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Rethinking Early Mediterranean Urbanism*

John L. Bintliff

As a result of Professor Korfmann's remarkable new discoveries, Bronze Age Troy is a vastly larger town than previously believed. This contribution assesses the significance of this in the light of a comparative analysis of Central and Eastern Mediterranean urbanism in the Bronze to Iron Age.

Introduction

Although is not so widely known in Continental European archaeological circles, theory in Anglo-American archaeology has for a whole generation been contested between two main groups of researchers and academics. Some see themselves as practitioners of scientific enquiry into a past reality, while others believe that archaeology is a subjective art form, which projects our own perceptions onto an essentially unknowable and indeterminable past – 'Post-processualists'. In reality the latter, 'Post-Modern' position has brought new approaches and insights to the discipline, although I am not alone in suggesting that these merely enrich rather than displace earlier 'Processual' and 'Traditional' method and theory. There are many reasons for rejecting the more dogmatic and ideological claims of Post-processualism and its tendency towards Relativism and extreme Subjectivity. One of these is the constantly observed process whereby empirical archaeological discoveries shock and surprise us, undo our previous reconstructions, and force us all to remodel the story of the past in the light of new data.

Just such an event – and one of great magnitude – has occurred as a result of Manfred Korfmann's brilliant intervention into the roll call of famous excavators at Troy. It is an ironic pleasure for me to record that my own minor research interest in the site and its region, based on a very short fieldwork visit in

the late 1970's but published much later, took as given the by then seemingly firmly established picture of Troy as a small fortified centre of a mere 2 ha.¹ Now Professor Korfmann's vast project team has produced evidence to throw this theory out of the window, revealing instead that around that tiny citadel there lay a vast outer and also fortified town – the whole encompassing a remarkable 27-33 or so hectares, and perhaps some 5000-10,000 people.² It took me some time to adjust to my own surprise and even initial scepticism at the first claims of these discoveries. Indeed, quite a few scholars continue to cast doubt on the demolition of what had seemed an established consensus – one which had been based, moreover, on the cumulative evidence made available in well over a century of excavation at Hisarlık tell. The Troy team has very commendably made available the whole wider debate concerning the significance of the latest Troy campaign series on their website.³ The debate ranges from the most critical and negative statements to the most positive support for the team's provisional interpretations – all of which came to a head with a very public controversy in the German media in the second half of 2001. Although to the outsider, the tone of this new 'Historikerstreit' was rather too personalised, the issues raised are very interesting. Before I can proceed with my thoughts about Troy some ten years on from my previous published foray into its prehistory, the theme of my essay is so central to the current controversy that I cannot

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¹ Bintliff 1991.

² cf. Korfmann 1995. – Korfmann 1998. – Korfmann 2001a-b.

³ <http://www.uni-tuebingen.de/troia/dew/index.html>

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but express my own judgement on the new excavations and their interpretation. The question of Troy as a 'Handelsstadt' I will deal with later, as here I find myself on the side of those who are sceptical towards Professor Korfmann's vision of Bronze Age Troy as primarily a commercial focus for intercontinental traders and navigational toll collectors. The same must hold for my feeling that the main harbour of Troy lay by the city on the Dardanelles rather than at a second inlet in the remoter Beşik Bay.

However, the core of the current controversy concerns the existence or otherwise of a great Lower Town, increasing Troy's size from a chieftain's fort of 2 hectares to a genuine town some fifteen times that size. This would lift its historical place quite firmly into a significant regional state within the wider region of the Near East and the Aegean, rather than a minor pirate's nest *vel sim.* Since I find the current Troy team's case for such a large town convincing, perhaps I would be wise to balance my scepticism on the other two points of current discussion with the observation that the ongoing research may overturn century-old certainties in other areas of Trojan scholarship!

The most important aspect then, to both this celebratory essay and to our wider comprehension of Troy's place in the later Bronze Age world, is the debate concerning the urban scale of this major archaeological site. Here, having followed every cut and thrust of the current Troy debate, I am confident that Professor Korfmann and the Troy team are fully justified in announcing to the world that the hitherto small-scale fortified citadel has now, through the latest excavations, become a major town. Indeed, it seems to be a town with a very considerable non-elite population within a vastly greater walled enceinte. The site is thus instantly elevated into a select group of state-centres discovered in the South Aegean, interior Anatolia and the Near East.

It is eminently plausible that a massively walled elite citadel ought to have a major population in its near vicinity supporting it

(and whose apparent absence had always puzzled scholars). It is equally plausible that a centre with such a powerful legendary presence (and in an otherwise peripheral area for Greek myth), had to be more than a 2 ha fort. However, the scientific crux of the matter has to lie in the latest archaeological evidence. The exciting and suggestive geoprospection seemed to show a fortification enclosing a densely filled outer town of Bronze Age date. Follow-up excavations in more than one sector of this vast new zone have also revealed substantial stone houses, and the ditch, fortification wall and a major gate for the Lower Town's own defence works. There is also no doubt at all that the immense rebuilding programmes of Greek and Roman times, up to Late Antiquity, with their new foundations reaching at times to bedrock, and their avid recycling of earlier buildings, have removed not only most of the Bronze Age structures (but not of course the ceramic refuse – which is ubiquitous in all points tested), but also most of the historically-attested major town of Early Roman date. What we might now expect to find of the large Bronze Age Lower Town is what *is* being found in undeniable vestiges at numerous points where preservation has allowed (again we must note that the historic town was a maximum of twice the size of its prehistoric counterpart and hence the latter has suffered varying degrees of repeated reconstruction).

It is an honour to have been invited to contribute to a volume in Manfred Korfmann's honour. I would like to take the opportunity to reflect on how these and other new discoveries by the current research project on the city and its environs change the way in which we can try to relate Bronze Age Troy into its wider context – that of contemporary urban development in the Eastern Mediterranean. This is a theme upon which Professor Korfmann has already inaugurated a revisionary discussion. The tiny walled centre portrayed until now provoked controversy concerning its political and economic importance beyond the Troad region of Northwest Turkey, and yet it could

be compared with the relatively small centres of Bronze Age power in Mainland Greece and the Aegean Islands.⁴ In contrast, the dramatic new scale of the town and its similarity to citadel-plus-lower town plans elsewhere in contemporary hinterland Turkey point east rather than west, and gives Troy a much more Anatolian character as well as far greater rank in terms of intra-Anatolian politics. The renewed claim that Troy is the kingdom of Wilusa/(W)Ilios, mentioned as a significant regional power in Hittite archives, accords far better with the new evidence, as well as conforming more clearly to the legendary importance attached to the town in Greek legends of the early historic era. It is extremely hard to explain why the ruins of Troy during Dark Age times should have formed the focus for two of the greatest epic cycles in all world literature, had the settlement played no significant role in a prior period. Furthermore, the archaeological discoveries made following the same hypothesis at Mycenae, Pylos, Thebes and Knossos are amongst the most remarkable in Aegean archaeology. At the same time, advances in the Bronze Age geography of Anatolia since the 1980's have independently strengthened the claims that texts dealing with the Ahhiyawa refer to the Achaeans or Mycenaean. Likewise, they have added credence to assertions that Millawanda refers to the significant centre of Bronze Age Miletus, and finally that Wilusa should be a regional power in the direction in which Troy lies and where the latter now seems to be the most important known central place.

Another theme, which I shall comment on later, is the cause of the emergence of such a large urban site in an otherwise peripheral region to the heartland of Bronze Age Aegean and Anatolian civilisations (Southern Greece and the east-central hinterland of Turkey). Based on the cumulative evidence from Troy, already known in part from previous work, and now strongly reinforced by the results of his new excavations at the site, Manfred Korfmann has adopted the radical position that

Troy was essentially a great international emporium for long-distance trade.

The explosion of Troy town in the eyes of modern scholars is a discovery that will change forever our understanding of the significance of the site in prehistory. In addition, the new wider picture of Northwest Turkey as the very fulcrum of a European-Asian network of intense exchanges of varied kinds also makes a lasting contribution to our comprehension. It explains why a centre of such size should arise exactly at what had previously been considered to be marginal in respect of cultural complexity. To go further – indeed much further as Professor Korfmann has speculated – that Troy was a key provider of commercial goods for Southern Greece, the rest of Anatolia, the Black Sea littoral zones, and the Near East, as well as parts of Central Asia. ~~Its straits would have therefore been a key passage for these goods.~~ If this was the case, then if there *had* been a real Trojan War it must have been a trade war. It would also follow that the great citadel walls were to protect merchant princes and their trading profits (*"Macht = Reichtum = Handel"*). However, I think that the evidence for this is very far from persuasive, the interpretation anachronistic, and the alternative explanations very much more attractive not only intrinsically but also in terms of our developing understanding of the nature of Bronze Age city-states in the contemporary Eastern Mediterranean.

