MOVERS AND STAYERS[*]

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1. A mobile world?

> The importance of mobility in early societies now no longer needs demonstration. Recent work over the last decades has rendered obsolete the image of populations that are for the most part immobile that demographers have sought to purvey. Within the Mediterranean area, throughout a very long period lasting from Antiquity down to modern times, the circulation of human beings constitutes a fact that is both structural and structuring, an element of continuity that forms the very basis of the Mediterranean network.[1]

Claudia Moatti, whose research has done so much to illuminate human mobility across Mediterraneans ancient and early modern,[2] succinctly sums up the current consensus.[3] As historians and archaeologists of the classical world we now repeatedly emphasise movement and communication, mobility and connectivity, hybridity and cosmopolitanism. Our fascination with movement and exchange is evident in revisionist accounts of the Roman economy, in studies of the ancient novel between east and west, in projects that track diasporas through haplotype distribution and stable isotope analysis, and in multiple appropriations of post-colonial criticism and globalisation theory. A little of this is simply the latest round in a familiar old game of asserting the modernity of the ancients, but the evidence for movement is undeniable. The issue now is to assess the scale, nature and significance of all this, and to avoid an exaggerated reaction that underplays the equally undeniable differences between globalised modernity and the ancient world.

It must be correct that classical worlds were never remote, isolated or autarkic communities. Indeed it is so difficult to see how anyone could reasonably disagree with Moatti's assessment, that the most contentious part of it is the claim that an earlier generation of demographers tried to persuade us that populations were mostly immobile. Yet asserting the mobility of ancient societies raises new questions. For mobility is now being claimed as important in virtually every period of human history. A good case is being made that the capacity for mobility is one of the distinguishing features of our species, when we are

[1] Moatti 2013: 77.
[2] Moatti 2004 and 2006, Moatti and Kaiser 2007.
[3] Compare for example Purcell 1990 and 2005; Osborne 2009: 123.

compared to our nearest living and deceased relatives: that traces of our selection for mobility can be found in our digestion and cognition, our sociality and our use of language.[4] It is not enough to declare ancient populations mobile: we need to consider in what ways people moved and how different kinds of mobility varied within our long historical period, and between antiquity and other ages, earlier and later. That inevitably entails some attempt at quantification, however approximate.[5] And we need to ask who moved? how often? and how far? And finally it also means asking about stability, about the stayers as well as the movers. This paper will have less to say about the stabiles than about the mobiles. Yet the presence in the background of those who rarely moved, or moved only very short distances, has to be taken into account if we are to understand the significance of those who did move. Who were the relatively less mobile? How did they differ in age, sex, occupation, skills, wealth and other respects from the more mobile? And how did movers and stayers get along?

2. The case for mobility

Perhaps it would be useful to recall, briefly, why it is that we do now all believe in mobility.

The first reason is that many ancient texts narrate the movements of peoples and of individuals.[6] These range from *nostoi* narratives and *ktiseis* (foundation legends) to accounts of sacred springs (*ver sacrum*), of barbarian invasions and of historical narratives of colonisations and deportations, of settlement programmes and of immigration to great cities. For the Roman period we also possess some accounts of private journeys made for trade and official errands, even for tourism and pilgrimage.[7] Naturally there are interpretative problems of the usual kinds – how should we evaluate accounts of archaic migrations? How do we reconstruct typical patterns of movement when historical records often take the typical for granted and focus attention on unusual events? Can we trust the numbers we are given, when we are given any at all? But these are not insurmountable problems, indeed they are ones that ancient historians are trained to deal with.

A second reason to believe in mobility is the evidence provided by material diasporas, the scattering of objects left behind by human vectors. These distributions are far better understood now thanks to advances in archaeological provenancing, whether by traditional

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[4] See recently Earle, Gamble and Poinar 2011; Wells and Stock 2012. For a comprehensive overview Ness 2013.
[5] Cf. De Ligt and Tacoma in this volume.
[6] Bickerman 1952; Woolf 2011.
[7] Adams and Laurence 2001; Adams and Roy 2007; Elsner and Rutherford 2005; Casson 1974.

methods or through the excavation of kiln sites, petrological analysis of fine-sectioned ceramic, isotopic analysis of metals and a battery of other methods. Biofacts – seeds, desiccated fruit, wood samples – are also becoming easier to provenance, while stable isotope analysis applied to human skeletal material is beginning to do the same for individual humans. A great deal of this has already been carried out for the Bronze Age, although the total quantities of material are often very small compared to later periods.[8] Once the expansion of the early Iron Age got underway the number of material diasporas, and their potential scale multiplies. Pendant semi-circle *skyphoi* from Euboea, Lyre player seals from Syria, faience scarabs from Egypt, and then the various finewares and container amphorae have all been used to produce distribution maps. It is not always easy to track the circulation of these objects between the sites of their production and their final resting spots but we can infer a good deal. And we can also see some limitations of circulation. The almost complete absence of Aegean material in Egypt or the Black Sea region before 700 BCE is one example, marking the geographical and chronological limit of one kind of mobility. A little earlier in time there is the apparent rupture of exchanges between the east and west Mediterranean at the end of the Bronze Age. From the middle of the last millennium BCE coins and inscriptions appear – in many respect artefact categories like any other – but carrying texts that give further information on their makers and users. And behind all these material diasporas lie movements of people.

A third reason to believe in mobility derives from ecology. As we have become more and more aware of the difficulties of agriculture in Mediterranean environments, the idea that communities of any size were genuinely autarkic, self- sufficient in resources that is, seems harder to believe.[9] It has long been appreciated that most Neolithic populations needed to travel to find obsidian.[10] The ecological precariousness of many of the environments exploited by the first farmers has also suggested that to survive bad years they relied on a web of connections and obligations with their neighbours.[11] And bad years were common, at least at a local level. The geological and climatic fragmentation of Mediterranean landscapes suggests that in any given year one microregion might experience plenty while its neighbours experienced scarcity, and this has been seen as a motivation for both state building and commerce. The growth in settlement size over the last millennium BCE can only have

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[8] Manning and Hulin 2005; van Dommelen and Knapp 2010. For the issue of scale see Blake 2008.
[9] Sallares 1991 and most recently Harris 2013.
[10] Torrence 1986; Broodbank 2010.
[11] Halstead and O'Shea 1982.

exacerbated the problem.[12] Larger cities came to rely for food on regular supplies from richer and more reliable sources outside the Mediterranean region, such as the Nile Valley and South Russia. Urbanisation concentrated demand in a just a few locations, and generated connections with areas from which textiles and metals, fuel and stone, water and animals, and many luxury goods could be supplied. People too, were a resource that needed to be moved about, or to move themselves, in order to make this world work.

Enumerating these reasons makes it clear that we dealing with many varieties of mobility.[13] Lane Fox's 'Travelling heroes'[14] of Homeric times inhabited a different world from Broodbank's heroic Neolithic canoists paddling to the uninhabited island of Melos in search of obsidian. The great convoys of grain ships that made their regular way from the Crimea to Athens in the fifth and fourth centuries or from Alexandria and Carthage to Rome in the early Empire represent a different level of mobility. Nor is this just a question of variations in scale, although that is inevitably part of the story. It seems strange to use a single term – mobility – to cover both traders on their regular round trips, and the masses that topped up the sickly populations of Mediterranean metropoleis. Many of the one-way migrants to Rome and Alexandria probably came in chains.[15] Traders and colonists were, we may presume, mostly of above average wealth and fitness. The forced mobility of soldiers and slaves had a different character, and different consequences, to the seasonal movements of those seeking work on the vintage in wine-growing areas, or those who moved into cities in the summer for work on the docks during the peak of the sailing season, or labour on building projects.[16] Then there are the long-term flows of freeborn individuals hoping to get rich but often perishing in cities and mines.[17] Present-day political debates over immigration illustrate the huge failures of understanding that result from failing to differentiate between varieties of human mobility. Ancient mobility may have been almost as various. And, like the more measurable episodes of mass migration of the last five hundred years, ancient mobility will also have varied considerably from one period to another.

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[12] Garnsey 1988.

[13] A key argument of Erdkamp 2008 to which much of the following discussion is indebted.

[14] Lane Fox 2008.

[15] Scheidel 1997. For an attempt to estimate the number of imported slaves needed to maintain the slave population of Rome (which appears to have been largely self-reproducing) see Garnsey and De Ligt in this volume. Adams' paper identies Alexandria as an attractive destiantiion for migrants but focuses on voluntary movements.

[16] In this volume Roselaar and Ivleva discuss state-organised movements of military personnel. Erdkamp argues that seasonal migrants accounted for a large proportion of the workforce needed for building projects in Rome or to unload the grain ships arriving during the sailing season.

[17] For migration to the mining districts of Roman Portugal and Spain see Holleran in this volume.

As a starting point I suggest any adequate account of human mobility in antiquity needs to include at least three features. First, it should differentiate between different kinds of mobility (long distance/short distance, permanent/temporary, etc.) and also between different kinds of migrants (individual/group, male/female, voluntary/compelled etc.).[18] Second, it should track change over time, and focus on variable mobility as a structuring force more than as a structural fact of Mediterranean history. Mobility – put simply – needs to be given a history.[19] Third, it should make some quantitative claims, for all the same reasons that it is not sufficient to write about trade or production simply as 'active', 'important' or 'significant'.[20] However approximate the numbers, we need some sense of how many moved how far how often, and how many did not. This paper sets out to offer some preliminary propositions along these lines.

