

POTTERY MARKETS IN THE ANCIENT GREEK WORLD

(8th - 1st CENTURIES B.C.)

Proceedings of the International Symposium
held at the Université libre de Bruxelles
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Edited by
Athena Tsingarida and Didier Viviers

ÉTUDES D'ARCHÉOLOGIE 5



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With the contribution of
Zosia Archibald, Alain Bresson, Fabienne Burkhalter, Véronique Chankowski, Franca Cibecchini,
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Sandrine Elaigne, Roland Étienne, Alan Johnston, Elisabeth Langridge-Noti, Eleni Manakidou,
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ABBREVIATIONS

ABV = J.D. BEAZLEY, *Attic Black-figure Vase-painters* Oxford, 1956.

Add^P = J.D. BEAZLEY, *Addenda: Second Additional References to ABV, ARV² and Paralipomena* (compiled by T.H. Carpenter) Oxford, 1989.

AGRP = T. Melander and J. Christiansen (eds), *Ancient Greek and Related Pottery*, Copenhagen, 1988.

APP = J.H. OAKLEY, W.D.E. COULSON, O. PALAGIA (eds.), *Athenian Potters and Painters* Oxford, 1997.

APP II = J.H. OAKLEY and O. PALAGIA (eds.), *Athenian Potters and Painters Volume II*, Oxford, 2009.

ARV² = J.D. BEAZLEY, *Attic Red-figure Vase-painters* Oxford, 1963.

The Athenian Agora III = R.E. WYCHERLEY, *Literary and Epigraphical Testimonia*, Princeton (N.J.) 1957 [*The Athenian Agora III*].

The Athenian Agora XII = B.A. SPARKES and L. TALCOTT, *Black and Plain Pottery of the 6th, 5th and 4th Centuries B.C.*, Princeton (N.J.), 1970 [*The Athenian Agora XII*].

The Athenian Agora XIV = H. THOMPSON and R.E. WYCHERLEY, *The Agora of Athens : the history, shape and uses of an ancient city centre*, Princeton, 1972 [*The Athenian Agora XIV*].

The Athenian Agora XIX = G. LALONDE, M. LANGDON, M.B. WALBANK, *Inscriptions*, Princeton (N.J.), 1991 [*The Athenian Agora XIX*].

The Athenian Agora XXIII = M. MOORE, and M.Z. PHILIPPIDES, *Attic Black-Figure Pottery*, Princeton, 1986 [*The Athenian Agora XXIII*].

BRESSON, 2007 = A. BRESSON, *L'économie de la Grèce des cités (fin de Vie-Ier siècle a.C.). I. Les structures et la production*, Paris.

BRESSON, 2008 = A. BRESSON, *L'économie de la Grèce des cités (fin de Vie-Ier siècle a.C.). II. Les espaces de l'échange*, Paris.

JOHNSTON 1979 = A. JOHNSTON *Trademarks on Greek Vases*, Warminster.

JOHNSTON 2006 = A. JOHNSTON *Trademarks on Greek Vases. Addenda*, Oxford.

Le vase grec = P. ROUILLARD, A. VERBANCK-PIERARD (eds), *Le vase grec et ses destins*, Munich, 2003.

Para = J.D. BEAZLEY, *Paralipomena: Additions to Attic Black-Figure Vase-Painters and to Attic Red-figure Vase-painters* Oxford, 1971.

TSINGARIDA, 2009 = A. TSINGARIDA (ed.), *Shapes and Uses of Greek Vases (7th – 4th centuries B.C.)*, Brussels.

JOINING UP THE DOTS: MAKING ECONOMIC SENSE OF POTTERY DISTRIBUTIONS IN THE AEGEAN AND BEYOND

Zosia ARCHIBALD

“For all the modern historians’ insistence on the marginality of ancient technicians, the sense of menace coursing through some of our sources suggests otherwise. And for all Plato’s and Aristotle’s dreams of a *banausos*-free ideal state, even from the point of view of mythology Athens was a technician’s city. According to a well-known story, the parents of the first Athenian, Athena and Hephaestus, were both technicians.”

(S. CUOMO, *Technology and Culture in Greek and Roman Antiquity*, Cambridge, 2007, 38, citing Aischylos’ *Eumenides* 13 *et al.*)

THEORIES OF ANCIENT COMMODITY EXCHANGE

The relationship between surviving fragments of ancient pottery and economic activity is a complex one. Ceramics are proverbially one of the most durable and widespread symptoms of production, distribution, and exchange. Yet the difficulties associated with identifying the value of pottery in economic relations has discouraged scholars from attempting to analyse the very material that can potentially yield objective information about all three categories of activity referred to. If ceramics are symptoms of exchange, then ceramic evidence charts aspects of human motivation, economic capacity, industrial organisation and transport, as well as reflecting the taste for particular products and commodities, whether as containers or as associated items.

Such an approach to the analysis of economic relations requires us to develop concepts that will explain how ceramics fit into wider patterns of economic exchange, which we can identify or reconstruct on a theoretical basis. This challenging task needs careful and transparent articulation. We cannot talk about “distribution”, for example, without first making clear what was being distributed and to whom. The transportation of commodities does not occur in chaotic conditions. The owners of boats, carts, or mules would not willingly have risked sending out transports, unless there were strong reasons for thinking that they would return with payment, perhaps mainly in the form of reciprocal products. So we may assume that if commodities travelled, this was because some knowledge of what was required, or a detailed awareness of what would sell, was available to those sending out goods at the supply end. The implication is that a clear set of relationships existed between the interested parties. The existence of specific, bilateral or multi-lateral relationships seems to be confirmed by the evidence

from shipwrecks, to which I will return below.

The significance of such reciprocal relationships to an economic network deserves emphasis. Students of economics are made well aware of the fact that if they explore what happens when they order an item in a simulated scenario, the supply chain will quickly become chaotic unless the partners at each stage of the supply process are well informed about the precise requirements of the customer or retailer. This is because the act of responding to a request involves some modification to an existing process, whether that of production or distribution. These problems are well known to those who specialise in supply management for contemporary businesses.¹ The producer plans his operation within a given set of parameters. He or she works a given number of hours in order to produce the required number of articles, in the knowledge that the ready goods correspond to an order for which he or she will be paid. It makes little difference in principle whether the producer is paid in money, or in some other substance or produce, if that constitutes the nature of the contract between producer and recipient. If the customer makes a change to his order, then the producer must respond by adjusting his production procedure. He may need to change the number of hours he works, or the amount of raw materials that will be consumed in the process. If he produces too much, and cannot sell on the fruit of his labours, then his efforts have been wasted and his raw materials depleted. Occasional wastage of this kind may be absorbed, but constant irregularities

1 There is a considerable literature on this key commercial topic; see for example the standard handbook by VOLLMANN, BERRY, WHYBARK, and JACOBS, 2005; for a more sociologically-inclined approach to supply and demand, see eg. HODGSON 2001, 276-277.

cannot be sustained without a considerable degree of inefficiency. The producer will then have to reconsider whether there is any point in continuing with a process that may have unpredictable consequences. The degree of risk must be weighed against the time and energy involved in production. I use the terms *producer*, *customer*, *retailer*, because these are familiar terms that clarify the nature of the exchange relationship. They are familiar in a market context. We could substitute words such as *maker*, *recipient*, *translator*, or some alternative vocabulary to represent the fundamental relationship between the participants of a supply chain.

Contemporary perceptions of the potential difficulties associated with supply chains do not, of course, provide precise analogies with the world of Classical antiquity. There are very profound differences between the highly sophisticated organisation of modern production and distribution and the kinds of exchange patterns that occurred in the remote past. Production and transportation methods are generally assumed to have been irregular, sporadic, unsystematised, let alone integrated, even under the Roman Empire.² On the other hand, patrons, clients, merchants, and ordinary householders, whether free, unfree, or slave, had confident expectations about the delivery of a wide variety of products and services, as the Vindolanda writing tablets have graphically demonstrated.³

2 This is not the place for a wider discussion of market integration, long a subject of dispute amongst historians (viz. FINLEY 1985 [1999], 33-34; 107; 137; 144-145; 192-193; the most explicit statement of the lack of Roman Imperial market integration is BANG 2008, 73-127; 150-238, though his bold conjectures about the prevailing forms of exchange are neither directly demonstrable nor as convincing as the author would wish: see Brent Shaw's review, 2010, 267). The most telling evidence about market coherence under the Roman Empire comes from banking contracts and their means of legal enforcement (see the contributions to VERBOVEN, VANDORPE, and CHANKOWSKI (eds.), 2008, particularly T. TERPSTRA); on Greek contracts: HARRIS 1989 [2006]; on commercial contracts and agreements: BRESSON 2000, esp. 13-84; 109-149.

3 BOWMAN 1994, 65-81 (including quality of life in the ranks, and in local civilian circles, as well as in the officer class); on pre-Imperial markets see ARCHIBALD 2005 and further discussion below. For studies of ceramic networks, COOPER 2007, 41-45 provides a cumulative analysis of supply patterns to key sites in lowland southern Britain between AD45 and AD300, with some consideration of the nature of demand; see now in general

Which of these two perspectives is closer to the truth when we want to consider Mediterranean regions in a more holistic way? It is likely that both views approximate, in different ways, to what happened when commodities travelled. Piracy, theft, and exploitation occur even in advanced capitalist economies (and are parasitic to them). With regard to Classical antiquity, there has been a tendency to over-estimate the difficulties of transporting commodities, particularly overland transportation. More recent studies of transport show that inaccurate perceptions of these difficulties have unduly distorted the broad picture of Mediterranean traffic and communications.⁴ We should not assume that, just because overland transportation was more cumbersome and time-consuming than maritime routes, merchants were therefore discouraged from using overland ways. Much would have depended on the incentives for given commissions. Bottlenecks, predatory tax collectors, and exploitative landlords certainly existed. Nevertheless, specific claims for legal redress show that we should not underestimate the robustness and transparency of local justice, even at considerable distances from major urban hubs.⁵ The complexity of the surviving evidence associated with the supply of ancient commodities has been apparent for a long time. New evidence, about the infrastructure of overland connections

WILSON 2009; FULFORD 2009; REYNOLDS 2010.

4 See ADAMS 2007, esp. 259-282 for discussion of the papyrological evidence for transport and ANDREAU 2010, 37 (with further references) for a review of the technological debate; piracy parasitic to exchange: HORDEN and PURCELL 2000, 157.

