

THE VALUE OF THINGS: THE PRODUCTION AND CIRCULATION OF ALPINE JADE AXES DURING THE 5TH – 4TH MILLENIA IN A EUROPEAN PERSPECTIVE

Pierre Pétrequin, Serge Cassen, Michel Errera, Lutz Klassen,
Anne–Marie Pétrequin, Alison Sheridan

During the 5th and part of the 4th millennium BC, the circulation of long axeheads of jade (that is, jadeitite, omphacitite and eclogite) demonstrates an extraordinary phenomenon featuring the long–distancetransfer of these objects (over distances up to 1700 kilometres and in some cases over 2000 kilometres as the crow flies) from the source areas. The Neolithic networks that extended outwards from these source areas (the massifs of Mont Viso and Mont Beigua) spanned some 3000 kilometres, from the Atlantic to the west to the Black Sea to the east.

INTRODUCTION

It would be hard to explain the movement of the oversized polished axeheads from a purely technological or economic point of view, since the success of these objects across Western Europe is due to a different kind of value: their conceptual value. We propose to explore the social significance of large polished jade axeheads by investigating the context of discovery of some 1800 examples that have been recorded to date. For the most part, these precious objects were not deposited in conventional archaeological contexts, but instead were often deposited close to rivers, marshes and stretches of water, or sometimes in front of rock shelters or isolated boulders, or in a fissure, or at the foot of a standing stone.

Our hypothesis is that these axeheads constituted sacred signs, which clearly belonged within the domain of religious beliefs and practices. If this hypothesis is correct, we then have to try to assess the social status of the men to whom people sacrificed large jade axeheads by breaking or burning them, as is the case in some exceptional graves within the largest mounds in the Carnac region of the southern coast of Brittany. Furthermore, it is in this region that the phenomenon of megalithism first saw the light of day in Western Europe, with large axeheads being represented on monumental stelae, associated with other signs in the religious grammar of the Carnac region.

Given the social (religious) significance of the long polished jade axeheads, technological and economic approaches have

little heuristic value in explaining why these ‘object–signs’ were produced in small numbers and reserved for use by specific people in markedly inegalitarian societies. The elites’ power and prestige would have been founded on powerful imaginary structures, not on technological factors or economic forces. This system of power involved the manipulation of jade axeheads that were destined to be consecrated for communicating with the Otherworld and for ensuring the reproduction of society. Furthermore, it operated within a Western, ‘jade’ Europe which existed in opposition to an Eastern Europe of copper and gold.

When Graham Clark published his *Prehistoric Europe: the Economic Basis* in 1955, an indispensable volume that merits repeated reading, especially when teaching, he considered economy from a prehistorian’s perspective. He listed techniques of production while leaving questions of output and of the social significance of the phenomena that he was describing to a large extent in the shade. In other words, like most other prehistorians who sought to reconstruct the techniques, the *chaînes opératoires* and the timing of work, Clark was interested in the infrastructures of production; these are the simplest elements to identify among long–disappeared societies. He attached a low importance to certain superstructures which seem to us to be indispensable, and in particular the social conditions of production (see Lemonnier 1970 for the concept of tasks and of strategic moments) and the perspective of the users (Liu 2003). In effect, the value of products – as is well known among sociologists, economists and publicists – is an essential aspect of the relative success of production. Advertisements which encourage people to *Be worthy of your car* and which are directed towards drivers who mostly have no idea of the techniques involved in building and running a motor, remind us that the value of goods is to be measured not only in terms of their technical efficacy but also with regard to imaginary

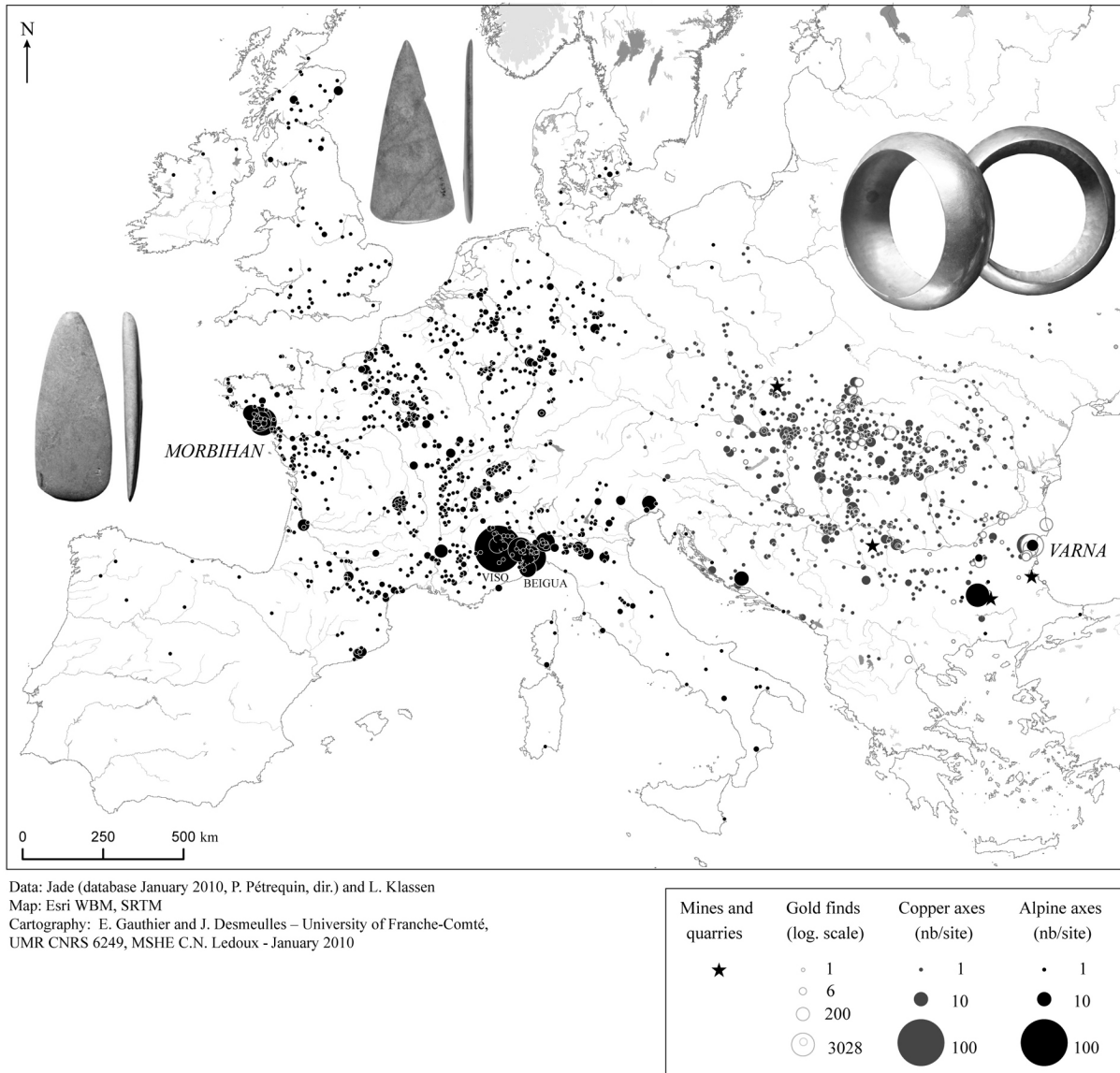
social concepts (see Godelier 1984 for the notions of the ideal and the material), which ensure the momentary success of a product or an idea (see Pétrequin and Pétrequin 2006 for ethnographic examples).

