

Networks and nodal points: the emergence of towns in early Viking Age Scandinavia

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Did towns return to early medieval Europe through political leadership or economic expansion? This paper turns the spotlight on a particular group of actors, the long-distance traders, and finds that they stimulated proto-towns of a special kind among the Vikings. While social and economic changes, and aristocratic advantage, were widespread, it was the largely self-directed actions of these intrepid merchants which created what the author calls 'the nodal points.' One can think of many other periods and parts of the world in which this type of non-political initiative may well have proved pivotal.

Keywords: urbanism, towns, network theory, Vikings, early medieval Europe, trade, merchants, ceramics

Introduction

Urban life was once considered alien to Scandinavia in the Viking Age. But in recent years the list of sites associated with trade and urbanism has grown lengthily. Embryonic towns are now claimed in some regions to have outnumbered the municipal towns of the late medieval period. Yet some of the sites discussed were hardly comparable to towns. This paper will examine a number of recent excavations in order to define the anatomy of trading-places in early Viking Age Scandinavia. By attempting a direct, comparative analysis that has only recently become possible with the publication of detailed information from a number of important sites, it will point to the fine distinction between the few nodal points and the many local markets. This distinction may be understood, it will be argued, in a network perspective, as motivated by the traffic and exchange between sites. The implications are that paths towards urbanism wind on many trails, that trade is not a byword for politics, and that long-distance routes are sometimes more important than hinterlands.

Early urbanism: a network perspective

The early Viking Age (eighth-ninth century AD) offers a classic focus for discussions of early towns and trade. Early synthesis pictured a very limited number of trading-towns positioned along a single great trunk route (e.g. Jankuhn 1956). This reflected a traditional diffusionist outlook, seeking the impetus for urbanism from the outside. More recent reconstructions

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have envisaged a dense scatter of sites, suggesting that each would have acted as 'central place' to a region (e.g. Carlsson 1991; Callmer 1994; Ulriksen 1998; Näsman 2000). The implied view is that urban milieux evolved by means of a local process of urbanisation. Both these ideas strongly reduce the spatial aspect of interaction, in terms of linear outreach or ease of access respectively. Both imply trading-sites to be a type of 'town', a generalised concept laden with many assumptions.

A more promising model is offered by a third concept, which has recently attracted interest from many sides in the humanities and social sciences: that of network. Since the late 1990s network-science has discovered a range of distinctive structures in complex networks, most famously the 'scale-free networks' in which a few nodes are far more connected than the average (Barabási & Albert 1999). The discoveries have made a deserved impact in a broad range of studies. In social theory, an original translation of the network concept was recently presented in Bruno Latour's 'Actor-Network Theory' (2005: 175ff). Unlike most social theorists, Latour does not reduce the connecting points or 'actors' in a network to a single first principle, like social power or economic constraints. 'Actor-Networks' are mixed assemblages of heterogeneous materials, like pots, people, kingdoms, ships or seascapes. The character of the network cannot be reduced to any one of its properties.

A different but related usage of the concept of networks, of particular relevance to the present discussion, is proposed by Paul M. Hohenberg and Lynn Lees (1996: 55ff). They suggest that early urbanism arose from conflicting locational principles, and suggest a distinction between 'network towns' connected to long-distance connections, and the more familiar concept of 'central places' concerned with local relations. Though Hohenberg and Lees single out only two types of connection, which could both be described as networks in Latour's sense, they concur in acknowledging heterogeneous formative principles and a complex topological structure.

The conceptualisation of spatial, social or economic relations as a network, continuously being formed by a heterogeneous assemblage of actors, offers a more organic approach to prehistoric trade and its locations than the previous perspectives that assigned agency in advance to external force or internal social process. As such, it provides an appropriate point from which to reconsider the nature of early trading-sites. This issue has often been considered in economic or political terms. In a network perspective, a trading-place is not primarily a political or economic structure, but a traffic junction – a point where certain networks of traffic convene. We can be sure that different traffic with different aims produced sites of a different character, and that political and economic concern contributed even further to the variation. But might a more explanatory pattern still emerge?

The nodal points

Archaeological sites have been proposed as early trading-centres for a variety of reasons. For many sites, the identification rests on topographical criteria or historical retrospect, e.g. later towns or sites in a strategic position. If archaeological evidence is considered, judgements tend to follow the character of the sediments. Black-earth sites, i.e. sites with massive occupation layers, are persistently pointed out as large trading-places, as are sites with many sunken-featured dwellings (*Grubenhäuser*). Both certainly preserve larger numbers of finds