5 See refs n.2 above; BANG (2008, 131-201) develops his theme of precarious Imperial Roman markets using the Mogul analogy; BOWMAN (1994, 79), refers to his document 33 (= *Tab. Vindol. II* 344) where a man describing himself as "hominem trasmarinum et innocentem" seeks redress after an arbitrary beating; as well as *Tab. Vindol. II* 281, 317 and 322, three petitions addressed to the prefect of the Ninth Cohort of Batavians and commanding officer at Vindolanda in the period AD97-102 (*ibid.*, 17). Whereas Bowman cites these instances to confirm the due operation of law, Bang cites the case of the *homo transmarinus* in order to make the opposite point, namely the fact of arbitrary violence (BANG 2008, 151). The guarantees afforded merchants by the Odrysian successor of Kotys I c.359BC on the Pistiros inscription provide a key piece of evidence for earlier regulatory patterns (CHANKOWSKI and DOMARADZKA 1998; *SEG* xliii, 486; xlv, 872*; xlvii, 1101).

(notably the wide availability of pack animals for local transportation), as well as the opportunities for financing exchange in a legally enforceable environment, has enriched our understanding of capacity.⁶ Yet there is still a wide spectrum of opinion about what this information tells us about broad economic patterns and about changes in these patterns between the early and late first millennium BC. One new direction in the study of ancient economies focuses on performance and institutional development, particularly in terms of the “New Institutional Economics”, as articulated in the work of Douglass North, although the nature of “performance”, especially when it is expressed in terms of economic growth, has aroused mixed responses. Historians prefer to look at longish time sequences for evidence of economic growth, in part because of the difficulty of isolating appropriate data sets that may stand in for statistical evidence. In practice, temporary fluctuations flatten out over time, making it hard to identify aggregate growth. At the broadest level of analysis it is reasonable to suppose that, in pre-industrial economies, periodic intensification of food production was generally cancelled out by population growth spurts.⁷ Nevertheless, the products of human labour are not cancelled out by mortality. Innovations, social and political, as well as those that have manifest economic value, contribute to overall economic expansion in a variety of ways. The net growth of domestic space in the Aegean area over the course of the first millennium BC, with significant step changes beginning in the mid

fourth century BC, are one indicator of sustained, long-term economic evolution that affected a large proportion of rural and urban populations, even if we lack sufficient evidence at the lower end of the social scale.⁸ An economist would recognise the aggregate increase of household accommodation as a genuine indicator of rising standards of living, even though we have no direct way of representing such phenomena in a putative table of GDP. Domestic space coincidentally offers an objective way of evaluating aspects of social differentiation. Although some wealthier properties become apparent in the second half of the fourth century BC, the variety of form, of visible expenditure and consumption that these display, tend to indicate that social hierarchies may in practice have been less steep than literary sources suggest.⁹ There is no question that there were rich families and individuals. It is the evaluation of non-elite social groups in the second half of the first millennium BC that has undergone the greatest scholarly reconsideration.

Moses Finley’s assimilation of Greek and Roman high status groups elided profound diachronic differences in the patterns of Mediterranean exchange.¹⁰ The imposition of tribute on newly acquired provinces and territories by the expanding Roman state modified the economic power and capacity of

6 ADAMS 2007, 103-105; 119-195; ARCHIBALD, forthcoming 2013; the combined contributions on private and public banking in the Near East, Aegean, Egypt, and Italy, between the sixth century BC and the third century AD in the volume edited by VERBOVEN, VANDORPE, and CHANKOWSKI (eds.), 2008, provide substantial evidence of stable legal mechanisms that reinforced regular exchange contracts in a wide variety of social environments within the study areas (and are not confined to a small number of large urban centres).

7 SCHEIDEL *et al.*, 2007, 5-12 for a programmatic statement adopting the concepts of “New Institutional Economics” (=NIE) as applicable for the remote past of Eurasia; *ibid.*, 50-66 outlining the “low equilibrium trap” where population responses to food surpluses cancel out gains in productivity; *ibid.*, 113-143 for a fuller exposition of the potential value of NIE as a theoretical set of tools for ancient history by FRIER and KEHOE; see BANG’s review, *JRS* 99 (2009), esp. 199-206. The volume was published too late for Bang to take its content into account in his monograph.

8 MORRIS 2005; NEVETT 2010, 30-42; 52-56.

9 SCHEIDEL *et al.*, 2007, 219-240 (I. Morris, who uses the term “middling oligarchic citizen states” to illustrate the dominant archaic social forms of the early first millennium BC); *cf* 385-406 (S. VON REDEN) on consumption in Classical Greece; on housing see esp. the contributions to AULT and NEVETT 2005.

10 FINLEY 1985 [1999], 45-61; DAVIES 1981 on Athenian social mobility, especially Chapter V, 73-87, “Continuity and stability”, with the evidence discussed there that confirms Pseudo-Demosthenes’ statement that ‘to be continuously prosperous with one’s property is not customary for the majority of the citizens’ ([Dem] 42.4); for the material symptoms of diachronic changes see now WILSON 2009; ANDREAU 2010, 89-95; 112-141; Bang notes the step change with the emergence of imperial tributary strategies: “No wonder that archaeologists again and again emphasise the different scale of activity between Greek and Roman history. Imperial tribute extraction must have dramatically changed and expanded or at least considerably modified the pre-existing patterns of economic circulation in the Mediterranean world.” (BANG 2008, 114; *cf* 47-48). The same author isolates the imperial landed aristocracy as the drivers of distance exchange, *ibid.*, 96-110, 290-305; *cf idem* 2009, 205-206.

tribute-paying areas. These processes have yet to be studied in any detail, as they surely deserve to be, if historians want to understand how Roman power changed the economies of its constituent provinces.¹¹ Finley's reluctance to distinguish between different interest groups and different phases of economic transformation are two aspects of ancient economic performance that have received scholarly attention. There is another key component of his analysis that has so far evaded systematic scrutiny, namely his evaluation of ancient markets. Finley's insistence on the primacy of ranks and statuses over market exchange has not been fully considered and its implications spelt out. Since the publication of Finley's *The Ancient Economy*, many scholars have accepted Finley's negative assessment of the economic role of markets in Classical antiquity. Finley himself stressed that "the inapplicability to the ancient world of a market-centred analysis was powerfully argued by Max Weber and by his most important disciple among ancient historians, Johannes Hasebroek; in our own day by Karl Polanyi."¹² Although the positions held by Weber, Hasebroek and Polanyi look less secure than they did when Finley penned these words, we continue to have a rather opaque understanding of what stimulated production in the first place, who invested in the building of kilns and workshops; how the volume of production was planned and managed; and what kinds of links there were between producers, transporters, and recipients. The problem of *adjusting supply to demand* remains the same, irrespective of the kind of economy that is envisaged, although the structure of the economy, and the ways in which production and supply are negotiated, will obviously affect the rate, efficiency, and quality of the outcome. So the dynamics of supply and demand must be taken into account, whether we consider market exchange to have had a marginal or a significant impact on the economies of ancient societies. One of the clearest examples of supply and demand relevant to this period and context is the fluctuating demand for milk products in the Cretan countryside between the Bronze Age and the early modern period.¹³

11 The contributions to FROHLICH and MULLER 2005 (especially those of I. SAVALLI-LESTRADE, J.-M. BERTRAND, J.-L. FERRARY and M. SEVE) provide a useful point of departure for such an investigation.

12 FINLEY 1985 [1999], 26; cf 33-34; 44-45; 48; 107; 111; 158; 163; see further below and references in n.17.

13 L. NIXON and S. PRICE, "The diachronic analysis

To students of economics, notions of *supply* and *demand* are so commonplace as to need little explanation or justification. But these terms have rarely been used in an explicit, clearly articulated way in discussions of ancient economies in Classical antiquity. They are still often used in a rather tentative way.¹⁴ The reasons are not hard to find. It has long been assumed that ancient societies were composed of self-sufficient units, with economies based overwhelmingly on agricultural production. The exchange of goods was peripheral and confined largely to luxury items, considered of negligible overall economic significance. In this scenario, social structures played a decisive role in determining economic structures.¹⁵

This model of ancient economies is no longer as dominant as it was two or three decades ago. The foundations of this model, which lie in the speculative theories of social historians in the second half of the nineteenth century, have to some extent already been discredited. The socio-economic theories of Karl Bücher, Werner Sombart, their contemporaries and successors, including Max Weber, were focused primarily on Medieval and post-Medieval societies. Their hermeneutic approaches shared the same essential methodology, namely the attempt to explain early modern and more recent *capitalist* history by recourse to earlier developments, in effect winding back the present into the past. But this procedure apparently required

of pastoralism through comparative variables", *BSA* 95 (2001), 395-424.

14 Alain Bresson's discussion of *l'offre* and *la demande* in: BRESSON, 2007, 218-224 in the context of innovation, is exceptional. See SCHEIDEL *et al.*, 2007, 6-12 with an explanation of a historical analysis based on production, distribution and consumption; 273-274; 286; 291; 405-406; 574-575, for explicit use of the term demand.

15 The principal accounts of *substantivism* and its perceived opposite, *modernism* in the context of Classical antiquity are Moses FINLEY's two monographs, *The Bücher – Meyer Controversy*, New York, 1979 and FINLEY 1985; there have been many critiques, but I refer the reader to I. MORRIS' introduction to the 1999 edition of Finley's book; cf also I. MORRIS and J.G. MANNING, "Introduction", in: *The Ancient Economy: Evidence and Models*, Stanford University Press, 2005, 1-44; W. SCHEIDEL, I. MORRIS, and R. SALLER, "Introduction" to the same authors' *The Cambridge Economic History of the Greek and Roman World*, 2007, 1-12. The view that trade amounted principally to exotic luxuries is restated by BANG 2008, 51, 110, 140-144; 257-261; 280-306.

historians to recognise profound discontinuities across time. Complex modern societies with their industrial infrastructures were contrasted by these authors with simpler, primitive societies, based squarely on a household economy. In part the contrast between post-Renaissance capitalism and the world of antiquity was ideologically driven. Bücher, like Karl Marx, believed that the “profit motive” was not shared by early societies.¹⁶

