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The spread of new technologies in Early Fennoscandia – a view without borders.

Archaeology has to a large degree been based on the conceptual linking of culture and people (*volk*). This is often seen as a relationship between groups living in a continuous area exhibiting a similar culture. Focus has to a great degree been on within-area similarities and between-area dissimilarities in material culture. This has produced archaeological cultures represented as plateaus of low variability bordered with zones with rapidly changing material culture. Groups are seen as cultural groups with large internal cohesion and contact, whereas contacts with "outsiders" are much less frequent. Culture is seen upon as normative and shared, based on ideas and bounded in space and time. In archaeology it has often been based on gross groups of ceramic, lithic of metalwork styles.

At the same time, archaeologists have also been interested in society, which has been seen as groups of people involved in frequent interaction. This view was earlier seen in an evolutionary perspective, where different types of society were replacing each other, with the replacement society being more advanced and complex than the preceding one. In the 1960´s and 1970´s there was often talk of different levels of social organisation (Service 1962, Fried 1967, Johnson & Earle 2000). In the 1980´s onwards there has been more focus on local societies which are participated in and possible to move in and out of. These local societies are not so rigid entities as the ones referred to above. The focus here would often lie on a local group of people (a community or such) and its immediate surrounding area. There is nowadays increasing awareness of most prehistoric societies being small-scale and to an extent fluid. These mental constructs: cultures, societies, communities are partly incommensurable and incompatible in that they focus on different aspects and levels of the human lifeworld.

A paradigm that does *not* focus on coherent groups or territories, but rather on direct relations between people and groups of people is the network. It has been used

a lot in sociology where it emerged as Social Network Analysis (Scott 1991). This was first a formal methodology geared towards describing and quantifying patterns of relations in the modern world. In the 1990´s another theoretical movement in sociology based on the network principle emerged. The actor network theory widened the interest not only in persons and organisations, but included all possible actants in an empirically studied situation (Latour 2005, Law & Hassard 1999). It was also much less formal than the SNA.

What is important for archaeologists in this theory is that it enables us to partly break free from the paradigm of bounded entities such as cultures, societies and coherent groups. At the same time it is not inherently incompatible with these concepts, it just moves the analytical focus elsewhere. A central tenet in the project is that people in prehistory has always been mobile, travelling shorter or longer distances in order to fulfil individual and/or collective strategies. This would be especially true for hunter-fisher populations dispersed in the vast northern areas. It is however important not to make the logical fallacy to think that they could move unhindered in all directions, but that they followed certain routes that were easier to traverse. These routes were also not only determined by nature ("natural highways" such as rivers, eskers a.s.o), but as much by social considerations (f. ex. the presence of friends/foes, relatives in these areas). Therefore one would predict that movements of people and hence also of cultural materials followed such routes. These could perhaps be called "pipelines" along which more intense movement occurred. It is also clear that people were not evenly spread out across the vast boreal forest, but that they were concentrated to certain areas and settlements during different seasons. Some areas with denser settlement seem to emerge during the Younger Stone Age and they continue to be important during the Early Metal Age. Such places where human and social resources were concentrated might then be called "nodes" in the network.

The adoption of new technologies in Northern Fennoscandia during the 2nd millennium BC.

By following the introduction and emergence of a new technology in a society, one can draw conclusions about social aspects of the society that is connected to the technology. Studies of a technology might be seen as a way to pose questions – as a hermeneutical device. Technology fulfils a role both as an enabler of new strategies and actions and a frame that restricts action. It can open up new possibilities for

resource utilization, economic and social interaction as well as render power shifts and strategies possible. By looking at different technologies and how they were organised, it would also be possible to say something about at which scale or level these technologies had an impact. It is possible to say something about who in society were occupied with the technology and who were not. Was it for example restricted to only a few nodes or more spread out? The production sequence as well as the different places where parts of it were performed can be studied.

By studying the pottery and metalworking technologies and their adoption and use in Northern Fennoscandia during the period 2400 – 1000 BC an alternative view on these hunter-gatherer societies can be gained. Instead of viewing them as monolithic groups which share the same culture and goals, one might see them as composed of individuals that have different motivations, strategies and possibilities. The focus here will be on what we can say about contact networks and relations between different areas and people.