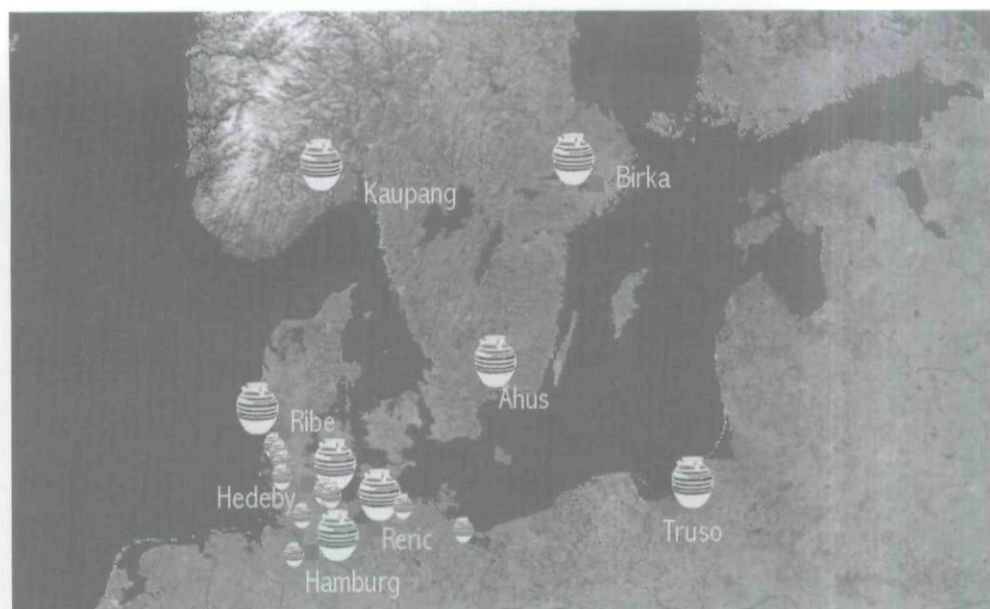


Figure 1. Sites with finds of Badorf-ware in Scandinavia and the Baltic Sea area. Small symbols: sites with less than 5 sherds. Data according to Brather 1996 with additions by Sindbæk 2005.

than sites without extensive cultural deposits, but that may owe more to preservation than to past activities. A final group of sites often considered as potential trading-places, are the 'productive' places known by rich metal-finds from detector surveys. It hardly needs saying that detector-finds are no less ambiguous phenomena than thick occupation layers.

A considerable number of old and new excavations in important early Viking Age sites in Scandinavia and the Baltic Sea area have recently been analysed and published. Whereas former studies had to issue from rather impressionistic comparison, we now have an opportunity to make a specific, contextual assessment of a large number of sites. As I will show, there are a number of indications that a small, distinct group among these sites had an exclusive role in long-distance trade. I shall refer to these sites as the nodal points. In our present state of knowledge, just seven sites in the region and age concerned can be assigned as nodal points: Ribe in Denmark, Kaupang in south Norway, Birka and Åhus in Sweden, Truso in Poland, and Groß Strömkendorf and Heðeby in Germany. A first, conspicuous common feature of this group of sites is the generous occurrence of imported ceramics. A distribution of particular interest is shown by the group of soft, yellow earthenware known collectively as Badorf-ware (Sanke 2001). This typical Rhineland-product occurs abundantly in all the above-mentioned sites; but unlike many other West European products, their distribution beyond these is non-existent, except on the coast of south-western Denmark and northern Germany (Figure 1). This strictly limited distribution of Badorf ceramics is repeated in contemporary sites in England (Brown 2003: 23), and it is a pattern which suggests that the imported vessels arrived in both regions as traders' items rather than traded items (cf. Hodges 1982: 58f). Their occurrence in Scandinavia and the Baltic Sea area may therefore be taken mostly to reflect the presence of travellers from the Rhineland.

In six of the seven nodal points, major excavations allow us to compare data in direct relation to the scale and methods of investigation. The scale of the investigations is measured graphically against the occurrence of selected imported items in Figures 2-3. The total number of ceramic sherds and glass beads retrieved is included as an indication of the general volume of finds. For some sites the volume of earth excavated is estimated from the thickness of the deposits and the number of sunken dwellings (each conventionally equalled to 2m³ of soil). Among the sites in the North Sea area, comprehensive information is available for nearly all excavations in Ribe until the present (Bencard *et al.* 1981-2004; Feveile 2006), but for the present analysis only one particular informative campaign is selected (Feveile & Jensen 2000). In Kaupang the most complete data covers the recent excavations 2000-2002 (Skre & Pilø in press), while in Heðeby, which literally bridged the Baltic with the North Sea, results are mostly analysed and presented from all the extensive campaigns together (Jankuhn *et al.* 1984 and specialist reports by, among others, Janssen 1987; Schön 1995; Steppuhn 1998; Andersson 2003).

The magnitude of the campaigns in Heðeby (Figure 2) is immediately striking, but the finds are less impressive when weighed against the size of the investigation. The frequency of ceramic sherds thus amounts to just some 10 sherds per cubic metre of soil excavated, less than a tenth of the frequency in most other sites. This primarily reflects the limited use of sieving, which also affects other find-groups. In Kaupang, on the other hand, the low proportion of ceramic finds reflects a cultural peculiarity: no domestic pottery was produced in Norway at the time, and so ceramics occur only as imports. The Badorf-ware occurs copiously in all three North Sea ports, as do sherds of the polished, tin-impressed Tating-ware jugs. Another western import, quernstones of Mayen Basalt, is also testified in all sites, albeit only with a few fragments in Kaupang.