So long as the focus of debate was on issues of subsistence, the autarkic model of ancient societies appeared relatively unexceptionable. But if products of exchange were brought into the equation, it was by no means easy to explain how exchange was managed. Exchange was not considered a defining characteristic of ancient societies by nineteenth century historians, for whom, as for Karl Marx, slavery was a feature of antiquity that distorted the processes of production and exchange.¹⁷ Max Weber was more interested than his predecessors in the distinctiveness of different cultures of antiquity but he also assumed that slave ownership set ancient societies apart from later ones. Karl Polanyi developed a concept of exchange that seemed to fit the substantivist theories of Bücher, Sombart and Weber, maintaining and enhancing the distinction between modern practice and the pre-modern European past with his three forms of transaction, namely, reciprocity, redistribution, and markets, whilst arguing that neo-classical economic theory was irrelevant to pre-industrial economies, a view shared by Moses Finley. Polanyi’s attempts to characterise economies that fall outside the purview of modern economic theory have been shown to be contradictory, inconsistent, and ideologically over-determined.¹⁸ Polanyi thought that the role of

markets in early societies was limited. Reciprocal exchanges and social redistribution were, in his view, alternate forms of exchange. The difficulty with this view is that little specific evidence has yet been found of alternative forms of exchange to market ones; not because all exchange necessarily took place in a market environment, but rather because markets involve price-setting mechanisms, which tend to affect forms of exchange outside the market. Redistribution has provided a useful way of conceptualising the storage practices of Mycenaean palaces.¹⁹ But reciprocity, in the form of gift exchange, is a concept that has led to a great deal of misunderstanding. The way in which *gift exchange* has been conceptualised by twentieth century historians has, it seems, been unduly influenced by anachronistic legal perspectives.²⁰ Whether an object was given freely, or with the expectation of a reciprocal act, this behaviour was embedded in a network of human relations, but the object required energy, expertise and the exploitation of specific resources, which must somehow be factored into the economy of the gesture.²¹

Athens and Modern Ideology, 128, citing POLANYI, *The Great Transformation*, 242, 244; *ibid.*, 149-188 for an in-depth discussion of the development of Polanyi’s ideas on markets and exchange; on Polanyi and “embeddedness”, see also GRANOVETTER 1985; on Polanyi and markets cf. ARCHIBALD, “Markets and Exchange: the Structure and Scale of Economic Behaviour in the Hellenistic Age”, in: Z.H. ARCHIBALD, J.K. DAVIES, and V. GABRIELSEN, (eds.), *Making, Moving, and Managing: the new world of ancient economies*, Oxford, 1-26.

19 See eg M.L. GALATY and W.A. PARKINSON, *Rethinking Mycenaean Palaces: new interpretations of an old idea*, California, 1999 [Cotsen Institute of Archaeology, Monograph 41].

20 “[Marcel] Mauss constructed pre-modern gift-giving as an acceptable counter-model to modern practices by enriching primitive gift-giving with the moral qualities which had been lost in the course of its standardisation within modern law, and by grounding gift-giving in a counterpart to modern contractual law...[...] Recent anthropological and historical studies have demonstrated how much the orientation towards a legal concept of gift giving actually contributed to misinterpretations by dividing complex exchange processes into a linear sequence of giving, receiving, and returning.” B. WAGNER-HASEL, 2006, 263; cf BRESSION 2011 on the “gift” of grain by the city of Cyrene in the early 320s BC (= IG II² 176).

21 BRESSION 2011 provides a detailed exposition of the practical mechanisms behind the “gift” of grain by the

16 K. BÜCHER, *Industrial Evolution*, tr. S.M. WICKETT, New York, 1968, 3; 152 (=K. BÜCHER, *Die Entstehung der Volkswirtschaft*, Tübingen, 1893).

17 A detailed discussion of the evolution of social theory relating to antiquity among nineteenth and early twentieth century historians is now provided by M. NAFISSI, *Ancient Athens and Modern Ideology*; WEBER on slavery: 119-120.

18 “In Polanyi’s view there was almost nothing inevitable, rational, progressive, or natural about the rise of market capitalism. Rather, it arose as the intended and unintended consequence of a series of ideological and political interventions. [...] Market capitalism was, in this sense, a *utopian* project superimposed with the help of the state, and certain interested parties, upon the communal/ natural *reality of society*”, NAFISSI, *Ancient*

Whatever the merits and demerits of these attempts in the nineteenth and much of the twentieth century to conceptualise ancient economies, this scholarly tradition has one common characteristic. Its representatives have used social or sociological theories to describe economic behaviour, rather than developing *economic* ideas or models. Economic behaviour is here explained in terms of social relations or power relations, with analogies drawn from other historical periods. By contrast, the *taxes and trade* model developed by Keith Hopkins, and the flow models explored by John Davies, are explicitly concerned with the circulation of commodities and services, without making particular assumptions about social structures.²² This does not mean that either author considered social factors to be irrelevant. That would be to misunderstand their intentions. But both were concerned with the need to create models that would represent economic factors independently of, or in addition to, the perceived social embeddedness of economic relations. It would be possible, for instance, to attempt an economic model based entirely on Finley's conceptualisation of economies, which would explain how landowners utilised their material resources to provide members of their families with furniture, ornaments, feasts, and dowries, appropriate to their rank, all of which required payment – whether in money, services, or kind – to other persons (to say nothing of the liturgies that wealthy individuals were expected to pay for in communities such as Athens).²³ The range of services that could be bought in fifth and fourth century BC Athens illustrates the degree of segmentation and horizontal specialisation, albeit in what may have been relatively exceptional

conditions.²⁴ What is missing from the “Finleyan” analysis is a consideration of what motivated the landowner's actions and how he chose to release resource to enable these various options.

Close reading of the founding texts on *substantivism* reveals that they have little to offer the scholar interested in exchange. By couching the discourse on ancient economies as a set of polarities, dubbed *primitivism* and *modernism* or *substantivism* and *formalism*, historians have made it immensely difficult to resolve the manifest contradictions between a way of thinking that privileges aspirations to autonomous, household strategies, over evidence of movement and exchange. Perhaps the most telling omission from standard accounts of ancient economies is the heritage of prehistoric societies. The exploitation of a wide range of natural resources, over extended geographical spaces, is among the very earliest characteristics of human societies. Exchange precedes rather than succeeds settled communities, as the circulation of Palaeolithic stone tools amply demonstrates. By the late Bronze Age, the circulation of commodities and resources already operated on an ambitious scale.²⁵ What kinds of social or customary mechanisms were being used to allow the movement of resources over regions, even continents? These were not mechanisms of the market type; but the wide circulation of metal bars and ingots implies socially reinforced and protected traffic. Most economic historians, following the arguments set out by Adam Smith in his *Inquiry into the nature and causes of the wealth of nations*, have assumed that contractual arrangements between societies or states represent a more advanced stage of exchange practices, distinct from the sorts of personal or group interchanges operating in early societies. Douglass North has identified third party enforcement as a prevailing characteristic of more recent societies and of impersonal market transactions.²⁶ Yet such

city of Cyrene to mainland Greek communities during a shortage in the early 320s BC (esp. 79-84).

22 K. HOPKINS, “Taxes and Trade in the Roman Empire, 200 BC-AD 400”, *Journal of Roman Studies* 70 (1980) 101-125; *idem*, “Rome, taxes, rents and trade”, in: SCHEIDEL and VON REDEN (eds.), 2002, 190-230; J.K. DAVIES, “Linear and Nonlinear Flow Models for Ancient Economies” in: MANNING and MORRIS (eds.), 2005, 127-156.

23 R. OSBORNE, “Pride and Prejudice, Sense and Subsistence”, in: J. RICH and A. WALLACE HADRILL, (eds.), *City and Country in the Ancient World*, London/ New York, Routledge, 1991, 119-145; on capital investment see now A. MÖLLER, “Classical Greece: Distribution”, in: SCHEIDEL *et al.*, 2007, 368-384.

24 E.M. HARRIS, “Workshop, marketplace, and household. The nature of technical specialization in classical Athens and its influence on economy and society.”, in: P. CARTLEDGE, E. COHEN, and L. FOXHALL (eds.), *Money, Labour, and Land: Approaches to the economies of ancient Greece*, Routledge, London, 2001, 67-96.

25 See for example LAFFINEUR and GRECO, (eds.), *Emporia: Aegeans in the Central and Eastern Mediterranean. Proceedings of the Tenth International Aegean Conference*, Liège, 2003 (2005).

26 A. SMITH, *An inquiry into the nature and causes of the wealth of nations*, Glasgow edition of the works and

descriptions do not correspond with the evidence that we find in prehistoric environments, where there is no obvious transition from what North calls a “clientised” form of exchange to an impersonal one. Part of the problem of identifying economic modes of exchange with documented evidence lies in the assumption that there was a succession of such modes in time. John Davies and I have argued that the three forms of economy that can be documented, namely “subsistence”, “command mode” and “market”, should properly be seen as alternative options, rather than as phases in the evolution of more familiar models.²⁷ In place of phased models that apply evolving methods of exchange, with different tools adapted to each phase, we would substitute optionality as a universal mechanism, with these three modes as three operative choices in any given situation. The kinds of socially protected exchange that characterised Late Bronze Age inter-community transactions may have involved a degree of ‘clientism’, to use North’s phrase. Nevertheless, the emergence of regional transfers of metal on a considerable scale, which were accompanied by a progressive standardisation of the forms exchanged, rather suggest a gradual tendency to render *some* commodities using impersonalised mechanisms. The commercial weights identified at ninth century BC Lefkandi show that, whatever the social framework of contemporary negotiations, commodities were apparently exchanged in terms of silver *minae* and their subdivisions, throughout the first millennium BC, not just in the second half.²⁸ In all likelihood the correlation of weight systems between the Near East and the Aegean was maintained without interruption, albeit in a limited number of locations. The scale of productive labour, particularly in the extractive industries, has been heavily under-appreciated for the pre-Imperial period. The importance of mining, metallurgy, and craftwork of many different forms has been studied

much more consistently in temperate Europe, which provides the right scale of comparison with the Mediterranean peripheries.²⁹ It is understandable therefore that the principal emphasis of the most substantial synthetic work on ancient economies published to date is on production, and its logical concomitant, consumption.³⁰ The focus on production and consumption has provided a more objectively structured account, although the separation of dynamic exchanges into these two distinct modes of operation has rendered it more difficult to follow up reciprocal relations and to tease out how demand and supply were matched.

My initial reflections on the subtle interplay between demand and supply aimed to draw attention to the fact that the reciprocity of this relationship needs much greater clarification. Demand needs to be located in specific social groups and the means of supply require a clear set of connections between producers, suppliers or intermediaries, and recipients. Pottery provides an excellent medium for understanding supply chains. Aegean wheel-made pottery is among the earliest inorganic commodities to acquire a specialist character. Traces of ceramic movements are abundant and among the best studied forms of material exchange. In some cases trade marks can be identified, either with batch orders, or with batch or individual prices. Pots or batches of pots could be purchased even using fractions of obols, or the kind that are now increasingly being recognised as a result of effective metal detecting and on-site flotation of excavated soil.³¹ Whether batches of pottery were selected at kiln stores, or bought from market retailers, the transaction was a market transaction. Commodity exchanges using given weights of metal, from the early first millennium BC onwards, imply market-type transactions. Whether we envisage ceramic production in the form of distributed domestic enterprises, or centralised local facilities, depending on the level of local investment (using Peacock’s hierarchy of production)³², the

correspondence of Adam Smith, R.H. CAMPBELL and A.S. SKINNER (eds.), Oxford 1976, Book 5, Ch.3; North 1990, 34-35.