The pottery technology was introduced at differing times in different parts of Northern Fennoscandia (Nunez 1990) but in this subproject the introduction of asbestos-tempered pottery in N Sweden and Norway during the second millennium BC is the focus of study. This so-called textile pottery is part of a widespread practice of pottery surface treatment stretching over a huge area from the northern parts of Russia to Northern Fennoscandia (Patrushev 1992, Lavento 2001). By studying pottery tempered with asbestos where the vessel surface is covered with textile-like impressions, a picture can be made of how the connections between people and groups of people might have played an important role. This textile pottery has been produced and used in the second millennium BC. It is quite clear that this pottery occur in larger quantities only on a few main localities in the inland and on the coasts of the Bothnian Sea and the Atlantic (fig. 1). It is also clear that several different varieties of textile pottery occur at these places. It seems as though there were certain potters present at these sites with knowledge of various ways to produce pots and that they must have had contact with others potters at different localities far away. These long-range connections do not go in all directions though, but follows certain routes (pipelines) and concentrate on certain places in the landscape (nodes).

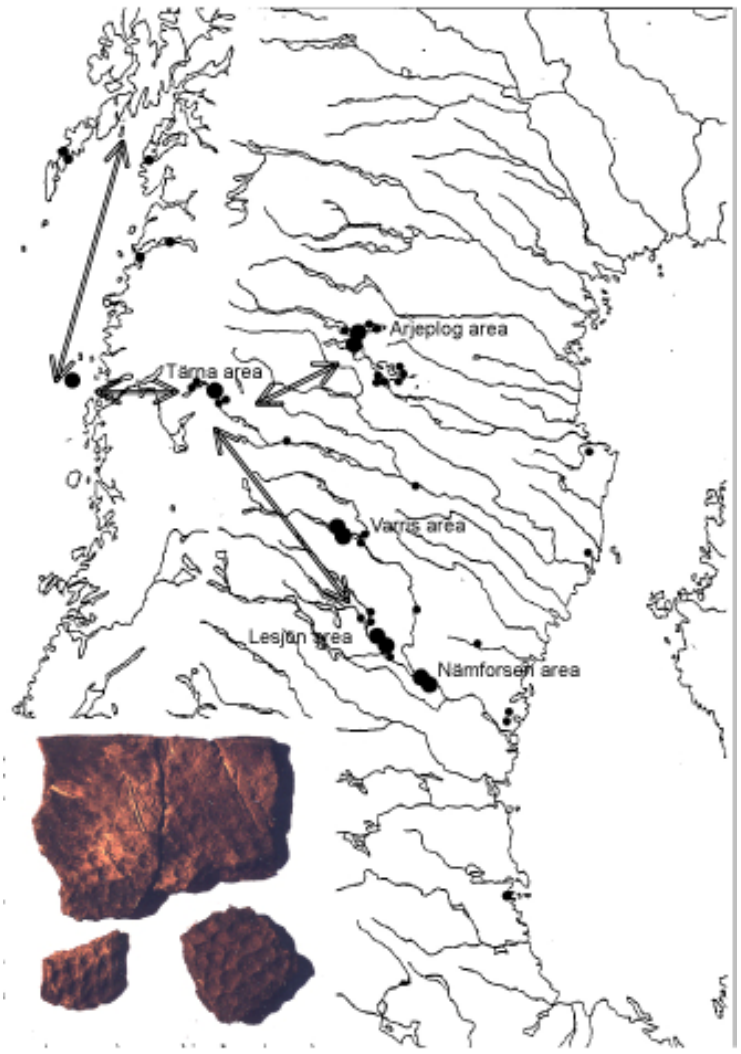

Figure 1 The distribution of textile pottery in Northern Sweden.

The introduction of metal in Northern Fennoscandia seem to be a gradual process slow-starting already during the Younger Stone Age, when a few copper objects occur on Comb-ware sites in Finland and northern Sweden. The first major introduction of metal is however more or less coterminous with the introduction of textile pottery. It has long been known that this first metalwork occur in the form of so-called Seima bronze axes, and it has been described as being limited to Finland (Meinander 1954, Lavento 2001). It is connected to a rapid spread of bronze objects in the vast area between the Ural mountains and Finland called the Seima-Turbino phenomenon by Russian scholars (Chernykh 1992, Koryakova & Epimakhov 2007). The spread of this material has been difficult to explain from a traditional culture-historical standpoint, since it does not seem to occur as local cultures, but appear punctually in singular graves or as stray finds. The dating of the Seima-Turbino phenomenon has earlier been set at around the middle of the second millennium BC by Russian

archaeologists. But this dating is based upon typological methods. A few radiocarbon dates are now available that suggests that it should be pushed back to the beginning of the millennium, i.e. coterminous with the early dates of the textile pottery (Koryakova & Epimakhov 2007:110).