As concerns the sites in the Baltic Sea area, information is available for Åhus in Eastern Scania (Callmer 1984; 2002; Ericson-Borggren 1993), Groß Strömkendorf in Mecklenburg, very possibly identical to Heðeby's predecessor, Reric (Wietrzichowski 1993), and for the excavations in Birka's Harbour area 1970-2 (Ambrosiani *et al.* 1973). Unfortunately, the more extensive campaigns in Birka 1990-5 and in Groß Strömkendorf 1995-8 are still only partially analysed and published (Jöns *et al.* 1997; Ambrosiani 2002). For the last relevant site, Truso, only provisional reports have been presented (e.g. Jagodziński & Kasprzycka 1991). The number of finds in Birka is surprising, considering the limited scale of the investigation. A possible explanation is that the excavation at the harbour front concerned an area with extensive handling, loss and breakage of artefacts, and a slow accumulation of cultural deposits. The tiny scale of the published excavations in Groß Strömkendorf must also be observed. It is worth noting that the exceptional character of a site, which seems to be confirmed by the more recent excavations, stands out even in an excavation of this limited size. The rate of Badorf-ware finds is modest in all the Baltic sites compared to those in the North Sea area. Tating-ware jugs appear only in Birka, but considering the limited scale of investigations, chance may be responsible for its absence in Åhus and Groß Strömkendorf. Quernstones of Mayen Basalt are only found in Groß Strömkendorf, and evidently were not traded further into the Baltic Sea area.

In spite of all variation, however, the pattern of finds in the nodal points proves to be remarkably consistent. Considered in relation to the size of investigations and the methods

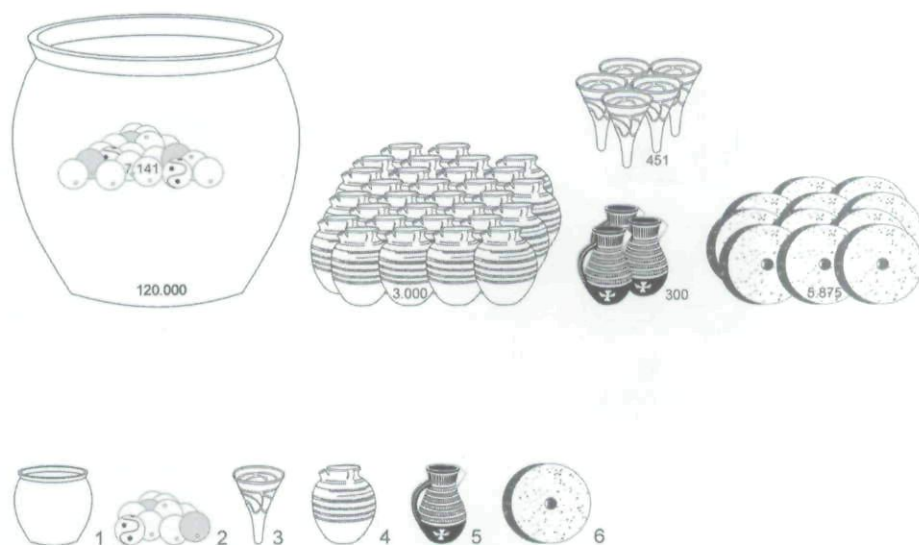
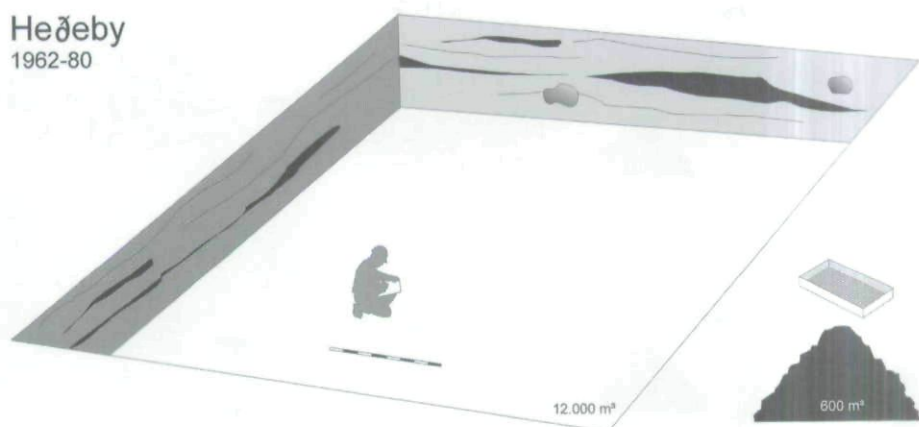
Heøeby
1962-80

Figure 2. Synoptic comparison: Excavation and selected imports from Heøeby. 1. Ceramic sherds (domestic & imported), 2. Glass beads, 3. Sherds of glass vessels, 4. Sherds of Badorf-ware, 5. Sherds of Tating-ware, 6. Fragments of Mayen-basalt quernstones. The size of the symbols to the left corresponds to the volume of soil or finds. For the imports to the right, each repetition denotes 100 fragments, except for quernstone: 500 fragments. Small symbols indicate less than five finds in a site.

employed, the same classes of imports are found in surprisingly similar numbers. It seems fair to imply that the sites were also linked by communications and activities of a very similar scale and nature.