27 ARCHIBALD and DAVIES, “Introduction”, in: ARCHIBALD, DAVIES, and GABRIELSEN (eds.), *The Economies of Hellenistic Societies*, 1-18.

28 J. KROLL, “Early Iron Age balance weights at Lefkandi, Euboea”, *OJA* 27 (2008), 37-48; cf. *idem*, “The Monetary Use of Weighed Bullion in Archaic Greece”, in: W.V.HARRIS (ed.), *The Monetary Systems of the Greeks and Romans*, Oxford, 2008, 12-37.

29 See eg. K. KRISTIANSEN, *Europe Before History*, Cambridge, 1998 [*New Studies in Archaeology*], 210-410.

30 W. SCHEIDEL, I. MORRIS, and R. SALLER, “Introduction”, *The Cambridge Economic History of the Greek and Roman World*, 2007, 1-12.

31 JOHNSTON 2006; for evidence of obol fractions see now the Colophon hoard published by KIM and KROLL 2008.

32 D.S. PEACOCK, *Pottery in the Roman World*, London, Longmans, 1982.

implication of such transactions is that they occurred in a market-type environment. The fragile nature of pottery means that most people will have had some exposure to market exchange (whether directly or vicariously), in order to provide the most essential items of daily use – iron tools; leather shoes; and pots (Pl. *Resp.* 2. 371a-372c). Plato himself does not seem to notice the ubiquity of pottery; but this is part of the “useful lie” that the philosopher propagates, to denigrate and control the powers of those whose *technai* threatened to compete with his ideas about elite control of society, as the epigraph to this paper emphasises.³³

Serafina Cuomo’s investigation of Plato’s treatment of technicians has revealed the extent to which Plato’s views can be seen to be partisan and unrepresentative of his own society. Technological knowledge was one way in which individuals without traditional credentials, whether through family connections or citizenship, could challenge existing elite groups. What is more, Plato’s rather dismissive approach to luxuries (*Resp.* 2. 372e-374a) shows that he was all too aware that his contemporaries were deeply wedded to a range of commodities that constantly swelled the ranks of the despised technicians from near and far. How is it then that the prevailing image of Classical Aegean societies is dominated by impoverished peasants? One reason may be the conviction, based on a calculation of Fernand Braudel’s, that at least sixty, perhaps even seventy per cent of pre-modern gross product never reached a market.³⁴ This is surely a misunderstanding of the difference between the tendency of organic bulk commodities, particularly cereals, to remain in storage, until such time as they were sold, carted to landlords in the form of tithes or rents (in order to keep transaction costs low), and the

monetary evaluation of stock, which would always find its way into ledgers, account books, and other inventories, whether it was paid out to landlords, or sold to merchants and *sitōnai* in a commercial environment.³⁵ It is unlikely that such stock was not accounted for, so it would have constituted a very real component of an owner’s capital assets and must be included in any assessment of the circulation of economic resource. The dynamics of exchange in the case of cereals may well have been relatively slow in relation to other commodities. They tell us nothing about the dynamics of other domestic essentials: roof tiles, carpentry timber, fuel, iron tools, leather shoes and equipment, to say nothing of even the most modest personal consumables, none of which were manufactured in the home.³⁶

STUDYING CERAMIC ASSEMBLAGES

When we come to consider the surviving data for ancient ceramics, it is the quantity of evidence that presents challenges for the researcher, not the lack of it. Fired clay was produced in very large quantities in many locations throughout the ancient Mediterranean and in many neighbouring regions. Older examples of ceramic containers were already being discovered accidentally in Hellenistic and Roman Imperial times (occasionally in earlier contexts, as in the case of discoveries on Delos: Thuc. I.8.19), as centres of population expanded over former cemeteries. Decorated pottery has been an object of curiosity, albeit for a very limited number of people, for the last thousand years at least. The selection of ancient ceramics, particularly fine wares, by museum curators and collectors on the basis of aesthetic and technical considerations means that much of the material accumulated in museum collections cannot be used as a basis for extrapolating *economic* patterns.³⁷ Ceramics can

33 S. CUOMO, *Technology and Culture in Greek and Roman Antiquity*, Cambridge, 2007, 22-43, esp. 25-32.

34 HORDEN and PURCELL 2000, 567, citing F. BRAUDEL, *The Mediterranean and the Mediterranean World in the Age of Philip II*, London and New York 1972, 425, ponder the fact that this proposition tends to impose the model of A.H.M. Jones and Moses Finley. Braudel argues: “the Castilian villages in 1576 must have consumed 26,000 quintals of the 60,000 they produced, that is about 50 per cent; but the other half did not necessarily go on to market, some of it went straight into the tithe barns or granaries of urban landlords. So 60 per cent or perhaps 70 per cent of the overall production of the Mediterranean never entered the market economy to which our methods of accounting mistakenly seek to assimilate it.”

35 Bresson’s analysis of the exchange of grain at Cyrene to civic *sitōnai* in the early 320s BC shows how civic authorities could negotiate prices for very substantial quantities of bulk grain without undermining the local market (BRESSON 2011).

36 BRESSON 2007, 193-203 on artisanal crafts and more generally 183ff, on productive activities associated with agriculture and the exploitation of natural resources.

37 V. NØRSKOV, *Greek Vases in New Contexts. The Collecting and Trading of Greek Vases – An Aspect of the Modern Reception of Antiquity*, Aarhus, 2002.

only be used as symptoms of economic activities if material is collected and analysed for these purposes. Consequently there need to be careful practical guidelines in the process of collecting, classifying, and analysing pottery that allow us to distinguish schemes and trends in particular places of exchange, among particular users, and production in specific locations. At present such guidelines do not yet exist for Greek pottery.³⁸

The practical problem that we face as twenty-first century researchers is that surviving ceramic data from antiquity is mediated through complex dynamics connected with the individual histories of manufactured vessels, as well as their reuse and afterlives.³⁹ The presence or absence of particular fabrics or shapes can only be meaningful when viewed in the context of other commodities and materials, whether those that travelled alongside the former, or were used in conjunction with them. The tendency of research reports to separate out fine wares from other ceramics and commodities makes it difficult to reconstruct the ways in which ceramic containers were used, transported and exchanged. Table wares have traditionally had particular value as chronological markers, because they are more susceptible to finer chronological subdivisions than are other fabrics.⁴⁰ By prioritising chronological over other concerns, scholars have not necessarily paid equal attention to the relationships between table wares and other ceramics, and between ceramics and their immediate contexts. The organisation of

ceramic reports has contributed in some degree to the comparatively low value that historians have traditionally given to this type of material evidence. Ceramics can thus hardly be compared in any grand economic analysis with taxation, market regulations, and landholding.

There has been a sea change in the use of ceramic data by social and economic historians of antiquity. Michael Rostovtzeff's frequent recourse to ceramic evidence in his *Social and Economic History of the Hellenistic World*² (1953) was not imitated by historians of the second half of the twentieth century, with some notable exceptions. More recently, however, and particularly during the last decade, there has been a conscious attempt to integrate material data with other kinds of economic evidence.⁴¹ We no longer need to argue the basic principle that patterns of distribution and consumption mattered to the economic wellbeing of ancient societies.⁴² The case for the significant role of broad flows of resource has been made convincingly, irrespective of individual interpretations of the volume of flows.⁴³ What still needs to be understood are the identifiable patterns that shaped given commercial transactions. These particular patterns arguably reflect the distinctive features of economic relationships within the Mediterranean region. Despite its ubiquity, pottery is paradoxically absent from most discussions of consumption patterns, including those in *The Cambridge Economic History of the Graeco-Roman World*, even though most scholars who research pottery take it for granted that these artefacts were marketed, whatever the precise mechanism for buying and selling.⁴⁴

38 *Pottery in Archaeology*, the handbook edited by Clive Orton, Paul Tyers, and Alan Vince, draws on data from Roman Corinth, for instance, as well as a wide range of material from northern Europe, but the guide lines recommended there, or equivalent procedures, have not (yet) been adopted as standards and principles in the majority of projects in the Aegean, even if they are an acknowledged feature of many individual international initiatives.

39 "It must be realised, however, that the archaeological distribution patterns [of ancient ceramics] cannot be equated with the ancient circulation of goods.[] Research has shown, for example, that historically documented trade can only partially be correlated with the distribution of ceramics from the same period. [] In addition, it has proven impossible to correlate archaeological distribution directly with specific mechanisms of exchange." (VAN WIJNGAARDEN, "The complex past of pottery: an introduction", in: CRIELAARD *et al.*, 1999, 6).

40 C. ORTON, P. TYERS, and A. VINCE, *Pottery in Archaeology*, Cambridge, 1993 [*Cambridge Manuals in Archaeology*], 5-11; 182-185; 217-219.

41 See esp. the contributions of BENNETT, MÖLLER, MOREL, and HARRIS in: SCHEIDEL *et al.*, 2007.

42 Notwithstanding the negative remarks that Finley is well known to have made about pottery (notably 1985 [1999] 33), his glosses in the second edition of *The Ancient Economy* (1985) include some perceptive remarks about the investment by landowners in Egyptian potteries as reflected in three mid third century AD papyri from Oxyrhynchus (FINLEY 1985 [1999], 190-191, citing COCKLE 1981).

43 See DAVIES, *Linear and Nonlinear Flow Models*; demand creation and commodity flows are also the subject of Z.H. ARCHIBALD, J.K. DAVIES, and V. GABRIELSEN (eds.), *The Economies of Hellenistic Societies*, Oxford, 2011.

44 WILSON 2009, 229-245 provides a preliminary analysis of Roman pottery exchange patterns.

ECONOMIC NETWORKS REFLECTED IN CERAMIC DISTRIBUTIONS

Bearing in mind what has already been said about the difficulties of recognising economic exchanges on the basis of pottery distributions, how can we set about identifying discrete patterns within the overall movement of commodities, in terms of producers, transporters, and end users?

1. We first need to clarify the kinds of questions that we want to answer. Archaeologists collect information about the context or material that they are working on. This may be sufficient to answer questions about, say, production, but not necessarily about distribution, or, more importantly, how one set of processes, such as the production of a ceramic batch, fitted into the organisation of retail trade. In order to answer that kind of question, we need to know much more about the interrelationship of local economic units. This requires a more holistic and historically-informed approach to the publication of data from individual archaeological sites than is current practice.
2. Second, both historians and archaeologists need to develop a set of appropriate conceptual tools, in order to distinguish the ways in which ceramic material may have been disseminated, using information derived from the fabric's use-history and afterlife. This does require the adoption of explicit models. In the absence of adequate data to formulate theories, models are the most appropriate way of characterising transactions. I refer here particularly to the graphic representations developed by my colleague, John Davies.⁴⁵
3. Third, we need to be able to fit suitable data into the models. The relationships between different economic agents must be seen to work within the context of ancient data and of an explicit operating model.
4. Finally, we must understand whether the results are meaningful. There is little point in pursuing methods or procedures unless they enhance what we know already.