3. The limits of corruption

All discussions of mobility in antiquity now begin from Horden and Purcell's spectacular and original *The Corrupting Sea,* a work that still sets the agenda for research on the social and economic nature of the ancient Mediterranean a decade and a half after its publication. *The Corrupting Sea* takes a line very similar to that of Moatti in repeatedly asserting that human mobility was systematically underrepresented by ancient sources and has been underestimated by modern scholars.

Horden and Purcell's view of mobility is not argued in linear form, but is dispersed throughout *The Corrupting Sea* – especially in chapters V, VII and IX – with frequent cross and back references. Although the book is structured thematically at the large scale, much of it consists of dense descriptions of particular locations and case studies. The design is evidently deliberate, the thematic order allowing the authors to explore continuities without the distraction of plotting an historical narrative, and the particular cases emphasising the diversity and difference which they see as characteristic of the region. Fractal-like, this structure is replicated within each chapter and even within each subsection, as arguments drawing on a dazzling range of (mostly literary) evidence drawn from across a vast geographical and chronological range: their Mediterranean World lasts (at least) three millennia, and includes generous portions of the continental hinterlands of the inland sea.[21]

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[18] Cf. De Ligt and Tacoma in this volume.
[19] For this point Bresson 2005: 104.
[20] Finley 1973: 32-34.
[21] On the boundaries of the study see Harris 2005a.

Their chosen method is to persuade by offering an exemplification of the power of their starting assumptions to make sense of a vast body of evidence, rather than by opposing those assumptions to actual or potential counter-arguments, or by testing them as hypotheses against one or more data-sets. These features of the book make it difficult to condense their argument into one or more central propositions. Fortunately, each author has subsequently clarified their intentions. From these later articles a clearer sense of how they conceptualise mobility may be reconstructed.

Horden, for instance, wrote in 2005 that *The Corrupting Sea*

> offered a partial definition of the integrity and distinctiveness of the Mediterranean in terms of the region's fluid communications and the concomitant mobility of its peoples.[22]

Horden's essay does not recapitulate the book; instead it sets out to discuss ancient perceptions of mobility, with the aim of understanding migration "the most neglected aspect of pre-modern demography" through the evidence of ancient medical texts. He begins with the Hippocratic *Regimen* (ch.68) the author of which (according to Horden) claims "to be writing for the majority of men: those who use ordinary, accessible, food and drink, who exert themselves as much as is essential, who undertake land journeys and sea voyages to collect their livelihood". Even if this claim is disingenuous, argues Horden,

> the image of the small producer who of necessity sometimes has to travel long distances to gather sustenance, and who benefits from the maritime 'connectivity' of the Mediterranean, seems like a condensation of the *Corrupting Sea*. It is exactly the form and degree of mobility that Purcell and I postulated.[23]

Purcell's 2004 summary of the book[24] states that its argument rests on a fourfold description of primary production in terms of a distinctive regime of risk; a distinctive logic of production organised around coping with this risk; a recognition of the extreme topographical fragmentation of the region; and finally a distinctive regime of communications. On the basis of this they had argued that "the key variable in assessing the social and economic character of any Mediterranean microregion at a given historical moment was *connectivity*". There is no contradiction with Horden's account but Purcell's formulation highlights the importance in their conceptualisation of specific historical circumstances. Despite the authors' frequent appeals to continuities, often made implicitly by juxtaposing incidents or texts from very different periods, the *Corrupting Sea* is unfairly accused of neglecting history. Occasionally a

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[22] Horden 2005: 179.
[23] Horden 2005: 182.
[24] Purcell 2004: 10.

decision not to deal explicitly with change is justified by the paucity of the available evidence: variations in mobility levels is one of the topics they decline to deal with on those grounds.

> The ethnic diversity of the population is the most obvious correlate of mobility, but from it also arise the cultural homogeneities which help make possible the Mediterranean social anthropology that we particularly deploy in the next three chapters. Clearly we cannot unpick the weave of this tangled mass of ethnic origins; nor can we quantify the mobility from period to period and place to place. It is extremely likely that it has been less in remote corners and at certain unfavourable periods. Our contention, though, is that it has never ceased.[25]

The authors of *The Corrupting Sea* have made a deliberate choice of synchronic over diachronic modes of analysis and presentation. By seeking to join up subjects previously divided by conventional periodisations, they 'take the road less travelled' by other historians of ancient and medieval history whose interests in political narrative and change have often led to a corresponding neglect of the physical stage on which the history of events unfolded. The costs of adopting an antithetical approach of this kind are perhaps obvious, and many of the reviews and responses have drawn attention to the consequences of not giving more weight to major changes in technology for example in shipbuilding or in the range of cultigens available; or to variables such as the proportion of the population not engaged in agriculture.[26] Perhaps. But it is easy to understand how they arrived at this starting point. Their opening paragraph reads

> The subject of this work is the human history of the Mediterranean Sea and its coastlands over some three millennia. Its immediate contention is that this history can profitably be treated as material for a unified and distinct discipline. Its purpose is to discover, first, how far the region so treated has displayed over this long period any unity and distinctiveness of its own, and second, what kinds of continuity could have been involved: these two questions form the backbone of our work.[27]

It is presumably in pursuit of the unity and distinctiveness of the Mediterranean World and of its long-term Braudelian (or pre-Braudelian) continuities that *The Corrupting Sea* returns again and again to the language of connectivity and mobility, the two terms that have as a result become central to the current debate over human mobility.

Connectivity, conceived of as a property of a microregion or of the Mediterranean as a whole, forms a dyad in their analysis with mobility, a property of peoples and individuals. Although based on some of the same ecological and geographical considerations highlighted

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[25] Horden and Purcell 2000: 400.

[26] Horden and Purcell 2000. This is not the place to offer a(nother) detailed assessment of the work, but it has inspired two volumes of responses – Malkin 2005a, Harris 2005b – and a number of review articles, notably Shaw 2001 and Fentress and Fentress 2001.

[27] Horden and Purcell 2000: 9.

by Halstead, Garnsey and others, Horden and Purcell's analysis repeatedly rejects environmental determinism: it seems that they prefer to think of connectivity as a potential, and mobility as one means of realising it. Their Mediterranean is imagined like a set of interconnected low-friction surfaces across which mobility of all kinds is relatively easy. Those surfaces are fringed and framed by territories of higher-friction, mountains and forests, deserts and continental interiors, regions of relatively lower connectivity about which they have less to say.[28] This is not a contentious argument – indeed the counter-proposition, that movement was equally easy and frequent in all directions irrespective of terrain would be ridiculous. The originality of the analysis is the implications that Horden and Purcell draw from it, that the risks and opportunities facing agricultural communities in such a region gave rise to strategies based on connection, to economies predicated on the mobility of persons not on the self- sufficiency of isolated communities.

The issue is not whether or not these effects were real – they clearly were – but how powerful they were. We might compare the problem with that posed by Keith Hopkins' various arguments connecting taxation, economic growth, trade and urbanisation.[29] No one seriously claims taxation did not stimulate production, nor that some economic forces were generated by the fact that emperors spent in fewer areas than they raised taxes. The difficult question is how much of the economic activity of the empire these relationships explain. Likewise for Horden and Purcell's arguments the question is not whether or not the Mediterranean world was ecologically fragmented, or even whether or not its microregions were connected: both propositions are uncontrovertible. But rather we must ask how much difference this made, how essential connectivity was, how far fragmentation was the precondition of survival and prosperity, how to calibrate these factors against others. As for mobility we need to ask how much mobility could be engineered to take advantage of these conditions, or conversely how much inertial drag populations had. Because just as no real markets are perfectly integrated to the point where they fix prices in a wholly rational manner, so no real landscapes can ever be so well connected that mobility is always optimised. Some Mediterranean spaces may have been low friction surfaces but none were friction free. Only quantitative studies or parametric modelling – neither of which feature prominently in *The Corrupting Sea* – could help answer this question.

Alongside their emphasis on connectivity and mobility, Horden and Purcell claim that population densities across the Mediterranean region were generally low. Humans can

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[28] Purcell 2004.
[29] Hopkins 1978b, 1980, 1995/6 and 2000.

therefore be treated as yet another scarce resource, and one that often needed to be moved in order for its value to be realised.[30] Individuals either move themselves in order to gather sustenance or else form a resource moved by imperial states or slavers in order to further the broader aims of others. As a result, humans accumulated on the nodes of the networks, for example on islands with high population densities or at sites of economic intensification – mines, cities, villa estates – and dispersed rapidly when connections shifted or local economic production abated. The claim that ancient Mediterranean populations were rarely caught in Malthusian traps seems plausible, and their critique of explanations of mobility in terms of land hunger or overpopulation is a powerful one. Yet the elasticity of population – how easily people might be moved – remains a contentious issue. How feasible was it for an ancient population to relocate in the wake of economic abatement? What were the costs involved in leaving a dying node to relocate to a growing one? Were people never left behind, stranded in suboptimal locations? And were there never enterprises that grew more slowly simply because it took too long for labour to concentrate where it was needed? We are very familiar today with the long-term sequels of the collapse of an industry in a given location: when coal mines are worked out, or fish stocks depleted, or the world price of copper plummets, entire communities can be plunged into generations of poverty. Dispersal remains an option in some cases, as the depopulation of Detroit in the wake of the collapse of the US motor industry shows. But new homes and new jobs cannot be taken for granted. And if population location is rarely optimised today, why should we imagine it was more easily optimised in antiquity? Given how much more difficult mass transport was in antiquity, and what a small proportion of the population worked in occupations that were movable rather than on the land, how long did it take ancient populations to respond to shifts in connectivity? Soldiers might be redeployed, and slaves simply moved by their owners, but most occupational groups would not have been able to relocate easily in response to localised economic booms and busts. How serious – in chronological, economic and human terms – were the lags between changes in other resources and human responses to them through mobility?

