

Stone Artefacts as Transmitters of Social Information

Towards a Wider Interpretation with a North Swedish Example

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Stone artefacts have been studied from various aspects. During the last decades possible behavioural aspects have been emphasized in discussions of different strategies in prehistoric manufacture and acquisition. In this paper specialization and distribution of stone tools are discussed in connection with manufacture, acquisition and consumption. The interpretation is based on Late Neolithic/Bronze Age assemblages in northern Sweden.

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Stone artefacts traditionally have been approached as being the products of people regarded as more or less passive respondents to the prehistoric environment. In line with this, lithics consistently were studied and discussed as utilitarian objects and described in technical and/or functional terms. Most archaeologists accept a utilitarian aspect and there is consensus that stone tools are considered principally as functional tools, such as axes for wood-working, scrapers for preparing hides or wood and different points in connection with hunting or warfare. This view of functional information embodied in lithics is undoubtable.

Yet, there are possible approaches beyond function, technology and chronology which are applicable to lithic materials. The issue of stone tool manufacture and use offers further ways of dealing with prehistoric strategies. If people instead are seen as active beings with the potential to manipulate their situation and surroundings, the view of their material culture as transmitters of fur-

ther information improves. One fruitful approach is to look at lithics as potential transmitters of information regarding social strategies. This can widen our view of prehistoric societies.

In this paper I will discern possible further information comprised in lithic artefacts, information that can be interpreted in terms of social aspects of prehistoric societies. A north Scandinavian lithic assemblage serves as an example of an analysis based on this issue.

CURRENT DIFFICULTIES

Studies concerning lithics, denoted lithic studies, are progressing. During stone tool-using periods technology has been considered a basic strategy. Archaeologically, this is reflected in the expansive approach to this complex of problems. Among other things, emphasis has been placed on technological problems and, as mentioned, on issues of social information. Recently, aspects of additional information hidden in stone tools

have been a topic of discussion. Research into and discourses on the concept of social information possible to derive from lithics have emerged, notably in the Anglo-Saxon and Australian world (e. g. Torrence 1986, 1989).

There are some problems connected with this approach. Here the most important ones to be aware of are presented. Mainly two major difficulties are discernible today.

Firstly, the methodological problem is often emphasized when lithic studies are discussed. Especially when prehistoric tools are considered as transmitters of social information, the lack of theoretical framework becomes noticeable. This circumstance is frequently focused on and the need for theoretical approaches is stressed. Therefore, theories concerning prehistoric stone tool manufacture and use are being developed (see e. g. Torrence 1989).

Secondly, when studying lithics as transmitters of social information the social context is essential. Notably, results from these studies reflect only a part of the prehistoric social totality and must be regarded as parts of larger complex systems in which lithics are not the only items of material culture that possess information. Further information can be derived from e.g. ceramics or other artefacts, or from combinations of several artefacts. Social complexes in the past, including social structures and strategies, are often too complex and impenetrable for analyses. This is a problem common to all archaeologists. Further, we are often engaged with more than one complex which can be structured in different ways.

In addition, we have to regard various aspects of source criticism. For instance, not all lithic assemblages or technologies indicate social information, or any information at all.

SOCIAL INFORMATION POSSIBLE TO DERIVE FROM LITHICS

Obtaining information from lithics, beyond functional and technical data involves several

aspects. The interest can either focus on how lithics were evaluated and regarded by prehistoric people, or on potential archaeological information possible to interpret in social terms. The latter is of interest here.

Theoretically speaking, items of material culture during their duration pass through several levels before they are registered by archaeologists. These levels can be summarised in one short sentence: first the item is *manufactured* and thereafter *acquired* in some way to be *consumed* by the user before it is *deposited* (Holm 1991:84ff). All of these levels are culturally affiliated, and the artefacts transmit diverse information. With respect to lithics as carriers of social information, the following is proposed;

The concept of *manufacture* involves organisational as well as technical and symbolic aspects. In this context the organisation behind the manufacture is of interest. There is reason to believe that the manufacture of lithics was organised in various ways, owing to the different degrees of social complexity. Some ethnographic studies, foremost in Australia, have demonstrated the often compound institution of human strategies and relationships behind the procurement of raw materials. For instance, local groups or individuals are often described as owning or having direct access to the sources of the raw materials. Also, specialization to a variable extent is common during the different steps of manufacture (for examples see Holm 1991:85f).

Concerning specialization, there are two different implications. Theoretically speaking, specialists can be seen as individuals or groups who are more or less skilled and professional practitioners. But, the term can also be separated from the craft and instead imply industrial specialization (industrialism), in which tools are efficiently produced on a large scale. A more industrialised specialization implies standardized methods and simplification during manufacture (Holm 1991:85).

