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# Interaction Within and Between Collectives: Networking in Northern Fennoscandia

The project *Early Networking in Northern Fennoscandia* is concerned with investigating interaction at the regional and interregional levels. Through a number of separate case studies we look into the substance of the interaction, evaluate its extent and diversity, background and organization, and its wider effects. In my case study I approach interregional interaction by looking at networks and collective identities. The following focuses on the importance of collectives in interaction.

While the project aims to dissect traditional cultural entities by showing that all communities, past and present, are heterogeneous, we do not deny that collective identities exist and are of great importance in interaction and networking. Interaction does not take place between unidentified partners, but between individuals and communities with recognized identities, even if the actual persons have never met before. People need an identity for you to know how to relate to them. In the following I first discuss how collective identities may be involved in interaction. The examples that follow are derived from the Late Stone Age in Northern Fennoscandia. However, the principles are assumed to be of a more general character.

I employ several different terms, which I present briefly here, to be elaborated on below. A *collective* is the broadest, most encompassing term. Some collectives are based on social or cultural elements, while others may be based on economic or technological practices. *Identities* are collectives consisting of people who are conscious about their shared position in society. They are predominantly based on shared social and cultural elements, but identities may build on other aspects, too. *Communities of practice* are collectives based on shared practices, whether economic or more explicitly technological. A community of practice may also have a shared identity, but there is no necessary or automatic correlation between identity and a community of practice. *Networks* are relations between a number of agents, and may take place *within or between* any collective, identity or community of practice.

### Identities, Collectives and Networks

My point of departure is that we all have a multitude of overlapping and situated identities. This is not a modern phenomenon, but would have been true also for past hunter-gatherers. Each individual would have had identities tied to social aspects such as descent and family, gender, age, possibly clan affiliation, and to language, but also perhaps to landscape, and to economic, cultural and religious tasks. Each individual would share such identities with a number of other persons (a collective), but not all of these would share all identities with each other (Figure 1). Each of these identities would be relevant and active in different circumstances, and in relation to different types of local, regional and interregional interaction. For instance, an individual would be associated with a patri- or matrilineal family, a collective consisting of men and women, young and old. In other circumstances, women would constitute the relevant collective, and young unmarried girls could be a subgroup here. And of course there would be collectives that one was not part of.

In the above examples the collectives spring mainly from social and cultural categories and identities. However, many collectives would be found in association with practical tasks of various sorts. Such collectives could be termed communities of practice (Hallgren 2008). A community of practice is a group of individuals associated with, if not necessarily collaborating on, a particular task, be it pottery production, raising a dwelling structure, fishing, making winter clothes etc. The important aspect here is that this group of individuals shares a set of techniques and practices with regard to the performance of a particular task. This practical knowledge has been transmitted within and between generations. The sharing may be deliberate and strategic, but may also be unacknowledged and tacit. The community of practice may also be described as a network in the sense that there are active relations between a number of human individuals in the form of learning or copying from each other and possibly collaborating in a task. In a wider Actor-Network-Theory sense this is also a heterogeneous network consisting of relations between human actors, tools, raw materials and possibly landscape, language etc (Latour 2005). While individuals in a community of practice may not always explicitly share a collective identity, their common practices establish the basis for a latent identity (Damm 2010).

These various collectives, communities of practices or networks may be expected to be linked explicitly or implicitly to material culture. This should be obvious when it comes to communities of practice where the sharing of technology is one of the premises for the collective. Similarly social collectives often share specific elements of material culture. It should be noted, however, that in a number of cases there is no direct material correlate for such groups.

The above would imply that we should be able to trace such communities and collectives by looking at various practices through their associated material. Different types of tools are needed for different practices and are produced by different collectives. If different artefacts are linked to different collectives, then



Figure 1. Model of an individual and her participation in different, partly overlapping collectives.

we should expect different patterns in space and context. Some patterns may be linked to production and others to use, as there may be different collectives involved.

One of the problems in archaeology is that for a very long time it looked at assemblages of tools, and tried to access through this larger communities or social and cultural entities. What I suggest is that it is possible to look at individual tools, or even elements of tools, for example specific elements of pottery production (Damm in press), and through these attempt to arrive at some understanding of the kind and size of collective in which they participated.