As already noted above, I also remain to be convinced by the case for another act of iconoclasm brought to us by Professor Korfmann. This concerns the relocation of the main harbour and port of Troy to the Aegean-facing bay of Beşik (despite my opinion published in 1991 being given the customary savaging which one project geoarchaeologist, George 'Ripper' Rapp, reserves for his choicest victims!). Indeed, it is more than noteworthy that the current Troy project's main landscape specialist makes it very clear in the

(and suggest
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doubtful.

⁴ cf. Renfrew 1972. – Bintliff 1991, 97 and fig. 31.

most recent group publication of the project that the latest environmental evidence agrees with the position I took in 1991. This was an assertion that the main harbour of Troy VI-VII lay on the Dardanelles, not at Beşik Bay, at the mouth of the Scamander/Menderes Plain.⁵

I should now like to turn to the new questions which have arisen from the recently established urban character of Bronze Age Troy. In my own earlier discussion of the site I had sought to place it into the possible region(s) it dominated or for which it formed a 'central place'. However, if I had thought to look more carefully I would have seen that there was already reason to discover a curious mismatch between the ostensible size of the 'town' and both the massive walling and undeniable epic importance in legend. Indeed, the town hardly seemed to merit the title at a mere 2 ha (an average Greek village in the early 20th century AD such as Karpofora in Messenia was 3.6 ha).⁶ Compared to the other contemporary nucleated settlements of the Plain of Troy and its associated hill land, it clearly stood out as the major district centre. This role which could have been tied to its central location, rich agricultural territory – and for my view – access to a major sheltered bay facing the Dardanelles. That first and most likely region dominated by Troy comprised some 400 km². Although in scale this was a reasonable size, in relation to other Aegean nucleations of comparable extent such as Phylakopi and Gournia, the other features of Troy noted above seemed better matched by Mycenaean and Minoan palaces, whose putative radii of power were generally closer to 2000 km².

Until recently, however, those Aegean parallels provided no greater clarity, since the nature of Mycenaean kingdoms is also rather complex. Whereas the Pylos kingdom could clearly be fitted within the modern province of Messenia in the Southwest Peloponnese, it has been difficult to make any statements regarding the relationship of the close foci of Mycenae, Midea, Argos and Tiryns within the Plain of Argos on the other (eastern) side of the Peloponnese.

Moreover, like Troy, it had seemed on available evidence that some Mycenaean central places are hardly larger than Early Modern villages (including Mycenae itself, and Pylos), whilst others – such as Thebes – were far more extensive. In contrast, Minoan palaces and/or regional centres more generally appeared to have associated towns or be populous towns, a few of which reached tens of hectares (eg. Palaikastro, Knossos?). Even in 1991 I therefore felt equally obliged to ask whether Troy in the Bronze Age was a greater regional power – despite rather than in keeping with the tiny scale of the Troy settlement. Here, the obvious territorial extension in the Troad, this corner of Northwest Turkey, with its wide expanses of less fertile hard rock hills and ridges, reached inland into the middle and upper basins of the great Menderes (Scamander) river whose lower reaches form the Plain of Troy proper. This greater territory, some 1700 km², somehow seemed an appropriate sphere of influence for a place whose role in the Bronze Age had left such a mythical impact.

Now, just as the new excavations in Troy have resolved this argument by providing us with growing material evidence for a much more extensive town, in keeping with its implied status from other indications, so too is recent work in Mainland Greece causing a radical reassessment of contemporary 'Achaean' or Mycenaean state centres. The PRAP intensive survey in Messenia⁷ has carried out research surrounding the Mycenaean palace of Pylos and suggests an outer town which lifts the site to some 20 ha, whilst the unpublished evidence of the Mycenae Survey also suggests a town of more than 30 ha. What is intriguing is not just that the legendary state centres ranged against each other in the Homeric epics are now being equally elevated in urban scale, but also that the size range is surprisingly similar, a remarkable observation that I shall

⁵ Kayan 2001.

⁶ Aschenbrenner 1972.

⁷ Bennet 1998.

return to later. The new 'Korfmann' Troy, with its 2 ha elite citadel and far more massive defended Lower Town adding up to a total 27-33 ha, now fits so much more neatly into that larger regional scale of power. Indeed, it matches the larger Minoan-Mycenaean state centres both in urban scale and in putative territory – some 2000 km². It also – and here I endorse Manfred Korfmann's insights on this matter – lifts Troy out of the realms of the parallels it has evoked in the past, especially the small island 'fortified villages' such as Poliochni, Phylakopi, which were always of minor significance beyond their small island worlds. Professor Korfmann has also rightly stressed the close parallels of the new Troy plan with a common Near Eastern tradition of centralised central places, including contemporary royal centres in Central and Eastern Anatolia. This position is reinforced by the strong case for Troy appearing as a significant regional power in the documents of those states.

I do agree that we can learn from noting the numerous parallels to the new plan and scale of Troy made by looking east from the site. However, the similarity in scale to the revised larger centres of Mainland Greece and Crete seems to me more than a coincidence, as we shall shortly see. By looking east, but also to the west, we can scrutinise Manfred Korfmann's theory that the great new Troy he has discovered is primarily a trading city. This can be helped by studying the evidence gathered by scholars for the functioning of comparable urbanised states in the Bronze Age of the Near East, the Aegean and Italy.

The Approach

In this paper I wish to focus on the aspect of those pre-industrial towns that formed state centres, which stresses the central importance of their subsistence sustaining area and its available rural manpower resources – in other words their political territory. As a corollary, I shall argue that the size of such towns was closely related to the territorial scale of the city-

state or territorial state of which they formed the administrative heart. Furthermore, agricultural and pastoral productivity increased very significantly and generally in the Mediterranean and Near East between Bronze Age and Iron Age times (by a factor of some 2 to 3, as a result of technological and related cultural innovations). This led to higher rural and urban populations and greater productivity per unit area of landscape in the later period.⁸ It can therefore be suggested that we could expect to find that towns grew in scale at the same time as their required sustaining areas shrank.

By reviewing recent scholarship on Bronze Age and Iron Age urbanism in the Central and East Mediterranean, we shall therefore be looking for parallels in the scale of territory likely to support a certain scale of urban central place, in pursuit of the very important question of food sustainability. Indeed, one widely adopted definition of urbanism amongst modern scholars of the later prehistoric or protohistoric Near East is that the relevant town is incapable of supporting its own population's food needs and is reliant on extracting food surpluses from dependent satellite towns and villages. This is manifested clearly by the creation of a settlement hierarchy forming a network associated with major city-state centres.

I do agree with this principle as a guideline for the *characteristic* functioning of urban centres in the periods under discussion here. However, I actually suspect that this definition reflects not so much the foundation stages of the typical form of early state – city-states. I rather believe that a second stage in which larger exemplars, such as are likely to feature in the records of rival regional powers, rise to prominence through absorbing the creations of the real first stage of city-state formation. That primary process, I have recently suggested, may often be associated with a very different but nonetheless revolutionary change *internal* to the key settlement.⁹ When this

(it rather describes)

⁸ cf. Bintliff 1984.

⁹ Bintliff 1999b. – Bintliff 2000.