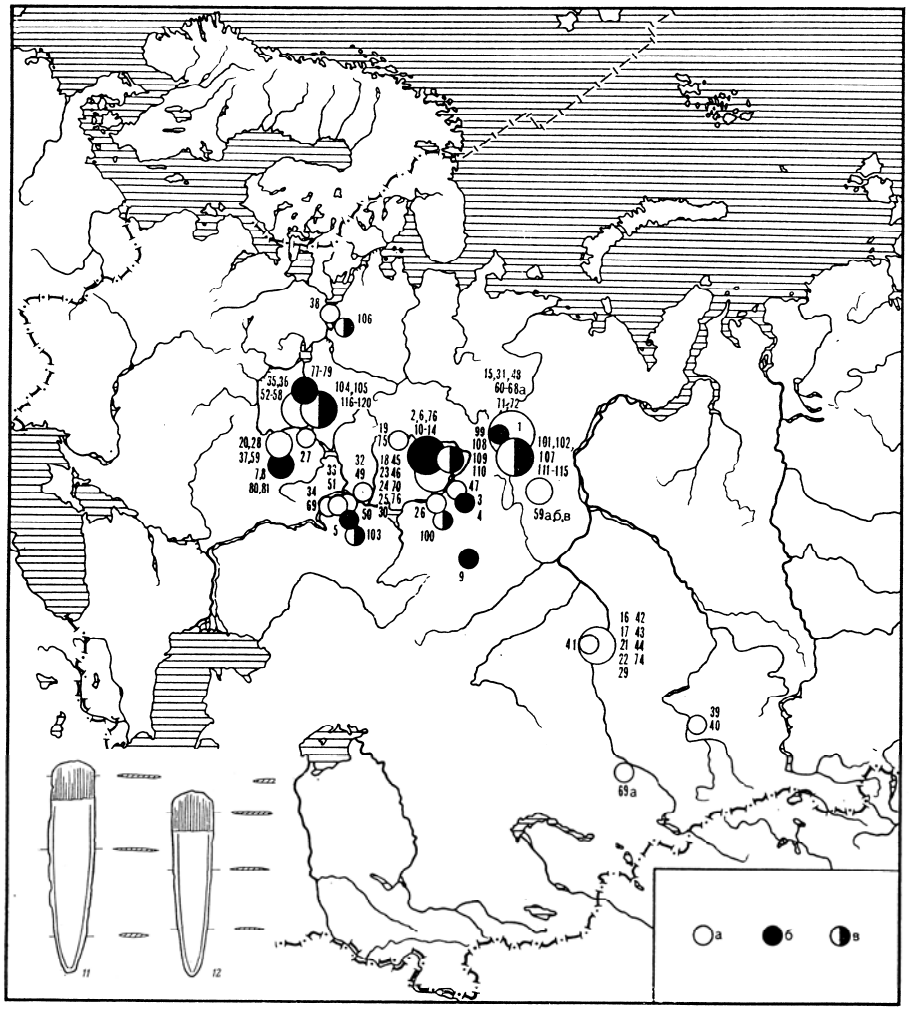

Figure 2 The distribution of daggers of Seima type in NW Russia.

What is interesting is that this early metal in Northern Fennoscandia does not only occur as a few stray axes, as was earlier assumed, but that there are evidence also in northern Sweden and Norway of this metalwork. It is mainly in form of daggers or casting moulds for daggers that are a typical part of Seima-Turbino assemblages all over the northern part of Russia (fig 2). The distribution of axes and daggers is rather peculiar. The axes mainly occur in S Finland and in Uppland in central Sweden, whilst the daggers and moulds occur in E Finnmark and central Norrland (fig. 3). If one looks closer at the occurrence in central Norrland, it follows a similar general

distribution as that of the textile pottery. Since moulds of daggers are found in Northern Scandinavia, it seems likely that casting of bronze objects has also been performed here already at this time. The fact that some of the axes in Finland seems to be of a local variant also leads one to conclude that local casting also has been performed within the Finnish area.