When trying to get at such past collectives, we as archaeologists must turn to material culture, but also to the activities and practices that the materials were involved in. It is not necessarily the tool itself that is important, but how it was manufactured and later employed. In other words, we are not primarily concerned with categorical types and traditional typologies, but rather with 'chaînes opératoires' in their most expansive sense, considering the items as enmeshed in a wider technological and social context. It is important that we consider not just the manufacturing phase of artefacts, but equally their practical use and its context.

#### Identifying Communities of Practice

I will illustrate the existence of prehistoric collectives through a few examples, drawn from Stone Age hunter-gatherers in northern Fennoscandia (predominantly the period 5000–2000 BC, all dates are calibrated). The examples are illustrative only, and are not yet to be regarded as forming a complete argument about the period. The selected artefacts and types are found over rather widespread areas, across modern national and academic borders. This leads to certain difficulties with regard to identification/classification, comparative dating, and cultural context. While I am aware of these issues, they will not be dealt with here, also because the examples are meant to serve as just that.

The Stone Age communities in Northern Fennoscandia were widely engaged in fishing on the coasts and in freshwater settings, although the contribution of fishing to subsistence cannot be evaluated in any detail and is likely to have varied for different regions. The majority of the fishing equipment would have been made of organic materials (bone, antler, wood, sinews etc), and is consequently not preserved. There are, however, some examples of composite fishing hooks or jigs, in which the shaft was made of lithic material, while the point was most likely was made of bone. These are quite common in Finland and regions further to the south and east. They have been presented by Torsten Edgren (1967) who classed them into three separate types. The two most common types are found in southern and central Finland. The third type is clearly distinguished from the first two in having two deep vertical furrows for inserted points, i.e. a double hook. The shaft is made of soapstone, sandstone or slate. The top of the shaft has a knob and/or horizontal lines engraved in it, the latter are also found on the bottom of the shaft, presumably to assist in hafting the points. They are 4-5 cm long and weigh 5-6 g. They would have been suitable for fishing either in deep water or places with strong currents (Gräslund 1969: 46).

The 12–13 known pieces of this type occur only in the northernmost parts of Fennoscandia, in present day Finland, Sweden, Norway and Russia (Figure 2). They are found both inland and on the coast. Unfortunately most of these finds are without detailed and reliable contexts. Many are from multi-phase settlements with material ranging from the early Neolithic well into the Early Metal Period (Table 1). The other two types of composite fishing hooks have been found in Finland with Typical Comb Ware dated to the first half of the 4th mill. BC (Edgren 1967, Pesonen 2004).

Based on information from the Noatun sites on the Pasvik River in Finnmark, Norway, the northern type has mostly been dated to the final part of the Stone Age, i.e. around 2000 BC or even the Early Metal Period (Simonsen 1963: 71, Edgren 1967, Gräslund 1969). The Noatun finds have all been recovered by a local farmer, and the exact find contexts are uncertain, as the area is a multiphase settlement. They were collected together with items such as Early Northern Comb Ware and bifacial chert points that date to the 5th mill. BC, and with Rovaniemi adzes, that date anywhere from the 5th mill. BC to the Early Metal



Figure 2. The distribution of composite fish hooks of northern type.

Period. This suggests that the late Stone Age date presented by Simonsen is at least not irrefutable. There is a late Mesolithic tradition of small soapstone sinkers on the west coast of Norway (Bjerck 1986).