(figure)
(member)

(town)

occurs, its population breaks through the normal social barriers to grow beyond an exogamous 100-200 person community and reaches a fig. of some 500-600 (or more) largely endogamous community. At this stage it can commonly be expected to take on the properties of a 'corporate community', capable of formalising political distance to neighbouring communities and reorganising its natural and human resources in novel ways – ways which we would associate with town life and state formation. I believe that the small Phylakopi/ on Bronze Age Melos, with a population of perhaps some 700-800 people, would qualify as a striking example of this (incidentally accounting for a virtual implosion of island population into its walled confines). Similarly, in my opinion we should allow city-state status to archive-documented Greek city-states or 'poleis' of the succeeding Iron Age, such as the town of Chorsiai in Boeotia, no more than 4.5 ha and with little more than 500 citizens.¹⁰

My own model for urbanism thus commences with a village network in which certain settlements enlarge to a 'corporate community' size of more than 500 inhabitants. They then become 'village-states', to use Ernst Kirsten's term¹¹ for Greek polis emergence (territories with a radius typically from 2-5 km).¹² This is succeeded by incorporation of contiguous villages into a small city-state modular district (stage 1 of Tony Wilkinson's city-state emergence model for North Mesopotamia, see *infra* – territories with a typical radius of 5-6 km).¹³ Over time, competition between these simple city-state systems gives rise peaceably, or forcibly, to absorption of similar solar-modules of city-states with their satellite villages by a dominant city.¹⁴ This allows much greater 'imperial' and supra-regional territorial states to emerge with an additional layer of settlement hierarchy (urban centre, secondary urban provincial centres, dependent villages). Potentially, this third stage can grow into vast empires. However, logistical and other organisational difficulties may favour the long-term resilient survival and replication of more limited systems.

These systems are more accommodating to the constraints of a day-return journey from the furthest settlement to the state urban centre (the geographers' traditional peasant market radius of some 15-20 km radius out from the main town).¹⁵ I should emphasise that the spatial figures given here are idealised, and in any real physical landscape the relevant parameters (walking-distance, level or steep topography, land potential, etc.) will give rise to variations over and above these 'guesstimates'. Some general guidelines can also be suggested for our analysis of sustaining territory, on the assumption that pre-Industrial towns and state centres with less than imperial status relied primarily on food and labour from their own hinterlands (a thesis to which most researchers subscribe, as we shall see). Once more, real-world conditions will create variations around these hypothesised means. Firstly, a reasonable sustaining area for a family of five people to be fed, on a basis of grain and vegetables, at times tree crops, and a small amount of farm-based stock, in the Iron Age, is some 3.6 ha; this includes a small surplus for trade or tax. In contrast, lower technology and general agropastoral productivity in the Bronze Age may point to some 9 ha for the same family's sustaining area. As a mean fig. to allow an idea of territorial scale, some 50% of the landscape is treated as cultivable (this certainly overestimates many parts of the East Mediterranean, but may be reasonable for the more fertile sectors in which towns developed). Utilising these 'guesstimates' allows us to construct a table (fig. 1), in which a further variable is required – a range for population densities in Bronze-Iron Age towns (120-300 people per total hectare). This enables us to see what sort

¹⁰ cf. Bintliff 1994. – Bintliff 1997.

¹¹ Kirsten 1956.

¹² Bintliff 1994. – Bintliff 1999a.

¹³ Wilkinson 1994.

¹⁴ cf. the 'Peer-Polity' interaction model of Renfrew (1986) for the rise of Mediterranean states, and also cf. the related 'Early State Module' scenario of Renfrew (1975).

¹⁵ cf. Wilkinson's second stage of city-state emergence and Bintliff 1994.

of geographical area is needed to support urbanism at a certain scale, on the assumption that towns are effectively sustained by their own hinterland agro-pastoral production rather than through a trade in subsistence foods. Separate calculations are made for Bronze and Iron Age urban support areas. Finally, we must incorporate the implications of the urban food supply sector moving beyond the immediate land. This land belongs from the beginning to, and can be exploited directly out of, the urban settlement itself, or from small satellite villages and farms close enough to share land use with urban commuter farmers and herders. This core 'catchment area' is commonly demarcated as limited by some 5 km or 1-hour radius travel out of the town itself. In fact, when land use becomes intensive, personal exploitation territories tend to be even smaller than the 5 km radius potentially cultivated, and go down to a radius as little as 2.5 or even 1-2 km.¹⁶ However, since it remains possible for urban settlers to share land use up to this 5 km distance with immediate satellite support settlements, I shall merge these into a single 'core access zone' associated with the urban centre itself. Beyond this general limit we will assume that food for the urban centre is produced by residents of secondary villages and towns, and set a 'guesstimate' limit at 1/3 of production being available for export to the main city after the immediate sustenance of those settlements has been covered. The territorial radii up to 5 km are therefore potentially almost entirely free for urban use, and beyond this a far larger zone is needed per head of urban population, as only 1/3 of production is available for the same purpose. Therefore, the 5th and 6th columns of fig. 1 show the approximate radius area needed around a town of a given size, in Bronze and Iron Age conditions, were all yields going to the town population. The final column, on the other hand, attempts to give at least some idea of the scale of geographical territory *actually* required for such urban centres once we add in the necessary satellite settlements

and their food needs. This is in states whose boundaries rise beyond the main city's own core access zone, which it can largely exploit itself. In creating this last column I have averaged out urban density figures to a fig. of 210 people per urban hectare.

(figure)

Troy in Context: Urbanism in the Bronze Age and Iron Age of the Central and Eastern Mediterranean

Anatolia¹⁷

The discovery of a truly urban Troy in the later Bronze Age and its new status as a plausible regional state mentioned in Hittite imperial archives, and appropriately large to suit the Troy of Homeric epic, has occurred at a timely moment in the development of Anatolian Bronze Age studies. After a long period of over-attention to texts and monuments, scholars have been devoting far more research to the creation of generalising explanatory models for the rise of states, empires and urbanisation in Anatolia. This has resulted from the rise of theory in Near Eastern archaeology stimulated by New Archaeology.¹⁸ However, ever since the revealing of Hittite civilisation, it has been apparent that Anatolia followed a distinctive indigenous trajectory of state formation. Although this was influenced by commercial and political contacts with Mesopotamian and Syro-Levantine as well as Aegean and other South Balkan societies, it is nonetheless essentially driven by internal processes of social evolution and sustained by expanding elite control of regional surpluses of food, raw materials and labour. As Gorny notes in a review of the geography of Hittite civilisation in the centre of Anatolia, *„Anatolia has always been a land dominated by villages and peasants... The peasants who inhabited these settlements have*

¹⁶ Bintliff 1999b.

¹⁷ Gorny 1989. – Gorny 1995. – Gorny/Steadman 1995. – Steadman 1995. – Yener 1995.

¹⁸ Gorny/Steadman 1995.

TOWN AREA hectares	Population range	Bronze Age food needs	Iron Age food needs	Sustaining radius B-age	Sustaining radius I-age	5 km radius + 1/3 beyond
4 to 5 ha	480 - 1500	864 - 2700 ha	346 - 1080 ha	2.4 - 4.2 km	1.5 - 2.6 km	B-age: Within 5 km** I-age: Within 5 km**
12-14 ha	1440 - 4200	2592 - 7560 ha	1037 - 3024 ha	4.1 - 6.9 km	2.6 - 4.4 km	B-age: 6.6 km radius* I-age: Within 5 km**
20 ha	2400 - 6000	4320 - 10 800 ha	1728 - 4320 ha	5.2 - 8.3 km	3.3 - 5.2 km	B-age: 9.7 km radius* I-age: Within 5 km**
30 ha	3600 - 9000	6480 - 16 200 ha	2592 - 6480 ha	6.4 - 10.2 km	4.1 - 6.4 km	B-age: 12.4 km radius* I-age: 6.1 km radius
80 ha	9600 - 24 000	17 280 - 43 200 ha	6912-17280 ha	10.5 - 16.6 km	6.6 - 10.5 km	B-age: 23 km radius I-age: 14 km radius*
150 ha	18 000 - 45 000	32 400 - 81 000 ha	12 960 - 32 400 ha	14.4 - 22.7 km	9.1 - 14.4 km	B-age: 32 km radius I-age: 20 km radius

KEY: ** = core access zone * = market return zone

Commentary on fig. 1

A number of points can be made from this admittedly idealised model and its mathematical implications:

1. If a 'proto-polis' or the first stage in the development of a small state out of a complex village can occur when populations reach 500-600 people, then the smallest size of urban site on this diagram possesses the potential for an emergent city-state. Significantly, under both Bronze and Iron Age technology, such a settlement could be sustained within its core access zone of territory with a radius under 5 km, and indeed in the latter period even within a territory with a half-hour radius. Although intensive land use may give rise to multiple settlements within this potential catchment radius of a single settlement, these figures suggest that it is not essential for an emergent city-state to possess such satellites to arise. In fact, empirical examples of Greek early city-states show both scenarios in action.¹⁹
2. In Bronze Age conditions the next city size calculated for (12-14 ha) already requires absorption of territory and satellite settlement surpluses from beyond its own potential land use exploitation zone. Enhanced Iron Age productivity, on the other hand, allows this much larger town and even the next cited size – a 20 ha town – to be sustained within a territorial radius of 5 km. Indeed, the ancient historian Ruschenbusch has independently calculated from the many hundreds of Aegean city-states in the classical period that their average territorial radius must have been some 5-6 km and their population several thousand, very much in agreement with our figures here.²⁰
3. Once Bronze Age towns and then Iron Age towns come to depend on surplus extraction from distant satellites beyond their own exploitation access radius (12-14 ha for Bronze Age and 30 ha for Iron Age), the next threshold of interest is the effective limit of access to the state town from its farthest satellites on a day-return basis. Historical geographers have pointed to cross-cultural regularities in the emergence of regional administrative and economic centres, with a strong tendency for such systems to be limited by a day-return from their hinterland (a typical radius of 15 km or some 3 hours of travel). It can be seen that for the Bronze Age towns this 'market radius' remains effective up to 30 ha centres and for the Iron Age up to an 80 ha town. Larger foci will demand a more decentralised system of secondary regional centres and more elaborate forms of central administration.

4. Finally, I must reiterate that this fig. and its discussion represent a simplified and idealised model, created for heuristic reasons and with the acknowledgement that in any particular time and place some of our variables will need alteration – with concomitant effects on the relevant calculations. Nonetheless, it should be of interest to compare the general scale of these model relationships with the empirical data for Mediterranean and Near Eastern urbanism, and then in particular with the possible situation regarding the new enlarged Troy central place of the Bronze Age.

(figure)

long formed the backbone of civilizations on this plateau".²¹ Although the crystallisation of a series of states across Central and Eastern Anatolia during the 2nd millennium BC or middle to later Bronze Age was strongly affected by the arrival of Assyrian trading colonies at the start of that millennium, Gorny suggests that this merely increased interregional contacts. It thus provided a model for the rise of an indigenous empire based on the most successful and aggressive of these competitive states. He claims that "*the appearance of Old Assyrian traders may have accentuated an already developing pattern of larger and ever-expanding regional units*"²².

These states were already on a far greater territorial scale than those characteristic of the Aegean world (Troy included) and much of the Syro-Levant and Upper Mesopotamia. Gorny suggests that these city-states, over which the Hittites rose to regularly disputed dominance, were "*limited to a region that probably extended somewhere between 30 to 60 miles from the city itself and included both the city itself and a limited hinterland*". Allowing for the extensive zones of rugged terrain and of steppe with unreliable rainfall, this still amounts to areas between 6000 and 25,000 km². Not surprisingly therefore, the scale of state urban centres is also far elevated above most of the neighbouring regions – the capital of the Hittites at Hattusa is some 168 ha within its 13th century BC walls. The fundamental process by which numerous states and their subordinate towns and villages came into the control of the Hittite Empire is seen as 'peer-polity interaction'.²³ In this, "*competition and interaction between equally-sized polities within a region are said to lie at the roots of state formation*", culminating in a Hittite realm which had arisen not by intrusion but through gradual

absorption of new areas into an expanding and multiculturally diverse state.²⁴

Clearly the large Anatolian states discussed by Gorny are already at or even beyond the scale of the largest model city in fig. 1. We suggested that a town of 150 ha would need to control several discrete regions each with their own urban foci, and even with high fertility and intensive land use at least 32 km radius of territory would be needed as a support zone. Gorny's radii of around 45-90 km for states with capitals such as Hattusa at almost 170 ha seems feasible if we allow for much lower fertility in the dry and rugged terrain which occupies a large part of East-Central Turkey. The fact that these state centres were competitive and rarely held power for long would also suggest multiple urban foci in multi-regional states.

Significant to the theme of this paper, Yener, summarising recent work on state formation processes in Copper, Bronze and Iron Age Anatolia, comments that far more attention should be given to "the nature of the population densities which are actually the mainstay of these Empires".²⁵ He draws particular attention to the growing evidence for urbanisation, not least the discovery of the Lower Town at Troy.

Also of notable interest for Troy is the deeper understanding of interregional cultural and economic exchanges within Anatolia and with neighbouring regions. Current scholarship emphasises the importance in the rise of urban centres and competing states focused on

¹⁹ Bintliff, 1999a.

²⁰ Discussed in Bintliff 2000.

²¹ Gorny 1989.

²² op. cit., 85.

²³ Renfrew 1986.

²⁴ Gorny 1995.

²⁵ Yener 1995.

such. It also examines control over the trade routes supplying both prestige goods for elite display and consumption and more functional goods, in conjunction with a more fundamental role for city-state domination of appropriately large sustaining areas for subsistence and labour. And yet, rather than being a novel feature and the *raison d'être* of the rise of states in the 2nd and early 1st millennia BC, large-scale exchange systems are now being recognised as a characteristic feature of Anatolian communities from as far back as the long eras of Neolithic and Copper Age village societies.²⁶ Continuing through the Early Bronze Age, these now form a foundation for the state-focused exchanges that will follow in the Middle and Late Bronze and Early Iron Ages of Anatolia. Apart from long-established networks of trade in obsidian and other functional or prestigious materials, it is now clear that large-scale diffusion of cultural styles and technological innovations were already in place by the Neolithic period. At this time they spread across Anatolia and reached well outside into the South Balkans in one direction²⁷ and the Syro-Levant in the other. It is argued that cultural 'interaction spheres' were more important to these networks than trade and direct importation.

Mainland Greece and Crete²⁸

By the mature Late Bronze Age it is argued that Mainland Greece under the Mycenaean civilisation was divided into a series of palace-centred states, whose territories and focal urban settlements are strikingly similar to one other. Thebes covers at least 19 ha, perhaps slightly more, and may have dominated some 1000-2000 km² of Central Greece. Mycenae has recently been estimated at 32 ha, and may have controlled a similar scale of territory in the North East Peloponnese and Pylos in the South West Peloponnese has also recently been upgraded to a size of 20 ha and probably possessed some 2000 km². The primary role of regional food surplus control in these palace systems is amply documented by the palace archives, with

most scholars agreeing that trade and industry were of secondary significance to the economic and political role of these states. In Crete during the First Palace period, at an earlier stage of the 2nd millennium BC, most researchers would argue for a series of independent palace-centred states across the island, each controlling something in the order of 1000-2000 km². Perhaps in an elevated position of power were Knossos (40-45 ha) and Mallia (at least 23 ha and now on surface survey 60 ha – but the 'ceramic town' may be larger than the area of built-up houses, (based on my own experience in urban survey in Greece). Other palace-towns were estimated at 20-36 ha, 15 and less. In the Second Palace period, Knossos may have grown into single pre-eminence as a focus of power, perhaps even (disputed) to primate dominance over the whole island and the other palaces (the latest survey suggests up to 75 ha spread of contemporary finds, but the built-up zone is only confirmed for some 30 ha). The contemporary shrinkage of some other centres might support such a view. The regions immediately controlled by the major palaces in this later period are considered to be comparable with the earlier period, with the exception of the controversial thesis of Knossian primate control over the whole of Crete (greater than 8000 km²). Although trade and craft production are well-evidenced in artefactual finds and rare textual and iconographic references from Egypt and the Levant, most scholars consider the economic and political basis of the Cretan palaces to have been primarily founded on extraction of regional food surpluses and their redistribution.

There is a marked tendency for Minoan-Mycenaean palace and other regional centres to lie in the 20-30 ha range. Rarer examples rise higher – Knossos in the Second Palace period is exceptionally large (75 ha ?) and seems to

²⁶ Yener 1995.

²⁷ Steadman 1995.