Artefacts can be *acquired* through direct access, distribution, or exchange. When they are completed and removed from the raw material sources by the local users, there is a minor complex organisation involved. Probably most tools for everyday use are acquired through direct access.

Distribution and exchange can be difficult to separate with regard to both the meaning and the characterisation of the assemblages. If exchange encompasses "all forms of distribution in which goods and/or services are passed between hands," as expressed by Torrence (1986:2), the problem is reduced. In this case it implies that those actions whereby artefacts are moved are conducted by individuals or by a particular group. Exchange is motivated by social, ceremonial as well as economic reasons, with the actions being carried out in a hostile or a non-aggressive atmosphere through direct or indirect (down-the-line) reciprocity.

In the context of *consumption*, two lines of use are apparent: in everyday and/or seasonal activities, or in connection with ceremonial or other purposes. The functional aspect is apparent when the everyday use of lithics is considered. Certainly, tools manufactured for use in daily life are in majority, such as scrapers, points and workaxes. Ceremonies or similar occasions are often seen as the opposite of everyday activities. Based on ethnographic records, usually weddings, funerals and various festivities and rites are regarded as ceremonies; but also other activities, such as hunting and hostilities, could be associated with actions involving symbols. Tools used on these occasions carry prestige or symbolic values.

Finally, when *deposited*, lithics are capable of transmitting information about different aspects, for example social strategies.

THE LATE NEOLITHIC/BRONZE AGE IN NORTH SWEDEN

Prehistoric northern Sweden should by no means be regarded as one uniform region in terms of geography and ecology. There are marked differences between the coast and the interior. The interior varies from the taiga in the east to the high mountains in the west. Likewise, subsistence and social structure varied among prehistoric hunter-gatherer societies, although they were based on similar principles with procurement and the manufacture of stone tools as basic economic activities.

In the interior of northern Sweden subsistence was based on hunting-gathering throughout all of prehistory. On the Bothnian coast it varied from hunting-gathering during the Stone Age, to a sedentary mixture of hunting, husbandry and food production during the Iron Age.

The transition period of the Late Neolithic/Bronze Age in northern Sweden is indicated in the archaeological material by technical changes. After about 2 000 B.C. the independently developed local types during the Neolithic were replaced by types which are similar over a vast northern area. Baudou argues that northern Sweden from that time on was part of a vast geographically separated northern techno-complex. In relation to southern Scandinavia, there are minor technical similarities (1989:41).

The changes in the material culture during the transition are interpreted as a total reorganisation of settlement pattern and technology. Dwellings were situated at base-camps and transitory camps, surrounded by exploiting sites. It is likely that the social units consisted of small families (Forsberg 1989:64ff). Quartz technology during the Neolithic was gradually replaced by bifacially flaked tools, foremost in quartzite. Bifacially flaked points are significant throughout the Late Neolithic/Bronze Age and the pre-Roman Iron Age. The frequently found asbestos-tempered sherds, as well

as bronzes, derive from a later part of this period. The investigation area is part of this region and structure.

The coastal region differs to a great extent from the interior. During the Neolithic there was a more complex, sedentary subsistence, as well as a denser population and less mobile groups (Forsberg 1992:58ff). Furthermore, flint hoards of thick-butted axes and sites with material which is probably entirely south Scandinavian in origin are regarded as the sites of immigrating, Neolithic, flint-using populations (Baudou 1989:35, Knutsson 1988:153). A few pollen diagrams indicate early agriculture (Baudou 1989:33). During the Bronze Age the southern influence, developed during the earlier periods, is reinforced and manifested in the cairns of south Scandinavian tradition. These are frequently registered along the Baltic. Earlier only a few dwelling sites were known, but more and more are registered today. Furthermore, sporadic indications of agriculture and pasture husbandry are again found in pollen diagrams (Baudou 1989:33f). Although some bronzes are found, technology is still based on stone as the primary raw material.

The investigation area is situated in the west of Lapland. This means that we cannot exclude western communications from the investigation area.

THE RANA-TÄRNA EXAMPLE

Discussions concerning socio-cultural information in lithics have been based on axes (e.g. Phillips 1979, McBryde 1984, Bruen Olsen & Alsaker 1984) but also on flake assemblages (Torrence 1986). Here my results from an analysis of large assemblages of debitage from the manufacture of flaked stone tools is used as a base when the issue of social information is discussed (Holm 1991).

