be acknowledged (the former Science or Arts faculties). Should we be discussing archaeologies (in the plural) and giving up on any criteria of identity? And in doing so, adding a further division to those already acknowledged, resulting in so many sub-disciplines (which I called components in my title): prehistoric archaeology, protohistoric archaeology, classical archaeology, zooarchaeology, archaeobotany, archaeogeography, etc... Ultimately, beyond these divisions, is there perhaps a sort of indecision in archaeological knowledge? And has the whole thing not been particularly clouded since research was first extended to the contemporary period? Up to the Great War and the more recent past? This addition of the recent is of course not being questioned, but does it justify giving archaeology the subject of “material culture”, making it the “discipline of things” or even that of the entanglement of

humans or non-humans as Ian Hodder proposes, in an idea that owes much to Bruno Latour, Daniel Miller and Tim Ingold – who find themselves cited abundantly in recent reflections published about theoretical archaeology? Why should archaeology be the chosen carrier of this “material turn,” which sometimes goes so far as to replace the earlier linguistic turn (which was condemned for its lack of symmetry and harmfulness to the notion of care for things)? Furthermore, archaeology so often finds itself unable to access the function of artefacts, in the absence of their producers and users. By assuming this position or asking this sort of question, are we not confusing an epistemological point of view with one which falls under the jurisdiction of the sociology of science, in relation to neighbouring disciplines? In short, between knowledge and discipline, even though groups of people are necessary to create both. In order to formulate our questions more effectively, we must first attempt to accurately describe the procedures of knowledge in question. As with any science – and archaeology is one, in so far as it proves things using universalisable methods – it combines things, methods and results, which it invents, which it adapts or recycles. As we all know, typology and stratigraphy came from the natural sciences, and are put to different uses in archaeology. If we wish to understand these differences better, we need, in my opinion, to shift our focus to even more fundamental entities; but which ones?

Based on the propositions of the logician and philosopher of science Carlos Ulises Moulines, we can say that every science is the configuration of a complex that is simultaneously ontological, epistemological and semantic, three domains not easily separated. These three components answer different questions, but it would be illusory to assume that they cover independent fields. We see this in particular in certain domains such as information technology or geography: with GIS, when we discuss ontologies, we are also talking about lexicons. From an intuitive point of view, it is easy to see that the ontological entities correspond in part with our most day-to-day experience, in terms of the vocabulary used to name them, and that it is difficult to avoid creating equivalence between the perceived and the named. What is different with “scientific” ontology is that we attempt to give greater coherence to all of this (a logical requirement), while reducing as much as possible the number of accepted entities (the famous Occam’s razor, well known to metaphysicists).

1 - A triadic ontology

With archaeology, we propose to apply this “onto-epistemo-semantic” complex to the idea of an “aggregate”, a term which describes a specific type of entity, knowable in a certain way, to which we give a meaning within a particular semantic field. The term “site”, often employed to designate the same thing, is in another language-game: it is not substantial, but belongs to the relational, due to its potential for locating, and is therefore relative. By choosing “aggregate”, we wish to first discuss a material complex, which occupies a given space, and to take responsibility for it (Boissinot, 2015). It is important to remember that we are referring to an ensemble of disparate material elements which have been juxtaposed. These are linked by a particular cohesion and demonstrate a relative structuring, in contrast with a pile of material, for example. This is how it is perceived during an archaeological excavation, which is the only procedure that enables it to be understood as a whole, albeit in a very ephemeral (and often incomplete) way. To then consider this aggregate as a “site” is a way of relating the aggregate to geographical entities. The term “deposit”, predominantly used by prehistorians up to the last century, turns out to be closer to the immediate experience of the excavators, as it refers to a mass of material things, without assuming from the beginning an interpretation in causal terms (proximity to a river, for example, is often suggested as the reason for choosing a particular location). However, it must be acknowledged that the notion of a “site” also rather quickly became a useful tool for situating remains which were not connected with any historiographical tradition, without relying on geodesy.