²⁸ Bintliff 1977. – Bennet 1990. – Bennet 1998 and pers. Com. – Halstead 1994. – Manning 1994. – Symeonoglou 1985. – Driessen in press. – Oliver Dickinson pers. com.

represent a putative primate urban focus with a new size scale suggesting a role across much or even all of Crete. In terms of our fig. 1, the suggested territory range of these foci at 1000-2000 km² would correspond to radii of 18 and 25 kilometres, appropriate to urban nucleations of some 50-80 ha. I suspect that the average fertility of the relevant Cretan and Mainland provinces is well under 50% land use, which may account for smaller central towns. More importantly, though, it can also be suggested that populations in both civilisations were much more dispersed in rural proto-urban and village sites than in the contemporary Near East or in Classical city-state Greece (easily-documented as regards urban ratios for Classical times in the same areas). The important roles suggested for Minoan villas in the administrative system of the palaces, and the small palace in the large village of Gournia could support this explanation. Although we are looking here at mature large state systems, there is evidence to suggest how the Mycenaean palace states in particular probably arose from the amalgamation of numerous petty chiefdoms in Middle Bronze Age times via regional medium-sized states of early Late Bronze Age times. This evidence is found both in the archaeological evidence and in analysis of the Linear B texts.²⁹ The first basic level seems to correspond to the territorial scale and population size suggested by my proto-polis stage (radius of up to 1 hour, several hundred plus people, settlement size of several hectares). The second might suit the scale of 6-7 km radius territory of the next level up in fig. 1 – supporting in theory a town of 12-14 ha (were the society highly centralised). At the other end of the empirical size scale, the anomalous Knossos, at 75ha on our model, could have been supported on a radius of little more than 20 km, i.e. within the range of hypothesised state territories for the larger Minoan-Mycenaean palace-states (1000-2000 km²). This is also well below the support potential of the whole of Crete – 8000 km². We have already suggested that land fertility may have been lower than the 50% in our

model but the divergence from expectation is still quite striking. It would seem that if Knossos or other abnormally large towns, such as Mallia, benefited from interregional power involving dominance or *primus inter pares* status over other regional palace-towns, then the effect on urban growth was muted. It would be difficult to envisage primate roles for either palace resulting in a consistent extraction of surplus towards the centre, since the extra growth is in slight proportion to the additional territories under discussion. This would seem to suggest either that neither palace-town had genuine control over large parts of Crete outside their own core state, or that surplus extraction was decentralised to support palace officials, military and craft personnel dispersed through the countryside in lesser nucleations and villages (a system compatible with the Mycenaean palatial administration, probably largely based on the Minoan). On the other hand, Wilkinson, in his modelling of city-state sustaining areas in Bronze Age Northern Mesopotamia, suggests that large-scale food imports from outside of the natural 'market range' of some 15 km radius would have been neither efficient nor reliable.³⁰

In direct contrast, it could be argued from ongoing empirical study that populations in Iron Age Classical Greece were far more nucleated (a general *fig.* from various landscape history projects suggests 70-80% of city-state total populations lived in urban centres). The result of this would be that towns of 20-30 ha or more are frequently found with territories of a mere 5-7 km radius in regions with a fertility ratio suiting our 50% cultivation level (matching the model of fig. 1).

(figure)

Cyprus³¹

As the Bronze Age develops, a series of urban centres arises in the 10-25 ha range across the

²⁹ Bintliff 1977. – Bennet 1998.

³⁰ Wilkinson 1994.

³¹ Knapp 1994. – Rupp 1997. – Oliver Dickinson, pers. com.

island. By the later phases of the Bronze Age, a 3-tier size hierarchy can be documented, with Kition as the largest (70-90 ha), followed by at least two sites around 25 ha, and then several sites in the 10-15 ha range. Territories of 1000-2000 km² could be suggested for the ratio of centres to the size of the island as a whole (greater than 9000 km²). Stimulus for urban rise is based on a balance between agricultural intensification, export of local copper and participation in interregional exchanges of a wider range of materials. As might be predicted, during the Iron Age – Historic period, the scale of urban support in subsistence surpluses rose sufficiently to elevate the size of the primate and secondary urban centres on the island. Thus by Roman times, the single largest site is between 100-200 ha, and the secondary towns between 23-100 ha.

The Bronze Age situation is quite reminiscent of the Aegean, Minoan-Mycenaean urban centres. Relative to the putative scale of city-state territory, towns are smaller than expected by my ideal models in fig. 1, despite the wide fertility of large parts of Cyprus. Again, the anomalous scale of Kition is similar to that of Knossos, and yet it is very small to act as a primate focus extracting support from the entire island. We might conclude here even more clearly that these towns were not sustained by high surplus extraction centripetally conveyed to the chief town. Either surpluses were far below our 1/3 model extraction rate, or perhaps more likely, rural surpluses were directed, as we have suggested, for the contemporary Aegean into decentralised support for state personnel of all kinds dispersed around the hinterland of each state centre. The increase in urban scale for the Iron Age would seem to fit our view of the heightened productivity sustaining urbanism. From fig. 1 we might suggest that the regional towns of 23-100 ha would generally be sustainable from a market-radius catchment, whilst the island primate centre required support on an interregional scale, as befitted its role and the improved communications of the era.

Italy³²

In North-Central Italy, the transformation from village to state-level societies passes through a critical intermediate stage, generally identified with a 'chieftain society', during the Late Bronze Age (until ca. 900 BC). During this period, in Etruria, settlement is mainly focused on a class of numerous small and sometimes fortified sites of 4-5 ha in size, but occupied by scattered habitation, and with populations of little more than 100 people. The radius of power is suggested to be little more than 2-4 kilometres around each minor focus. However, a small number of sites, which will later become the dominant city-states of Etruria, were perhaps already larger in size; it is possible that their population had already reached 1000 or more. In the succeeding Early Iron Age or Villanovan period the putative top group of sites can definitely be given surface areas of 100-200 ha, but remain far from continuously built-up, and are still suggested to contain some 1000 people. Most scholars suggest that territories for these leading sites were now larger but still left much of Etruria under smaller autonomous central places, whose radius of influence may have been between 5 and 15 km. In the following Orientalizing and Archaic eras the climax of Etruscan civilisation is achieved; from the earlier leading settlements emerge some 15 top cities which control all of the region, with a 4-step settlement hierarchy. The city-state foci are 200-300 ha in size, and are suggested to have up to 35,000 inhabitants, with territories of 1000-2000 km² or effective average radii of some 18-25 km. Second-rank centres lie in the range of 10-100 ha. One well-studied example at Acquarossa, at around 30 ha, has an estimated 4000-7000 inhabitants. As for the third rank, 2-10 ha in size, an example such as Tuscania is considered to have an effective radius of control of less than 10 km. Recent scholarship tends to argue that the basic wealth of Etruscan cities

³² Spivey/Stoddart 1990. – Barker/Rasmussen 1998.

lay in agriculture, with secondary income from trade and industry. Food imports from outside of the region would normally have been of little importance to nourishing urban growth.

At the start of the urbanisation process, we may note the 'germ cells' of 4-5 ha sites. Such sites have territorial radii below catchment access limits of 5 km, but have as yet low density settlements; infill of some of these foci could easily be imagined to create our proto-polis foci if numbers rose to 500-600. Indeed, it has already been hypothesised that there were a small number of complex villages with perhaps 1000 inhabitants, contemporary with the Late Bronze Age. In our view these already cross the threshold to Dorfstaat – corporate community formation. In fig. 1 we have calculated that in favourable agricultural zones, such anomalous early city-state foci could arise on the basis of a core radius of no more than 5 km – even under Bronze Age conditions of productivity. In the succeeding Early Iron Age, increased productivity is associated with confirmation of the existence of a series of proto-state foci of some 1000 inhabitants. It is perfectly possible that some of the Etruscan precocious urban sites possess such high quality land within their immediate core access landscape (eg Tarquinia) that they give rise to such centres. Even if we allowed the incorporation of some further surplus-providing satellite settlements at a slightly larger radius, the picture would still leave most of Etruria open for the autonomous supply of food to other settlements – a situation exactly matched in the reconstruction for the Early Iron Age period noted above. For the Iron Age, we can allow for the scale elevation shown in fig. 1, and indeed there is no doubt that urbanism does rise to unprecedented levels in terms both of the density of towns and the size of the upper levels of the settlement hierarchy. As was the case for the Iron Age in the Aegean, contemporary Etruria appears to have been far more urbanised and thus conforms to the carrying-capacity upper thresholds in fig. 1. Thus the

top level of city-state towns at 200-300 ha and populations estimated as up to 35,000 people are associated with territories of 1000-2000 km² on average, or a radius of some 18-25 km. These figures are roughly comparable in scale to those in our models for fig. 1, pointing to high surplus extraction rates from most of the putative city-state hinterland sustaining growth at larger centres. The existence of secondary and tertiary nucleations (although significantly there are signs of the decline of many of these in tandem with the rise of the primary centres), seems to concur with market-centre foci for level 2 (the primate boundaries are probably normally too large for such a function) acting as sub-centres for the state. In level 3 we may be seeing evidence for the 'building block' level of mature proto-polis nucleation comparable to the Normal Polis of Classical Greece and with radial control over slightly more than its core access zone (i.e. more than 5 km and less than 10 km radius).

