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### “The Immense Respiration of a Social Structure”: An Integrated Approach to the Landscape Archaeology of the Mediterranean Lands

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# “The Immense Respiration of a Social Structure”: An Integrated Approach to the Landscape Archaeology of the Mediterranean Lands

Mediterranean; long-term history; landscape change; settlement systems; Annales School; technological history; state formation.

In his iconic study of six hundred years of rural life in south-west France,<sup>1</sup> Le Roy Ladurie described the cycles of demographic and economic expansion and contraction visible in the historic record as “the immense respiration of a social structure.” Landscape Archaeology is characterised by such a long-term vision of rural life, where the embeddedness of society, economy and technology, as well as worldviews and persistent ways of life, into distinctive regional landscapes allows us precious insights into the very essence of historical processes. This paper will take the longer-term perspective and review the many complementary approaches being practised today in Mediterranean landscape archaeology, and then set them within the framework of our aim to see larger patterns in the dialectic between dynamic societies and dynamic regional landscapes.

The overall framework for the long term study of an inland sea was created for the Mediterranean by Braudel.<sup>2</sup> He developed with other members of the French Annales School the method of Structural History. Here any event, generation, century or millennium should be approached through exploring the short term, medium term and long term contexts, whose waves of impact interact at any one point in time. These waves include geographical, economic, social, cultural and intellectual processes.

## Landscape Change

We are all too well aware today of climate change, and certainly some periods of such had a widespread impact on all Mediterranean societies, such as the prolonged aridity around 2200 BC<sup>3</sup> and a deep climatic downturn throughout Europe in the 6th century AD.<sup>4</sup> Yet recent more sophisticated comparative climate studies allow us to see that a global climate change can have opposing effects across a macroregion, for example in the Mediterranean on either side of latitude 40 degrees North.<sup>5</sup> The greatest climatic effect was of course that from the last Ice Age to our Holocene postglacial period, before which substantially lower sea-levels created vast now submerged lowland hunting grounds. The rapid sea-level recovery to around 6000 BP pushed far inland of today but then stabilised to allow larger rivers to repel the sea in turn through delta formation. Modern Mediterranean coastal

1 Le Roy Ladurie 1966.

2 Braudel 1972; cf. Bintliff 1991.

3 Wossink 2009.

4 Hodges 2010.

5 Magny et al. 2012.

plains have usually experienced a dramatic series of changes over the last 10,000 years that can be reconstructed through coring, as for example at Troy, where the shore at its foundation lay well inland of the site.<sup>6</sup>

River alluviation brings us to consider erosion phases: surprisingly land degradation in the Mediterranean now appears to be rare and short lived, and most of the Holocene has seen stable land-surfaces and soil formation.<sup>7</sup> Nor are humans the only element in erosion. As work in Syria has shown,<sup>8</sup> a rise in the numbers of settlements is not immediately followed by land degradation, which may occur several generations or even centuries later: the explanation here is that the now open, cultivated landscape is pre-adapted to a period of extreme weather which is the primary cause of erosion.

## Navigation and Communication

We can set the scene for the Mediterranean by noting the dominant currents for maritime travel, and the surprisingly large areas visible from different mainlands that encourage exploration. From the final Palaeolithic into the Neolithic, large-scale movement of obsidian from the Cycladic island of Melos shows marine competence, but surprisingly the leading specialist in the lithics involved, Catherine Perlès,<sup>9</sup> makes a convincing case that these were brought by seasonal traders travelling throughout the Aegean coastlands, rather than by village to village exchange or direct procurement. This brings caution to the current interest in using Social Network theory (see *infra*) as in this early example, economic pragmatism precociously sidelines social factors. A recent reconstruction of a small oared boat made it to Melos safely, the likely scale of craft involved. But an astonishing recent discovery is that Crete was visited in the Middle Palaeolithic by boat,<sup>10</sup> although even at the lowest sea-level of the last Ice Age it was still far from the Greek Mainland. Dates earlier than 130,000 BP are currently suggested for this achievement by Neanderthals.