In the Aegean area, as in other parts of the Mediterranean periphery, the principal research method for collecting spatial data from ancient sites and their resource procurement zones has

been the intensive survey. This strategy can deliver economic information, but the quality of the data is unfortunately inadequate for the kinds of purposes envisaged here, particularly with regard to dynamic exchanges.⁴⁶ So a review of the region must rely on selective sample evidence that reflects the quality of particular data sets, rather than attempt a genuinely representative overview. Recent investigations of kiln sites in Attika have revealed the outlines of successive workshops, both in the periphery of the ancient city and in its rural hinterland.⁴⁷ This research provides a much-needed framework for the understanding of distributions of Attic fine wares, which in turn played a formative role in the design of other Aegean table wares of the fourth to first centuries BC.

I will confine the rest of my discussion to the interpretation of evidence from four locations. Two are from within the Aegean region - the contents of selected domestic units at Classical Halieis, Argolid, and those of a Hellenistic well at Eretria, on the island of Euboea. The third location is outside the coastal hinterland, and consists of finds from the British excavations at Pistiros, in inland Thrace. These three assemblages will also be compared with material from a complex of rooms at Panskoye, near Chersonesus, in Crimea. In chronological terms, there is some overlap between these examples. Similarities in the profile of finds can be observed. They have also been selected in order to illuminate specific issues relating to the analysis of excavated finds for economic purposes. The data sets were investigated during the last decade and a half, and therefore enable an up to date view of methodological considerations.

The fill of the Eretrian well, situated c.9 m south of the stylobate of the temple of Apollo Daphnephoros, contained a number of black glazed pieces of fine pottery, including a *krateriskos* and thirteen relief-decorated bowls, as well as a number of storage vessels: a *dinos* with thick, horizontal banded decoration, a wide-mouthed jar, and seven plates or shallow dishes. In addition, two other pouring

46 N. TERRENATO, "Sample Size Matters! The Paradox of Global Trends and Local Surveys", in: *Side-by-Side Survey. Comparative Regional Studies in the Mediterranean World*, Oxford, 36-48.

47 C. JUBIER-GALINIER, A.-F. LAURENS, and A. TSINGARIDA, "Les ateliers de potiers en Attique. De l'idée à l'objet", in: *Le vase grec*, 2003, 27-43; J. PAPADOPOULOS, *Ceramicus Redivivus: the early Iron Age potters' field in the area of the classical Athenian Agora*, Princeton, 2003 [*Hesperia Supplement* 31].

45 DAVIES, *Linear and Nonlinear Flow Models*, 142-156, Figures 6.8-6.14.

vessels, two *unguentaria*, and a dish with an everted rim could have formed further elements of this set of vessels connected with the preparation and provision at table of a meal, evidently taken within the sacred precinct. Stephan Schmid's analysis explores the eating habits of the consumers as well as discussing the origins and associations of the vessels. The author has opted to develop an in-depth reflection on the pattern of ritual meals and formal dining practices across the Mediterranean and neighbouring regions. He charts the lengthy history of the wine krater, from the second to the first millennium BC, when this shape apparently replaced the cauldron, with its intimations of stewed meat, making the wine mixing bowl the principal focus of social attention, perhaps in the eighth or seventh centuries, depending on location. The coincidence of kraters and drinking cups in a wide range of sites, non-Greek as well as Greek, reinforces the dissemination of social practices connected with the *symposion*. Many features of this story are well known, but Schmid has recast the narrative to provide a backcloth for his drinking equipment at Eretria. The emergence of the *krateriskos*, and of individual bowls in place of cups, is interpreted as a fashion influenced in part by Hellenistic ideas of individuality.⁴⁸

The author goes on to discuss the origins of the dining set and its associated storage vessels. Some of the relief-decorated bowls are assigned to an origin in Asia Minor, very likely Pergamon, where there are close analogies for the designs as well as the fabric.⁴⁹ The band-decorated dinos, as well as the two jars and three inturned-rim bowls are also attributed to Asia Minor. The remaining relief-decorated bowls are identified as "northern Greek", most likely Macedonian (A4-A6; A11, A12; perhaps A2), as are the *unguentaria*. Schmid considers the physical context of a symposium in close proximity to the temple (with which the structures south-east of the temple may be connected). He also discusses the distribution of relief-decorated pottery, notably the so-called *Megarian* bowls, from the final quarter of the third to the mid second century BC. These drinking vessels enjoyed a remarkably wide popularity, in the western as well as the eastern Mediterranean, in contrast to most other fine wares. Schmid also considers the political framework of Euboea in general and Eretria in particular. Macedonian influences are associated with the presence of the

Macedonian garrison until it was forced to leave under pressure from Rome's allies, Pergamon and Rhodes, in the opening years of the second century. Nevertheless, the author prefers, rightly I think, to keep the relationship between political events and commercial production indirect.⁵⁰

One of the author's aims is to try and distinguish local from imported items. Local Eretrian production has proved remarkably hard to identify.⁵¹ On the one hand, this study offers a set of tools for integrating the consumption patterns of a comparatively limited urban élite, whose tastes reflect standards and patterns shared by an educated audience in the principal cities, with the spatial development of the sanctuary of Apollo Daphnephoros, and other contemporary developments in the city of Eretria. On the other, it points up the deficiencies of current knowledge. Complex sites, such as Eretria, which require collaboration between many different teams, often result in an extended publication timetable. Schmid regrets the absence of mineralogical or other analytical studies of clays. Much of the analytical work still relies on conventional principles of classification, which involves sorting pottery by fabric, the recognition of patterns used in published site records, and the identification of originating centres in broad terms. So much for what a study organised in this way can do. The publication of different classes of material in separate volumes renders any sort of economic evaluation much more difficult. What a study like this cannot do is to make comparisons with different areas, even within the same site, let alone others. It cannot explore how the pottery described was marketed, or how fabrics derived from different origins came to be used together. There may be contemporary information from elsewhere in Eretria that could be relevant to the local economy that needs to be referred to here. The material from Pistiros is published in a monograph series, similar to those for Eretria, but the finds are documented by context. There may well be a similar method of ceramic processing at Eretria, but neither the method of data collection nor the economic context has been considered relevant to the publication of the well fill. The processing of complete sets of data at Pistiros makes it easier to understand the heterogeneity of deposits there. But, as at Eretria, reports tend to be published as work progresses. In 2002 I published the contents of a pit,

48 SCHMID, *Boire Pour Apollon*, 76; 78.

49 SCHMID, *Boire Pour Apollon*, 96; A1; A8-A10.

50 SCHMID, *Boire Pour Apollon*, 97.

51 SCHMID, *Boire Pour Apollon*, 95.

location	Halieis Ho.7	Halieis Ho.A	Halieis Ho.C	Pistiros D24	Pistiros B21	Chersonesos Taurica- Panskoye U6
study area (m2)	231	133	208?	100	100	1190
total pot	6206	3046+	5843	[3715]	[6094]	636
MNV	824	434	492	min332	min99	
RF sherds	28	?15	21	min47	min60	216 (RF&BG)
chronology (approx. continuity)						
	c.180	c.180	c.180	c.250-275	c.250-275	50-80

Table 01. Gross finds of ceramic table ware from Halieis, Argolid (Houses 7, A, C); Pistiros, interior Thrace (grid squares D24; B21); and Panskoye (Building U6), Chersonesus Taurica.

[?] = incomplete data sets (further data expected); min = minimum number of vessels identified to date.

which in certain respects resemble the finds from the Eretrian well fill already referred to.⁵² Here too we find the remains of a meal, perhaps even a ritual meal, including cups and bowls in a variety of fabrics. In this case, the origin of the majority of vessels was almost certainly local. A kiln excavated since 1997 just beyond the fortification walls produced orange wares, terracottas, tiles, and other ceramic products. Similar kilns have recently been published by M. Tonkova further east, at Halka Bunar, near Chirpan, both for grey, reducing fabrics, as well as orange wares, produced in oxidising conditions.⁵³ The relationships between these various regional kiln sites have yet to be elucidated. We thus know more about the regional context of Thracian ceramics in

the fourth and third centuries BC than we do about those of Eretria, notwithstanding the scale and longevity of research conducted there.

The excavations of the eastern quarter in the lower town of Halieis, Argolid, have produced half a dozen complete houses from some twenty identifiable residential units, whose overall chronology extends from the early fifth century to c.300BC. Halieis was evidently a small but wealthy coastal community, benefiting from a good harbour, as well as local agricultural resources. During the course of the fourth century, the material standards and productive capacity of domestic accommodation was visibly enhanced, in the size and layout of houses, the quality of building materials used, and the installation of olive presses.⁵⁴ Ceramic evidence from three of the completely excavated house units is included here in Table 1 (House 7, House A, and House C).

The figures for ceramic assemblages in Table 1 provide some starting material for reflection. The footprint of each residential unit (or fraction thereof, in the case of the Pistiros units, whose precise layout is unknown) can be matched against a gross number of ceramic sherds for that unit area. Gross numbers give a relatively imprecise yardstick, because it is hard to compare figures accurately without knowing more about the excavation methods used. In very dry conditions, excavation with a mattock and shovel involves a degree of imprecision, which can

52 Z.H. ARCHIBALD, "Underground deposits: Pit no. 9 and the 'field' of pits", in J. BOUZEK, L. DOMARADZKA, and Z.H. ARCHIBALD (eds.), *Pistiros 2* (2002), 46-58; cf *eadem*, "A River Port and *emporion* in Central Bulgaria: An Interim Report on the British Project at Vetren", *Annual of the British School at Athens* 97, 309-351; *eadem* "Excavations by the British team (1999-2005) in the northern and southern sectors of AV1, Vetren – Pistiros" in: J. BOUZEK, L. DOMARADZKA, and Z.H. ARCHIBALD (eds.), *Pistiros 3: Excavations and Studies*, Charles University, Prague, 81-110, for the local context of the excavation.

53 A.I.R. HERRIES and M. KOVACHEVA, "Using Archaeomagnetism to answer archaeological questions about burnt structures at the Thracian site of Halka Bunar, Bulgaria", *Archaeologia Bulgarica* xi/3 (2007), 25-46; A.I.R. HERRIES, M. KOVACHEVA, M. KOSTADINOVA, J. SHAW, "Archaeo-directional and -intensity data from burnt structures at the Thracian site of Halka Bunar (Bulgaria): the effect of magnetic mineralogy, temperature and atmosphere of heating in antiquity", *Physics of the Earth and Planetary Interiors*, 162 (2007), 199-216.