To develop this idea further, we need to define the “building blocks” of our ontology, its basic entities. This is because, as we have seen, the main activity of science, as well as philosophy, is to ask ontological questions. We can borrow the ontology of the French philosopher Francis Wolff due to its simplicity, and its intuitive and practical nature, far from any prescriptive aim. Once again, the basic entities support relatively simple questions, which will be useful in order to respond more analytically to our initial

question, on the relationship between nature and culture. There are three types, widely recognised in Western metaphysics:

- Things: these are countable, well defined in space and can be named, ensuring their identification and re-identification. Although natural language will always have a certain amount of flexibility, there are still parallels between the perceptive structures and the semantic structures of language;

- Events: when things move, they usually emit sounds (one of their attributes, on which F. Wolff has recently worked), and we describe what happens to them using verbs (one of the necessary and universal elements of all languages). And, of course, they require the support of things in order to express themselves. The question we ask of events is why they happen, and how one can cause another, in a virtually infinite regress;

- People (or agents): these are the specific things which provoke particular events, which we call actions. These are caused by agents who have reasons for acting. Also, as speakers, they express themselves in the first person, through the use of indexicals. By acting, they do not simply see the world as a spectacle; they participate in it. They conceptualise and transform it. But, at a certain scale, if we wish to really know what ultimately exists, behind all appearances (quarks, for example or Higgs bosons – or who knows what, as F. Wolff says), we can of course leave out this all too human level...

Clearly, this ontological proposition exists within a world at our human scale, in which asymmetries exist. This runs contrary to the material turn, which brushed aside the fundamental importance of language, its predicative and indexical function. It is almost certainly a question of where we place the cursor. As F. Wolff notes, the major categories of art, as well as the structure of law, appear to support this manner of considering the fundamental entities (“tropes” are more complicated: the act of reducing everything to a single entity, like the events or the processes, does not take into account the intuitive way in which we perceive the world). Thus, we can easily understand the problems faced by law when one of the elements of the triad is missing (the person), such as in the very current example of driverless cars, which could cause harm to a third party, without any responsibility on the part of a real agent. F. Wolff’s ontology does not answer natural science’s broad question, “What ultimately exists in the world?” Instead, it responds more specifically to the following: “What exists in the world inevitably and

universally for all human beings?": clearly, first and foremost, there are things, events and people, before we can consider other categories, such as processes, animals, natural and artefactual things...

The aggregate had barely held the attention of metaphysicians because it is a combination which had remained unnoticed, which had no reason to be named, considered in an even more vague way than a detritus, than a remnant or vestige, since these assume a voluntary action by people, or the idea of a whole which undergoes a subtraction. An aggregate can be anything and everything, except that it does not stretch on indefinitely. It is compact and more heterogeneous than a pile; it holds together well. It really is a metaphysical entity which acts as a foil, even more so than compounds or hybrids... That is why philosophers have hardly taken an interest in our archaeological affairs, except to use a metaphor, in the case of Sigmund Freud or Michel Foucault.

If we retain F. Wolff's triadic ontology, dividing the world into things, events and agents, it must be said that archaeology, while aiming for all three, really only has access to the first (and these are inert), in a world within our abilities (at a mesoscopic scale, and with the supposition of predication, but in its absence). This opens up the possibility of telling a story – if we are willing to accept this as archaeology's purpose, rather than contenting ourselves with a basic inventory of things in space and time. Paradoxically, this initial limitation to things is also the guarantee of virtual immutability, separability and individuability, which is exactly what all normative ontologies strive for. Quite the opposite, therefore, of the elements in a dream, for example, which have a particular fluidity, with characters which remain indeterminate, and everything being interpreted as soon as it occurs. By contrast, the things in an aggregate hold something tangible which we divide up according to its natural articulations (mainly its stratigraphic limits) like a chicken (to borrow a hackneyed philosophical simile)! We can of course debate the "inert" nature of an aggregate when we know that its components can undergo numerous processes (chemical alteration, erosion, bioturbation...), which can cause radical transformations, or even the disappearance of the structure. However, when the archaeologist perceives it, the aggregate presents itself as an inert mass where nothing moves; and from this observation, he or she deducts that things have moved (taphonomy).