By the Early Bronze Age many images show the likely early craft, a small and a large oared sail-less boat. Broodbank<sup>11</sup> mapped the range of the small, ten person craft on a day return for this period on the Cyclades, suggesting a chain of endless small journeys tying scattered island populations together. The larger 25 person craft on a whole day journey created a mosaic of small worlds focussed around important settlements. Around 2000 BC however the knowledge of sailed boats diffused from the Eastern Mediterranean and these small island worlds were absorbed into larger spheres of economic, political and cultural influence radiating out from the palatial civilisations of Minoan Crete and later Mycenaean Mainland Greece, whilst the whole Aegean comes into a broader shared culture or ‘koine’ of the Eastern Mediterranean states.

By the mature Iron Age, maritime confidence, together with social and economic drives, propel Phoenician and Greek colonisation waves throughout the Mediterranean and Black Sea. It may be significant that these two societies largely colonise ecologies closer to their homeland, respectively the southern and northern regions. By the late Iron Age imperial states have developed, whose stimulus to move goods by the cheapest means—sea rather than land—gave rise to massive boat traffic: the peak centuries of the Roman Empire were those producing almost all shipwrecks in the Central and West

6 Kraft et al. 1980.

7 Bintliff 2002c.

8 Casana 2008.

9 Perlès 1992.

10 Strasser et al. 2011.

11 Broodbank 2000.

Mediterranean.<sup>12</sup> Like most ancient economies, large-scale private commerce rode on the back of the state sponsored movement of foodstuffs to feed the imperial capital and the frontier armies, as Fulford’s<sup>13</sup> model makes clear, and this includes the distribution of cultural objects like ceramics from major food producing regions (for example the ubiquitous red-slip tableware from North Africa).

Maps and books of routes from Roman times are amenable to the novel approach called Social Network analysis,<sup>14</sup> allowing us to see the areas of densest route packing as opposed to more isolated or single link regions of the empire. In Roman Spain a range of links between towns, not just road and river systems but also cultural connections, are being used to create network maps revealing the degree of regional integration.<sup>15</sup> This approach explores the degree to which a settlement’s size and importance are correlated with its location within webs of human movement.

Human migration by land and sea creates potential merging of human populations, and here DNA and isotope analyses of human, animal and plant remains are a major new resource for plotting biomigrations. Nonetheless it is striking that a computer scatter diagram of modern DNA groupings in Europe closely mimics the geographical dispersal of the countries the samples were taken from,<sup>16</sup> indicating a surprisingly high degree of genetic in-breeding rather than intermixing—the Mediterranean on this evidence appears to form a dividing rather than a linking sea for human interbreeding.

## The Diffusion of Technology and Cultigens

Andrew Sherratt<sup>17</sup> pioneered the concept of the major impact caused by the progressive diffusion of new agricultural technologies for ploughing, terracing and irrigation, as well as alterations in the use of milk products and textile production, modifying where people could live, their economic productivity and population density throughout the Old World from mature Neolithic times onward. Kevin Greene<sup>18</sup> has argued that additional practical technologies spread throughout the Roman world due to high social mobility and the regular displacement of units of the army, rather than through a conscious state policy of provincial development. This is paralleled in the early Middle Ages by Watson’s<sup>19</sup> researches into the Islamic Green Revolution, a whole package of crops and land use practices diffusing with ease within the expanding Islamic world. These expansive processes led to notable changes in areas occupied and types of land use across the Mediterranean macro-region and well beyond.

## Economic Growth

These just-mentioned, accumulating, maritime skills, cultigens and technologies have tended to have an accelerating effect on human use of the landscape—as we see from Dalmatia in coastal Croatia<sup>20</sup> where a chart of the number and size of sites correlated with their spread across different landscape types demonstrates a time-progressive colonisation

12 Davies 2006.

13 Fulford 1992.

14 Graham 2006.

15 Keay and Earl (in press).

16 Callaway 2008.

17 Sherratt 1981.

18 e.g., Greene 1994.