The Southern Levant (Palestine, Jordan)³³

The study of Bronze Age and Iron Age urbanism in Palestine and Jordan has benefited from the unparalleled intensity of recent research into this topic for a relatively small area of the Old World, combined with a strongly theoretical perspective based on the New Archaeology. Three periods of urbanism have emerged from the research. Firstly, the initial development of small city-states in the mid to late 3rd millennium BC (EBII-III) has been explored. Secondly, following a phase of urban collapse, the re-establishment of a stronger and possibly more hierarchical city-state system in the 2nd millennium (MB II-III) has been studied. Finally, the third period concerns the elaboration of a more countrywide network of hierarchical towns in the Iron Age (centralised states

³³ Broshi/Gophna 1984. – Broshi/Gophna 1986. – Bunimovitz 1992. – Bunimovitz 1995. – Dever 1997. – Falconer 1994a-b. – Falconer/Savage 1995. – Gonen 1984. – Gophna 1995. – Gophna/Portugali 1988. – Herzog 1992. – Ilan 1995. – Isserlin 1998. – Savage 1997. – Shiloh 1980.

of Israel and Judah; later, Hellenistic and Roman provinces). I shall summarise the chief points that emerge from various studies of each phase before discussing comparative research by several scholars.

In the Early Bronze Age urban sites are concentrated in only two parts of the region – the Palestinian coastal plain and its fertile hinterland hills, and the district of Lake Huleh in the northern interior. No site reaches 35 ha or more, but there are five towns at 20 or more hectares, together with numerous much smaller nucleations. Using the geographical measure of the rank-size graph (which can detect the extent to which a series of contiguous towns form an integrated functional hierarchy), it appears that these urban sites are probably independent local centres, with the majority of the country lacking towns altogether. The current model would suggest a small number of autonomous city-states with limited spheres of power and having only localised effects on a village-dominated landscape. In the coastal plain zone with most town sites, my inspection of the distribution finds that territories of less than 10 km radius might be provisionally suggested. As for the context for urbanism, it seems that a general population rise in the entire region provides a basic foundation from which an urban precipitate of enhanced nucleation emerges in two districts alone.

In the Middle Bronze Age, town life in the Southern Levant is reconstituted on a grander scale. Nonetheless, it is focused on the same two geographical zones, and the general conclusion is that cities are neither adequately large nor centrally located enough to provide urban dominance for the entire region, much of which remains unurbanised and settled with villages. All the same, the urban sites of this period show clear signs of internal differentiation: one is 80 ha, three are 40–64 ha, and three are 20–25 ha. Below this there are many much smaller nucleations, providing evidence of enhanced urban development for the region (although these greater city extents must be partly offset by the exaggeratedly large area

now devoted to a new kind of wide ramp fortification defending them). Once again the main focus is the coastal plain and its hinterland, and here the pattern of towns does begin to look as if some nesting into dominant and subordinate centres has occurred, a view reinforced by application of the rank-size graph in which signs of a rank order are more apparent than in the EBA. On the other hand, political dominance of larger over smaller and the smallest nucleations must have been far from complete, since Egyptian sources mention from 20 to over 60 rulers of city-states at different stages of this period. An urban geographer would draw attention to the anomalous size of the single great urban site of Hazor in the far north (80 ha) as hinting at an emergent 'primate centre' for the entire region, but internal evidence and historical sources provide little support for this. The local factors that could have led to a uniquely high growth include potential irrigation development for enhanced food production, a favourable location for trade routes and the absorption of other district foci into a new level of settlement hierarchy. Another suggestion is that Hazor belongs to a different system of town-country organisation from the low-level and multiple city-state networks of the rest of the region, and is rather a part of the larger territorial urban states to be found in Syria and adjacent Northern Iraq and Southeast Turkey. As with the EBA urban florescence, towns re-emerge as a precipitate from a more generalised population rise, which is chiefly focused on village populations throughout the Southern Levant.

The urban picture in the Late Bronze Age has long been recognised as curious – whilst Hazor remains at its exceptional size of some 80 ha in the far north, only Lachish at 20 ha remains a major urban site. Elsewhere, shrunken and often unfortified nucleations are to be found. It has now become clear that Egyptian interference played a major role in suppressing urban growth during a period when the region was frequently crossed by external armies. Egyptian sources again indicate some

15-17 significant city-states, but below this it seems likely that many even smaller nucleations were semi- or fully autonomous too, although the actual urban distributions could be read as suggesting nesting of more powerful small towns surrounded by semi-autonomous and even smaller nucleations. Texts indicate such a picture of many small competitive states. Although geographical analysis has led to the suggestion that the significant city-states had territorial radii of 15-20 km and power over rather less than 1000 km² each, conforming to Renfrew's concept of the Early State Module³⁴ with its 10-20 centres, 20 km radius and territories of 1500 km² or less, my inspection of the actual urban distribution indicates that the situation is not so evolved. In the areas where urban sites are most common, the 'modular territory', measured in terms of its radius, is generally around 10 km. Since a number of urban foci are asymmetrical to their territories (as suggested by Thiessen polygon analysis in the absence of known state boundaries), especially (as one might expect) if a town lies on the coast, this distorts inter-urban distances. I consider that the distribution is more appropriate to small city-states with limited spheres of power encompassing a number of secondary, even smaller nucleations and a third level of hinterland villages, and at a scale well below the comparison of Renfrew's Early State Module. Hazor, once again, seems to reflect a quite different level of regional power at a far-enhanced scale.

In the Iron Age, as expected, overall population density rises throughout the Southern Levant and is closely associated with increased agricultural and pastoral productivity. This can be predicted to support a more complex hierarchy, which will include larger urban centres in its upper levels and also a denser network of larger villages and small towns. Indeed, with the rise of the two kingdoms of Israel and Judah, village density throughout the region rises so that they are found in detailed rural surveys to lie every 3-5 kilometres from each other (creating a packing in which

village territory radii at 1.5-2.5 kilometres reflects intensive land use).³⁵ The two capital cities of Jerusalem and Samaria are some 50-60 ha in size, below which numerous local administrative towns form a second tier of towns some 5-7 ha in size, with a further tier of 2-5 ha village-towns or fortified villages identified. By Roman times, the region takes off into even more significant population growth – reaching a previously unparalleled peak in the Late Roman period. This is accompanied by a further rise in the most important urban site – Jerusalem – firstly to some 77 ha and then to 156 ha. Significantly, other regional foci at a secondary level witness enlargements on a parallel scale (Caesarea 50-94 ha, Beth-Shean 85 ha, and Gerasa 84 ha), whereas Samaria remains at the same level as its former state centre at 64 ha.

The very wide distribution of landscape research in the Southern Levant enables urban theorists to undertake more searching studies. Thus it becomes apparent from the more detailed information available here that the region is better subdivided into a series of sub-regions, in each of which the history of urbanism follows distinctive trajectories. Moreover, in both major urban phases of the Bronze Age, towns dominate a minority of the landscape within a patchwork of village territories. Particularly in the thought-provoking articles of Falconer this fact is contextualised into a deeper spotlight on the importance of the increasing density or decline of rural village communities as the underlying foundation out of which urban foci emerge. Despite Falconer's important highlighting of proto-urban developments amongst some villages of the village-dominated landscapes, he misses the opportunity to envisage these as potentially revelatory about the processes of city-state formation itself where this does reach fulfilment in the coastal zone and Huleh district of the North. The transforma-

³⁴ Renfrew 1975.

³⁵ cf. Bintliff 1999b.

tion from complex village to small city-state is described in Ernst Kirsten's 'Village-State' (Dorfstaat) model³⁶ for the rise of the Greek polis. It can be given added explanatory potential through incorporation of anthropological studies of the 'corporate community' of large traditional villages, and archaeological models describing threshold values for achieving community endogamy.³⁷ The long and varied history of towns in the Southern Levant, both temporally and geographically, seems to show to good effect different stages along a spectrum. These stages move from non-urban exogamic villages, through proto-urban, potentially endogamic, complex villages, to small city-states with limited territories of 10 km radius of less and including a small number of satellite villages.³⁸ They then reach significant city-states with wider geographical scope – Hazor in the MBA and LBA, and finally the royal capitals of the kingdoms of Judah and Israel.