54 AULT 2005, 53-65; *idem*, 2007, 264-265; HANSEN and HANSEN 2004, no. 349 (M. PIERART) for historical *testimonia*; the estimated size of the inhabited area of the city is c.15 ha (= 15,000 m²).

only be rectified by sieving the soil used. Intensively used urban areas may result in high levels of fragmentation, which again affect gross counts in different ways. So counting minimum numbers of vessels (MNV; or EVEs = Estimated Vessel Equivalents) is a more accurate way of estimating ceramic assemblages.⁵⁵ The ceramic evidence from houses at Halieis is classified in terms of “loci”, or spatial components (without distinct stratigraphic differentiation) and comparability with other sites is based on the gross ceramic sherd counts, as well as net estimate vessel numbers (MNV).

House A is the smallest of the three by area at 133 square metres. House 7 is almost twice the size of House A, but is comparable to two other residential units examined in detail, namely Houses D and E. So the larger units were evidently not unusual at Halieis.⁵⁶ The House with the Mosaics at Eretria (625 m²), and particularly House II (1200 m²), in the west quarter of the city, represent the higher end of the contemporary housing market.⁵⁷ In economic terms, therefore, the properties at Halieis represent a range of unit areas that correspond to some degree of pretension, though a long way short of significant wealth. Bearing in mind that allowances should be made for chronology (a longer period of use can be expected to produce a longer record of consumption, hence higher gross figures), the quantities of imported material at Pistiros are no fewer than those at Halieis. The gross numbers of sherds per unit area are broadly similar, as are the minimum numbers of vessels identified by area. However, the number of Attic fine ware vessels appears to be higher than at Halieis. The figures of vessels listed in Table 1 for the two residential samples at Pistiros represent only a small fraction, perhaps ten, and no more than twenty per cent, of the total number of deposits containing such material in these units alone. At Pistiros the residential units are hard to reconstruct, because

many seem to have been rebuilt every two or three decades. They are modest in overall dimensions, although the size of individual rooms is similar to houses at Athens, Olynthos, Halieis, and elsewhere in the later fifth and fourth centuries. The largest single unit identified to date at Pistiros, Building no. 1, is a walled complex composed of a multi-roomed suite behind a portico that faces the main east-west street (with internal dimensions 12.8 m x 5.8 m = 74.24 m²), including a courtyard across the width of the building at its rear (fig. 2). The external

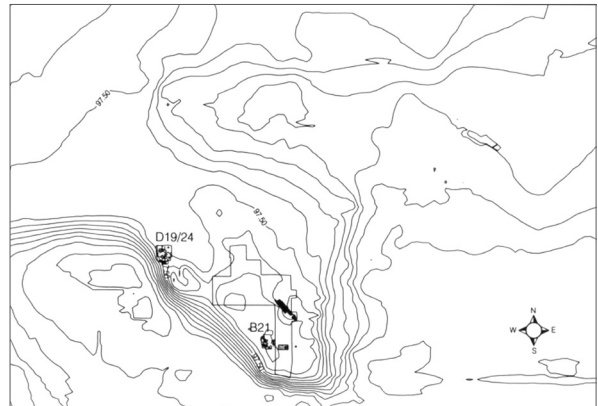


Fig. 1. Location of trenches D19/24 and B21 in the excavation area AB1 (= Adjyska Vodenitsa 1), Vetren, Septemvri Municipality, Bulgaria.

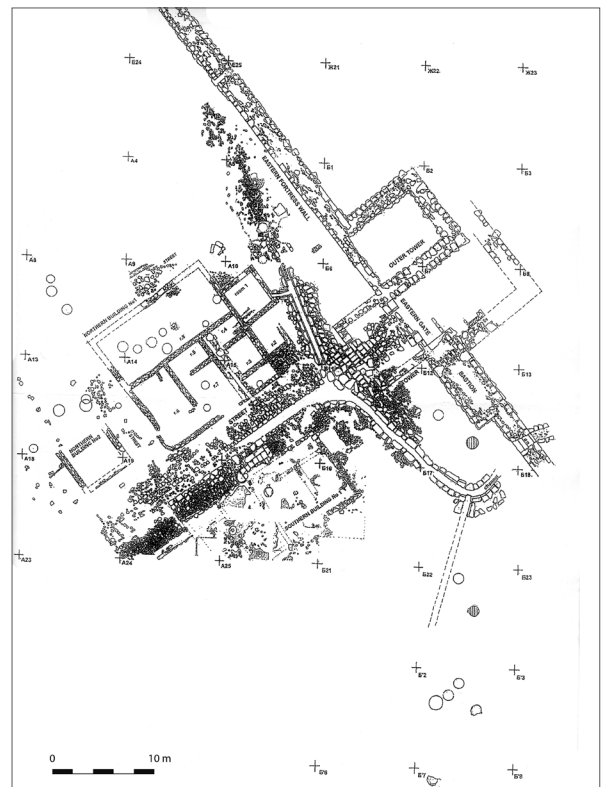


Fig. 2. Plan of Adjyska Vodenitsa-Pistiros-area around the main east-west road.

55 ORTON, TYERS and VINCE 1993, 21-22; 171-175.

56 FOXHALL 2007, 236-240 for further discussion of house sizes and ceramic data at Halieis, as well as the suggestion that House 7 may have been a “tavern” or *kapeleion*. Two residential units examined by M. Fidler at Levkas, showing two structural phases between the late third or early second century and the late first century BC are comparable in size: A II 5 = 182 m²; A II 6 = 221 m² (FIDLER 2005, 99-118); NEVETT 2010, 72-75 and fig. 4.3 for comparanda on Delos.

57 REBER 2005; cf NEVETT 2010, 52-62.

context	1069	1067	1057	1061	1098	1097	1096	1072	
RF lge		1					1	1	
RF cups		1			3	3	1	6	
BF									
BG cups	5	2	3	3+	5	5		6	
BG bowls		1							
orangerware									
bowls	4 or 5	1		7	3		1		
general					2	1	6	5	
greyware									
cups	5	11		2	3	4		16	
bowls	6	1		13	15		13		
lids								1	
total drinking and eating	21	18	3	25+	31	13	22	35	169
storage ware									
greyware	2	1	1	3	5	5		4	
<i>grey jugs</i>	11		3	3					
graphite dec						1			
amphora	1	20+	7	7	50+	80	30	20+	
cooking ware	5		3		10	10		1	
pyraunos		1	1		2	1			
lamp				2				1	
mortar	1				3			1	
pithos					1			1	
other							1		
total storage/cooking	20	22+	2	15	9	66+	91	31	24+

Table 02. Statistics for MNV (= Minimum Number of Vessels) at 8 selected contexts (from c.90 deposit contexts) in grid square B24, Pistiros, Thrace.

dimensions of the unit, comprising the portico, the seven rooms behind it, and the courtyard, are 18.2 m x 14.35 m (= 261.17 m²).⁵⁸ No other complete plan has been fully recovered at Pistiros, although the tripartite structure facing Building no.1 has similar dimensions. So, whatever the precise footprint of individual residential units, they appear to have been well within the scale of contemporary urban plans in many parts of the coastal Aegean world. The area of study for each data set at Halieis corresponds to two of the 10 m² grid squares at Pistiros, yet the quantities of complete vessels estimated for the individual grid squares at Pistiros are beginning to

look comparable to total house units at Halieis. If we factor in the longer chronology at the Thracian site (ie c.450-c.200+BC, about 250 years at a minimum, compared with c.480-300BC, 180 years), then the figures look more broadly comparable. Individual 'loci' at Halieis thus do seem to correspond, as markers of domestic eating sets, with those contexts at Pistiros that represent individual domestic floor levels.

The distributions of finds associated with eating, drinking, storing and cooking food in other respects also look comparable (Tables 2 and 3). The study areas are excavated grid squares within the urban texture, corresponding to domestic units or parts thereof. That said, much of the real variety between individual residential units is hard to expose without

⁵⁸ LAZOV 2007; BOUZEK and MUSIL 2007 for the tripartite southern house.

	I	III	VII
fine ware			
serving	12	7	23
drinking	18	30	49
drinking	4	3	6
containing	7	4	4
other	2	3	6
plain wares			
prep/serving	3	10	33
pouring	5	6	25
other	9	2	17
course ware			
prep		3	3
cooking	8?	15	59
serving		2	3
drinking	2		1
store			
total MNV/locus	70	87	230

Table 03. Comparison of MNV at three 'loci' at Halieis, House 7.

a much greater range of comparanda. We can contrast with these examples the evidence from the Danish excavations of a monumental building (U6) at Panskoye, a farm in the vicinity of Chersonesus in Crimea.⁵⁹ At Panskoye the ceramics can be divided into local (predominantly handmade storage and cooking vessels), regional, and long-distance pottery. At Panskoye a high proportion (>30%, the precise figure varies in different contexts) of the tableware consisted of long-distance imports, including wheelmade storage and tableware from the southern coasts of the Black Sea, probably Herakleia Pontika. In practical terms, the excavators do not distinguish Aegean from Pontic imports. Regional products refer to storage pots made in the northern Black Sea region. There are similar categories at Pistiros, where the bulk of ceramic products, which include construction materials as well as storage wares, were produced either in the immediate vicinity of the site, as demonstrated by the kiln debris, or within the Central Plain of Thrace. Imported

fine wares constituted only a tiny proportion of the traffic in commodities shipped upriver along the Hebros (including tiles, *amphorae*, and much archaeologically invisible material), or overland to cooperating cities along the Aegean coast, including Maroneia, as the Pistiros inscription affirms.⁶⁰

At Pistiros imported fabrics are proportionately rare as tableware, as compared to regional and local pottery, although there is a wide variety of amphora fabrics, representing a range of Mediterranean and Black Sea proveniences. Tiny amounts of Attic black figure, some red figure, and a modest amount of black glazed vessels, reflect the very apparent contrast between Aegean imported fine wares and locally produced construction ceramics, regional storage and table wares, and locally-made cooking pots.⁶¹ Yet, when each context is examined in detail, it is possible to identify dining sets, composed of imported and locally supplemented cups, bowls, and jugs, as well as storage and cooking wares, including three-legged, portable hearths. The range of individual vessel forms from the British excavations can be supplemented by finds from other grid squares. These include occasional white ground *lekythoi*, as well as shapes other than drinking cups and bowls – red figure squat *lekythoi*, *askoi*, lamps, toilet boxes, *oinochoai* and various minor closed forms (fig. 3). If the imported drinking cups and bowls were to be published separately, without other finds, they would create a strong impression of healthy provision. In reality, a cross section of any individual context shows that the fine ware fragments, so often given special priority for a variety of reasons, form a tiny fraction of the total (fig. 4). The numbers are still difficult to quantify (analysis is in progress), but the many thousands of Attic glazed

60 V. CHANKOWSKI and L. DOMARADZKA, "Réédition de l'inscription de Pistiros et problèmes d'interprétation", *BCH* 123 (1998), 246-258. V. Chankowski has recently presented some further arguments that question the identification of Adjiyska Vodenitsa, Vetren, with Pistiros (CHANKOWSKI 2010, esp. 245); my response in the same volume, 209-210.