The contribution made by *The Corrupting Sea* to current discussions of human mobility in antiquity is mixed. On the positive side, it offers a powerful set of arguments about how mobility and connectivity are to be related. The ecology and landscape of the Mediterranean basin did not drive mobility, but did constrain it in certain ways, and mobility became an important option for individuals and states. By treating human labour (or human

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[30] Horden and Purcell 2000: 266-68, 377-391.

beings – their usage varies) as one scarce resource like any other, an economic logic is offered for the location and movement of some people, on some occasions. On the negative side, the connections sketched out are essentially logical rather than empirical, and their significance – the scale of their influence – cannot easily be assessed. Still to be established are the gradients of connectivity, the numbers of individuals moving, the micro-regions most or least often affected by these forces, and so on. The authors' concern to emphasise mobility of all kinds means that only in rare passages (such as their important discussions of *cabotage*) do they systematically differentiate diverse kinds of movement; and in their passionate advocacy of the enduring structures of Mediterranean life 'before Braudel', they have left to others the task of analysing change across the long period they treat, and of establishing the limits of mobility and connectivity.

This is not the place to attempt a history of mobility levels in the long term. But there are some good practical reasons to approach the general issue from the early Roman period. The quantity of objects in early imperial material diasporas, the number of shipwrecks, the mean size of vessels, the number of cities and the peak size of the largest metropoleis, all establish the expectation that levels of mobility peaked in the last centuries BCE and the first CE. Levels of mobility were as high as in the preceding and following periods, and perhaps mobility was more differentiated too, if only because social roles were more differentiated.[31] It follows that whatever limits we may establish for the great imperial age of Rome apply even more stringently to earlier and later periods. But before approaching the difficult issue of quantification it is worth trying to get a more precise idea of the kinds of mobility we might expect.

4. Mobility and migration

Mobility is a relatively recent focus of research in antiquity, but we can benefit from a longer tradition of research into migration. Migration and mobility are not exact synonyms. 'Migration' in common usage often connotes mobility over long distances, and perhaps permanent relocation. Migration theorists, on the other hand, use the term much more widely to encompass temporary as well as permanent movements of individuals and groups, and examine how it works at a range of scales.[32] Archaeologists have been particularly preoccupied with the subject because migration was an early (and easy) explanation for

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[31] For recent attempts to describe this more precisely see Bowman and Wilson 2009 and 2011.
[32] Ness 2013 gives a sense of the range of phenomena covered by the term.

cultural change, then largely rejected in favour of endogenous processes of social evolution, and has in the last decades been gradually rehabilitated as a social phenomenon worth investigating in its own right.[33] Early medievalists have made use of some of the same theory to help relate changes in material culture after the fall of Rome to historical claims about movements of peoples.[34] Prehistorians have found inspiration in animal colonisations and new niches.[35]

Perhaps the most useful insights to emerge from these applications of migration theory are a set of common features that characterise long-distance movements of many kinds. Individual motives are various and usually unknowable, but the kind of circumstances which make migration possible, and the way it subsequently develops, are quite regular. David Anthony, in an influential paper which focuses on voluntary migration, summarises this approach as follows.

> From a constructivist perspective, viewing the actions of individuals within specific historical contexts, migration can be understood as a behavior that is typically performed by defined subgroups (often kin-recruited) with specific goals, targeted on known destinations and likely to use familiar routes. Kinship linkages and access to information limit many of these behaviors. From a processual perspective, examining constraints and regularities in longer-term patterns of behavior, migration can be viewed as a process that tends to develop in a broadly predictable manner once it begins. Social organization, trade relationships, and transportation technology constrain some of these processes.[36]

Migration is rarely, if ever, the movement of an entire society. Certain kinds of societies allow groups within them to take advantage of the possibility of movement. Those movements are rarely one-directional, in fact it is news passed back by returnees that shapes the decision of future migrants, positively and negatively. Migration in the ethnographic and historical record is the product of activities undertaken by groups, often united by kinship; it is generally targeted on a known place; and once begun tends to develop into a regular set of exchanges of population. These exchanges set up migration streams. People move not in waves, but along channels that often leapfrog intermediate locations to reach a known goal. Really long distance movements depend not only on good communications technology but also on the flow of reliable information, so that those who move know what possibilities exist for them at

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[33] For accounts of this see Adams, van Gerven and Levy 1978; Rouse 1986; Collett 1987; Anthony 1990 and 1992; Chapman and Hamerow 1997; Burmeister 2000; Tsuda 2011; Champion 2013. For the state of the question see Van Dommelen 2014.

[34] Hamerow 1994; Scull 1995; Trafford 2000; Halsall 2007 and 2014.

[35] For a more ecologically orientated approach to generalising models of human mobility see Diamond 1977.

[36] Anthony 1990: 895-896.

the other end of the journey.[37] But most migratory activity "consists of short-distance movements within a local area" and most moves "take place within an information field that represents habitually interacting social groups."

Anthony's discussion of the structure of migrations also has much to say about the identity of migrants.[38] A key variable is the economic roles played by would be migrants and the likelihood of their skills being in demand or usable in the chosen destination. Migrants are likely to be more skilled than many of those who stay behind. Because migration is an investment in the future they either need some capital to travel, or else the support of backers. And those most likely to migrate are those who have already done so, with the result that migrant communities provide pools of future migrants. The sex ratio of voluntary migrants has (until very recently) been biased strongly in favour of males.

Not all of this discussion is immediately relevant to mobility in the ancient Mediterranean, and some of it is more useful in helping interpret the movements of the archaic period than those of the Roman Empire. All the same, it does allow us to formulate some broad expectations about human mobility in our period.

First we should replace our notion of generalised mobility with a recognition that making long distance journeys was likely a specialised activity open to relatively few within each society. Those few were likely male and young, with valuable skills (masons, miners and potters rather than peasant farmers).[39]

Second we should look for the establishment and growth of particular migration streams, rather than imagine connectivity in terms of a general propensity for any one micro-region to be connected – briefly and opportunistically – with any other. Saltation and the movement of individuals back and forth along particular routes should provide the best clues here.

Third we should expect most movement to be local or regional, that is circulation within an information field formed by habitually interacting groups. Local movement we might consider as mobility between neighbouring villages or villages and towns, presumably

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[37] For the importance of information flows in structuring migration flows see Holleran's contribution to this volume. As Bernard points out, perceptions of opportunities existing in the city or area of destination might have been as important as reliable information transmitted by previous migrants.
[38] Anthony 1990: 899-905.
[39] Burmeister 2000. In this volume Holleran and Tacoma and Tybout call attention to the high proportion of traders and skilled workers among migrants referred to in the epigraphic records of Roman Portugal, Spain and Asia Minor. Of course, some men who travelled or migrated to distant destinations must have been accompanied by wives and sometimes also by children. See the papers by Bruun, Holleran and Hin for examples. Foubert discusses travelling women.

ubiquitous and almost never recorded.[40] Regional mobility is more difficult to define. Social networks certainly formed within geographically circumscribed areas – up and down the Nile Valley, between the cities and small settlements of Campania, up and down the coast of Asia Minor and so on.[41] Every so often these connections can be mapped, as for example in the countermarking of local coins by neighbouring cities in Asia Minor.[42] Since many provinces had also formed within geographical frames of this kind we can sometimes treat movement within a province as effectively movement within a region. But some provinces were so vast or so small that this cannot be a general rule. Perhaps it would be better to reckon in journey times, counting as long distance or interregional travel any journey that took five days or more.

The question of exactly how these empirical questions are resolved is perhaps of less importance than moving away from describing the ancient Mediterranean world in terms of a generalised connectivity. Migration theory, or rather the ethnographic and historical cases it synthesises, suggest instead that we imagine a mosaic of locally caged societies. Movement within those local small worlds must have been very frequent, but consisted of journeys of a few days at most. These worlds were mostly joined up into regions within which some movement took place. But the connections between regions were formed by migration flows – long distance streams along which rather specialised groups moved, carrying information and goods as well as their own skills and labour. The remainder of this paper seeks to substantiate these propositions, and exemplify them.

5. Was most mobility short-distance?

Short-range mobility comprises both relocations of individuals or families within a locality – from one village to the next for example – and also the less permanent mobility of those in search of work. How permanent any given move will be is not always evident at the time. Historical analogy strongly suggests that in premodern societies there may be considerable circulation of residence. Robin Osborne in a survey of rural mobility recorded in medieval and early modern documentation found huge variations in levels of mobility from one society

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[40] Some instances of marital mobility discussed in Zerbini's paper involved movements over relatively short distances.