The investigation area is centred around some lakes in a high mountain environment

on the border between Sweden and Norway. More than 200 sites from the Late Mesolithic to the Early Iron Age are concentrated around and between the lakes in a resource area for stone tool production, where also reindeer hunting took place. All of the sites are connected with flaked stone tool manufacture; raw material sites, workshops as well as dwelling sites. The total manufacturing process, including selection and procurement of raw material and the ensuing reduction to completed tools, was practised here. A site distribution pattern is obvious, with dwellings and workshops along the lakes on the one hand, and raw material sites and workshops at a distance from these on the other. After being completed the tools were used in this region for, among other things, reindeer hunting, but a number of tools were also distributed outside the region. Based on data from debitage in the form of flakes, originally used for a technological analysis, the results are also useful for additional interpretations. The data derive from one dwelling site occupied from the Late Mesolithic to the Bronze Age/Early Iron Age, from two production areas for the procurement of lithics, and from assemblages found outside the region (Holm 1991:29ff, 52ff). The period of the Late Neolithic/Bronze Age is of interest in this context.

As far as organisational aspects of *manufacture* are concerned, a development towards some kind of specialization is discernable during the Late Neolithic/Bronze Age, perceived as an initial phase of labour division. This is also the period in which the general total technical change is obvious. Variables on flakes, such as the absence or presence of cortex, colour-tone, platform remnant morphology, together with the number of flakes have been considered for the following discussion.

The results of the flake analysis show a uniform material and flaking method. Together with additional analysed variab-

les, this pattern is reinforced. The results are congruent with the bifacial method producing foremost so-called flat-hewn points. Raw material was selected to a great extent and the selection and decortication took place at sites separate from the dwelling site; no decortication flakes are found in the analysed material. Flakes deposited on this dwelling are debitage from a later step in the manufacturing process. Thus, debitage from the total manufacturing process is not registered here (Holm 1991:62ff). It is worth noting that the raw material used is continually the same.

The results described above can be discussed in terms of specialization. The fact that an abundance of raw-material sites and workshops are concentrated to two restricted areas, containing more than 100 sites (Holm 1991:40ff), provides evidence of large-scale manufacture and implies a certain degree of specialization. The majority can be dated to the Late Neolithic/Bronze Age/Early Iron Age. During this period a certain amount of industrialised specialization is conceivable; extensive use of the material, concentration of workshops, and the fact that the various steps in the manufacturing process are separated, are all factors which support the statement. Also, the preforms and completed tools exhibit few or no variations in shape or style. The majority are flaked into bifacial points. Speaking in modern terms, this can be described as an intensified use, with specialization characterized by efficiency and practised on an extensive level. Further, selection is characterized by accuracy; much effort is devoted to finding the excellent, homogeneous parts of the boulders (Holm 1991:122).

As a comparison it is of interest that flakes deposited earlier, during the Neolithic, exhibit data of a totally different pattern; raw material procurement was to a lesser extent selective and was comparatively unsystematic. Selection seems to have been ran-

dom and the need for uniform, homogeneous material was less important. Boulders of different combinations of colour-tones, collected from both raw-material sites and dwelling sites were used. The entire process of manufacture occurred at the dwelling where a comparatively large proportion of the material was decorticated; 22 % cortex flakes are registered. The small number of flakes indicates a relatively small-scale production (Holm 1991:62ff). Manufacture was less rational and less efficient, but nevertheless it required skilled knappers.

It is more difficult to approach the problem of organization of the procurement. But considering the results discussed above, this can be proposed: an organization with more efficient stone tool manufacture also involves a certain degree of organization concerning the procurement. This does not mean that a low degree of specialization, or none at all, implies that the acquisition of raw material was unorganized. Here the described differences between the time periods are of importance, with a probable step towards more organized procurement during the Neolithic/Bronze Age.

Regarding *acquisition*, direct access, distribution and exchange are possible ways of obtaining either prefabricated or completed tools. When this issue is discussed the distribution of registered lithics is basic. The investigated area is situated on the watershed between a number of waterways, principally in SE, SW and NW directions. Thus there are several routes of distribution, and contact with other regions is obvious; there are several items of exotic material in the region, such as flint, pumice, slate and quartzite of non-local type. The otherwise dominant petrographic material is local: approximately 97 % of all flakes and 60 % of all tools consist of the so-called brecciated quartz. In addition to lithics, sherds of asbestos ceramics and wares are registered from the late part of the time period (Holm 1991:35f). These materials are taken as a

base when acquisition of lithics is considered. The question of *consumption* is affiliated with acquisition, whether it is the everyday/seasonal use or some kind of ceremonial use. Therefore, in the following these two aspects are treated together.