Thus, it is the question of the social context of production and of the product itself that we wish to develop as regards certain types of polished stone axeheads and their circulation around Europe. This is not to deny the importance of studying the techniques of production and the investment of time in manufacturing these axeheads; but to us these seem insufficient to account for the temporary success or for the abandonment of certain types of stone axehead. For this reason, the theoretical calculations that had been attempted concerning the production of axeheads of type A metadolerite at Plussulien (Côtes–d’Armor, France) seem unrealistic to us, because they fail to take into account the chronological span of the production and the social value of the axeheads that were exported up to 700 kilometres from the Breton source of the raw material (Le Roux 1999: 206–09).

The example that we have chosen is that of the large axeheads of Alpine jades, not only because they are well documented but also because they illustrate our thesis well by virtue of the long distances travelled, namely up to or even exceeding 2000 kilometres. During the Neolithic, the only comparable phenomenon is the movement of rings and beads of Aegean spondylus shell, objects whose strictly material function was negligible.

THE EUROPE OF JADE

The use of jades (jade–jadeite, and by extension omphacite, fine–grained eclogite and certain amphibolites), extremely tough stones that are luminous, often translucent and capable of taking a magnificent polish, to make polished Neolithic objects has been known since the 19th century (Damour 1863, 1865).



Data: Jade (database January 2010, P. Pétrequin, dir.) and L. Klassen
 Map: Esri WBM, SRTM
 Cartography: E. Gauthier and J. Desmeulles – University of Franche-Comté,
 UMR CNRS 6249, MSHE C.N. Ledoux - January 2010

Fig. 1: Comparative distribution of large axeheads of Alpine jades (black circles), gold objects (white circles) and copper axeheads (heavy object metallurgy: grey circles). CAD. E. Gauthier and J. Desmeulles. Data P. Pétrequin and L. Klassen (JADE)

The high Italian Alps, and above all the Mont Viso massif, were proposed as a source area by Alexis Damour from as early as 1881, and this hypothesis was presented in more detail by Secondo Franchi (1904), who mentioned in particular the massif of Mont Beigua, above Genoa (Fig. 1).

These early references were subsequently ignored and no attempt was made to investigate them in the field during the many

years when the only people who studied jade axeheads were petrographers (Campbell Smith 1963, Woolley et al. 1979, Ricq –de Bouard 1996, D’Amico et al. 2003). It was not until ethnoarchaeological models were applied (Pétrequin and Pétrequin 1993) that the large jade working sites were identified in the Mont Viso massif in 2003 (Pétrequin and Pétrequin 2006, Pétrequin et al. 2007a, 2007b), thereby resolving a problem that had endured for over 150 years.

Alpine jades were exploited from 5300 BC until around the end of the Neolithic, with most of the objects produced being workaday tools, that is, small polished axe- and adzeheads (Pétrequin et al. 2012a: 574–727). The extraction methods initially involved fire-setting and flaking (Pétrequin et al. 2008) and from the middle of the 5th millennium, fire-setting and laborious sawing using plaques of wood, sand and water (Pétrequin et al. 2009b), in order to produce longer objects and to make the most economical use of a rare raw material (Croutsch 2005). In comparison to the time needed to manufacture a flint axehead between 15 cm and 20 cm long (12 to 20 hours), the time required to make a large workaday axehead of similar size from Alpine jade is much longer (between 30 and 70 hours; much less for a small axehead: Delcaro 2005, Pétrequin et al. 2012a: 258–90). However, such figures take no account of the time taken in undertaking the necessary expeditions to reach the source areas in the mountains, located between 1700 and 2400 metres above sea level (Pétrequin et al. 2007b, 2012a: 214–57).