[41] For applications of network theory to the classical Mediterranean see Malkin 2005b; Graham 2006; Collar 2007; Constantakopoulou 2007; Malkin, Constantakopoulou and Panagopoulou 2009; Malkin 2011; Collar 2011; Eidinow 2011; Maas and Ruths 2012; Collar 2013. In this volume Adams calls attention to the role of letters in maintaining social networks and transmitting information in the Nile Valley.

[42] Howgego 1985.

to another, but also some rural societies in which as much as 50% of a village population was replaced each generation.[43] Family and neighbourly disputes, the search for employment and land, movements for marriage and responses to local disasters and new economic opportunities all result in local relocations. The papyrological evidence from Roman Egypt produces many instances of movements of residence and also the circulation of traders and craftsmen within a nome or between neighbouring nomes.[44] The political unification of the Roman world almost certainly made such movements easier, and we might reasonably assume a background of short-range mobility in most parts of the empire. Classical literary texts include much rich anecdotal evidence of travel, actual and imagined, and this has often been surveyed.[45] But the two most important data sets for actually measuring movement are epigraphy and skeletal material.

Major advances in the use of skeletal material have made in recent years through the use of stable isotope analysis by Kristina Killgrove, Tracy Prowse, Hella Eckardt and others.[46] But the total sample sizes remain quite small. Although it seems that almost anywhere a group of burials are examined carefully a significant proportion seems to be of individuals who were not born and brought up in the immediate locality, it is difficult to establish the statistical significance for any single cemetery. Another complication is that Killgrove's analysis of strontium isotopes in ancient skeletal material dealt with 105 individuals from the environs of Rome, while Prowse's analysis based on oxygen isotopes used dental material from 61 individuals buried in Isola Sacra, the necropolis of Portus. Both are locations where we should, on other grounds – not least epigraphic[47]– expect immigration to be particularly high. How far their results can be generalised to the Roman world as a whole is unclear. In this volume Christer Bruun calls attention to another difficulty: while isotopic analysis is a good technique for identifying individuals who have spent particular portions of their life in places other than those where they were buried, it is at present not capable of identifying precisely those points of origin. The ratio of oxygen isotopes in drinking water varies from place to place, but within a relatively narrow range so a non-typical local value may reflect either short-range or long-range migration and perhaps also even the use of water from higher altitude brought by aqueducts. The techniques are evolving fast, but at present seem unable to

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[43] Osborne 1991.
[44] Braunert 1964; Gibbs 2012: especially 45-47; Adams in this volume.
[45] Casson 1974 is difficult to better in this respect. For a dramatisation Morley 2003.
[46] Killgrove 2010; Leach et al. 2009; Prowse et al. 2007; Eckardt 2010; Eckardt et al. 2010.
[47] Bruun 2010.

differentiate very short-distance migration from the kind of long-distance migration documented by epigraphic data from the same sites.

For epigraphic data does frequently record the origin of individuals and since a very large proportion of epigraphic mentions are funerary in nature, they provide pretty good indications of individual cases of human mobility.[48] The figures are not entirely easy to use. First the origins of aliens are likely to be *overrepresented* as a proportion of funerary epitaphs simply because the *origines* and municipal citizenships of locals are less likely to be noted when they died close to home.[49] On the other hand the scale of mobility is likely to be *underrepresented* by funerary epigraphy simply because many individuals did return home after journeys abroad, or else were commemorated where they had lived rather than where they died. Those we know about are the unluckly proportion who died 'on foreign shores'.[50] Finally, many will have died within their native *civitates* but in different communities from those in which they were raised. It follows that we should expect that there was more mobility than is recorded on epitaphs, but that more of it was local than appears.

With these caveats we can turn to the various provincial surveys that have looked at the question. One of the earliest was Krier's study of the Treveri, a relatively well travelled people.[51] Of the 62 Treveri recorded outside their home territory only 3 individuals are attested in the Mediterranean world, all from the city of Rome. 43 were from the Germanies or Comatan Gaul with the Rhineland prominent. The remainder were scattered thinly across the Danube provinces and Britain. The great majority of these displacements are regional rather than long-distance in terms of the criteria suggested above. Incidentally the vast majority were soldiers or traders, and they were overwhelmingly male. Wierschowski's studies of regional mobility across the totality of the Gallic provinces show that these patterns are in fact fairly general.[52] Excluding soldiers and veterans he documented 649 cases of mobility of which 500 were within the Gallic provinces. These represented some 5% of the total number of individuals recorded in the epigraphy of the provinces. Most of the other cases of mobility were of Gauls commemorated in Spain or Italy. Haley's study of migrants within the Spanish provinces found they represented less than 5% of the population

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[48] This discussion draws in part on Woolf 2013.

[49] In this volume Zerbini, Ivleva, Hin and Tacoma and Tybout's use epigraphic references to *origines* to trace migrants.

[50] Handley 2011. Most of the mobile individuals discussed by Tacoma and Tybout (in this volume) seem to have been temporary migrants or travelers, and the efforts undertaken to repatriate the remains of relatives who had died abroad, which are the central theme of Tybout's paper, bear witness to the expectation that the invididuals in question would return to their places of birth.

[51] Krier 1981.

[52] Wierschowksi 1995 and 2001.

commemorated.[53] Even so he identified 715 migrants, but more than 80% were migrants from other Spanish communities. Most were soldiers, traders or miners. Figures from other western provinces, although less systematically gathered, do not suggest that either the Gallic or Spanish provinces were atypical.

These figures do not support the idea that long distance mobility was common in the provinces considered. Admittedly the data sets refer largely to continental regions where cities were typically small and economic relations conducted over relatively short distances. Yet the epigraphic data overwhelming seems to document forms of mobility that were relatively short range and occasionally regional, just as David Anthony suggested. People did move, from villages to towns, between villages and occasionally between neighbouring *civitates*. Most migrants were male, and those with specific skills are easier to see than agricultural labourers (although these are underrepresented in epigraphic documentation). Long distance movement seems to have been rare.

6. Migration streams

What about migration streams leapfrogging to distant but well-known destinations, streams that evolved over time through reverse migration and the branching off of new migratory routes? A range of migration streams can be indeed documented for the Roman world but they relate to rather specialised groups, not to Horden's "small producer who of necessity sometimes has to travel long distances to gather sustenance". And for the most part – like so many mass movements in history – they were organised by others.

Army recruitment extracted individuals from particular societies and despatched them to particular destinations according to the needs of the state. It is clear that certain legions relied on particular recruiting grounds and some were, at least to begin with, quite distant. Flows of individuals seem to have become established between particular frontiers and their more urbanised hinterlands, so from Gallia Narbonensis to the Rhineland and from Africa Proconsularis to Numidia. Rare redeployments of units, and the settlement of veterans formed the counterpart to these flows, but there was clearly some return migration as well.[54] Auxiliaries also came to be drawn from some societies more than others – the Batavians and the Syrians are well documented examples – and some at least returned to their home societies

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[53] Haley 1991.
[54] Forni 1953; Keppie 1983; Roselaar in this volume.

after long periods of service.[55] Military migrants – legionaries and auxiliaries alike – were drawn from specific sectors of society, defined by gender, age and on occasion by their skills.

Slave trading too established migration flows to predetermined locations, and slave traders were also selective in whom they moved, with young adult males almost certainly predominating.[56] The importance of particular sources of slaves varied over time. And as the urban network evolved and new tetrarchic metropoleis emerged within it, we might expect destinations to have changed as well. If we could observe it more precisely, then, we would see the same gradually shifting flows of slaves that characterised the Atlantic Slave trade.

Some other migration streams are less well documented but seem to be required by the standard current models of Roman demography.[57] Most obvious of all are the demands imposed by the so called 'urban graveyard effect', the thesis that in most preindustrial cities of any size mortality significantly exceeds fertility and that cities as large as ancient Rome therefore depended on immigration of one kind or another to sustain their population levels.[58] That view – at least in its simplest and more generalising form – has recently been subjected to sustained critique. Saskia Hin has shown how much it relies on analogy with better documented places and periods, and although she concludes that the city of Rome probably did require some level of immigration, she queries the scale of phenomenon.[59] Elio Lo Cascio has pointed out how variable the demography of early modern cities was, and raised doubts about some of the traditional and more recent arguments for Rome being a particularly unhealthy place.[60] The debate continues. But there is broad agreement that Rome and other large cities in classical antiquity were densely populated, that large sections of their population lived in conditions of poverty and insecurity, that they had as a result poor diets and high levels of endemic disease, and were therefore susceptible to epidemics.[61] All of this makes it overwhelmingly likely that the literary testimony for immigration reflects a genuine dependence on migrants. Even if some were seasonal, many may have had higher mortality than long-term residents. A proportion were involuntary migrants, that is to say slaves, but the