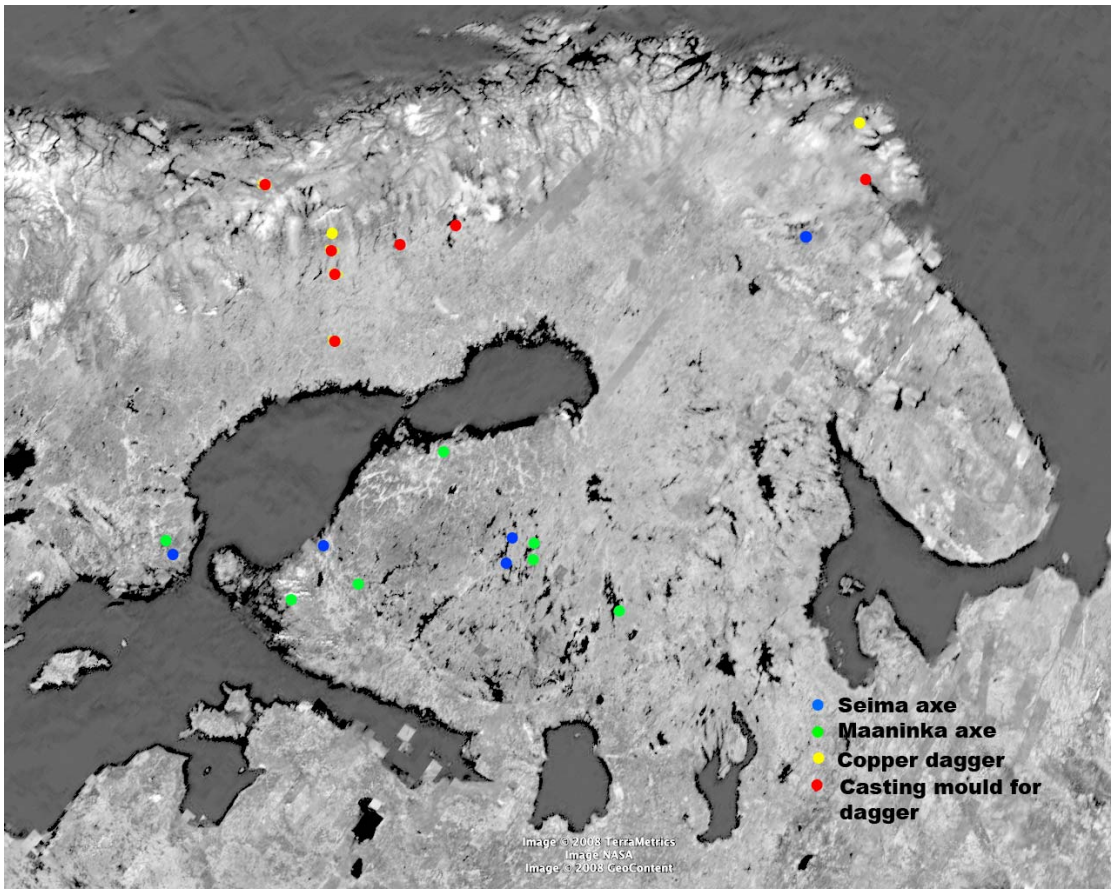

Figure 3 The distribution of bronzes of Seima-Turbino type in Northern Fennoscandia

Conclusion

By following the introduction and spread of new technologies it is possible to break free of the paradigm of bounded social entities that has characterized much of archaeology during the last hundred years. The actor network theory provides a basis for following contacts and interaction between people and groups from widely different communities. Following this, it has been possible in the CAS project to discern certain *pipelines* and *nodes* in the network that has been instrumental in the spread of early metalwork and pottery during the second millennium BC. The

dispersal of technologies were dependent upon individuals and small groups and their movements through a specific northern landscape – and also a specific social landscape. The northern areas were not a “flatland” where it was possible to go anywhere with comparable ease. Certain routes and pipelines were preferred before others. These were probably partly dependent upon already established networks – a part of the “interactional history” of the regions.

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