The excavation of the structure of an aggregate is the only operation which we can follow; unlike when we read a text or when we look at an image, here we do not receive any points of view, since an aggregate is not addressed to anyone. It is a singular activity in the context of telling a story, far removed from the work of historians, but is one which guarantees “that a good excavation cannot lie” (Besson *et al.*, 2011). A “good excavation” is a procedure carried out methodically and sincerely, under the critical eye of the public – exactly what was missing in famous hoaxes such as Glozel.

2 - A unique inquiry

The “archaeological inquiry” is what I call the two questions asked successively of every aggregate, which, since nothing moves there yet, correspond with a decoupling of space and time. The former is the only one truly observed, while the latter is deduced from the structure and the properties of its spatial elements. As soon as the initial question is formulated (“what is here”), the archaeologist shifts towards a second question (“what happened here”), which provides the main motivation for excavating the aggregate. And so, on the basis of a list of consequences (things), the aim is to find the causes (events, actions), much the same way a police inquiry is carried out. Excavation takes place at a mesoscopic scale (Schaeffer, 2007), which is simultaneously that of the people excavating (archaeologists) and of those who left these things in this place. It is at this level that decisions are taken to leave, assemble or remove the tangible remains. The use of supra and infra (macro/micro) scales can be considered supplementary. In the confines of the laboratory, we proceed to characterise some of the things we have discovered, in so far as they are made of a particular substance: it is as if these things are labelled, associated with a strict reference (“it is limestone”, “those are pine pollen grains” etc.). This is why it is said that the pronouncement of a chemical, mineral or organic formula, from atoms up to genetic macromolecules, is like a proper noun, or is at least true regardless of the place it is found. However, at larger scales, we are dealing with a world seen as shared: it does not matter that a wall is made up of a particular set of chemical elements (unless one is particularly

interested in the provenance of the materials), what interests us is the fact that it was built here, in this context, as a wall, a grouping of parts with one or more aims, and in a way that can be imagined if we put ourselves in the position of the builders, in thinking about their movements and the constraints they encountered (this is what we mean when we speak of a “shared” thing), as well as the movement of products. Even though an artefact might be comprised of the same atoms as the rest of the universe, we cannot elucidate its function (i.e. the reasons for its use in a particular context) by crushing it into powder and examining it under a microscope. In order to successfully complete this inquiry, a small amount of anthropology will therefore be required.

However, not all aggregates deserve to be treated together to make up a single discipline that we can call “archaeology”. Some are falsified, and do not hide it (*Le déjeuner sous l’herbe* by Daniel Spoerri: Demoule, 2012), while others manipulate the potential audience, as is the case with the true hoaxes, those who do not admit they are hoaxes (Glozel) and which are only the echoes of the technical and historical knowledge of their time. Others, conceived as concrete wholes (with some parts understood to varying degrees), about which it is possible to predicate, as in the case of bazaars or libraries considered disordered, yet where someone is still able to recognise that everything is poorly catalogued, or to find an object which exists – as though “stratified” – within it. Ultimately, agents exist who are not only the cause of these assemblages, but who still recognise them as nameable entities, as wholes greater than the sum of their parts. The first and only predicator of an aggregate is the archaeologist who excavates it. In short, he or she is its ephemeral subject.