The workaday jade axeheads, which were far tougher than those made of other rocks, were distributed in large numbers, mostly in northern Italy, in eastern France and in the Mediterranean Midi (Ricq-de Bouard 1996, D'Amico and Starnini 2000, Thirault 2004), that is to say, at distances that scarcely exceeded 400 km as the crow flies. Beyond that, it appears that they circulated concurrently with other axeheads made of poorer quality, local rock types (Pétrequin and Jeunesse 1995, Thirault 2004). However, despite diminishing drastically in number beyond 400 kilometres from their source, some small axeheads of Alpine jade continued to circulate as far as the Atlantic and the North Sea to the north-west and to a similar distance to the east, to the shores of the Black Sea, where they are represented in the cemeteries of Varna and Durankulak in Bulgaria (Pétrequin et al. 2012b:1231–1279).

Previously, most authors (Ricq-de Bouard 1996, D'Amico et al. 2003) believed that small jade axeheads circulated on a down-the-line basis, according to Colin Renfrew's famous scheme (1975). However, it was hard to check this hypothesis, since no Europe-wide inventory had been compiled and this was a massive task. The only inventories that existed were those prepared by Walter Campbell Smith (1963 and subsequently) for Britain and Ireland. In Britain it seemed as though the number of small axeheads diminished from south to north, even though the larger axeheads, by contrast, showed no fall-off between the Channel and Scotland (Pétrequin et al. 2012a: 581, Fig. 5).

For our part, because of the large number of Alpine jade axeheads across Europe, we chose to restrict ourselves to working mostly with examples longer than 13.5 cm and to document these on a pan-European scale. This way, it was possible to create the largest possible inventory, to map the transfer of jades (Fig. 1) and to propose a detailed typology and a chronological evolution on the basis of closed groups (Pétrequin et al. 1998, 2002, 2012a: 574–722). This team-based work, undertaken over a period of 15 years, has profoundly changed our knowledge of the circulation of long axeheads precisely because it is based on detailed inventories, on analyses to pinpoint the sources of the various raw materials (using spectroradiometry: Errera et al. 2006, Errera et al. 2007 with a reference collection of raw material samples and working debris: Pétrequin et al. 2012a: 46–533) and on chronology. In this respect, our work differs radically from preceding approaches where the main, if not the sole, criterion was the petrographic characterisation of jades, without reference to Alpine source areas and generally without reference to archaeological and social questions.

The overall distribution map of large jade axeheads (Fig. 1) shows that most of the

products (especially those from Mont Viso) diffused westwards and north–westwards across Europe as far as Brittany, Ireland, Scotland and Denmark. During the period of the most widespread diffusion of Alpine axeheads, that is, between approximately 4600 BC and 3700 BC, the concentration of jade axeheads in Western Europe stood in opposition to that of copper tools (heavy–tool metallurgy) and of golden objects in Chalcolithic South–East Europe (Fig. 1) (Pétrequin and Jeunesse 1995, Pétrequin et al. 2002, Klassen 2004, Pétrequin et al. 2009a). This was a fundamentally important discovery: we can now recognise “two Europes” during the second half of the 5th millennium, namely a ‘Jade Europe’ in the West and a ‘Copper Europe’ in the East. These two Europes functioned largely independently of each other until the oriental influences from South–East Europe eventually submerged the symbolism of jade from the end of the 5th millennium (Klassen et al. 2012: 1280–1310).

Given the geographical extent of the transfer of large axeheads and the force with which these objects permeated different cultures and probably also different languages, there are several reasons to conclude that we are not simply dealing with ‘prestige’ or ‘ceremonial’ axeheads to use terms favoured by prehistorians, even though they are very badly defined and are used automatically without any demonstration of their validity. On the contrary, we argue that their role would have been fundamental in some of the most profound social functions.

Firstly, the large axeheads were oversized tools or, in other words, they were disproportionate in terms of the balance and the average weight of a workaday axe– or adzehead. Let us remember that the longest Alpine jade axeheads from one of the massive Carnac mounds at Mané er Hroëck at

Locmariaquer (Morbihan, France) measures no less than 46.6 cm in length. The gigantism of certain of these ‘object–weapons’ indicates that they have deviated from the original function of axeheads by being transformed into socially–valorised ‘object–signs’ (Lemonnier 1996). To attempt to discover the length of time dedicated to the manufacture and circulation of one of these long axeheads, we shall trace the progress of certain examples from the Alps, where primary production took place, and the Gulf of Morbihan, an area remarkable for the concentration of jade axeheads (Fig. 2).

The Alpine sources of jade are the points of origin for the transfers. In the Mont Viso massif, the most important working areas are located at high altitudes, between 1700 and 2400 metres above sea level, and they could only have been reached by expeditions undertaken during the warm season. All men who made such expeditions would have had access to blocks of eclogite and omphacitite, while the best jadeitites seem to have been reserved for use by a restricted number of workers. A rapid calculation allows us to show that the production of large roughouts was very limited (with 1800 examples of long polished axeheads being recorded for a production period spanning over a millennium). Even at its peak, between 4600 and 4000 BC, the production of large jadeite axeheads would probably not have exceeded a dozen examples annually (if it is acceptable to think in terms of averages). These dozen notional axeheads per year would have fed into a larger pattern of circulation of axeheads that spanned a large part of Western Europe and a considerable amount of time would have been invested in undertaking the expedition and in quarrying the rock. The large roughouts and the blocks that had been detached by fire–setting were taken down to settlements for further working, where there would be ready access to the best land for growing cereals.