Stratigraphically the hook from Neitilä 4 should be associated with Typical Comb Ware (Kehusmaa 1972: 70), suggesting a date between 4000 and 3500 BC. The finds from Steinsvik were also collected by a local farmer with no further information on the context. They include a broad-bladed dagger or spearhead, a large single-edged knife, a greenstone chisel fragment and a sinker (Gjessing 1943). Although none of the finds are chronologically diagnostic, both daggers

and large single-edged knives are common in the early part of the period when polished slate was used in northern Norway, around ca.4000 BC. The Halsen find consists of a large number of artefacts discovered when a road was built in 1922. They are from an area extending 42 m and the width of the road (not specified), with a few finds further away. The find location was later measured to be about 16 m asl (Engelstad 1925). The extension of the find area indicates that the finds probably derive from several house structures. The collection consists of four boot-shaped single-edged knives, four single-edged knives with heel, one ridged double-edged knife, six spearheads (several with barbs), two arrowheads (one is a Sunderøy preform), in addition to two harpoons (one antler, one bone) (Nicolaissen 1923, Gjessing 1938). The bone harpoon has a distinct circle ornamentation. The majority of these artefacts should date to the 3rd and 2nd mill. BC (Olsen 1994). The circle ornamentation bears close resemblance to a find from Nyelv, dated to 3200–3000 cal BC. The ridged dagger resembles daggers with elk-heads, dated to the late 4th or early 3rd mill. BC.

Unfortunately none of the fishing hooks can be dated with absolute certainty. Some find associations suggest quite early dates (5000–4000 BC), while others indicate a late date (into the 2nd mill. BC). It is quite possible that the type in question was in use over several millennia, however, the many identical details may suggest a more limited period of production. Considering the find from Neitilä and the dates for the other composite fishing hooks, I am personally inclined to favour an early date.

We must assume that many such implements have been lost whilst fishing. Similarly the shaft may in many cases have been made of other materials. Nevertheless the finds indicate the existence of a rather widespread community of practice, producing and/or employing nearly identical composite hooks. Even if the actual production was restricted to a more limited region the wider distribution is still evidence for widespread contacts of some sort, resulting in the spread of these artefacts. The fishing hooks have not been given much attention, and there may well be unrecognized items in the museum collections. Nevertheless the double jig does seem to be an exclusively northern type, with the two other types are predominantly known from areas further south and east.

Any definite dating for the composite fishing hooks of northern type is not possible at present. More reliable in this respect are bifacial chert points with pointed base. These points are quite common along the coast of Finnmark and probably further south, as well as along the Pasvik River, and date from the 5th mill. BC. A few items of the type have been found in limited numbers further inland at Finnish and Swedish sites. Interestingly, Marianne Skandfer has argued that although these points are found in both Eastern and Western Finnmark the *chaîne opératoire* differs between the two regions (Skandfer 2005, 2009). This suggests that there was one larger community of practice with regard to use of the point, but two different communities of practice when it comes to the production of them. The reduction sequence known from eastern Finnmark is found also on Finnish sites (Skandfer 2005: 16) and possibly on the Kola Peninsula (Gurina 1997: 37)

MUS. NO.	LOCATION	MATERIAL	SIZE	CONTEXT	REFERENCE
Sweden					
SHM 27538	Vakkokoski at Torne river, Jukkasjärvi, Lappland	Soapstone	45 x 11 x 8 mm; (5 gr)	Single find	Gräslund 1969
SHM 28476	Talludden, Övre Länsjärv, Överka- lix, Norrbotten	Grey slate	43,5 x 11 x 8 mm; (6 gr)	Surface collection	Gräslund 1969
Not available	Revi, lake Kakel, Arjeplog, Lappland	Slate	Ca 45 x 10 mm	No information	Bergman 1995: 68
Norway					
Ts 2854	Halsen, Kvalsund, Finnmark	Grey slate	5 x 1 cm	Collection of several sin- gle edged knives, wide barbed spearheads and a slim ridged dagger.	Gjessing 1938 Nicolaissen 1923
Ts 3974 d	Steinsvik, Lødingen, Nordland	Soapstone	43 mm; (8,1 g)	Found with dagger and single edged knife, a greenstone chisel and a sinker.	Gjessing 1943: 17
Ts 5208 dd	Noatun Innmarken, Sørvaranger, Finnmark	Soapstone	48 x11mm	Collection from multi- phase settlement. Found together and with a flat adze of Rovaniemi greenstone.	Simonsen 1963: 18
Ts 5208 ee		Soapstone	34 x 9 mm Not intact		
Ts 5581 bu	Noatun Innmar- ken, Sørvaranger, Finnmark,	Soapstone	40 x 9 mm Not intact. Type uncertain	Collection from multi- phase settlement, found with Comb Ware and chert points.	Simonsen 1963: 66
Ts 4665 a	Noatun Løkka, Sørvaranger, Finnmark	Soapstone	42 x 11 x 8 mm	Collection from multi- phase settlement. The other finds include Rovaniemi adzes and Comb Ware.	Simonsen 1963: 123
Ts 5927 d	Stourajavre, Kautokeino, Finnmark	Soapstone	40 x 11 x 9 mm; (5,1 g) Not intact	Surface collection	TMU database
Finland					
NM 15671:1312	Neitilä 4, Luusua, Kemijärvi	Sandstone	39 x 11x 6 mm	Multi-phase settlement. Stratigraphically associ- ated with Typical Comb Ware.	Edgren 1967, Kehusmaa 1972
NM 15042:171	Sotaniemi 3a, Luusua, Kemi- järvi	Slate	42 x 11 mm	Multi-phase settlement, possible association with Kierikki Ware.	Edgren 1967, Kehusmaa 1972
Russia					
Not available	Mayak, Kola	?		Multi-phase settlement	Gurina 1997: pl 33, fig 23