61 Z.H. ARCHIBALD, "Imported Athenian Figured Pottery (1988-1991)", in: J. BOUZEK, M. DOMARADZKI, and Z.H. ARCHIBALD (eds.), *Pistiros I, Excavations and Studies*, Prague, 1996, 77-88; *eadem*, "Attic Figured Pottery from Adjiyska Vodenitsa (Adzijska Vodenica), Vetren 1989-95", in: J. BOUZEK, L. DOMARADZKA, and Z.H. ARCHIBALD (eds.), *Pistiros II, Excavations and Studies*, Prague, 2002, 131-148.

59 HANNESTAD, "How much came from where", 165-187.



3. Adjyska Vodenista, Vetren: material from a rich context, showing a variety of Attic shapes from the second half of the fourth century BC (©: Z.H. Archibald)



4. Vetren-Pistiros, finds from grid square D24, context [1096], showing large fragments of imported transport amphorae, locally made fabrics, and animal bone. The Attic black glazed and red figure sherds are almost invisible in this array (©: Z.H. Archibald)

sherds are likely to represent hundreds of cups. At Olynthus fragments of forty-four figured kraters were recovered by the original excavation team, compared with seventy from the first preliminary Pistiros report. It is hard to believe that the disparity reflects real differences in the circulation of decorated wine mixing bowls. The fact there was an equal dearth of drinking cups at the former, whereas cups were the commonest imported shape at Pistiros, suggests rather that the difference is due to different taphonomic histories, not to a preference for metal vases, as Cahill is inclined to think.⁶² The popularity

62 N. CAHILL, *Household and City organization at Olynthus*, New Haven / London, Yale University Press, 187; M. BENTZ, "Objets d'usage ou objets de prestige? Les vases dans l'habitat", in: *Le vase grec*, 2003, 47; cf also B.A. AULT and L.C. NEVETT, "Digging Houses: Archaeologies of Classical and Hellenistic Greek domestic assemblages", in: P.M. ALLISON (ed.), *The Archaeology of Household Activities*, London, 43-56; M. BATS and B. D'AGOSTINO, "Le vase céramique grec dans ses espaces: l'habitat, la tombe", in: VILLANUEVA PUIG *et al.* (eds.), 75-90.

of metal vessels in ancient Thrace is well attested from grave finds, while evidence of metallurgical processing and exchange at Pistiros makes it unlikely that metal drinking vessels were less readily available than pottery cups. The eight Panathenaic amphorae found at Olynthus can be compared with the four identified to date at Pistiros. It is arguable, of course, that Olynthus may represent a wealthier, more socially distinctive community as a whole than Pistiros. Olynthus yielded 4400 Greek coins. Pistiros has yielded upwards of 1500, albeit from a far smaller surface area. The civic space of Olynthus covered c.27 ha after 432BC, but the city's territory is estimated as having extended over 630 km² (= 63,000 ha), which would have put it in the top ten per cent of mainland cities in terms of spatial dimensions. Erosion of the urban fabric of Pistiros by the River Hebros (Maritsa) makes it difficult to estimate the size of the urban nucleus, although it has been estimated as having occupied between 50 and 100ha, although these figures include some rural territory as well as the

urban layout. No attempt has been made to estimate the possible rural domain as a whole.⁶³

The variety of ceramics at Pistiros is a good reflection of the site's character as an *emporion*. *Emporia* that handled international transactions were not found at every port or major market centre. They were comparatively rare, it seems, even in early Imperial times, judging by Strabo's references to such international places of exchange. The volume of

63 HANSEN and HANSEN 2004, no. 588 for testimonia on Olynthus (FLENSTED-JENSEN); *ibid.*, 70-73 on the sizes of Greek cities; on the territory of Pistiros: DOMARADZKI 2000; CHIVERRELL and ARCHIBALD 2009; V. TANEVA, "Les monnaies de Pistiros", in: *Pistiros et Thasos I*, 47-67 (reports on 747 coins (681 copper alloy; 66 silver) found between 1988 and 1997; J. Bouzek reports the coin hoard of 434 silver drachms, 115 tetradrachms, and three gold staters, discovered in a pot in 1998 (BOUZEK and MUSIL 2007, 64-65). Coins have been recovered from regular excavations every year since 1997 and a cumulative report is in preparation by V. TANEVA, to appear in *Pistiros V* (forthcoming 2014).

essays edited by Bresson and Rouillard in 1993 did a great deal to clarify how we should understand such markets.⁶⁴ *Emporia* of this kind were specifically intended to cater for inter-state transactions, in situations where traders needed a higher degree of infrastructure, to ensure effective mechanisms and guarantees for transactions to take place. The discovery of Pistiros provides some indication of the gaps between Strabo's geographical descriptions and evidence in the field. These major entrepôts may not have been very numerous; but they acted as distribution centres for regional and local periodic markets.

Although analysis of the ceramics from Pistiros does not yet allow us to define global figures for the settlement as a whole, we may nevertheless compare our sampled evidence from the British excavations with the statistics from Panskoye U6. Chersonesus.

The unit of assessment is a building complex c.34 m by 34 m (1190 m²), and the number of ceramic finds identified, predominantly fragmented sherds, is 636, of which 216 are black glazed sherds, 24 other types of fine wares.⁶⁵ The three 10 m² quadrats within the urban centre of Pistiros therefore represent slightly less than one third of the area examined at Panskoye, while the ceramic finds exceed 13,700, from a gross count of just under 20,000 finds, which includes c.5700 animal bone fragments, c.3000 sherds from cooking wares, 2370 sherds of regional table wares, 568 sherds of imported Attic black and red figured plus black glazed wares.⁶⁶ Since the relevant squares at Pistiros are at some distance from the main thoroughfares and principal buildings at the centre of the settlement, they are likely to be broadly representative of the distribution on the site as a whole.⁶⁷

64 A. BRESSON and P. ROUILLARD (eds.), *L'emporion*, Paris, 2003.

65 HANNESTAD, "How much came from where", 182. Some further clarification would still be desirable concerning retrieval methods (dry and wet sieving enhance the overall retrieval rate, as compared with the use of pick and shovel alone).

66 The statistics from the British excavations at Pistiros represent interim rather than gross figures; the final count will include the earliest levels in all areas, which have only been reached in one five metre square within grid square J24.

67 See for example the tables in DOMARADZKI,

The proportional differences in the gross figures of ceramic finds between these two locations are not surprising, despite the considerable distance from the sea in the case of Pistiros (several hundred kilometres as the crow flies, either across mountainous terrain or by a circuitous riverine route). Pistiros was an urbanised entrepôt, with a wide range of regional and inter-regional contacts, while Panskoye is a rural location, albeit relatively close to the coastline. Nevertheless, the proportion of Attic fine wares among the Pistiros ceramics compares unfavourably with Panskoye. The comparison of large decorated Attic vases with those of Olynthos on the one hand, where domestic items may well have been removed prior to abandonment, and Panskoye on the other, where there are very few vessels of comparable size, shows that we still have a long way to go in understanding how and why the dissemination of commodities differs so dramatically from place to place.

ROMAN COMPARANDA:

DIACHRONIC AND REGIONAL DISTINCTIONS

Direct comparanda from other Aegean and Pontic sites are not easy to find. In a discussion of Greek pottery quantification published in 1999, Vladimir Stissi pointed out how few of the detailed studies of consumption patterns within the Classical Mediterranean have been conducted in the Aegean area: "The Greek world itself appears largely to have remained outside the orbit of pottery distribution studies, although a few thorough collections of basic data, with some evaluation, are available".⁶⁸ It is fair

"Interim report on fieldwork at Vetren-Pistiros, 1995-98", in: *Pistiros 2, Excavations and Studies*, Prague, 2002, 18. The figures quoted here for the British grid squares [B21, D19/24] represent interim data. The available statistics nevertheless provide a reliable indication of the relative proportions of different classes of material, and of the overall concentrations for comparative purposes.

68 STISSI, "Production, circulation and consumption of Archaic Greek Pottery (sixth and early fifth centuries BC)", in: CRIELAARD, STISSI, and WIJNGAARDEN (eds.), 1999, 101-102 for citation; *cf idem*, "Modern finds and ancient distribution", in: Villanueva Puig, *et alii*, (eds.), 351-355; *Idem*, "Why do numbers count? A plea for a wider approach to excavation pottery", in: P. DOCTER and E. MOORMAN (eds.), *Proceedings of the XVth International Congress of Classical Archaeology, Amsterdam, July 12-17, 1998*, Amsterdam, 404-407; ROUILLARD, "Le vase

to say that there are still, at the present time, few comparative studies of any period. Nevertheless, the analysis of Roman pottery, as a component of *small finds* from sites in France, the UK, Italy, the Iberian peninsula, and other selected international projects in southern Europe, is beginning to demonstrate what can be achieved if the research aims of a project incorporate a strategy to address wider diachronic issues, including economic ones. Essays published in a volume edited by Richard Hingley and Steven Willis in 2007 review these achievements.⁶⁹

What such studies reveal is that there are many common traits in the material record, irrespective of the type of site being investigated. Ceramics form the single largest category of finds, but the quantity and forms understandably vary when the evidence can be examined diachronically. Quantified data from a range of sites undoubtedly provides a much more nuanced data set than can be achieved from studying production centres alone, as we can observe the relative dominance of different centres in relation to consuming groups. It also becomes possible to relate ceramic vessels to other finds. If we exclude metal finds associated with building construction, particularly iron nails, the bulk of small finds are personal items, such as jewellery, or belt fastenings, followed by textile-related equipment and recreational items, including gaming pieces. Some of these were also made of baked clay. We may expect there to have been significant differences between Roman Imperial and pre-Imperial patterns of circulation, because of the organisational differences that accompanied large-scale production complexes under the Empire. But we presently lack the range of evidence to be able to assess what these differences objectively amounted to. Effective sampling is one way of achieving useful results without necessarily undertaking

ambitious and time-consuming new projects. In terms of distribution patterns, a good deal of work has already been done to understand the physical constraints of travel and transport. We know that water-borne traffic consisted mainly of short routes within sight of land.⁷⁰ This information needs to be integrated with the specific transit traces of known ports and the qualitative data from shipwrecks (I refer here to Mark Lawall's work on the distribution patterns of *amphorae* from different originating centres in harbours of the Aegean and Toby Parker's on shipwrecks).⁷¹ Shipwrecks with a bulk stock of fine wares are comparatively rare, which confirms the now established view that pottery travelled as a component of mixed cargoes.⁷² As Parker has shown, it is possible to analyse traffic along commercially determined routes with considerable nuances. There is also a wealth of information available about harbour and port facilities, which has not yet been considered within a systematic economic framework, and would illuminate the kinds of vessels for which long-term provision was made.