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[55] Haynes 2013; Ivleva in this volume.
[56] Harris 1980; Scheidel 1997; Harris 1999 and 2011; Garnsey and de Ligt in this volume.
[57] Parkin 1992; Scheidel 2001a, 2001b and 2007.
[58] Among others Hopkins 1978a and 1978b; Morley 1996; Scheidel 1997 and 2004; Paine and Storey 2006; de Ligt and Northwood 2008; Erdkamp 2008.
[59] Hin 2013.
[60] Lo Cascio 2006 and id. in this volume.
[61] Sallares 2002; Scheidel 2003: Garnsey and de Ligt in this volume.

remainder were most likely drawn from the small towns and villages of Italy and nearby provinces, just as in the traditional picture.[62]

Most discussions end here, having established a relationship between urbanisation and the rural hinterland, or between bigger and smaller cities. But it is also possible as a thought experiment to consider the population of the Mediterranean world as a whole. If it is correct that there was no significant regular immigration from beyond the imperial frontiers, and that demographic growth within the empire was perhaps around 0.1% annually, we can then begin to envisage the internal dynamics of that system in terms of migration streams from areas where fertility exceeded mortality towards those where the reverse was the case. Slavery no doubt accounted for some of this movement, but there is no reason to believe that all areas of relatively high fertility were subjected to slaving on a large scale: upland Italy, for example, populated entirely by Roman citizens from the early last century BCE, is an unlikely slaving ground. Some migration streams were almost certainly seasonal because of the variable demands of both labour-intensive agriculture (including viticulture and olive production) and of some urban industries (building for example, and also work on the docks which were much busier in the sailing season than in the winter months).[63] Analogous migration streams – some permanent and some seasonal – must have been generated by other large cities such as Carthage, Alexandria, Syrian Antioch and Constantinople.[64] The same centres also attracted traders of course, some plying regular annual routes like the grain routes from Alexandria and Carthage to Rome.

It is also likely, if difficult to document, that the ecological fragmentation of the Mediterranean world and local alternations of glut and dearth (in Horden and Purcell's terminology) also generated traffic to major centres. The notion of generalised connectivity might lead us to imagine that farmers with unexpected surpluses would attempt to make direct contact with localities experiencing unusual shortages. But consideration of the information regime of the ancient Mediterranean makes it clear that this would be a time-consuming and risky strategy. Vessels carrying surplus food might take some while to locate an area experiencing dearth, or might arrive too late to make a sale. It would be more rational for those with a surplus to transplant it to a major port, and for those in need of additional supplies to go to those same ports. And because some places produced surpluses rather often,

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[62] Brunt 1971; Hopkins 1978a; Morley 1996. For a broader Italian context Morley 1997; Patterson 2006.
[63] Erdkamp 2008: 424-433 and id. in this volume.
[64] For migration to Alexandria see Adams' contribution to this volume.

some of these routes as well as the hubs would become routinised. This kind of mobility too resembles a migration stream in Anthony's terminology.

Military recruitment and settlement, the slave trade, the labour demands of ancient metropoleis and villa owners, imbalances of fertility and mortality across the Mediterranean world, and the trade in staples generated by other imbalances all combined to establish a slowly changing network of migration streams. These flows of population were essential for sustaining certain economic and political structures to which ancient elites were committed – among them villa agriculture, urban residence and the maintenance of the imperial state. For these reasons ancient elites compelled some movements, and incentivised and facilitated others. These varieties of long-distance mobility connected up populations most of whose members moved only very short distances during their lifetimes, even if they did not inhabit isolated or autarkic communities. Rather than a generalised mobility, I suggest the ancient world was characterised by a minority of movers – travelling back and forth along well defined migration streams – and a majority of stayers inhabiting small worlds even if they were aware of the larger one to which their visitors connected them and into which some of their members might occasionally depart, for a while or for ever.

7. Quantifying long-distance mobility

So how many moved? The epigraphic surveys collected above produced very low figures for those commemorated outside their own communities – in the order of 5%. That figure is hardly dependable for the reasons stated already, but it is not really compatible with very high levels of long-distance mobility. Almost all the epigraphic testimony can be accounted for by short-range journeys within a region, by stayers rather than movers.

A different approach to the question of long-distance mobility is to ask about the carrying capacity of ancient communication systems. A good deal of important recent work touches on this question.[65] All I intend to do in this final section is to sketch out some broad parameters, the limits that is of what was feasible. To do this I will make a few gross assumptions.

Most important I shall concentrate on maritime journeys. I assume that road travel was important, but mostly for local communications (from town to country and between neighbouring towns that is). This conforms to the importance given to land transport in the

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[65] Adams and Laurence 2001; Adams 2007; Adams and Roy 2007; Malkin, Constantakopoulou and Panagopoulou 2009; Talbert 2010; Alcock, Bodel and Talbert 2012.

agronomists, and to the logical demands that centres of consumption be connected to rural hinterlands.[66] Colin Adams is certainly right that we need to move beyond contrasting the costs of maritime, riverine and land transport systems and ask how different modes of transport were integrated.[67] Whenever we can track a long journey in detail – Pliny's journey to his province for example, or the journey of Theophanes from Egypt to Antioch – it is common to find different transport methods used for different stages.[68] To the evidence Adams has gathered from the Egyptian papyri may be added recent studies of transport systems in Roman Europe. Specialised groups like *utricularii* worked alongside *nautae* and *navicularii* to distribute goods arriving by maritime and riverine transport to locations in the interior, and regular commerce across trans-Alpine routes was in some sense that is not entirely clear organised by *corpora* of merchants.[69] The high cost of land transport has certainly been exaggerated, and often there were no alternatives available.[70] But it remains true that the few accounts of long journeys by land that we have – the most detailed of which are the journeys of the first Holy Land pilgrims and of the Egyptian landowner Theophanes, all from the fourth century CE – suggest journeys by land were expensive, difficult and slow even for those who did have *diplomata* that entitled them to use imperial *vehiculatio* and *mansiones*.[71] Apart from the special important case of troop movements I shall assume, therefore, that most long distance travel was undertaken by sea. I shall also assume that *cabotage* also served primarily local needs, even if it was occasionally integrated into wider commercial networks as means of distributing small quantities of manufactures and perhaps bringing small quantities of produce to larger markets. Sea travel also, I suggest, was the bottleneck in the system, the point in integrated transport systems where additional capacity was obtained with the most difficulty.

What of sea travel then? A number of calculations have been made of the number of journeys made annually by vessels of different size, and Dominic Rathbone has recently

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[66] Laurence 1999.

[67] Adams 2007.

[68] Plin. *Ep*. 10.15-17 by sea to Ephesos, by road to Pergamon, then by coastal boat to Cyzicus and road again to Apollonia and Prusa. Theophanes by boat down the Nile, then by road to Antioch mostly by cart (*raeda*) but possibly the last stage on horseback (Matthews 2006). It would be easy to multiply examples.

[69] For *utricularii* see Liu 2009: 136-138, building on Kneißl 1981 and Deman 2002. For the *splendidissimum corpus mercatorum Cisalpinorum et Transalpinorum* see Hitchner 2012 citing Walser 1989 and 1991.

[70] Laurence 1999.

[71] Casson 1974; Wilkinson 1982; Hunt 1982; Matthews 2006. On the so-called *cursus publicus* Mitchell 1976 and 1982; Kolb 2000 and 2001. For an overview of the system Talbert 2012.

reviewed the most important.[72] He cites Tchernia's estimate of around 800 vessels of 150-350 metric tonnes each making 2 or 3 round trips each year, and argues that most vessels were smaller and that we might imagine as many as 1500 vessels between 60 and 330 tonnes. Three round trips within a sailing season sounds implausible for all but the shortest of routes. Rathbone's aim is to emphasise the large cumulative scale of maritime commerce, but he argues this reflects the net effect of many voyages in mostly small vessels.[73] Harris and Iara's recent conference volume on maritime technology also emphasises the predominance of small vessels, arguing that large ones of around 300 tonnes are overrepresented in wreck evidence and would have been prohibitively expensive for many shippers.[74]

So far this might seem to argue for high levels of traffic, especially within the core sailing season of May to September. Yet this might not translate into a high capacity for passenger travel. The largest vessels attested in literary sources seem to have been those designed for mass transportation of foodstuffs, such as the grain boats crossing from Alexandria or Carthage to Portus. A few – such as the short lived *dolia* vessels of the Augustan period – definitely had little spare capacity. A small number of very large vessels were needed to transport stone,[75] and presumably specialised vessels carried live animals. But we lack much evidence for specialised passenger vessels of the kind used for the voluntary and involuntary settlement of the New World. Most accounts of travel describe passengers riding on commercial vessels.[76] It seems very unlikely that most vessels on long distance routes could have managed more than a few dozen passengers, and some presumably travelled with none.

A small number of accounts of shipwrecks survive. Josephus in his *Life* describes how on his way to Rome the ship he was travelling in sank in the Adriatic with about 600 passengers abroad, of which only 80 survived to be rescued by a Cyrenenaic vessel.[77] More famous is the account in *Acts* of the wreck of one of the enormous grain vessels that travelled each year from Alexandria to Rome, apparently usually by way of southern Asia Minor, then across the Aegean before rounding Malea and making the journey through the straits of Messina. In this case 276 passengers were allegedly aboard.[78] These vessels were, according to Philo, the preferred means of transport between Rome and Alexandra no doubt because

[72] Rathbone 2003.
[73] Rathbone 2009.
[74] Harris and Iara 2011.
[75] Tchernia 2011.
[76] Pomey 1997.
[77] Josephus *Vit.* 3.
[78] *Acts* 27.37.

their greater size allowed more comfort.[79] The final account is Synesius 4th letter describing the wreck of a ship heading bound from Alexandria to Cyrene. Aside from the cargo there was a crew of a dozen and around 50 passengers. Calculations from anecdotes like these are fantastically difficult but they perhaps give a sense of the range of possibilities.