Other trading-places?

If we proceed to compare these first sites with five other ones, which often figure in lists of supposed trading-places, an unmistakable difference becomes apparent (Figure 4). Menzlin in Vorpommern, investigated in 1966-9, revealed up to 0.5m of occupation layers from the eighth to ninth century (Schoknecht 1977). Yet the finds do not justify an inclusion with the first group of sites. The sporadic occurrence of Rhenish wares and glass vessels

Emergence of towns in early Viking Age Scandinavia



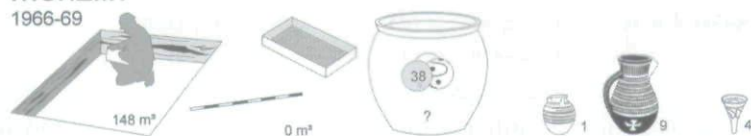
Figure 3. Synoptic comparison: Excavations and selected imports from nodal points. Same scale and signatures as Figure 2. Small symbols indicate less than five finds in a site.

present some ambiguity, since they are complemented by the finds of Scandinavian graves in a cemetery close to the site. More recent investigations have demonstrated the presence of elaborate road facilities near the settlement, but have not succeeded in more convincingly locating a commercial centre (Jöns in press). Neither was Wolin in western Pomerania a trading-site of any importance in the early Viking Age. In marked contrast to the situation in the tenth to eleventh century, the layers from the eighth-ninth centuries rarely contained any imported materials (Filipowiak 1993; Stanisławski 2000; Sindbæk 2006).

In a similar way, Fröjel on Gotland's west coast has an unambiguous association with long-distance exchange in the tenth and eleventh centuries (Carlsson 1999). But the finds from

Menzlin

1966-69



Wolin

Harbour



Fröjel

1987-90



Löddeköpinge

1965-68



Sebbersund

1991-97



Figure 4. Synoptic comparison: Excavation and selected imports from selected sites. Scale and signatures as Figure 2.

the seventh to ninth centuries make it clear that it was hardly active in long-distance trade in this period. Löddeköpinge (Vikhögsvägen) in west Scania is yet another site frequently quoted as a trading-place (Ohlsson 1976; Callmer 1994). But again it is the size of the investigation rather than the frequency of imported goods that departs from more common agrarian sites (cf. Svanberg & Söderberg 2000: 97). Finally, Sebbersund at the eastern Limfjord gives evidence of trade and exchange in the eleventh century, but lacks comparable finds from the early Viking Age (Birkedahl 2000). There are hardly grounds to claim yet, as the excavators do, that the site acted as 'a large and important trading site' in the period 700-1100 (Birkedahl & Johansen 2000: 28f).

In all the sites considered here the amount and frequency of bulk-finds, as measured by ceramic sherds, is comparable to the first group considered: around a dozen sherds per cubic metre of soil in excavations without sieving, and up to around 150 sherds per cubic metre if the soil is sieved. The scale and methods of investigation are not generally inferior to those in the nodal points. The frequency of imports, on the other hand, is strikingly low in all sites. None of the latter sites offer indications of trade that even approach the nodal points. Some sites are simply misunderstood because of a good state of preservation and hence a varied artefact assemblage. Others, like Sebbersund and Fröjel, may have acted as nodal points for a period of their existence, but not during the early Viking Age.

All available information suggests that similar conclusions would emerge from analysis of most other proposed trading-centres. Although sites like Ralswiek on Rügen (Herrmann 2005), Rostock-Dierkow in Mecklenburg (Warnke 1993) or Bejsebakken in northern Jutland (Nielsen 2002) all differ from the contemporary settlements of their respective hinterlands, none of them measure up to the nodal points in their evidence of long-distance connections. It is a different matter with Staraja Ladoga in north-west Russia (Kirpichnikov 1985; 1997). The absence of west European ceramics – one single Tating jug apart – is most likely explained on account of its location in the far north-east corner of the Baltic. Its numerous imports in other categories, most notably glass beads, all suggest its status as a nodal point – and testify to its attachment to another, more easterly inclined orbit.

Crafts and raw materials

The analysis of imports suggests a remarkably clear division among the sites. If we now proceed to examine the remains from crafts found at the same sites, it will appear that this distinction can be put even more clearly (Figure 5). Crafts have been strongly focused as an aspect of early urbanism in recent years (e.g. Blinkhorn 1999; Hjärthner-Holdar *et al.* 2002; Callmer 2003). It has been suggested that the promotion and protection of specialised crafts was in fact the impetus – more so than long-distance trade – for the formation of permanent trading-places or '*emporia*' (Hodges 2000: 83). There was a more practical aspect, however, to the restriction of certain crafts to the nodal points. Textile production, common iron-forging, or comb-making were crafts that demanded skilled craftsmen, but used materials that could be obtained almost anywhere. Unsurprisingly, they are met in most of the sites discussed. Remains from copper-alloy casting and glass-working, on the other hand, are only sporadically met in more common settlements. A large scale manufacture is attested only in the nodal points. Putting these ideas to the test, we find a remarkable correlation: sites with recurrent finds of imported Rhenish ceramics are also sites with evidence for the regular production of glass beads and cast bronzes. This is no coincidence. The salient feature of just these crafts was not the particular specialisation of the craftsmen – but the fact that they consumed raw-materials imported from a distance. They were thus directly dependent on the same steady supplies through long-distance exchange that are reflected in the imports.