Another requirement in order to hit the right targets in our regional ontology (since this is focused on the archaeological inquiry) is that at least part of the aggregate be an artefact (or, as is more typically encountered, part of an artefact. The discovery of a potsherd in an alluvial deposit, whereby the sherd is one of the deposit’s components, along with gravels or tree stumps, is not enough to qualify the deposit as archaeological. Furthermore, such a deposit could never be understood by means of a comprehensive excavation. Also of little interest are the aggregates which reveal themselves to be almost entirely comprised of parts of a single artefact, which, once reassembled, form an isolated whole. In such an instance, it would be necessary, for example, to consider the restoration of a building after an earthquake

as archaeology, and that there would be a benefit in giving such a meaning to this practice (a semantic project), even though it does not necessarily aim to tell a story. Fieldwork experience, commonly called “archaeological”, demonstrates that this is rarely the case, because there is always something missing, or something unexpected, in what we find: a far cry from the image of a jigsaw puzzle so widely used in the popularisation of the discipline! It is simultaneously more and less, with no guarantee that the missing piece of the aggregate exists elsewhere, or that what we find here is the same as anywhere else. That is the epistemic situation in which we find ourselves as archaeologists. As we know, the success of certain police inquiries resides precisely in this complementarity between the scene of the crime and the world as it continues to exist beyond it – which is an excellent reason for not mixing up the two types of research.

Furthermore, there is a vacuum around aggregates, which we can call specifically an “archaeological vacuum”. It is in fact impossible to conduct an investigation such as the one we have just described, even if there is material between two aggregates, in the form of terrain and sedimentary deposits. It is also impossible to be certain of their coexistence, since the chronologies determined by the archaeological investigation are always probabilistic, with the exception of a few iconic examples (such as the region of Pompeii). This leads to a problematic use of geographical concepts, which leave no portion of space without classification. There is also always the possibility of naming an entity between two others which have already been identified. In other words, there is a sort of criterion of continuity which is lacking in archaeology, as philosophers have already noted.

3 - A world at our own scale

Through archaeological practice, the agents – though largely undefined, as they are reconstructed by thought, using things – are understood at our own scale. Below are a few examples which illustrate this, because the issue is important, as it enables us, through the use of F. Wolff’s simplified ontology, to confirm that we do indeed fall under the heading of social science.

All of us, as children, were no doubt surprised to learn in geography or geology class, while looking at certain mountains, that “before, this area was a sea”; and that this was because there were fossils of aquatic species in the rock. The mountains, seen from this angle, are not part of a world at our scale, as our geographical reference points are disrupted: both the actual spatial entities and, more importantly, their relationships. This paradoxical predication which places sea before mountain is the only reference for a single geometric position, and is therefore abstract. It involves the proposition of a naturalist ontology in the context of our “natural” ontology (i.e. “that which is natural, or familiar, to us”). It is as if we imagined, this time at a microscopic scale, that all of this before us, the objects on the table, for example, was simply the bustling of electrons around billions of atomic nuclei. This may be no less true, but it does not describe the world for us human beings, as we “naïvely” perceive and conceive it (“naïve physics” is a very important branch of science which has enabled the development of artificial intelligence).

The artefact, according to François Sigaut’s definition, that is to say, a thing which satisfies three conditions (form, use and function), cannot be fully conceived without prior use of language. Its criteria of identity (that which allows us to say that we are dealing with the same artefact), require us to turn to the actions of the makers and users: the artefacts must be credited with existence in order to truly exist (Lenclud, 2007). They are only artefacts in our human world and at our scale. At the very least, every artefact contradicts “nature” (intrinsically or extrinsically), even if, at a different scale, they are nature itself (mineral or plant, atoms...).