Table 1. Fish hooks of northern type.

Finally Early Northern Comb Ware (earlier often referred to as Säräsniemi 1), dated roughly between 5500–4000 cal BC (Skandfer 2009) is found in eastern parts of northern Fennoscandia only. This northern ware is stylistically different from the early Comb Ware further south in Finland, suggesting different communities of practice. And Skandfer (2005, 2009) has demonstrated that even within the northern ware technological elements such as wall thickness, types of temper and choice of stamps differ between sites indicating very local practices.

The fishing hooks, the bifacial points and the pottery represent different communities of practice. Within them it is possible to find additional communities of practice, all depending on the scale of analysis and the elements studied (for example production sequences versus finished tools). The three are arguably contemporary and partly — but only partly — overlapping geographically. They are good examples of the complexity of collectives existing in past hunter-fisher societies. It is reasonable to assume that the fishing hooks, the bifacial points and the pottery were produced and used by different collectives of individuals, with different patterns of regional and interregional interaction and networking.

Skandfer (2009: 363) has suggested that the introduction of the Early Northern Comb Ware should be viewed as a catalyst, which initiated something without being a key product itself. If, for the sake of the argument, we assume that pottery was produced by women, then the knowledge of the chaînes opératoires would be transmitted within a collective of females. Since pottery production is generally acknowledged to require close interaction between potter and apprentice, pottery could not have spread widely just by seeing and copying. Experienced potters must have travelled. In other words, either women raised in the Southeast travelled north and settled there, or women from the northernmost parts of eastern Fennoscandia travelled to the Southeast, learned the pottery craft and later returned home. As there is little to suggest that the potters were part of a major northward migration, we are mostly likely dealing with either women being married into northern groups or possibly less extensive migration movements consisting of a limited number of families. The pottery craft does not spread further west, which suggests that whatever kind of network these women were part of (in addition to that of the craft), it did not for some reason extend beyond Varanger.

The fishing hooks and the chert points represent other activities undertaken by different communities of practice. Here the transmission of technology with regard to production and use display patterns different to those of the potters. Clearly the persons within these different networks followed separate patterns of interaction.

Whether or not these collectives were explicitly linked to particular social or cultural identities we can not say. However, the persons engaged in the shared practices in these collectives must necessarily have had something in common even if the related tasks were not an essential part of any overt identity. They would have learned these practices from each other and transmitted the knowledge between them in time and space, from generation to generation, and from region to region.

#### Across and Between

In the above I have focused on identifying collectives based on shared practices and the transmission of knowledge and items within these communities of practice. However, transactions between different collectives are of course also very common, and constitute much of the interaction in any society. Here the networking springs from diversity rather than from common ground.

Items will cross between different collectives. The point with regard to collectives and communities of practice is that although, as argued above, in a number of cases the distribution of a specific artefact and the technologies associated with it indicate the existence of a rather close collective, in other cases the distribution in no manner reflects a collective with a potential common identity.