If a thousand vessels each made two round trips annually, each carrying on average thirty passengers, then the total number of long-distance journeys per annum would be in the region of 60,000. If so that would mean that only one in a thousand out of the population of 60 million made a long distance journey in any one year.

There is no way of getting away from the provisional and speculative nature of these calculations, but they do at least provide some parameters for assessing claims of high mobility, and they are not very different from what epigraphic evidence suggests.

8. Movers and stayers

The subjects of the Roman emperors did not spend all their lives at home, nor in isolation, nor were they self-sufficient in the way the ideology of autarky suggests. Human mobility and connectivity are key concepts if we are to understand the evolution of the Mediterranean as a populated environment, and as one that at times could support a few large cities and some very large states. But it is important to retain a sense of perspective. Those who have worked on mobility in prehistory have been careful to stress the huge limitations on travel and its small scale alongside its enormous importance.[80] From the middle of the third millennium strenuous efforts were made to improve maritime technology and navigational techniques, and this continued through the Roman period.[81] These efforts imply that connectivity was certainly not taken for granted in antiquity.

For the Roman period most mobility was over rather short distances. Most people were stayers (meaning those who stayed at or near home) rather than movers (meaning those who moved over long distances). Long distance mobility was uncommon, and it involved a tiny proportion of the population. Movers were not a random selection of the general population. Women, in particular, as I have argued elsewhere, almost never moved except in the company of their male relatives or owners, and often their relatives and owners moved without taking them along. But many men too moved long-distances only rarely, or perhaps only once or twice in their lives when others moved them. Most lives had narrow horizons.

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[79] Philo, *in Flaccum* 25-27 has Gaius recommend this route to Herod.
[80] Broodbank 2013.
[81] Broodbank 2006 and 2010; Harris and Iara 2011.

It is worth pointing out, however, that even if only a small proportion of the population engaged in long distance migration or travel, this might have had quite important effects. Many of the literary testimonia refer to the movements of high status individuals – embassies and governors, princes and sophists and the like – and much of the epigraphy relates to traders and craftsmen. Even quite small numbers of individuals of this sort would have been able to generate considerable connectivity across the empire, and beyond it as well.[82] One of the founders of Social Network Analysis, Mark Granovetter, pointed out that the weak ties that connect two or more densely bound local networks have a special importance since it is precisely those weak ties that bring information not already shared within the locality.[83] This insight has already been applied to the explanation of religious change in the Roman world.[84] From quite a different starting point Bruce Frier, in one of the best short discussions of Roman demography, argues the balance between mortality and fertility rates in ancient societies was so fine that even very modest migration might have had major effects.[85] Mobility does not need to be high or ubiquitous in order to have major effects. Put otherwise, a high degree of connectivity does not depend on high levels of mobility.

REFERENCES

Adams, C. (2007). *Land Transport in Roman Egypt. A Study of Economics and Administration in a Roman Province, Oxford Classical Monographs*. Oxford, Oxford University Press.

— and R. Laurence (eds.) (2001). *Travel and Geography in the Roman Empire*. London, Routledge.

— and J. Roy (eds.) (2007). *Travel, Geography and Culture in Ancient Greece, Egypt and the Near East*. Oxford, Oxbow Books.

Adams, W.Y., D.P. van Gerven and R.S. Levy (1978). 'The retreat from migrationism', *Annual Review of Anthropology* 7: 483-532.

Alcock, S.E., J. Bodel and R.J.A. Talbert (eds.) (2012). *Highways, Byways, and Road Systems in the Pre-Modern World. Ancient World Comparative Histories*. Malden, Wiley-Blackwell.

Anthony, D.W. (1990). 'Migration in archaeology. The baby and the bathwater', *American Anthropologist* 92: 895-914.

— (1992). 'The bath refilled. Migration in archaeology again', *American Anthropologist* 94: 174-176.

Bickerman, E. (1952). 'Origines Gentium', *Classical Philology* 47: 65-81.

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[82] Matthews 1989.
[83] Granovetter 1973.
[84] Collar 2007, 2011 and 2013; Price 2012.
[85] Frier 2000: 808-811.

Blake, E. (2008). 'The Mycenaeans in Italy. A minimalist position', *Papers of the British School at Rome* 76: 1-34.

Bowman, A. and A. Wilson (eds.) (2009). *Quantifying the Roman Economy. Methods and problems*. Oxford, Oxford University Press.

Bowman, A. and A. Wilson (eds.) (2011). *Settlement, Urbanization, and Population, Oxford Studies on the Roman Economy*. Oxford: Oxford University Press.

Braunert, H. (1964). *Die Binnenwanderung. Studien zur Sozialgeschichte Ägyptens in des Ptolemäer- und Kaiserzeit, Bonner historische Forschungen*. Bonn, L. Röhrscheid.

Bresson, A. (2005). 'Ecology and beyond. The Mediterranean paradigm', in: W. V. Harris (ed.), *Rethinking the Mediterranean*. Oxford: Oxford University Press: 94-114.

Broodbank, C. (2006). 'The Origins and Early Development of Mediterranean Maritime Activity', *Journal of Mediterranean Archaeology* 19: 199-230.

— (2010). ''Ships a-sail from over the rim of the sea.' Voyaging, sailing and the making of Mediterranean societies c. 3500-800 BC', in: A. J. Anderson, J. H. Barrett and K. V. Boyle (eds.), *The Global Origins and Development of Seafaring*. Cambridge, McDonald Institute for Archaeological Research: 249-264.

— (2013). *The Making of the Middle Sea. A History of the Mediterranean from the Beginning to the Emergence of the Classical World*. New York and Oxford, Oxford University Press.

Brunt, P.A. (1971). *Italian Manpower 225 B.C. - A.D. 14*. Oxford, Oxford University Press.

Bruun, C. (2010). 'Water, oxygen isotopes and immigration to Ostia-Portus', *Journal of Roman Archaeology* 23: 109-132.

Burmeister, S. (2000). 'Archaeology and migration. Approaches to an archaeological proof of migration', *Current Anthropology* 41: 539-567.

Casson, L. (1974). *Travel in the Ancient World*. Baltimore & London, John Hopkins University Press.

Champion, T.C. (2013). 'Protohistoric European migrations', in: I. Ness (ed.), *Encyclopaedia of Global Human Migration*. Malden MA & Oxford, Wiley-Blackwell.

Chapman, J. and H. Hamerow (eds.) (1997). *Migrations and Invasions in Archaeological Explanation, British Archaeological Reports International Series*. Oxford, Archaeopress.

Collar, A. (2007). 'Network theory and religious innovation', *Mediterranean Historical Review* 22: 149-162.

— (2011). 'Military networks and the cult of Jupiter Dolichenus', in: E. Winter (ed.), *Von Kummuh nach Telouch. Historische und archäologische Untersuchungen in Kommagene. Dolichener und Kommagenische Forschungen 4*. Bonn, Habelt: 217-245.

— (2013). *Religious Networks in the Roman Empire. The Spread of New Ideas*. Cambridge, Cambridge University Press.

Collett, D. (1987). 'A contribution to the study of migrations in the archaeological record: the Ngoni and Kokolo migrations as a case study', in: I. Hodder (ed.), *Archaeology as Long-term History*. Cambridge, Cambridge University Press: 105-116.

Constantakopoulou, C. (2007). *The Dance of the Islands. Insularity, networks, the Athenian Empire and the Aegean World, Oxford Classical Monographs*. Oxford, Oxford University Press.

de Ligt, L. and S. Northwood (eds.) (2008). *People, Land and Politics. Demographic developments and the transformation of Roman Italy 300 BC - AD 14*. Leiden, Brill.

Deman, A. (2002). 'Avec les utriculaires sur les sentiers muletiers de la Gaule romaine', *Cahiers du Centre Gustave Glotz* 13: 233-246.

Diamond, J. M. (1977). 'Colonization cycles in man and beast', *World Archaeology* 8: 249-261.

Earle, T., C. Gamble and H. Poinar (2011). 'Migration', in: A. Shryock and D. Lord Smail (eds.), *Deep History. The Architecture of Past and Present*. Berkeley & Los Angeles & London: University of California Press: 191-218.

Eckardt, H. (ed.) (2010). *Roman Diasporas. Archaeological Approaches to Mobility and Diversity in the Roman Empire*, *Journal of Roman Archaeology Supplements*. Portsmouth, Rhode Island.

—, C. Chenery, S. Leach, M. Lewis, G. Müldner and E. Nimmo (2010). 'A long way from home: diaspora communities in Roman Britain', in: H. Eckardt (ed.), *Roman Diasporas. Archaeological Approaches to Mobility and Diversity in the Roman Empire*. Portsmouth, Rhode Island: 99-130.

Eidinow, E. (2011). 'Networks and narratives. A model for ancient Greek religion', *Kernos* 24: 9-38.