19 Watson 1983.

20 Chapman, Shiel, and Batovic 1996.

of the entire range of habitats available. In a similar fashion we can try to calculate the effect of the more productive economic practices of the Iron Age compared with the Bronze Age for the Mediterranean region, through the size of territory required by towns of varying sizes to feed themselves.<sup>21</sup> There is indeed a quantum jump in the number and size of urban centres in the later period. Such generalising studies must however be adapted to the ecological and economic potential of different landscapes, something done in a masterly way by Tony Wilkinson<sup>22</sup> for the Near East.

## Emergent Social Complexity, Urbanisation and State Formation

Various powerful models have been deployed in the Mediterranean and adjacent Near East to account for the rise of complex societies at state level. I would emphasise the significant contrast between rural communities living at a face-to-face level and fissioning when over 150 people or so, and those at 5–600 people or more which tend to transform into city-state forms of behaviour.<sup>23</sup> These two modes reflect a tension between what is desirable socially and what is necessary biologically. The Neolithic villages of Northern Greece offer thousands of years of face-to-face society,<sup>24</sup> whereas the Greek city state with an average of 3000 people was replicated more than 1500 times around the Mediterranean and represents the other mode, one which was closely reborn in the 400 city-states of Medieval Italy. Tony Wilkinson<sup>25</sup> has modelled a common form of city state formation in Early Bronze Age Syria from a small world of village territories and showed how shortfalls from an emergent town in their midst can be met through draining surpluses from smaller satellites. A similar model of emergent urban statelets has been sketched by Barry Kemp<sup>26</sup> for the early stages of Egyptian civilisation.

Wilkinson's scale for village and then early city state territories conforms to human geographers' generalisations for pre-Industrial settlement hierarchies, with the early statelet settling within a radius of power comparable to the catchment of a traditional market town, 2–3 hours or 10–15 kilometres radius. Although these central place systems do not compare to the elaborate nested geometry proposed by Christaller for ideal settlement hierarchy development, empirical research, for example on Roman towns in Italy (and in Germania Inferior) shows a partial evolution towards simpler versions of central place mosaics.<sup>27</sup>

## Beyond the Market Radius and Early State

How does Rome cope when its city state origins explode into a giant empire well beyond market- and early state-radii? Largely it does not try to, as it delegates most of its organisation to the very cities it arose out of and their leading citizens, one reason for its long life. But there is a field of major research which seeks to model how imperial systems emerge from city states and simple central place systems. Core periphery and World System approaches<sup>28</sup> try to identify regions with greater military or economic complexity than their neighbours, which then draw these in to subordinate relationships.

21 Bintliff 2002b.

22 Wilkinson 2003.

23 Bintliff 1999.

24 Perlès 2001.

25 Wilkinson 1994.

26 Kemp 1989.

27 Bintliff 2002a.

28 Kardulias 1999.

For the Mediterranean the Sherratts<sup>29</sup> famously modelled the progressive creation of a World Economy through the Mediterranean from east to west during the Iron Age and early historic era, from out of the Near East and onwards to the Atlantic coasts of Spain. But they gave little scope for individual regions to pursue their own paths of development, one example being Later Bronze Age to Iron Age Sardinia, where a largely internal evolution of small states has been documented. Likewise, although Cunliffe<sup>30</sup> chained the Sherratt’s expanding Mediterranean world economy to an Atlantic coast extension running through Spain, there is abundant evidence for the largely independent development of complex central place systems in the Spanish interior landscapes.