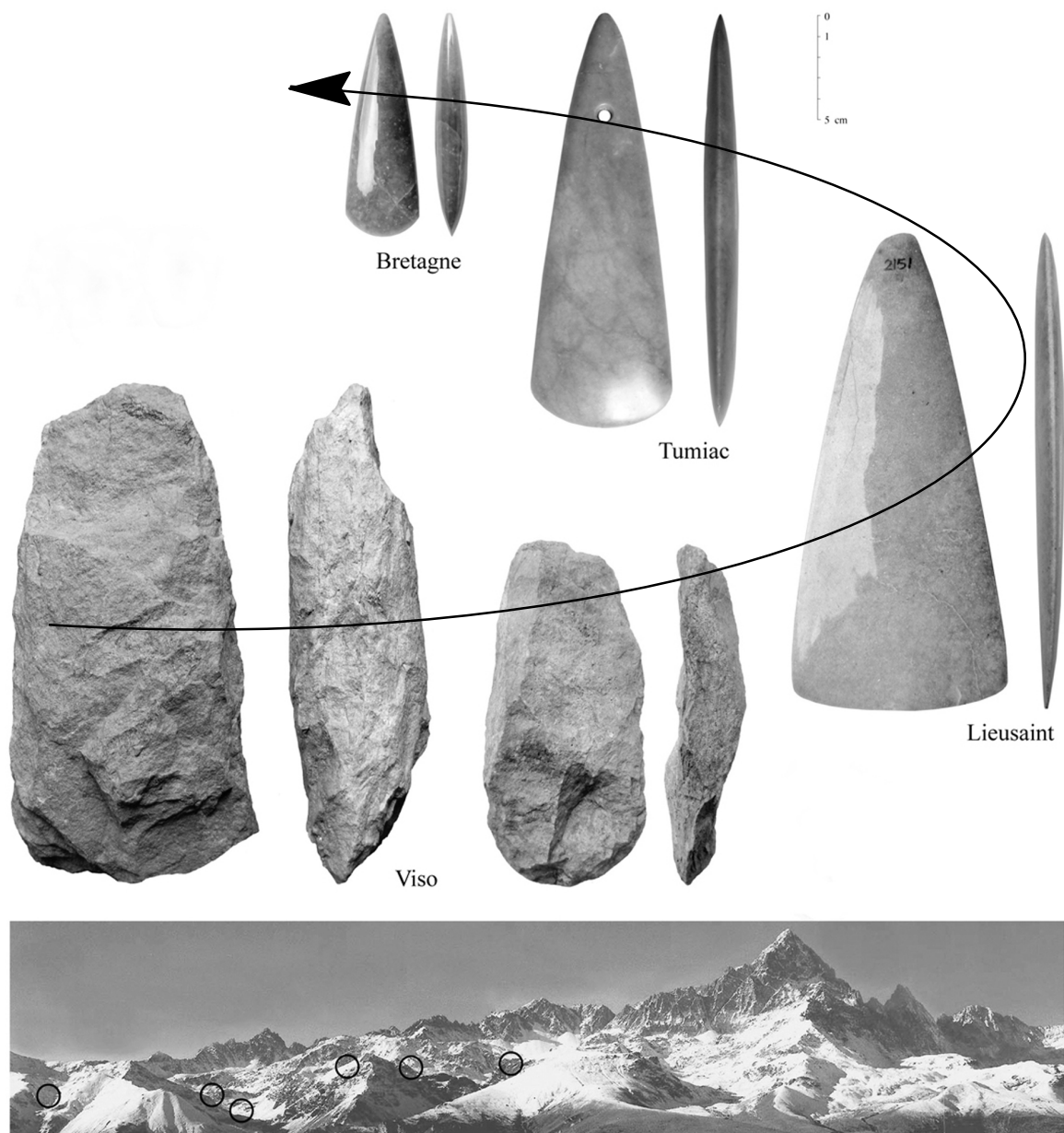


Fig. 2: From the massif of Mont Viso to the Gulf of Morbihan: the transformation of jade object–signs through repolishing. Circles indicate the principal quarries (Photos: P. Pétrequin and E. Flesia)

Another phase of time investment was involved in the production of these axeheads: this concerned the pecking of the roughouts using jadeitite hammerstones, or else a long episode of sawing blocks in order to produce regular-shaped bar roughouts, together with initial grinding and polishing of the axeheads that were destined to circulate. Experimentation has shown that, given the

toughness of jades, 100 hours of grinding and polishing is required to produce even the most basic polished axehead of a reasonable size (20 cm and longer). It may be that an even longer period of time would have been required in the case of the long sawn bar-roughouts (Pétrequin et al. 2009b, 2012a: 258–90).

Once past the Alps, the large, partly- or wholly-polished axeheads circulated towards the Paris Basin, where they were subjected to an initial process of selection with regard to the quality of the jade (D'Amico et al. 2003, Pétrequin et al. 2011). Large examples in jadeitite were repolished in order to change their shape and reduce their thickness (Fig. 2, Lieusaint). Yet further away, the fine axeheads of the Paris Basin gravitated towards the Gulf of Morbihan, where they were modified anew: hundreds of hours of supplementary polishing would have been required to produce the 'Carnac-style' axeheads (Fig. 2, Tumiac), with their perfect regularity of form, their extreme thinness and sometimes with a perforation through their butt. Since valid experimentation has not been carried out to explore these successive processes of remodelling in which each user considered imported axeheads as raw material to be re-thought and reworked in order to differentiate them from those of their neighbours, it is impossible to estimate the exact amount of time invested to create the most beautiful of these 'object-signs'. For certain examples, a figure of 1000 hours (Fig. 4) is far from being unreasonable. Several of these Carnac-style axeheads created in the Morbihan, were themselves re-exported, this time towards the Iberian peninsula: the specimen found at Vilapedre had travelled 1900 kilometres overall, from the Alps to Brittany, then from Brittany to Spain (Pétrequin et al. 2012a: 1033, Fig. 17), while the axehead from Schweicheln in Germany had travelled 2000 km (Klassen et al. 2010) and the example from Laterza in the south of Italy had travelled 2800 km (Pétrequin et al. 2007a).

Finally, the fundamental role in social functions and the extreme importance accorded to these Carnac-style 'object-signs' is reflected in the fact that these jade axeheads were imitated by using local rocks around the turn of the 5th – 4th millennia BC, at least in Spain and Switzerland (Pétrequin et al. 2006a).