Elsner, J. and I. Rutherford (eds.) (2005). *Pilgrimage in Graeco-Roman and Early Christian Antiquity. Seeing the Gods*. Oxford, Oxford University Press.

Erdkamp, P. (2008). 'Mobility and migration in Italy in the second century BC', in: L. de Ligt and S. Nortwood (eds.), *People, Land and Politics. Demographic developments and the Transformation of Roman Italy 300 BC - AD 14*. Leiden, Brill: 417-449.

Fentress, J. and E. Fentress (2001). 'Review Article. The hole in the doughnut', *Past and Present* 173: 203-219.

Finley, M.I. (1973). *The Ancient Economy*. Berkeley, University of California Press.

Forni, G. (1953). *Il reclutamento delle legioni da Augusto a Diocleziano*. Milan, Bocca.

Frier, B.W. (2000). 'Demography', in: A. Bowman, P. Garnsey and D. Rathbone (eds.), *Cambridge Ancient History, vol. XI. The High Empire, A.D. 70-192*. Cambridge, Cambridge University Press: 787-816.

Garnsey, P. (1988). *Famine and Food Supply in the Greco-Roman World. Responses to Risk and Crisis*. Cambridge, Cambridge University Press.

Gibbs, M. (2012). 'Manufacture, trade and the economy', in: C. Riggs (ed.),*The Oxford Handbook of Roman Egypt*. Oxford, Oxford University Press: 38-55.

Graham, S. (2006). 'Networks, agent-based models and the Antonine itineraries. Implications for Roman archaeology', *Journal of Mediterranean Archaeology* 19: 45-64.

Granovetter, M.S. (1973). 'The Strength of Weak Ties', *American Journal of Sociology* 78: 1360-1380.

Haley, E.W. (1991). *Migration and Economy in Roman Imperial Spain, Aurea Saecula*. Barcelona, Publicacions Universitat de Barcelona.

Halsall, G. (2007). *Barbarian Migrations and the Roman West 376-568*. Cambridge, Cambridge University Press.

— (2014). 'Two Worlds Become One. A 'counter-intuitive' view of the Roman Empire and 'Germanic' migration', *German History* 32: 515-532.

Halstead, P. and J. O'Shea (1982). 'A friend in need is a friend indeed. Social storage and the origins of social ranking', in: C. Renfrew and S. Shennan (eds.), *Ranking, Resources and Exchange. Aspects of the Archaeology of Early European Society*. Cambridge, Cambridge University Press: 92-99.

Hamerow, H. (1994). 'Migration Theory and the migration period', in: B. Vyner (ed.), *Building on the Past. Papers celebrating 150 years of the Royal Archaeological Institute*. London, Royal Archaeological Institute: 164-177.

Handley, M. (2011). *Dying on Foreign Shores. Travel and Mobility in the Late Antique West*, *Journal of Roman Archaeology Supplements*. Portsmouth, Rhode Island.

Harris, W.V. (1980). 'Towards a study of the Roman slave trade', In J. H. D'Arms and E. C. Kopff (eds.),*The Seaborne Commerce of Ancient Rome*. Rome, American Academy in Rome 117-140.

— (1999). 'Demography, geography and the sources of Roman slaves', *Journal of Roman Studies* 89: 62-75.

— (2005a). 'The Mediterranean and Ancient History', in: id. (ed.), *Rethinking the Mediterranean*. Oxford, Oxford University Press: 1-42.

— (ed.) (2005b). *Rethinking the Mediterranean*. Oxford, Oxford University Press.

— (2011). *The Roman Imperial Economy. Twelve Essays*. Oxford, Oxford University Press.

— (ed.) (2013). *The Ancient Mediterranean Environment between Science and History*, *Columbia Studies in the Classical Tradition*. Leiden & Boston, Brill.

— and K. Iara (eds.) (2011). *Maritime Technology in the Ancient Economy. Ship Design and Navigation, Journal of Roman Archaeology Supplementary Series*. Providence RI.

Haynes, I. (2013). *Blood of the Provinces. The Roman Auxilia and the Making of Provincial Society from Augustus to Diocletian*. Oxford, Oxford University Press.

Hin, S. (2013). *The Demography of Roman Italy. Population Dynamics in an Ancient Conquest Society 201 BCE –14 CE*. Cambridge, Cambridge University Press.

Hitchner, R. B. (2012). 'Roads, integration, connectivity and economic performance in the Roman empire', in: S. E. Alcock, J. Bodel and R. J. A. Talbert (eds.), *Highways, Byways, and Road Systems in the Pre-Modern World*. Malden, Wiley-Blackwell: 222-234.

Hopkins, K. (1978a). *Conquerors and Slaves*. Cambridge, Cambridge University Press.

— (1978b). 'Economic Growth and Towns in Classical Antiquity', in P. Abrams and E. A. Wrigley (eds.),*Towns in Societies. Essays in Economic History and Historical Sociology*. Cambridge, Cambridge University Press: 35-77.

— (1980). 'Taxes and Trade in the Roman empire, 200 BC- AD 200', *Journal of Roman Studies* 70: 101-25.

— (1995/6). 'Rome, taxes, rents and trade', *Kodai* 6/7: 41-75.

— (2000). 'Rent, taxes, trade and the city of Rome', in: E. Lo Cascio (ed.), *Mercati permanenti e mercati periodici nel mondo romano*. Bari: 253-267.

Horden, P. (2005). 'Travel sickness. Medicine and mobility in the Mediterranean from Antiquity to the Renaissance', in W. V. Harris (ed.), *Rethinking the Mediterranean*. Oxford: Oxford University Press: 179-199.

Horden, P. and N. Purcell (2000). *The Corrupting Sea. A Study of Mediterranean History*. Oxford, Blackwell.

Howgego, C. (1985). *Greek imperial Countermarks. Studies in the Provincial Coinage of the Roman Empire, Special Publications*. London, Royal Numismatic Society.

Hunt, E. (1982). *Holy Land Pilgrimage in the Later Roman Empire AD 312-460* Oxford, Clarendon Press.

Keppie, L.J.F. (1983). *Colonisation and Veteran Settlement in Italy 47-14 BC*. London: British School at Rome.

Killgrove, K. (2010). 'Identifying immigrants to Imperial Rome using strontium isotope analysis', in: H. Eckardt (ed.), *Roman Diasporas. Archaeological Approaches to Mobility and Diversity in the Roman empire*. Portsmouth, Rhode Island: 157-174.

Kneißl, P. (1981). 'Die *Utricularii*. Ihre Rolle im gallo-römischen Transportwesen und Weinhandel', *Bonner Jahrbücher* 181: 169-203.

Kolb, A. (2000). *Transport und Nachrichtentransfer im Römischen Reich*. Berlin, Akademie Verlag.

— (2001). 'Transport and Communication in the Roman State. The cursus publicus', in: C. Adams and R. Laurence (eds.),*Travel and Geography in the Roman Empire*. London, Routledge: 95-105.

Krier, J. (1981). *Die Treverer außerhalb ihrer Civitas. Mobilität und Aufstieg, Trierer Zeitschrift Beihefte*. Trier: Selbstverlag de Rheinischen Landesmuseums Trier.

Lane Fox, R. (2008). *Travelling Heroes. Greeks and their Myths in the Epic Age of Homer*. London, Allen Lane.

Laurence, R. (1999). *The Roads of Roman Italy. Mobility and Cultural Change*. London, Routledge.

Leach, S., M. Lewis, C. Chenery, G. Müldner and H. Eckardt (2009). 'Migration and diversity in Roman Britain. A multidisciplinary approach to the identification of immigrants in Roman York, England', *American Journal of Physical Anthropology* 140: 546-561.

Liu, J. (2009). *Collegia Centonariorum. The Guilds of Textile Dealers in the Roman West*. Vol. 34, *Columbia Studies in the Classical Tradition*. Leiden & Boston, Brill.

Lo Cascio, E. (2006). 'Did the population of imperial Rome reproduce itself?', in: G. Storey (ed.), *Urbanism in the Preindustrial World. Cross-cultural Approaches*. Tuscaloosa: University of Alabama Press: 52-68.

Maas, M. and D. Ruths (2012). 'Road Connectivity and the Structure of Ancient Empires. A case study from late antiquity', in: S. E. Alcock, J. Bodel and R. J. A. Talbert (eds.), *Highways, Byways, and Road Systems in the Pre-Modern World*. Malden MA, Wiley-Blackwell: 255-264.

Malkin, I. (ed.) (2005a). *Mediterranean Paradigms and Classical Antiquity*. London & New York, Routledge.

— (2005b). 'Networks and the emergence of Greek identity', in id. (ed.), *Mediterranean Paradigms and Classical Antiquity*. London & New York: Routledge: 56-74.

— (2011). *A Small Greek World. Networks in the Ancient Mediterranean*. New York, Oxford University Press.

—, C. Constantakopoulou and K. Panagopoulou (eds.) (2009). *Greek and Roman Networks in the Mediterranean*. London & New York, Routledge.

Manning, S.W. and L. Hulin (2005). 'Maritime commerce and geographies of mobility in the late Bronze Age of the eastern Mediterranean: problematizations', in: E. Blake and A. B. Knapp (eds.), *The Archaeology of Mediterranean Prehistory*. Malden MA & Oxford & Carlton, Victoria, Blackwell Publishing: 270-302.