The missing dimension in exchange is the evidence of specific contracts and given inter-community agreements. Since the normal way of legitimising agreements was between one community and another,⁷³ what we might expect to see in economic relationships is more evidence of reciprocal contracts. This may be hard to see in the case of Eretria, where political relations have been invoked in order to explain the presence of Macedonian or Ionian (Pergamene?) fabrics. At Halieis, the wide range of foreign coins suggests that many different communities had representatives who docked in the harbour, and therefore who may have benefited from

attaque: de sa récolte à sa cartographie", in: VILLANUEVA PUIG *et al.* (eds.), 331-343.

69 See esp. COOPER, "Promoting the Study of Finds in Roman Britain: Democracy, Integration, and Dissemination. Practice and Methodologies for the Future", in: R. HINGLEY and S. WILLIS (eds.), *Roman Finds. Context and Theory*, Oxford, 2007, 35-52; SYMONDS and HAYNES, *ibid.*, "Developing Methodology for Inter-Provincial Comparison of Pottery Assemblages", 67-76; cf also ORTON, TYERS, and VINCE 1993, 197-206; W. SLANE, "Corinth's Roman Pottery: Quantification and Meaning", in: Ch.K. WILLIAMS II and N. BOOKIDIS (eds.), *Corinth, The Centenary Volume, 1896-1996*, Princeton, 2003 [*Corinth XX*], 321- 335.

70 The standard work on Mediterranean sailing and sea routes is now P. ARNAUD, *Les routes de la navigation antique*, Paris, 2005.

71 LAWALL, "Amphoras and Hellenistic economies: addressing the (over) emphasis on stamped amphora handles", in: Z.H. ARCHIBALD, J.K. DAVIES, and V. GABRIELSEN (eds.), *Making, Moving, and Managing: the new world of ancient economies*, Oxford, 2005, 189-232; PARKER, *Artifact Distributions and Wreck Locations*, 177-196.

72 JUBIER-GALINIER, "L'épave archaïque IA de la Pointe Lequin: une épave hors du commun", in: *Le vase grec*, 2003, 119-124 ; PARKER, *Artifact Distributions and Wreck Locations*, 183.

73 BRESSON, *La Cité marchande*, 109-149, with detailed discussion of *synthekai*.

a legal framework within which commodities such as domestic ceramics would have arrived in mixed cargoes from Athens.⁷⁴ Attic forensic speeches provide a range of examples that show how merchants responded to specific orders for commodities, albeit as seen through the lens of credit transactions.⁷⁵ In the case of Pistiros, the reciprocal agents are clearly described in the inscription from Asar Dere, close to the *emporion*, where the special status of Maroneia is apparent, although Thasians and Apollonians (from Chalkidike?) also enjoyed particular advantages.⁷⁶ The presence at Adjijyska Vodenitsa, identified with ancient Pistiros, of silver coins of Maroneia, Thasos (or its mainland dependencies), Parion, and Chersonese, as well as silver and copper alloy coins issued in the name of Odrysian rulers, echoes the provisions of the decree preserved on the inscription. The range of participating centres suggests that no single community exercised a monopoly over exchanges; but by limiting commerce to half a dozen or so partner communities, trust and transparency were more easily maintained.

CONCLUSIONS

1. Although the theoretical framework within which exchange occurred in antiquity has undergone significant changes in recent decades, the role of markets has received comparatively little attention, whether in terms of the logic of Mediterranean ecologies, which both required and enabled connectivity in order to maintain a range of primary commodities;⁷⁷ or the simple exigencies of supply and demand.⁷⁸ I have argued that the substantivist approach offers no clear method of understanding exchange. What we are witnessing, in the case of the pottery market in the fifth and

fourth century BC Aegean, is an expansion of marketing activities. At Halieis, Panskoye, and particularly at Pistiros, pottery is a symptom of market transactions, whose liveliness and intensity is reflected in residual coin concentrations at all three locations. Attic products were shipped in batches to all three places. If we could chart the quantities of material travelling to the north Aegean and beyond, into the Pontus, it is likely that we would see a pattern of large dots at many intermediate coastal locations, as in significant inland entrepôts, such as Pistiros. Outside and beyond these main commercial highways, made up of numerous orders, we would expect a gradual fall-off, illustrating distance from source against cost of transportation. But most importing centres had access to analogous materials, from local or regional producers. At Pistiros and Panskoye, the regional products supplemented demand, probably at a reduced prices, as compared with the rates for Attic products. At Halieis there was no need for supplements, presumably because the cost of transportation from Attica ruled out competitors. The situation changed in the third century BC, when Attic products ceased to be the main fine wares available in central Greece. Thus, at Eretria, the dining set is made up of northern (Macedonian?) as well as Asiatic (Pergamene?) items.

2. The exchange of commodities is embedded in social practice, as I have tried to show in the case of feasting behaviour at Eretria, a relatively modest, but by no means impoverished meal in a rather wealthy city, and in the very different environment of an international emporion such as Pistiros in Thrace. The choices and preferences of communities in these varied locations determined the overall pattern of commodity acquisition that is reflected, albeit indirectly, in the material deposited and available to archaeological analysis. The ceramic residues that we can investigate represent a conscious and deliberate selection from among the many different kinds of ceramics potentially available at large production centres, such as fifth and fourth century Athens and the evolving taste for shapes reflected in Hellenistic Pella, Demetrias, or Pergamon. The analysis of complete data sets of finds is a pre-requisite for understanding the economies of selected locations, but is not in itself sufficient to reconstruct patterns of exchange. In order to acquire a more holistic view of economic networks, we also need to extend the enquiry to

74 AULT 2007, 262.

75 See esp. SHIPTON 2008, 110-112.

76 See the discussion in: CHANKOWSKI and DOMARADZKA 1999; ARCHIBALD 2002a.

77 HORDEN and PURCELL 2000, esp. Ch.VII, 175-230.

78 LO CASCIO, *Mercati permanenti e mercati periodici nel mondo romano, Atti degli incontri capresi di storia dell'economica antica*, Bari, 2000; the international project entitled: "*Les marchés dans le monde antique: espaces, pratiques, institutions*" (2007 – 2013) a *Groupe de Recherche International*, or *GDRI*, visit <http://webdev-kyros.fr/marche/>.

other nodes in the supply network that formed a social as well as material chain (as well as to those products that are invisible in the record).

3. The demand for long distance products, particularly Attic table wares, at Pistiros, and at Panskoye, at least equalled, if not exceeded that at Halieis. The units of assessment explored here show that a dining set at Pistiros contained as many imported Attic cups and bowls as a similar unit at Halieis. So, despite the greater distance from origin, the consumers at Pistiros, whether local or visiting merchants and their hangers on, suppliers, and dependents, as well as the much ignored indigenous hosts, the Pistirenoi, insisted on having the same range of items as their opposite numbers at Halieis. Since demand exceeded supply, additional items were purchased from local or regional producers. The transport costs of the Attic items were evidently met by the trading community, divvied up with the lower costs of local supplements.
4. Critical to the understanding of supply is the role of the middlemen, both merchants and ships' captains, who ensured delivery of the product. The quantities of imported ceramics give us some idea about the levels of demand for particular items, while forensic speeches demonstrate the frustration and disappointment of agents when something went wrong with the supply chain. In the speech *Against Lakritos* ([Dem.] 35.10-13), Androkles of Sphettos and Nausikrates of Karystos leant 3,000 drachmae to two Phaselites, Artemon and Apollodoros, who were undertaking a voyage to Borysthenes in the Black Sea, stopping off at Mende in Chalkidike to take up 3,000 jars of Mendeian wine, which were intended as security for the voyage. This unique document shows that merchants with origins outside the Aegean, as well as Athenians or other Aegean Greeks, might get involved in transporting commodities along the north Aegean coastal route. An obvious stopping-off point was the commercial harbour of Thasos, which evidently enjoyed very lively traffic, judging by surviving regulations for putting boats into dry docks – only vessels over fifty tonnes were permitted (*IG XII Suppl.* 348). Bulk cargoes conveyed in these types of ships probably travelled seasonally between Athens and Chalkidike, Thasos, the Hellespontine Straits, and on into the Black Sea. Conditions for travelling upriver along the Hebros also imply a marked seasonal

pattern.⁷⁹ The north Aegean ports that had deep - water harbours, notably Thasos, but also Therme, Torone, Akanthos, Neapolis, Maroneia, and Ainos, had a natural advantage over those that did not, since they could receive sea-going craft. This is where we might expect storage facilities for medium term storage, for up to a year in the case of cereals; but storage capacity would encourage owners to maximise space for other commodities, which could include pre-selected batches of ceramics, before these were shipped periodically upriver or overland.

5. The dynamics of exchange deserve far greater attention than they have been given in the past. Different commodities were purchased at very different rates. Although consumers might buy bread or flour on a regular basis, family or collective stocks were replenished annually. The acquisition of cereals to supplement local production was an annual responsibility for political authorities and the travels of delegated officials associated with these will have followed the pattern of seasonal harvests from Libya to the Black Sea,⁸⁰ Merchants and ship owners will have used these itineraries, and the associated bulk cargoes, to stake out major consignments, building other orders, including preserved foodstuffs, around and between them. Orders for other commodities, from shoes and baskets to tiles, pots, and pigments, did not obey any seasonal rules, while fresh foods could only be purchased when available. Our picture of market exchange must build many more short distance sales at periodic markets into the general pattern of market exchange. Pottery, which could, and, on the basis of the four examples used here, manifestly did travel with relative ease, even to distant and inland areas, should find its place among these regular purchases.

79 CHIVERRELL and ARCHIBALD 2009.

80 BRESSON 2011 provides a detailed exposition of the practicalities and rationale.

ABBREVIATIONS

ARCHIBALD, forthcoming 2014 = Z.H. ARCHIBALD (with contributions by MATTHEW PONTING, and Sue STALLIBRASS) *Pistiros: a Late Iron Age River Port in south-eastern Europe, the Liverpool project, 1999-2006*.

ARCHIBALD, forthcoming 2013 = Z.H. ARCHIBALD “Moving upcountry; ancient travel from coastal ports to inland harbours”, in: K. HÖGHAMMER and A. LINDGREN (eds.), *Ancient ports - the geography of connections International conference at the department of Archaeology and ancient history, Uppsala University, 23-25 September, 2010*.

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