A second recurrent theme in this region is the importance of domination of local labour and food surpluses from dependent satellite communities for the rise and size of urban centres. Here, control of and participation in interregional trade is generally seen as a complementary factor for the emergence of towns. Reflecting a viewpoint also dominant in Mesopotamian urban research, towns are defined as population foci whose immediate exploited territories are inadequate to support themselves. They thus require control over surrounding settlements (although the size limit for the Southern Levant is set at quite varied levels, e.g. 35 ha for Falconer compared with only 6 ha for Dever!). In my view, this concept is a very useful one but only operates at a second stage of urbanism. The first stage is the creation of a largely endogamous corporate community with special organisational properties through the expansion of a particular village into a larger complex village – a variant of the Dorfstaat model. It can be achieved even within the catchment of a single village in a fertile or intensively exploited niche of the landscape, without the necessity of absorbing satellite

nucleations (partially recognised by Falconer in his observation that the smaller urban centres can be self-sufficient from their personal territories). Typically, though, such urban centres stabilise by enlarging their catchments through capturing those of neighbouring settlements (both in the case of the so-called Normal-Polis of ancient Greece, and the smallest city-states of the Southern Levant, with territory radii of less than 10 km). Wilkinson's model city-state for EBA North Mesopotamia represents something intermediate between this smaller city-state form and a regional state of the putative scale of MBA and LBA Hazor, Ugarit (see *infra*) and the Aegean palace-states.³⁹

In terms of my fig. 1 with its idealised sustaining area models, the Early Bronze Age small group of towns at 20 or so hectares is potentially supportable in less than 10 km radius. This is in agreement with the empirical indications here, and points to well-integrated but small-scale city-state control over a rural hinterland. In the Middle Bronze Age, alongside this size of city-state, urban foci at 40–64 ha could probably be sustained within a market-radius scale of territory (up to some 15 km radius) but also implying efficient surplus extraction from satellites beyond the core access zone. Hazor, at 80 ha, is unlikely to form a real primate for Palestine and it is suggested that its regional production of food had been enhanced by intensification. It has further been suggested that its territory was much more extensive than the smaller contemporary towns of the region (is it coincidence though that a similar question hangs over Knossos in the Aegean at about the same size?). In any case, in fig. 1 we see that under Bronze Age conditions, with high fertility, a centre of this size would require regular and efficient sur-

³⁶ Kirsten 1956.

³⁷ Bintliff 1999b. – Bintliff 2000.

³⁸ Comparable to the first stage of Wilkinson's state formation in N. Mesopotamia. – cf. also the village-statelets analysed by Marfoe 1979 for the Beqaa Valley in Lebanon.

³⁹ Wilkinson 1994.

plus extraction up to some 23 km radius, which goes beyond a natural market radius scale of import and would require absorption of other regions with their own settlement hierarchies. Indeed, it has been argued that lesser urban centres in Northern Palestine were subordinated to a state centred on Hazor. If we allowed the territorial scales suggested for these three levels of the urban hierarchy in MBA Palestine, much of the country would still remain outside of the required sustaining zones for the known urban sites of 10 ha or larger, whilst the towns are nearly all packed into two clusters in the South and northern coastal plains and hill land. Hazor, as predicted, seems to have its own space appropriately over 20 km radius and apart from these two groups, if we assume that the smaller and medium towns of Qadesh and Dan were its satellites. The pattern of the two coastal clusters is intriguing. Applying catchments as suggested of 15 km radius territories for medium towns and 10 km radius for the smaller ones seems to show solar patterns with the largest urban foci surrounded by small satellite towns *within* their putative sustaining areas, or else packed medium towns with individual satellites *within* their territory. This might indicate a nested hierarchy where food surpluses were moving up the settlement hierarchy, implying a clear degree of dependence of smaller towns on larger towns, and this is supported by the rank-size analysis. Contemporary texts mention some 20 and later 60 states in the region, and there are at least 20 towns of 10 ha or more recorded, which could point to semi-autonomy for all the 20 sites known and even for a fourth level of towns at less than 10 ha at certain times. However, the spatial relationships and the implications of the sustaining area calculations would argue for tributary flows of food surpluses moving regularly up the settlement hierarchy. In the Late Bronze Age, my suggested territories (again excluding Hazor) of 10 km radius or less for the usually small urban sites of this period could have sustained larger towns than are actually recorded. This accords with the general opi-

nion of deurbanisation and a proliferation of semi- or fully autonomous statelets of very small size.

With the Iron Age, the early independent state centres at Jerusalem and Samaria, at 50-60 ha, could have been sustained from market radii catchments under the increased productivity of this era, following fig. 1. The abrupt gap to numerous very small towns at 2-7 ha suggests an otherwise low degree of urbanisation focused on village-towns whose sustenance could stem from core access zones exploited from the centre and immediately adjacent satellite villages and farms, no more than 5 km radius out. Under foreign rule (Hellenistic then Roman) a much greater stimulus to urbanisation is observable in the progressive rise of the primate regional agglomeration at Jerusalem. Following fig. 1, its sustaining area would need to be at least 20 and then 32 km radius in its increasing expansion through the Roman era, clearly, and as contemporary texts support, representing extraction on an inter-regional scale. In contrast, Samaria remains at its earlier regional level, but there are now three other larger towns in the overall Palestine-Jordan region in the 50-94 ha range. According to the sustaining models in fig. 1, these could be primarily sustained on market radii. Indeed, inspection of the network of these centres and its putative territorial scale (which now includes Samaria), does suggest that 20 km radii might be appropriate – more than adequate to support them from their own regional surpluses. It is feasible for some surpluses from these regions to still be available for nourishing Jerusalem. However, we might also consider a more asymmetrical sustaining area for the primate city, since there is an absence of large competing cities on all but its north side (where all the other four large towns lie associated with their appropriate 'market' range territories). This perhaps privileged its access to the fertile lands in the other directions (especially west and south-west). These speculations can certainly be tested by referring to the detailed literature available on

the flow of goods to Roman Jerusalem and the other major cities of that era.

North Mesopotamia⁴⁰

(Northern Iraq, Eastern Lowland Turkey, Syria)

I have left this sector to last, because it is particularly insightful for the Trojan situation, given the careful attention paid by scholars of this zone to questions of territory, economy and socio-politics in relation to urbanism. The general view is that urbanism in the 3rd and 2nd millennia BC, in this large zone of dry-farmed open landscape, is affected by positioning on trade routes, possibilities also to export products to other regions, and 'peer-polity' as well as 'core-periphery' political competition with regional and interregional urban centres. However, the primary economic support for urbanism is argued to have been the control over surplus food and labour in satellite communities, which form systematic networks around the large tell towns at the head of small city-states. Thus, Curvers and Schwartz state that it is "assumed that small rural sites provided the larger centres with the agricultural surpluses that enabled them to exist and to support their non-food producing specialists".⁴¹ Liverani also notes that Near Eastern texts allow a 'guesstimate' that some 80% of Bronze Age state populations were primary food-producers.⁴² Two Bronze Age small states are well-researched, both are in Syria – Ebla and Ugarit, and both merit mention in the archives of more powerful state systems of the Near East, as well as possessing their own rich palace archives shedding light on the organisation of these kingdoms. Ugarit in the Late Bronze Age comprised 29 or more hectares with an elaborate and carefully exploited territory full of subordinate rural settlements.⁴³ Texts suggest an urban population of some 6000-8000, which would conform to the upper level of commonly deployed archaeological density estimates for an urban centre in this region (100-200 people per hectare). Ebla in the

Early Bronze Age was even more impressive a kingdom, a 50 ha town, whose population has been suggested in texts to have been 20,000, rather high for archaeological density ranges which would give 5-10,000. Some 100 villages are listed in the obsessively controlled rural hinterland that sustained the city.⁴⁴

By far the most innovative and detailed attempt to understand the functioning of Bronze Age city-state systems in their geographical context for the Near East has been made by Tony Wilkinson, who focuses on the emergence and decline of a series of contiguous minor state systems during the Early Bronze Age in the Upper Khabur Basin.⁴⁵ Intensive archaeological survey, excavation and textual studies together with detailed environmental analyses allow Wilkinson to identify salient and significant aspects of urban networks in this region. He constructs a general model from the empirical data, allowing variations and deviations to be identified and analysed for local factors, whilst leading to propositions of a wider validity regarding the sustaining parameters for the rise of urban hierarchies. The base unit is a nucleated site with its own food-producing district of around 2-3 km radius (personal catchment) or less – a village that may rise to several hectares in size. The first signs of state formation occur when a larger (tell) community arises at the heart of a series of such settlements, whose anomalous growth is considered to be supported by extracting food surpluses from its ring of satellite villages. In terms of local ecology, Wilkinson suggests that these simple solar networks (sometimes approximating to half a dozen or so satellites to one central place) allow the centre to grow to some 12-14 ha and ca. 2500 inhabitants. Growth is

⁴⁰ Curvers/Schwartz 1990. – Liverani 1994. – Matthiae 1996. – Wilkinson 1994. – Yon 1992.