What of animals? They certainly act, but are they capable of communicating the reasons for their actions, even to themselves? Clearly, it is necessary to create bridges and to shift our frames of reference in order to understand and accept the phenomenon of hominisation and the emergence of language. Beyond the blurred boundaries and hazily outlined concepts, there is one essential difference: an animal only perceives that which is important to it based on its possible actions. It perceives and acts in its own world. It is a subject which lives in a world of its own, and of which it is the center (Von Uexkull, 1934). By following the analyses of Étienne Bimbenet, we can discuss the notion of the animal’s “idealism” (Bimbenet, 2011). In contrast, the human being, following the process of hominisation (as well as throughout their ontogenesis, from baby to adult), will recognise “the World” which belongs to

everyone, and which exists beyond his or her own world. Humans invent realism (Bimbenet, 2015), which acknowledges that the world exceeds and precedes them, and will most likely survive them. It is a world older than their thoughts, which contains things that exist outside of their field of vision. Humans make the world their space for discussion (and ultimately make archaeology, among many other things, possible).

Designating a thing in the world, by pointing at it, as we sometimes do with the stars, is to recognise that shown thing as being the same for everyone, nameable and translatable, rather than only being of use to oneself. This is what we call curiosity. No animals argue about what things are in reality, independently of oneself. Here we see the willingness to acknowledge through (archaeological) inquiry the specific actions of people capable of predication, as having formed part of our world. As archaeologists, we ask questions of the aggregate not only as we would an ecological niche (like we do for any group of animals), but also as a place of action by agents capable of curiosity and predication, who are absent at the time of excavation.

A few thinkers, such as François Djindjian (2011) – though I am not sure he really believed it himself – have imagined the possibility of codifying the “archaeological reality” by presenting it as a set of formulae, as one might do in chemistry, for example, or for some aspects of biology (we know that for Alain Gallay [1986] too, this could be a model for our archaeological science). Despite calling on semiology, following an idea heavily inspired by Jean-Claude Gardin, this description of the world does not fit into our semantic field. Unlike natural language, it contains neither the fundamental structures of predication (subject, verbs, indexicals), nor the useful distinction between proper and common nouns, with the latter often being socio-anthropological concepts which are not as easily defined as we like to think.

These concepts, such as that of a town, for example, refuse to be held in by a mesh of strictly objective criteria. They move according to human intersubjectivity and often remain vague, which probably also enables us to combine them. In other words, there is no set of necessary and sufficient conditions allowing us to precisely define the concept, which is typically used retrospectively and synoptically (Boissinot, 2011). However, without the opinion of the makers and users, and therefore the function of

the artefact, the archaeologist will not avoid an argument as to its classification, that of the town in this example, and must bring it before the world for approval. He or she will contribute to a definition of the town, but only by taking into account the extent of the term (with further cases), incapable of questioning its intent (or comprehension). This is why I believe there are so few conceptual debates in archaeology...

Conclusion

Archaeologists do not simply observe things as in a theatre. They act upon them to render them at the scale of our human world, where it is necessary to count things, events and people. If they were naturalists, they would aim for a knowledge independent of themselves and of their human group, even when it is the work of mankind, whether made in a laboratory or in nature. However, with the undeniable evidence acquired through the excavation of aggregates, archaeologists contribute to the updating of the world's inventory and, in part, to that of the concepts necessary for understanding it. But of course, this "undeniable evidence" only pertains to certain properties of artefacts (or assemblages) which cannot be apprehended in their entirety.

Although specialised in the search for "ecofacts" (defined by our colleagues from Québec as the material remains from the animal, plant or mineral worlds, which comprise the residues of humans' action on their environment), archaeologists only take interest in them, ahead of artefacts, in so far as they inform us about social practices, in other words, people's styles of actions. The plural is of the essence here, especially since archaeology focuses on assemblages, rather than isolated objects – which are even more elusive – which places it at once in the realm of the social. Even in funerary archaeology, where we sometimes believe that we have perceived the individual, we need to remember that at least two people are required to make a grave: one deceased and one living.

Regarding works of art, ultimately what interests us is not so much their “authors” and their impossible biographies, but rather the role these aesthetic objects played in society. In the end, working with archaeological aggregates turns out to be a specific approach to social science.

Philippe BOISSINOT

École des hautes études en sciences sociales
philippe.boissinot@ehess.fr

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