THE CONTEXT OF LARGE JADE AXEHEADS

We are dealing with a system of particularly valued signs whose social codification will have varied over time and over space, as axeheads were transferred from one region to another. Furthermore, the choice of the axe as an 'object-sign' is neither fortuitous nor arbitrary, because it is essentially a fundamental tool for undertaking Neolithic agriculture in a forested environment and thus, it would have been repeatedly handled by men (Pétrequin and Pétrequin 1993, Pétrequin and Jeunesse 1995, Pétrequin et al. 2002) and its movement, when in use, evokes force and violence (Cassen 2007).

The underlying symbolism becomes easy to comprehend if one follows the evolution of jade exploitation in the Alps. At the end of the Early Neolithic, jades were used to make modest-sized tools, but from 5200–5100 BC, in parallel with the production of numerous small axe- and adze-heads, long narrow axeheads and ring-discs started to be made. We shall see below that this association is probably not random. Later, around 4600 BC, production was orientated towards triangular models with a blade that was more or less wide. Jadeitites are always represented among these types. Then, around 4300–4100 BC, the shape of the large axeheads changed once more, adopting the quadrangular sections that were inspired by the copper axeheads that had appeared in northern Italy. Finally, at the beginning of the 4th millennium, the production of long axeheads eased off, even though jades continued to be used to make small workaday tools for felling trees and wood working until almost the middle of the 3rd millennium. Without doubt, the toughness of the raw material accounts for this continued use of jades.

The evolution of jade exploitation illustrates the metamorphosis of a tool from a utilitarian object into an item that is integrated within a system of imaginary signs. Having been

progressively invested with a remarkable ideological significance expressed in the form of the long axehead (whose typological evolution reveals the Alpine producers' desire to create novel and incomparable models), the polished jade axehead only returned to being a utilitarian object when influences from Chalcolithic South–Western Europe led to the adoption of a new system of 'object–signs'. That process was concurrent with the introduction of copper metallurgy in northern Italy, and subsequently in areas to the north of the Alps.

We can see the same desire to create new and inimitable 'object–signs' in the area between the Alps and the shores of the Atlantic, particularly around the middle of the 5th millennium. In order to change the shape of the finest jadeite axeheads – which were tough, fine–grained, translucent, luminous and of a pale green colour – communities in the Paris Basin invested a considerable amount of time on supplementary polishing in order to eliminate the Alpine characteristics of certain of the imported axeheads. The same occurred in Morbihan, with the creation of the Carnac–style axeheads which are so distinctive (Fig. 2). It should be added that the method of polishing which involves the creation of long facets is particularly time–consuming for rocks of the jade family: our experiments suggest that only 1–3 grammes per hour can be removed using this technique, to say nothing of the final episode of polishing against a flat surface in order to remove the facets.

To a large extent, the long–distance movement of large jade axeheads was based on the following: 1) the adoption of a masculine symbol that was immediately recognisable by everyone; 2) the selection of a particularly rare fine rock; 3) the undertaking of procurement expeditions up the mountains, close to the highest point of the southern Alps; 4) the use of fire–setting to produce large thermal flakes and hence large

axeheads; 5) specialisation in the initial working by knapping or by sawing; 6) a long period of pecking; 7) the repeated investment of effort in the transfer of axeheads from one region to another over distances of up to several hundred kilometres and 8) finally, new episodes of polishing in order to change the shape of certain axeheads according to regionally variable criteria. The final result, the production of a small number of jade 'object–signs' that were always rare, if not exceptionally so, reflects these investments, which were technical and social in nature rather than economic. In effect, every one of these polished axeheads has specific characteristics (ie. the grain, texture, veins and colour of the rock, the shape, quality of polish and dimensions of the object) which render it practically unique and hence irreplaceable, and each one would have been immediately recognisable at first glance. In a way, each of these oversized axeheads would have borne its own biography, or at least a condensed story of its complex journey from the mythical mountain of Mont Viso to the furthest–flung users. In short, the large Alpine jade axehead belonged within a system of oppositions and of blatant inequalities, as follows:

- tools for all versus 'object–signs' for the few;
- mass production versus individual production of a few objects;
- small investment of working time versus considerable investment in polishing;
- regionally available rocks versus particularly rare exotic rocks;
- fine–grained and luminous Alpine jades versus eclogite and omphacite.

It is hardly a surprise to find that the overall distribution of long polished jade axeheads in Western Europe is not uniform (Fig. 1). The pattern of distribution displays strong regional concentrations (in the *Plaines de*

Saône, the Paris Basin, the Morbihan and the Pays de la Loire for example), separated by zones where the axeheads are either rare or absent. This kind of uneven distribution – featuring regional clusters where the number of long axeheads does not diminish with distance from the source areas – certainly does not conform to the ‘down–the–line’ model of object movement. Rather, according to Colin Renfrew’s models (1975), we are dealing with the outcome of inter–elite ‘exchanges’, whereby an axehead could travel long distances in a single, direct exchange, with no intermediaries being involved (Pétrequin et al. 1998, 2002, 2009a, 2012a: 574–722). In the system of inequalities outlined above, the circulation of jade axeheads would operate in opposition to regional structures of object movement, as in the case, for example, of the workaday axeheads produced in the quarries of Plancher–les–Mines/Marbranche (Haute–Saône, France), which scarcely travelled more than 250 kilometres from the source area (Pétrequin and Jeunesse 1995). It is therefore within a context of marked oppositions and inequalities that we should seek to ask what the social function of jade ‘object–signs’ was.