In brief, the distribution of crafts, as well as that of imports, defines the same small group of sites as centres on quite another scale than other possible trading-places. It is not trade as such that distinguishes 'great' and 'small' sites, but specifically the role as nodal points for long-distance traffic. The special thing about the nodal points was that travellers recurrently

Heðeby 1962-80					
Ribe 1992					
Birka 1970-72					
Kaupang 2000-03					
Åhus 1989-91					
G.Strömkendorf 1989-92				+	+
Menzlin 1966-69				+	
Wolin Harbour					
Fröjel 1987-90			+	+	+
Löddeköpinge 1965-68	+				
Sebbersund 1991-97					

Figure 5. Evidence of selected crafts in the sites discussed. From left to right forging (i.e. amount of slag), textile-working (spindle whorls and loom-weights), comb-making (worked antler), metal-casting (crucibles and moulds) and bead-making (raw glass and unfinished products). A sporadic occurrence is indicated by '+'.
 +

visited them from distant regions, bringing goods in considerable quantities. The nodal points thus differed from more local markets. The latter were served by local traffic and doubtlessly communicated with the nodal points, but not with the long-distance traffic that travelled between them.

Discussion: actors and networks

The particular status of sites like Birka or Heðeby has often been recognised, but never exactly defined. Traditionally their special importance has been explained with reference to political, i.e. royal power (e.g. Hodges 1982: 184; Ambrosiani & Clarke 1991: 89). But trade did more than mediate power. Here the message of network-theory is pertinent: the links between exchange and politics were composed of many separate actors. A few should be briefly discussed.

During the later Middle Ages trade was typically subject to royal supervision and protection. But should we assume that this was also the case in an earlier period? As noted by many researchers, a phase of demise separates the unfortified emporia in the eighth and early ninth century from the more general urbanisation of north-western Europe (e.g. Verhulst 2002: 134; Palmer 2003: 50). The new urban centres that appeared from the tenth century were typically fortified, and they combined trade and crafts with mints, ecclesiastical centres and royal seats. In short, they were associated in ways very unlike those encountered 200 years earlier.

Trading-sites were certainly also a concern of rulers and a target of political ambitions in early Viking Age Scandinavia. Various written sources speak of kings in Ribe, Birka and Heðeby (see e.g. Sawyer 1978). But was edict and patronage enough to secure the trading-network at this stage? The looting of Dorestad, Paris, London and many other sites demonstrate that no ruler in the early Viking Age could guarantee market-peace without a large share of consensus, and the lack of substantial fortifications in the eighth-ninth century emporia suggests that they knew this to be the case. According to ship-finds, it was only in the tenth century that specialised cargo-vessels appeared in Scandinavian waters (Crumlin-Pedersen 1999). Before that, trading-ships each brought an armed crew for protection. No maintained trade could thrive without a basic trust that strangers came with peaceful intentions. But in early Viking Age trading-places the protection of peace seems rather to have been provided by the interdependence of the traders than by a coercive power.

The fact that a hierarchy of sites can be observed within a trading-network does not necessarily imply a corresponding hierarchy of power. Regardless of the political situation, each participant in a long-distance exchange will have had a significant incentive to seek out what he considered the most favourable, safe and active places for trading. To a traveller spending weeks or months on the journey, a few days extra were inessential compared to the ultimate objective of finding suitable exchange partners. Undoubtedly many traders took part in guilds and had standing agreements with long-time business relations. But if partners failed, any trader had to count on a market. This would compel most travellers to seek for the same few sites. The resulting 'rich-get-rich' mechanism is similar to that identified by network-scientists in scale-free networks.

The location of nodal points or 'hubs' would not be random, but influenced by topography and the conditions it created for transportation. Unlike most central-place functions, which are served by local traffic and thus depend on maximum accessibility from a hinterland, the function of a nodal point is exercised through long-distance traffic and will therefore be stimulated in particular by topographical restrictions that guide traffic into corridors. Most of the nodal points considered here, it can be noted, were situated in locations where a