Some years ago I undertook a detailed case study of regional development trajectories in Greece, beginning with the historical shifts of military dominance over the Classical period.<sup>31</sup> There appeared to be an historical displacement of political and military power from the southern lowlands to the more upland north over time. The analysis of complementary archaeological evidence from regional surface surveys and the history of town foundations, identified the same clear pattern of radial expansion from an early heartland of precocious development in the south-east lowlands. In part this seems to show an expanding core-periphery effect, but closer examination identified a much wider list of factors behind the progressive shift in power and urban growth. They included divergent rates of economic and demographic development between regions with different potentials, then the added effect of core intervention into a slower developing periphery which can hasten, block or even reverse its growth. The late rise of marginal regions can also show long term unsustainability, as here in much of northern Greece. A model by Viazzo, following Malthus, is a fruitful one, suggesting that marginal landscapes go through boom-bust cycles of population and external connections.

Recent research has suggested some new insights into the mechanics of regional dynamics within ancient empires, through focussing on some remarkable processes at work in the Early and then Late Roman world. In the Late Republic and Early Roman Empire, there is increasing evidence for the expansion of proto-capitalism through the accumulating provinces under Rome’s sway.<sup>32</sup> Financiers and their agents diffuse through the Mediterranean and beyond, to set up inter-regional business operations and infiltrate local economies previously more focussed on regional production and consumption, increasingly using contracts rather than cash or physical goods in their transactions. The accompanying spread of villas and the decline of villages and family farms in many landscapes appear to accompany this, marking the rise of commercial farming for wider markets. As in modern global economics, inter-regional markets do not require that all landscapes are productive, and we see a new patchwork of lively, stagnant and almost empty countrysides within the Empire. Intriguingly, whilst Greek city-states may contain 70–80% of populations, Roman towns may invert this to low urbanisation rates of maybe just 20%: perhaps Romanisation involved streamlined towns dominated by wealthier landowners and regional servicing communities anticipating the Early Modern capitalist town, a very different form of town to the people’s city of democratic farmers in the preceding Greek world.

In Late Antiquity, during the 5th to 6th centuries AD, this process took a dramatic step further,<sup>33</sup> since the overall productivity of the Roman Empire had declined drastically due to Barbarian invasions, the loss of the Western Provinces, the decline of the

29 Sherratt and Sherratt 1993.

30 In Cunliffe and Keay 1995.

31 Bintliff 1997.

32 Paterson 1998; Bintliff (in press a).

33 Bintliff (in press b).

currency, and major population decrease. Against expectations however, the archaeological picture is often totally at odds with such economic weakness and a drain in manpower: new basilican churches sprout up everywhere like sown grass, sometimes of colossal proportions, and there are giant palaces and smaller mansions for provincial governors, bishops and wealthy rural landowners. Yet the same landscapes that have such monumental novelties are frequently clearly characterised by depopulation, and shrinking cities which are losing their urban appearance. On the other hand there is a mosaic reminiscent of the Early Empire but in a more extreme form: some regions see genuine expansion of settlement, such as Central Anatolia and the Dead Cities of the Northern Levant hinterland.

The explanation for this contrast can be sought in that body of theory known as Chaos-Complexity science. The Second Law of Thermodynamics, the law of Entropy, does indeed state that all complex systems inevitably and unavoidably will run down, not least major empires: as we observed, the Late Roman Imperium was haemorrhaging its human and economic resources at an unsustainable level. But Ilya Prigogine at Brussels University showed that even in complex energy systems which are running down to simpler forms of dispersed low levels of activity, a concentration of remaining energy into focal points can create new elaborate phenomena.<sup>34</sup> Amidst emptying countrysides and shrinking towns, pockets of intensive rural production and magnificent buildings can thus arise. Significantly those rare landscapes of Late Antique rural expansion have been under-developed earlier in the Empire due to poor soils and difficult climates, such as the Konya Plain and the landscape of the Dead Cities.

Finally globalisation can ultimately reduce regional variety to common forms of life throughout an inland sea or even across the world. The approach to the built environment called Space Syntax<sup>35</sup> has identified emergent properties of urban growth which operate globally, such as the deformed wheel of a town's major external routes heading out from the town centre, complemented by the organic creation of replicating urban neighbourhoods built like the town in miniature.

34 Coveney and Highfield 1990.

35 Hillier 1996.



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