The European inventory of Alpine jade axeheads currently comprises almost 1800 examples whose length lies between 13.5 cm and 46.6 cm. Many of these are complete and show few, if any, signs of use. From this total, some axeheads (in the form of fragments and flakes) come from settlements, but most of these date to before 5000 BC or after 4000 BC, that is, before and after the main period when large jade axeheads were socially valorised. That said, in general, it seems that large axeheads are excluded from settlements and middens, in contrast to small workaday axeheads which are well represented in the primary diffusion zone, within 400 kilometres of the Alpine source areas. Only 138 polished jade axeheads, more or less

long, have been discovered in graves, and most of these come from around the Gulf of Morbihan; we shall return to these below. It is possible that a few ‘stray’ finds had also come from graves that had been disturbed, as in the Square–Mouthed Pottery culture in northern Italy or in the Trench Grave Culture (Sepulcros de Fosa) towards the western end of the Pyrenees. In every case, these finds are associated with a complementary set of grave goods, which allows us to recognise them as having originated in a funerary context. However, it would be wrong to assume that all ‘stray’ finds of Alpine axeheads had come from graves.

Two hundred and eighty six polished Alpine axeheads have been found in hoards, containing between two and 28 examples (see Bordreuil 1966 on the concept of pairs). Two recently discovered hoards, from Vendeuil (Aisne, France; Pétrequin et al. 2005) and from Saint–Pierre–Quiberon/Petit Rohu (Morbihan, France; Cassen et al. 2010) offer good examples: each pair of axeheads had been ‘planted’ in the ground with their blades uppermost, and in neither case was there any topographic link with a grave or settlement. This deposition of hoards is a recurrent feature in Western Europe, not only as regards Alpine jade axeheads but also those of flint or of dolerite (Cordier and Bocquet 1998), and this phenomenon raises the possibility that the practice of depositing jade axeheads in ‘context–free’ locations had been the norm and the result of a deliberate choice.

What of the hundreds of axeheads that have been discovered in ‘context–free’ locations, found either as hoards or most commonly as single ‘stray’ finds? The length of most of these examples pleads against their having been lost accidentally or abandoned. On the contrary, the evidence strongly indicates that the long polished jade axeheads had been deposited deliberately at their findspots; this is as true of the single finds as of the hoards containing several examples.



Fig. 3: Out of a total of 1800 large jade axeheads, the majority have been discovered as stray finds, devoid of a conventional archaeological context. These polished axeheads had been deposited in specific locations in the landscape, often in relationship to rock shelters (here Saint-Pons-de Thomières, France), stretches of water and marshes (Photo: P. Pétrequin)

We have documented 97 cases of ‘context-free’ axeheads (ie. those not found in settlements or funerary contexts) where the evidence regarding findspot location is clear enough to form an idea of what had informed the depositors’ choice of locale. These 97 examples can be considered alongside the 286 aforementioned specimens that come from hoards of two or more axeheads. The identification of the findspot location shows a remarkable consistency, even if it encompasses a certain degree of diversity: the examples of axeheads deposited in front of a rock shelter (Fig. 3), or at the foot of a morainic boulder (such as at Lugrin, Haute-Savoie, France; Pétrequin et al. 2009b) or by a standing stone (as at

Saint-Macaire-en-Mauges, Maine-et-Loire, France) (Cassen 2012: 1310–1354) offer incontrovertible evidence for association with remarkable locations, be they natural or modified by humans.

It was not only highly-polished axeheads which were planted in special locations. Numerous examples of the deposition of unfinished axeheads can be cited from the working areas in the Mont Viso massif: at Bobbio Pellice/Barant, two large thermal flakes had been placed beneath the canopy of a rock shelter; at Oncino/Puymirol, a large flaked and burnt roughout had been deposited; at Oncino/Lu, a flaked roughout had been planted vertically, along with a roughout of serpentinite, in front of a minuscule, obscure rock overhang at the foot of an enormous morainic block; at a rock shelter near a ford on the Po river close to its source at Paesana, two flaked roughouts were deposited on the rock bed; in the Orco valley, a long flaked roughout had been placed at the foot of a rocky pinnacle and at Lugrin, a double roughout in the course of being sawn had been deposited. The list is impressive and demonstrates not only the strongly ritualised context of rock exploitation at Mont Viso but also the value attributed to jade as a material: it was valorised even in its raw, unworked form, up in its high-altitude source area. It also appears that, during the Neolithic, jade was not regarded as just a simple raw material, but as a very precious resource, whose extraction and working required special techniques (for ethnographic analogies: Pétrequin and Pétrequin 1993, 2006a).

Most of the large axeheads come from less spectacular findspots, although they were also found at significant locales (Table 1): 79% seem to have been associated with water, as hoards close to a river, in ponds, marshes and bogs, at the entrance to a narrow gorge or just above a waterfall (Pétrequin et al. 2012c: 1354–1424).

river	39 ex
march	22 ex
rockshelter	9 ex
hill	6 ex
cave	4 ex
rock	4 ex
standing stone	3 ex
pass	3 ex
lake	3 ex
gorge	2 ex
spring	1 ex
waterfall	1 ex
water	79%
rockshelter, fissure	13%
block, standing stone	8%

Table 1: Statistics for the depositional location of large jade axeheads during the 5th and the beginning of the 4th millennium BC. The relationship with water (river, marsh, lake, gorge, spring or waterfall) seems incontrovertible

All these special locations are well known from the ethnographic literature as being places that were especially favourable for communicating with the Otherworld and with supernatural powers. Particularly illuminating parallels can be cited from among the Sa[a]mi of Finland and Russia (Bergman 1991, Ballmer 2010), from New Guinea (Pétrequin and Pétrequin 2006) and Central America (Reilly 1994, Rodriguez and Ortiz 2000). Also illuminating is the archaeological example of the Funnel–Beaker (Trichterbecher) Culture, in which hoards of flint axeheads were deposited in similarly significant locations (Rech 1979, Wentink 2006).