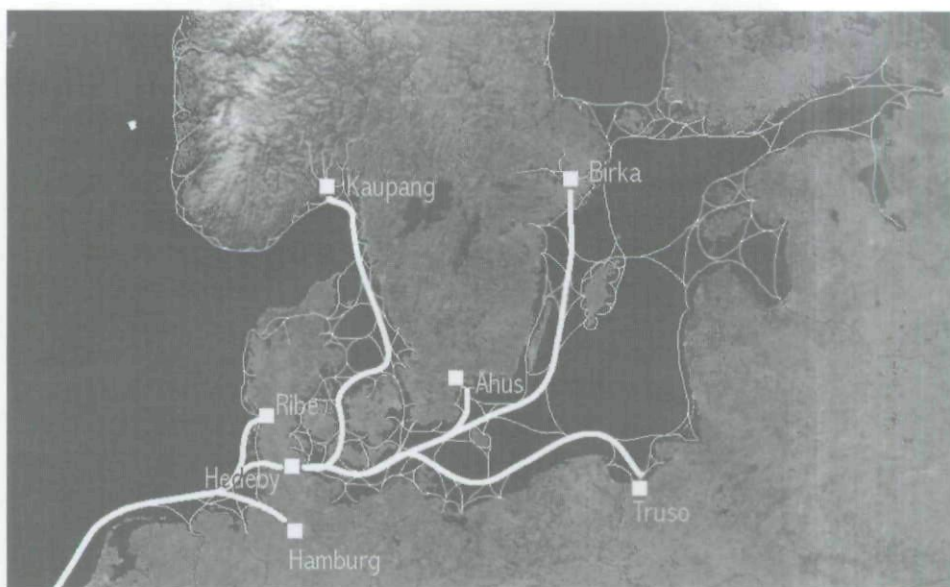


Figure 6. Suggested map of routes and networks in early Viking Age Scandinavia.

topographical barrier caused a break of traffic and demanded a trans-shipment and perhaps a temporary storage of goods (Sindbæk 2005: 99ff).

In short, the geographical outcome of these concerns would be a network with a few sites in boundary-locations acting as hubs or nodal points for long-distance traffic within a widespread web of more local contacts (Figure 6). There were only a few nodal points because these were regarded by individual long-distance traders as the optimal locations for meeting other long-distance traders, and the most obvious choices of sites were those where journeys came to a halt anyway.

Conclusions

The essential argument of this article is that the number of important centres of long-distance trade in Early Viking Age Scandinavia should not be counted in dozens. There were many local markets, but few nodal points of an incipient urban character. These points are clearly distinguished archaeologically by the frequency of imports and tools of exchange, and not the least by crafts with imported raw-materials, e.g. bronze-casting.

The hierarchy of sites cannot be reduced to a reflection of a political network. Long-distance exchange brought its own rules, which did not necessarily support existing political structures. The choice of sites had to match the interest of travellers and the conditions of geography as much as the ambitions of rulers. The analysis suggests that in early Viking Age Scandinavia, the networks of trade and politics were not by far coincident. For this reason, the concepts 'towns' and 'urbanisation' with their implication of compound, multipurpose centres, are unfortunate captions to the trading-places of this period. Some early Viking Age nodal points had an urban character not unlike the fortified towns from the tenth century onwards; but they were actors in a network of essentially different nature.