While cultural and material difference is an important aspect of and even basis for cross-cultural interaction, it will in almost all cases also lead to a wider distribution of specific practices and material. With regard to communities of practice it may be important to distinguish between production and use. An item may cross into a collective that apparently does not know how to produce the item, or at least choose not to, but the use of the item is likely to be the same. While it may be argued that we are still dealing with communities of practice with regard to use, it is much less likely that there is any foundation for shared identities. Such items may well be obtained not because they are associated with shared social or cultural activities, but mainly because they are functional, are considered pretty, or have certain prestige value in the receiving collective or as part of a more complex and extensive pattern of interaction between collectives, i.e. they may be part of more elaborate gift exchange, where much of the immaterial aspects and relations are of more importance than the specific exchanged objects.

When evaluating the distribution of individual types, there are therefore many different types of collectives, networks and interaction to consider. Again the scale we select is at issue. There may well be exchange between separate households within a local group, or between different local groups if each household or group has specialized in certain practices, e.g. specific economic practices as has been demonstrated for groups located only 20 to 30 km from each other in the Varangerfjord (Hodgetts 2010). However, this may often be difficult to ascertain archaeologically. We are perhaps better equipped to deal with exchange between different regional groups.

While metal objects primarily date from the Early Metal Period, i.e. from the late 2nd mill. BC onwards there is an early metal horizon too. At the Comb Ware settlement of Lillberget in northern Sweden a copper bead and a fragment of copper plate were found (Halén 1994). The C14 dates from the site unanimously place the finds between 3900–3600 BC (Färjare 2000). The site is one of the westernmost settlements with finds of Comb Ware, and it also had numerous implements of eastern flint as well as Baltic amber. At Polvijärvi in Eastern Finland a copper ring measuring 6.5 cm in diameter was found in a homogenous cultural layer with Typical Comb Ware (Taavitsainen 1982), which should also

date the ring to the first half of the 4th mill. BC. Further north, at Kukkosaari, a forged copper adze was found at a site with mixed material. It has tentatively been dated to 3800–2500 BC (Huggert 1996). A cast copper adze was found outside any datable context in Varris, Sweden. It measures 9.8 x 5,1 cm and is 0.9 cm thick, weighing 238.9 g. The Varris adze does not bear resemblance to the adzes from the Early Metal period, but is not dissimilar to the Kukkosaari adze.

From several other sites in Finland copper finds (mostly unidentifiable fragments) have been reported (Lavento 2001: 119–20). Of these at least four are associated with Neolithic pottery. At Vihi in Rääkkylä nine fragments were found in a dwelling depression with Typical Comb ware; at Ankonpykälänkangas in Kerimäki a fragment was found in a test pit with Typical Comb Ware and Neolithic asbestos pottery; at Kuuselankangas and Purkajansuo, both in Yli-Ii, copper was found with Kierikki and Pöljä wares, that have been dated to between ca. 3350–2900 BC and ca 3500–2600/1900 BC respectively (Pesonen 2004).

Finally, a copper dagger was found in a midden next to a semi-subterranean house in Varanger, northern Norway. The house has been dated to the transition between the Neolithic and the Early Metal Period (ca 2000–1800 BC) (Schanche 1989), but recent re-examinations indicate that the midden may in fact be more than 1000 year older, with 4 C14 dates between 3400–2750 BC (Helama & Hood 2011).

The primary area for early metal production lies in the Oka-Volga area and into the Urals, but copper is also found in the bedrock on the western shores of Lake Onega in Russian Karelia, where it appears to have been exploited during the Typical Comb Ware period (ca 4000–3500 BC) (Huggert 1996: 77). The early Onega sites included furnaces, crucibles and axes, suggesting that smelting was indeed involved (Chernykh 1992: 188; Huggert 1996). These Karelian sources appear to have been exploited less intensively in the following period, which is characterized by asbestos pottery of Pöljä type.