To start with the exotic materials in Rana-Tärna region, flint and pumice are the most apparent. Both flint and pumice are not indigenous at these latitudes but can be found, for example along the Atlantic coast up northern Norway. This has been taken as an indication of a western contact with the Atlantic coast, but there is no evidence for a direct correspondence between sites along the coast and in the mountains (Gaustad 1964:102). Flint is by no means exclusively found in the Rana-Tärna region. A large number of flint objects are found in northern Sweden along the Bothnian coast as well as in the interior, for example, along the river Umeålv. The flints are mostly of southern origin, but flint of eastern provenance, so-called Russian flint, also occurs in northern Sweden (Forsberg 1989:57). If the flint objects and sites registered along the coast are of southern origin, the types of objects found in the interior of northern Sweden show a north Swedish origin. These occur on sites from a later time period (Bronze Age and pre-Roman Iron Age) (Forsberg 1989:57). Pumice is more seldom found on sites in northern Sweden.

Obviously flint and pumice in the Rana-Tärna region were acquired through exchange, originally with southern contacts, whether SE or SW. The other petrographic materials - slate and various types of quartzite - are heterogeneous in character, of different colour-tones and coarseness, and obviously were not originally acquired in the region. Almost no debitage material of either quartzite or slate is registered. A few slate preforms, along with completed slate and quartzite tools indicate distribution to the region.

After this presentation of non-indige-

nous materials in the Rana-Tärna region, the local raw material worked here gives additional information. As earlier demonstrated, the predominant material is the local so-called brecciated quartz. The distribution of this material can be summarized graphically as a fall-off curve with high percentages in the area of sources, and thereafter as a steep falling line both to the NW and SE, following the waterways.

Westwards, along the Atlantic coast, hitherto few sites of similar character are registered. These are dated to the earlier period (Gaustad 1973:189). It is uncertain whether objects of brecciated quartz are registered on these sites.

To the southeast following the Ume river, sites with flakes as well as tools are registered at a distance of 170 km. The number of objects is low, ranging from one object to a few hundred; in the latter case they are flakes in otherwise heterogeneous assemblages. In addition, material is found further south in the province of Ångermanland (at a distance of some hundred kilometres), in the interior along the Ångerman river and on the Bothnian coast, in fairly large quantities (Holm 1991:50f). These assemblages consist of debitage and completed bifacially flaked points.

Concerning both acquisition and consumption, it is obvious that the procured material principally was acquired directly, to be manufactured into objects for everyday or seasonal use by local groups. The groups which occupied the region seasonally comprised to a certain degree specialists who were organized during the manufacture. At a later stage the acquisition was a well-arranged operation. Additionally, exotic materials imported to Rana-Tärna and the distribution of local material outside the region imply exchange with others, following the definition I suggested earlier; exchange is defined as all forms of distribution of objects and /or services "between hands".

The exchange in northern Sweden during

stone-using periods followed extended routes. A large number of objects of southern and eastern origin throughout prehistory indicate a long tradition of contacts. As far as the Late Neolithic and Bronze Age are concerned, the contacts between Rana-Tärna and regions further south along the Ume and Ångerman rivers to the coastal regions of the Gulf of Bothnia obviously involve different kinds of social complexes. Here, more sedentary subsistence during the Neolithic and Bronze Age imply different social structures. Whether the exchange was direct or indirect, the people seasonally occupying Rana-Tärna came in contact with people from societies of different structures.

CONCLUDING REMARKS

I have put forth one interpretation regarding social aspects based on lithic assemblages. Based on the concepts of manufacture, acquisition and consumption, I have discussed exchange and specialization in manufacture and procurement.

During the Late Neolithic/Bronze Age the production of stone tools was organized; specialists produced stone tools with an intensified use of lithic material. They worked on an extensive level after having selected the raw material with accuracy, which

also indicates a certain degree of organisation in the procurement. This interpretation is supported by the results of an analysis of debitage material.

During the same period, some of the manufactured preforms and completed tools were exchanged with other regions. The distribution of the local material and the import of exotic materials indicate far-reaching contacts. Contacts between societies of different structures are obvious. How these contacts were organized, and what the character of exchange was, is not developed here, due to limitations in the material. The interpretation does not rest on data of the same reliability; the discussion is not circumstantial.

I want to return to the introduction and reemphasize the problem of complex prehistoric societies and material-culture assemblages. The results of individual studies should be apprehended as parts of and contributions to a larger whole, as my study. My results and interpretations can very well be applied to the general social system observed during Late Neolithic/Bronze Age in northern Sweden.

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