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References

- AMBROSIANI, B. 2002. Osten und Westen im Ostseehandel zur Wikingerzeit, in K. Brandt, M. Müller-Wille & C. Radtke (ed.) *Haitabu und die frühe Stadtentwicklung im nördlichen Europa*: 339-48. Neumünster: Wachholtz.
- AMBROSIANI, B., B. ARRHENIUS, K. DANIELSSON, O. KYLBERG & G. WERNER (ed.). 1973. *Birka. Svarta jordens hamnområde. Arkeologisk undersökning 1970-1971*. Riksantikvarieämbetet, Rapport C1. Stockholm: Riksantikvarieämbetet.
- AMBROSIANI, B. & H. CLARKE. 1991. *Towns in the Viking Age*. Leicester: Leicester University Press.
- ANDERSSON, E. 2003. *Tools for Textile Production from Birka and Hedeby*. Birka Studies 8. Stockholm: Riksantikvarieämbetet.
- BARABÁSI, A.-L. & R. ALBERT. 1999. Emergence of Scaling in Random Networks. *Science* 286: 509-12.
- BENCARD, M., LISE BENDER JØRGENSEN & HELGE BRINCH MADSEN (ed.). 1981-2004. *Ribe excavations 1970-76*, Vol. 1-3. Esbjerg: Sydjysk Universitetsforlag. Vol. 4-5. Aarhus: Aarhus University Press.
- BIRKEDAHL, P. 2000. Sebbersund – en handelsplads med trækirke ved Limfjorden – forbindelser til Norge, in Karmøy Kommune (ed.) *Havn og handel i 1000 år. Karmøyseminaret 1997*: 31-40. Stavanger: Dreyer Bok.
- BIRKEDAHL, P. & E. JOHANSEN. 2000. The Eastern Limfjord in the Germanic Iron Age and the Viking Period. Internal Structures and External Relations. *Acta Archaeologica* 71: 25-33.
- BLINKHORN, P. 1999. Of cabbages and kings: production, trade, and consumption in middle-Saxon England, in M. Anderton (ed.) *Anglo-Saxon trading centres: beyond the Emporia*: 4-23. Glasgow: Cruithne Press.
- BRATHER, S. 1996. *Feldberger Keramik und frühe Slawen. Studien zur nordwestslawischen Keramik der Karolingerzeit* (Universitätsforschungen zur prähistorischen Archäologie 34). Bonn.
- BROWN, D.H. 2003. Bound by Tradition: A study of pottery in Anglo-Saxon England, in D. Griffiths, A. Reynolds & S. Semple (ed.) *Boundaries in Early Medieval Britain* (Anglo-Saxon Studies in Archaeology and History 12): 21-7. Oxford: Oxford University School of Archaeology.
- CALLMER, J. 1984. Recent work at Åhus. *Offa* 41: 63-75.
- 1994. Urbanization in Scandinavia and the Baltic region c. AD 700-1100, in B. Ambrosiani & H. Clarke (ed.) *Developments around the Baltic and the North Sea in the Viking Age*. Birka Studies 3: 50-90. Stockholm: Riksantikvarieämbetet.
- 2002. North-European trading centres and the Early Medieval craftsman. Craftsman in Åhus, north-eastern Scania, Sweden c. AD 750-850. *Uppåkrastudier* 6 (Acta Archaeologica Lundensia Ser. in 8° no. 39): 133-58. Lund: Almqvist & Wiksell.
- 2003. Wayland. An Essay on Craft Production in the Early and High Middle Ages in Scandinavia. *Uppåkrastudier* 7 (Acta Archaeologica Lundensia Ser. in 8° no. 40): 337-61. Lund: Almqvist & Wiksell.
- CARLSSON, D. 1991. Harbours and trading places on Gotland AD 600-1000, in O. Crumlin-Pedersen (ed.) *Aspects of maritime Scandinavia AD 200-1200* (Proceedings of the Nordic Seminar on Maritime Aspects of Archaeology): 145-58. Roskilde: The Viking Ship Museum.
- 1999. "Ridanäs" – Vikingahamnen i Fröjel. Visby: ArkeoDok.
- CRUMLIN-PEDERSEN, O. 1999. Ships as indicators of trade in Northern Europe 600-1200, in J. Bill (ed.) *Maritime Topography and the Medieval Town*: 11-20. København: Nationalmuseet.
- ERICSON-BORGGREN, T. 1993. *Åhus 42:84 m. fl. Åhus sn. Fornlämning 35. Skåne*. Kristianstads Läns Museum Rapport 1993: 12. Kristianstad.
- FEVEILE, C. (ed.) 2006. *Det eldste Ribe. Udgravninger på nordsiden af Ribe Å 1984-2000* (Ribe Studier bd 1.1 & 1.2). Aarhus: Jysk Arkæologisk Selskab.
- FEVEILE, C. & S. JENSEN. 2000. Ribe in the 8th and 9th century. A Contribution to the Archaeological Chronology of North Western Europe. *Acta Archaeologica* 71: 9-24.
- FILIPOWIAK, W. 1993. Die Häfen von Wollin im 9. - 14. Jahrhundert, in M. Gläser (ed.) *Archäologie des Mittelalters und Bauforschung im Hanseraum*: 261-9.
- HERRMANN, J. 2005. *Ralswiek auf Rügen. Die slawisch-wikingschen Siedlungen und deren Hinterland. Teil III – Die Funde aus der Hauptsiedlung* (Beiträge zur Ur- und Frühgeschichte Mecklenburg-Vorpommerns 37). Schwerin: Archäologisches Landesmuseum für Mecklenburg-Vorpommern.