Most scholars have looked to the Ural region as the point of origin for the copper and copper artefacts in this early horizon in northern Fennoscandia. As pointed out by Anders Huggert (1996) it is, however, a complex matter to determine the exact source of the copper from artefacts. Huggert (1996: 79) is of the opinion that several of the Fennoscandia items may consist of mixed material, thus complicating an analysis. Here it is of less importance if the origin was in Russian Karelia or further east. In any case it is obvious that artefacts were being exchanged over long distances, and that the objects entered new and different collectives. We are not able to extract much information about the circumstances for the distribution of these early copper items, but it is a general assumption that the objects would have been rare and viewed as exotic and perhaps prestigious. Interestingly they all appear to derive from settlements, rather than individual graves, this suggesting either that they were associated with a collective rather than an individual, or that the individual was not able to hold on to it, at least not after his/her death.

A similar and contemporary example is the exchange of amber in the 4th mill. BC. The amber was collected at the Baltic coast, manufactured into predominantly beads and pendants at a number of key sites, even in the interior (Loze 2003, Zagorska 2003). During the first part of the 4th mill. BC the huntergatherer societies to the north were obtaining amber from these sources. It is also clear that the amber was by no means evenly distributed. In Southern Finland a rather limited number of graves contained large numbers of beads (e.g. Edgren 1959, Katiskoski 2003), others a few beads, while most contained no amber. A few settlement sites revealed a great deal of amber, while most had none. And even within settlements such as Kierikki, some houses contained distinctly more amber than others (Vaneeckhout 2010). Morten Ramstad has suggested that while amber necklaces were kept intact in the southeast, further north where amber was even rarer, necklaces were taken apart, and the beads exchanged separately (Ramstad 2006). Also in northern Norway some areas seems to have had better access to amber than others.

The distribution pattern in each local area (cemetery or settlement) indicates that amber was not a material that could be readily obtained by everybody. Only some individuals or collectives had access to these objects. Furthermore it would appear that the onwards distribution was not a simple down-the-line pattern. Amber appears in good quantities in some areas and not at all in others. To me both of these patterns suggest that the exchange was part of socio-political interaction, possibly organized as partnership exchange. Described in relation to collectives, the distances that these objects are transported across, demonstrate (based on other knowledge of the larger area) that they are being exchanged between different collectives: produced in one, passed on between several others. They may have been bartered or traded, but for the period in question (late 5th and 4th mill. BC) there is little evidence for any extensive barter or trade activity of bulk goods. Instead, they may well have been handed on in gift exchange between collectives or perhaps between individuals with particular positions within their own collective, which were recognized as either equal or at least suitable for interaction.

While it is possible that copper was distributed across the landscape in much the same way as the amber, we may be able to trace different actual networks of interaction. The copper possibly derives from Onega, and appear to be handed on in a network going from Karelia into the area of the Finnish lakes and north around the Gulf of Bothnia. The amber on the other hand shows a different route of interaction and social networking, going from the south more directly north, although a few finds found their way across or around the Gulf of Bothnia. At present these possible routes are very uncertain. But with better dating of individual sites and finds, it should be possible to trace different routes of networking for different materials and artefacts. This would contribute towards understanding the complexity of interregional interaction between collectives in northern Fennoscandia. While the interaction between collectives is mostly easily demonstrated in the case of long-distance exchange of more exotic items or materials, we should be aware that similar exchange may well have taken place regionally or even locally.

### Conclusions

These few examples show how broadly contemporary artefact types and materials are involved in a wide variety of interaction, with potentially highly different distribution patterns. To understand why, to get to grips with the substance and background of the interaction, we need to look not only at the different functions and activities with which these artefacts were associated, but we also have to realize that a substantial part of the background for the different distributions are the different collectives and communities of practice to which they are linked, and how knowledge and objects are transmitted within and between them.

By breaking down interaction into an almost infinite number of practices, networks and identities I hope to have demonstrated the very complex nature of entangled relationships between material culture and interaction within and between collectives and communities of practice.

Often our data do not provide the fine resolution necessary to distinguish between various forms of interaction within or between collectives. Nevertheless, I would argue that it is important for us to develop our understanding of the many levels and varieties of interaction also affecting the material patterns that we are forced to work from. I also think that by considering the scale and the choice of data carefully we will be able to find data that can provide information on these aspects.

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