With all these ethnographic analogues for the practice of depositing stone axeheads in significant locales, which recur across cultures and areas that are distant from each other, we enter into the domain of religious beliefs concerning (and explaining) the ordering of the world and the functioning of society (Testart 1993, Godelier 1996, Pétrequin et al. 2009a). To ignore this would

mean returning to an approach to Alpine axeheads which has, for far too long, overlooked an essential aspect of Neolithic societies under the pretext of maintaining so-called ‘scientific prudence’.

In brief, the majority of large Alpine jade axeheads would have been produced in small numbers and in small sets, using a raw material that was considered sacred because it belonged to the Dream Time. Additionally, at the end of their journeys, these extraordinary signs which cannot simply be interpreted as votive objects (ex-voto items) were destined to be consecrated deliberately at privileged points in the imaginary cosmos where the profane and the sacred came into contact with each other. It was at these points that the ritual specialists were able to enter into communication with the Spirits or the supernatural powers and to intervene in the course of world developments.

LONG DISTANCE TRANSFERS, SOCIAL INEQUALITIES AND CONTROL OF RELIGIOUS RITUALS

An investigation of the graves containing jade axeheads will allow us to go a little further towards evoking the men who manipulated these ‘object–signs’ imbued with religious value. At the pan–European scale, large jade axeheads are very rare in tombs. Apart from a few isolated examples, one can point to a small group among the richest funerary assemblages in Catalonia, in the Trench Graves (Sepulcros de Fosa), which date to the extreme end of the 5th millennium and the beginning of the 4th. However, the axeheads here are small workaday tools, in spite of the wealth demonstrated in the associated variscite beads from the nearby mines at Gava. Similarly, in northern Italy, in the province of Emilia Romagna, the male graves of the Square–Mouthed Pottery Culture often contain jade axeheads, but here again they are mostly short and of indifferent quality, except

for small axeheads (of the local Collecchio type) made of a magnificent jadeitite (Bernabò Brea et al. 2006). In the female graves, by contrast, the presence of female ceramic statuettes could be an expression of a complementary form of power to that of the males: the power of fecundity (Bernabò Brea and Mazzeri 2009). Thus, in these two examples, Catalonia and Emilia Romagna, the flat graves attest to considerable social inequalities, in which only privileged lineages had the right to be buried with an important set of grave goods, although there is no sign that certain men possessed long jade axeheads.

Two regions of Europe offer an exception to this general situation. Firstly, on the shores of the Black Sea, tomb 43 in the cemetery of Varna I (Bulgaria), one of the richest graves, with the most gold objects, contained an axehead made of jade from Mont Beigua that had been placed between the legs of a man. This had clearly been a personal possession of a particularly rich individual. However, the type of the axehead differs markedly from the long jade axeheads that were consecrated in Western Europe (Pétrequin et al. 2012b: 1231–1280).

The second and most important exception is to be found on the southern coast of Brittany, in the gigantic Carnac mounds close to the Gulf of Morbihan. In the central closed chambers under these exceptionally large monuments which date to 4600–4300 BC (in the case of Carnac/Saint-Michel), one or more individuals (one individual at both Tumiac and Saint-Michel, but no bones were preserved at Mané er Hroëck) was accompanied by a remarkable number of objects imported over long distances, including beads and pendants of Iberian variscite and small axeheads, probably of Iberian fibrolite. Many large axeheads of Alpine jade were included in these graves and most of these were deliberately broken and

sometimes even burnt in a clear act of sacrifice (Cassen 2000, 2012, Cassen et al. 2012: 918–996; Pétrequin et al. 2012c: 1324–1424). These extraordinary graves are associated with the earliest monumental funerary architecture in Western Europe (Boujot and Cassen 1992, Bailloud et al. 1995), with the emergence of megalithism and the architecture of standing stones along the Atlantic façade (Cassen 2009) and with novel religious concepts within which the axe figures prominently among the signs from the mythology of the Carnac area engraved on the stones (Cassen 2007).

It is hard to avoid the conclusion that these individuals held a pre-eminent social status within a highly inegalitarian society. Jade ‘object-signs’ which elsewhere in Europe were almost exclusively consecrated to supernatural powers were sacrificed to these people. These manifestations, so extraordinary in a 5th millennium context, take us far away from the commonly-held model of a society that indulged in ostentatious displays of wealth (Gallay 2006), as defined by Alain Testart (2005).

In terms of parallel historical accounts of former societies that were markedly inegalitarian, which created monumental architecture and where the religious power was held by a supreme chief (often doubling with a war chief) who was believed to come from the Otherworld, two examples struck us as particularly pertinent. The first of these is the ‘Tu’i Tonga’ in the Tonga Isles, a society which Testart classed among non-slave-using semi-states, and the second is the ‘Soleil’ among the Natchez, a group classed by Testart within the category of ‘royal societies’. We have no doubt that this comparison will surprise and perhaps shock those of our colleagues who are unfamiliar with the Morbihan region during the 5th millennium.