- HJÁRTHNER-HOLDAR, E., K. LAMM & B. MAGNUS. 2002. Metalworking and Central Places. *Uppåkrastudier 6* (Acta Archaeologica Lundensia Ser. in 8° no. 39): 159-83. Lund: Almqvist & Wiksell.
- HODGES, R. 1982. *Dark Age Economics: The Origins of Towns and Trade AD 600-1000*. London: Duckworth.
- 2000. *Towns and Trade in the age of Charlemagne*. London: Duckworth.
- HOHENBERG, P.M. & L.H. LEES. 1996. *The Making of Urban Europe 1000-1994*. Cambridge (MA): Harvard University Press.
- JAGODZIŃSKI, M. & M. KASPRZYCKA. 1991. The early medieval craft and commercial centre at Janów Pomorski near Elbląg on the South Baltic Coast. *Antiquity* 65: 696-715.
- JANKUHN, H. 1956. *Haithabu. Ein Handelsplatz der Wikingerzeit*. (3., ergänzte Auflage). Neumünster: Wachholtz.
- JANKUHN, H., KURT SCHIETZEL & HANS REICHSTEIN (ed.). 1984. *Archäologische und naturwissenschaftliche Untersuchungen an ländlichen und frühstädtlichen Siedlungen im Deutschen Küstengebiet vom 5. Jahrhundert v. Chr. bis zum 11. Jahrhundert n. Chr. Bd. II: Handelsplätze des frühen und hohen Mittelalters*. Weinheim: Deutsche Forschungsgemeinschaft.
- JANSSEN, W. 1987. *Die Importkeramik von Haithabu* (Die Ausgrabungen in Haithabu 9). Neumünster: Karl Wachholtz.
- JÖNS, H., F. LÜTH & M. MÜLLER-WILLE. 1997. Ausgrabungen auf dem frühgeschichtlichen Seehandelsplatz von Groß Strömkendorf, Kr. Nordwestmecklenburg. *Germania* 75: 193-221.
- JÖNS, H. In press. Ports and emporia in the region – the south coast (from Heðeby to Usedom/Wolin), in A. Englert (ed.) *Wulfstan's Voyage. The Baltic Sea region in the early Viking Age as seen from shipboard*. Roskilde: Viking Ship Museum.
- KIRPICHNIKOV, A.N. 1985. Rannesrednekovaya Ladoga (itogi arkeologicheskikh issledovaniy). *Srednekovaya Ladoga*: 3-26. Leningrad: Nauka.
- 1997. Rannesrednekovaya Ladoga po dannym istoriko-arkheologicheskikh issledovaniy, in A.N. Kirpichnikov & E.N. Nosov (ed.) *Drevnosti Povolokhov'ya*: 5-25. St. Petersburg: RAN IIMK.
- LATOUR, B. 2005. *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.
- MCCORMICK, M. 2001. *Origins of the European economy: communications and commerce AD 300-900*. New York: Cambridge University Press.
- NIELSEN, J.N. 2002. Bejsebakken, a central site near Aalborg in Northern Jutland, in B. Hårdh & L. Larsson (ed.) *Central Places in the Migration and Merovingian Periods. Papers from the 52nd Sagensymposium, Lund, August 2001*. *Uppåkrastudier 6* (Acta Archaeologica Lundensia Ser. in 8° no. 39): 197-213. Lund: Almqvist & Wiksell.
- NÄSMAN, U. 2000. Exchange and politics: the eighth-early ninth century in Denmark, in C. Wickham & I. Lyse Hansen (ed.) *The long eighth century. Production, distribution and demand. The transformation of the Roman World* 11: 35-68. Leiden: Brill.
- OHLSSON, T. 1976. The Löddeköpinge Investigations I. The Settlement at Vikhögsvägen. *Meddelanden från Lunds universitets historiska museum* 1975-76, New series vol. 1: 58-161.
- PALMER, B. 2003. The Hinterlands of Three Southern English Emporia: Some Common Themes, in T. Pestell & K. Ulmschneider (ed.) *Markets in Early Medieval Europe. Trading and 'Productive' sites, 650-850*: 48-60. Macclesfield: Windgather.
- SANKE, M. 2001. Gelbe Irdenware, in H. Lüdtker & K. Schietzel (ed.) *Handbuch zur mittelalterlichen Keramik in Nordeuropa*. bd. 1: 271-428. Neumünster: Wachholtz.
- SAWYER, P.H. 1978. Wics, Kings and Vikings, in T. Andersson & K.I. Sandred (ed.) *The Vikings. Proceedings of the Symposium of the Faculties of Arts of Uppsala University June 6-9 1977*: 23-31. Uppsala: Almqvist & Wiksell International.
- SCHORNECHT, U. 1977. *Menzlin. Ein frühgeschichtlicher Handelsplatz an der Peene*. Berlin: Deutscher Verlag der Wissenschaften.
- SCHÖN, V. 1995. *Die Mühlsteine von Haithabu und Schleswig* (Berichte über die Ausgrabungen in Haithabu 31). Neumünster: Wachholtz.
- SINDBÆK, S.M. 2005. *Ruter og rutinisering. Vikingetidens fjernhandel i Nordeuropa*. With English summary. Copenhagen: Multivers.
- 2006. Viking Age Wolin and Baltic Sea Trade. Proposals, Refusals, and Engagements, in T.K. Möller Hansen & K. Buck Pedersen (ed.) *Across the Western Baltic. Proceedings from an archaeological conference in Vordingborg*: 267-82. Vordingborg: Sydsjællands Museum.
- SKRE, D & L. PILØ. In press. Excavations and surveys at Kaupang and Huseby 1998-2003. Background and results. Århus: Aarhus University Press.
- STANISLAWSKI, B. 2000. Ceramika typu Fresendorf w badaniach nad wczesno redniowieczn ceramiką słowiańską. *Materiały Zachodniopomorskie* 46: 125-56.

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- STEPPUHN, P. 1998. Die Glasfunde von Haihabu. *Berichte über die Ausgrabungen in Haihabu* 32. Neumünster: Wachholtz.
- SVANBERG, F. & B. SÖDERBERG. 2000. *Porten til Skåne: Löddeköpinge under järnålder och medeltid*. Arkeologiska studier kring Borgeby och Löddeköpinge 2; Riksantikvarieämbetet, Arkeologiska undersökningar 32. Lund: Riksantikvarieämbetet.
- ULRIKSEN, J. 1998. *Anløbspladser. Besejling og bebyggelse i Danmark mellem 200 og 1100 e.Kr.* Roskilde: Vikingskibshallen.
- VERHULST, A.E. 2002. *The Carolingian Economy*. Cambridge: Cambridge University Press.
- WARNKE, D. 1993. Rostock-Dierkow – ein Wirtschaftszentrum des 8./9. Jahrhunderts an der Unterwarnow. *Zeitschrift für Archäologie des Mittelalters* 20 (1992): 63-80.
- WIETRZICHOWSKI, F. 1993. *Untersuchungen zu dem Anfang des frühmittelalterlichen Seehandels im südlichen Ostseeraum unter besonderer Berücksichtigung der Grabungsergebnisse von Groß Strömkendorf* (Wismarer Stud. Archäologie und Geschichte 3). Wismar: Stadtgeschichtliches Museum Wismar.

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