Matthews, J.F. (1989). 'Hostages, philosophers, pilgrims, and the diffusion of ideas in the late Roman Mediterranean and Near East', in: F. M. Clover and R. S. Humphreys (eds.), *Tradition and Innovation in Late Antiquity*. Madison, Wisconsin, University of Wisconsin Press: 29-49.

— (2006). *The Journey of Theophanes. Travel, Business, and Daily Life in the Roman East*. New Haven CT, Yale University Press.

Mitchell, S. (1976). 'Requisitioned transport in the Roman empire. A new inscription from Pisidia', *Journal of Roman Studies* 66: 106-131.

— (1982). 'The requisitioning edict of Sex. Sotidius Strabo Libuscidianus', *Zeitschrift für Papyrologie und Epigraphik* 45: 99-100.

Moatti, C. (ed.) (2004). *La mobilité des personnes en Méditerranée de l'antiquité à l'époque moderne. Procédures de contrôle et documents d'identification*. Rome, École française de Rome.

— (2006). 'Translation, migration, and communication in the Roman empire. Three aspects of movement in history', *Classical Antiquity* 25: 109-140.

— (2013). 'Immigration and Cosmopolitanization', in: P. Erdkamp (ed.), *Cambridge Companion to Ancient Rome*. Cambridge: Cambridge University Press: 77-92.

— and W. Kaiser (eds.) (2007). *Gens de passage en Méditerranée de l'Antiquité à l'époque moderne. Procédures de contrôle et d'identification*, Collection L'atelier méditerranéen. Paris, Maisonneuve & Larose.

Morley, N. (1996). *Metropolis and Hinterland. The City of Rome and the Italian Economy 200 B.C. - A.D. 200*. Cambridge, Cambridge University Press.

— (1997). 'Cities in context. Urban systems in Roman Italy', in: H. Parkins (ed.), *Roman Urbanism. Beyond the Consumer City*. London, Routledge: 42-58.

— (2003). 'Migration and the metropolis', in: C. Edwards and G. Woolf (eds.), *Rome the Cosmopolis*. Cambridge, Cambridge University Press: 147-157.

Ness, I. (ed.) (2013). *Encyclopaedia of Global Human Migration*. Malden MA & Oxford, Wiley-Blackwell.

Osborne, R. (1991). 'The potential mobility of human populations', *Oxford Journal of Archaeology* 10: 231-252.

— (2009). *Greece in the Making 1200-479 BC*, second edition, London, Routledge.

Paine, R.R. and G.R. Storey (2006). 'Epidemics, age at death, and mortality in Ancient Rome', in: G.R. Strorey (ed.),*Urbanism in the Preindustrial World. Cross-Cultural Approaches*. Tuscaloosa, University of Alabama Press: 69-85.

Parkin, T. (1992). *Demography and Roman Society*, *Ancient Society and History*. Baltimore & London, John Hopkins University Press.

Patterson, J.R. (2006). *Landscapes and Cities. Rural Settlement and Civic Transformation in Early Imperial Italy*. Oxford, Oxford University Press.

Pomey, P. (ed.) (1997). *La navigation dans l'antiquité*. Aix-en-Provence, Édisud.

Price, S. (2012). 'Religious mobility in the Roman empire', *Journal of Roman Studies* 102: 1-19.

Prowse, T. et al. (2007). 'Isotopic evidence for age-related immigration to imperial Rome', *American Journal of Physical Anthropology* 132: 510-519.

Purcell, N. (1990). 'Mobility and the polis'," In O. Murray and S. Price (eds.),*The Greek City from Homer to Alexander*. Oxford, Oxford University Press: 29-58.

— (2004). 'The boundless sea of unlikeness? On defining the Mediterranean', *Mediterranean Historical Review* 18: 9-29.

— (2005). 'Statics and dynamics. Ancient Mediterranean urbanism', in: R. Osborne and B. Cunliffe (eds.), *Mediterranean Urbanization 800-600 BC*. Oxford, Oxford University Press: 249-72.

Rathbone, D. (2003). 'The financing of maritime commerce in the Roman empire, I-II AD', in: E. Lo Cascio (ed.), *Credito e moneta nel mondo romano*. Bari, Edipuglia: 181-229.

— (2009). 'Merchant Networks in the Greek World. The impact of Rome', in: I. Malkin, C. Constantakopoulou and K. Panagopoulou (eds.), *Greek and Roman Networks in the Mediterranean*. London & New York, Routledge: 299-310.

Rouse, I. (1986). *Migrations in Prehistory. Inferring Population Movement from Cultural Remains*. New Haven, Yale University Press.

Sallares, R. (1991). *The Ecology of the Ancient Greek World*. London, Duckworth.

— (2002). *Malaria and Rome. A History of Malaria in Ancient Italy*. Oxford & New York, Oxford University Press.

Scheidel, W. (1997). 'Quantifying the sources of slaves in the early Roman Empire', *Journal of Roman Studies* 87: 156-169.

— (2001a). *Debating Roman Demography*. Leiden, Brill.

— (2001b). 'Progress and problems in Roman demography', in id. (ed.), *Debating Roman Demography*. Leiden & Boston, Brill: 1-81.

— (2003). 'Germs for Rome', in: C. Edwards and G. Woolf (eds.), *Rome the Cosmopolis*. Cambridge, Cambridge University Press: 158-76.

— (2004). 'Human mobility in Roman Italy I: the free population', *Journal of Roman Studies* 94: 1-26.

— (2007). 'Demography', in W. Scheidel, I. Morris and R. P. Saller (eds.), *Cambridge Economic History of the Greco-Roman World*. Cambridge, Cambridge University Press: 38-86.

Scull, C. (1995). ʿApproaches to material culture and social dynamics of the Migration Period in eastern England', in J. Bintliff and H. Hamerow (eds.), *Europe between Late Antiquity and the Middle Ages. Recent Archaeological and Historical Research in Western and Southern Europe*. Oxford: Tempus Reparatum: 71-83.

Shaw, B.D. (2001). ʿChallenging Braudel. A new vision of the Mediterranean', *Journal of Roman Archaeology* 14: 419-53.

Talbert, R.J.A. (ed.) (2010). *Rome's World. The Peutinger Map Reconsidered*. Cambridge, Cambridge University Press.

— (2012). ʿRoads not featured. A Roman failure to communicate?', in: S. E. Alcock, J. Bodel and R.J.A. Talbert (eds.), *Highways, Byways, and Road Systems in the Pre-Modern World*. Malden: Wiley-Blackwell: 235-254.

Tchernia, A. (2011). *Les romains et le commerce*. Naples, Centre Jean Bérard & Centre Camille Jullian.

Torrence, R. (1986). *Production and Exchange of Stone Tools. Prehistoric Obsidian in the Aegean*. Cambridge, Cambridge University Press.

Trafford, S. (2000). ʿEthnicity, migration theory, and the historiography of the Scandinavian settlement of England', in: D. M. Hadley and J. D. Richards (eds.), *Cultures in Contact. Scandinavian Settlement in England in the Ninth and Tenth Centuries*. Turnhout: Brepols: 17-39.

Tsuda, T. (2011). ʿModern Perspectives on Ancient Migrations', in: G. S. Cabana and J. J. Clark (eds.), *Rethinking Antrhopological Perspectives on Migration*. Gainsville, Fla, Florida University Press: 313-338.

van Dommelen, P. (2014). ʿMoving on: archaeological perspectives on mobility and migration', *World Archaeology* 46: 477-483.

— and A.B. Knapp (eds.) (2010). *Material Connections in the Ancient Mediterranean. Mobility, Materiality and Identity*. London & New York, Routledge.

Walser, G. (1989). ʿQuelques hypothèses sur le splendidissimum corpus mercatorum Cisalpinorum et Transalpinorum', *Ktema* 14: 89-93.

— (1991). ʿCorpus mercatorum cisalpinorum et transalpinorum', *Museum Helveticum* 48: 169-175.

Wells, J.C.K. and J.T. Stock (2012). ʿThe biology of human migration. The ape that won't commit?', in: M.H. Crawford and B.C. Campbell (eds.), *Causes and Consequences of Human Migration. An Evolutionary Perspective*. New York: Cambridge University Press: 45-64.

Wierschowski, L. (1995). *Die regionale Mobilität in Gallien nach den Inschriften des 1. bis 3. Jh. n. Chr.* Stuttgart, Steiner.

— (2001). *Fremde in Gallien -- "Gallier" in der Fremde: die epigraphisch bezeugte Mobilität in, von und nach Gallien vom 1. bis 3. Jh. n. Chr. (Texte-Übersetzungen-Kommentare)*. Stuttgart, Steiner.

Wilkinson, J. (1982). *Egeria's Travels to the Holy Land*. Warminster, Aries and Phillips.

Woolf, G. (2011). *Tales of the Barbarians. Ethnography and Empire in the Roman West*. Malden MA & Oxford, Blackwell.

— (2013). ʿFemale mobility in the Roman West', in: E. Hemelrijk and G. Woolf (eds.), *Women and the Roman City in the Latin West*. Leiden & Boston, Brill: 351-368.