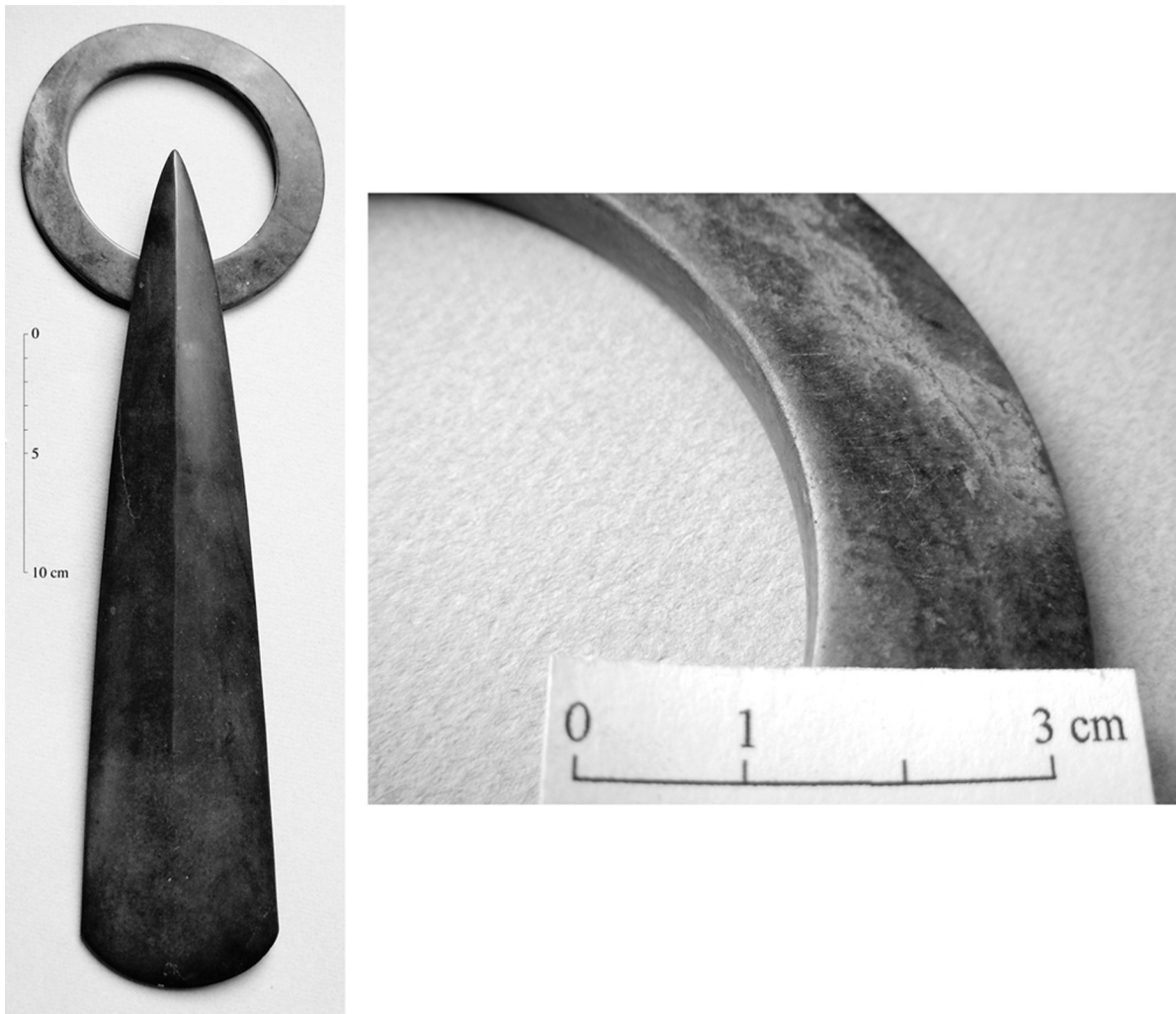


Fig. 4. Around the Gulf of Morbihan, jade axeheads had been integrated within the religious symbolism of the gigantic standing stones. In the Carnac tumulus of Mané er Hroëck, the physical association between a long polished axehead and a disc–ring shows an arrangement linked with the ideal reproduction of society (Photos: P. Pétrequin)

But in our opinion, this offers us the most plausible hypothesis for accounting for the status of the ‘Powerful Ones’ who were interred under the massive mounds of Tumiac at Arzon, Saint–Michel at Carnac and Mané er Hroëck at Locmariaquer. These people would have been supreme sovereigns in a system of royalty based on religious concepts, where the ‘King’ is an intermediary between people and supernatural Powers. The explicit association between a very long jade axehead and a jade disc–ring in the mound of Mané er Hroëck, like the association between a phallus and a large axehead on the monumental standing stone of Mané Rutual

in the same commune (Locmariaquer), encourages us to conclude that we are dealing with an ideal reproduction of society based on a male (phallogocentric) ideology of power. This ideology stands in contrast to the technical and economic reproduction of society that is found in Neolithic communities (Pétrequin et al. 2012c: 1354–1424).

In appropriating the systematic study of material culture, prehistorians often tend to consider economy and social functioning in terms of techniques, *chaînes opératoires* and ‘functional’ production. This perception is

encouraged by our own, Western interpretation of ‘technology’, and also by the determinism expressed by many palaeo–environmentalists and archaeometrists, but a society does not function solely on this ‘functional’ production. To propose a model of exchange systems that is based exclusively on notions of material benefit (in other words, on trading in its strict sense) leads us to predict models of prehistoric societies that are based on our own society.

Given our examination of Alpine jade axeheads in which we are dealing with journeys of over 2000 kilometres as the crow flies, we cannot reconcile this with a purely mercantile model. On the contrary, our approach to these exceptional Neolithic ‘object–signs’ considers these in ideological terms and we have shown that it is with religious concepts that we have to seek new keys to understanding these major phenomena of the movement and circulation of social signs on a pan–Europe scale. We are dealing with societies where the Powerful Ones, in their role as mediators, manipulated the religious signs to be extracted and shaped, to be given and received (rather than exchanged) and to be consecrated in order to communicate with supernatural Powers. This also underlines the profound inequality that existed between human beings and the social power that was linked to these religious activities.

We must now seriously ask ourselves whether, in our analyses of prehistoric societies, it is really possible to consider technology and economy as true infrastructures or whether we should instead follow Maurice Godelier (1996) in his contention that it is ideal concepts, at work in all societies, which lie at the basis of all social and economic functioning.

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