⁴¹ Curvers/Schwartz 1990.

⁴² Liverani 1994.

⁴³ Yon 1992.

⁴⁴ Matthiae 1996.

⁴⁵ Wilkinson 1994.

now limited by the available surplus within the territory typically under the statelet's control (in an isotropic landscape with satellites symmetrical around the centre the state radius would be 5 km). However, if such a centre subsequently expands its political sway over adjacent statelets, each consisting of a central place and a number of dependent villages, the accumulated food and labour surpluses now available – owing to the fact that spatial expansion provides geometrical rather than arithmetical progression – can cause the central place to leap in size to beyond 27 ha and often even 70-100 ha. Whether the city-state centre sits at the upper or lower levels of this enhanced scale depends on whether the newly incorporated solar systems have larger or smaller urban populations themselves. In an idealised, isotropic landscape, this new state would commonly have a territorial radius of some 15 km (see Wilkinson fig. 17) and replicate itself into a landscape with small city-state centres spaced some 30 km apart across extensive fertile landscapes such as dry-farmed Upper Mesopotamia. It is very striking how the Upper Khabur urban foci of the 3rd millennium BC (as most other Bronze Age urban sites of the Eastern Mediterranean) grow from modest to large size in a rapid quantum jump. According to Wilkinson, “each settlement system under consideration expanded rapidly... and in each case the main surge in town growth may be ascribed to the integration of a series of smaller catchments into a large, compound catchment. The proposed model represents growth at the center as having been supported by surplus production generated by secondary centres or satellite communities”.⁴⁶ Among the urban state centres studied were Tell al-Hawa at 66 ha, second rank satellites 10-20 ha, at distances of 9-12 km from the centre, and third rank settlements in excess of 10 ha in size with their own territories of 2-3 km radius nested between the dominant secondary and primary town foci. Other putative city-states studied are focused on Titriş Höyük at 40 ha and Tell Leilan at 90-100 ha.

There are signs of the proto-polis, emergent city-state process in Wilkinson's first to second stages – from the village with its 2-3 km radius territory to the first town at 12-14 ha and 2500 or so inhabitants. I suspect we have passed through a ‘village-state’ transformation at key complex villages when they broke the population barrier of 500-600 citizens, either through internal growth or the synoecism with close satellite villages into a single political unit. Wilkinson's model envisages the second scenario, but it can be noted from his spatial dimensions and the predictions of fig. 1, even in the Bronze Age, that most or all of the territory even up to the 12-14 ha town network can be exploited equally from the urban centre itself as from possible absorbed satellites, favouring a form of political and economic synoecism. My calculations agree broadly with those of Wilkinson, that once an emergent city-state rises to the next stage of growth and absorbs a series of surrounding core access solar networks like itself, then a geometric rise in surplus extraction to nourish a correspondingly expanded urban centre ought to be observable. This is especially the case when still within the favourable logistics of a market-return radius of some 15 km. According to our figures, in the Bronze Age, such a wider ‘market’ radius could sustain state centres of 50-60 ha. The larger sizes of 70-100 ha are beyond our parameters, although we have built into our fig. 1 support locally for secondary and tertiary settlements themselves as well as surplus flowing to the single state centre. Wilkinson's data do help to explain the changes needed to our parameters to account for the Early Bronze Age situation he describes. Firstly, he argues for exceptionally intensive food production using, amongst other strategies, large-scale artificial manuring at this period. Secondly, he suggests that the level of urbanism was not in fact sustainable in the long-term.

⁴⁶ Wilkinson 1994, 504.

Re-evaluating Trojan Urbanism

For our purposes, the relevance of our comparative survey to the putative settlement hierarchy of later Bronze Age Troy is very clear. At around 30 ha, Troy may match the recently enlarged centres of the Bronze Age Mycenaean and Minoan palace-kingdoms, but falls somewhere between the primate and secondary size ranks of Wilkinson's model for the Early Bronze Age North Mesopotamian fertile steppes. On the other hand, Wilkinson makes a powerful case for exaggeratedly high productivity for his region based on intensive manuring, and we may note that the centre of the significant kingdom of coastal Late Bronze Age Ugarit is apparently comparable in size to Troy. As for the growth of these city-state regional systems, my postulated initial stages for Troy could fit reasonably into Wilkinson's first growth stage. Although my earlier territory model for Troy and the other tell settlements of the Trojan Plain gave each settlement its own 2.5 km radius territory, in reality most tells other than Troy are asymmetric to agricultural land, and lie on the outer rim of their putative sustaining hinterlands (coastal resources excepted!).⁴⁷ If Troy expands its dominance to include these settlements into a single state encompassing the Trojan Plain and its immediate hilly edges,⁴⁸ its new territorial radius is 5-7 km, providing a comparable system to Wilkinson's initial expansion of his emergent city-state. Wilkinson's model for this stage postulates an idealised group of 6 satellite villages of several hectares, which beyond their own food needs could elevate the centre's own food production from its personal territory to allow it to rise to some 12-14 ha and a population of 2000-3000 people. In line with Wilkinson's own intention to use the model to explore the effect of varying his model parameters, larger populations at the central place and smaller ones in the satellites are conceivable (and indeed the variations we already have noted between Aegean state centres, Ugarit and the North Mesopotamian urban foci seem

to point to this). Labour needs do, however, limit how far this can be taken.

Interestingly, the latest calculations for the size of Troy and its Lower Town in the Early Bronze Age are some 9 ha, which conceivably might indeed reflect a sustaining area limited to food surpluses from the Trojan Plain district alone.⁴⁹

With the rise by Troy VI times of a Troy citadel plus Lower Town to 27-33 ha (figures cited by the current Troy team vary), our calculations in fig. 1 for Bronze Age conditions would suggest that if we must allow for the self-support of a series of villages in the Lower Menderes/Troy Plain, and an urban density above the lowest level of my cited range, then the sustaining area for Late Bronze Age Troy would have been in the order of the market radius of up to 15 km. Allowing for local topography – not least Troy's location near the coast, and the occurrence of a band of rugged landscape separating the Trojan Plain and its hill land from the next rich zone of fertile land – the Middle Menderes basin upstream, then the required extension of Troy's sustaining area would most naturally encompass the fertile zone of the Middle Menderes. We have allowed in fig. 1 for the self-provision of other regional centres and their satellites when a city-state absorbs districts beyond its own core access zone, so that the likely existence of once autonomous regional towns in the Middle Menderes basin is built into the calculations. If we were to consider Trojan extraction of food surpluses to have been less than maximal (here seen as 1/3 of total production in subordinate regions), or productivity less than the 50% land use postulated in the model, then it might have been necessary to extract food surpluses from the Upper Menderes basin as well. The total area of the fertile Lower basin (the Troy Plain) and the Middle and Upper Basins at 1700 km² is well above the

⁴⁷ Bintliff 1991, fig. 26.

⁴⁸ Bintliff 1991, fig. 29.

⁴⁹ Jablonka 2001.

requirements for surplus production to support a city the size of our new enlarged Troy town in the Later Bronze Age. It must be significant that this total zone is in the range commonly assigned to the Minoan-Mycenaean states of the contemporary Aegean (1000-2000 km²) and it is probably no coincidence either, that the size of the state centre is also comparable. In the light of our earlier discussion of the Aegean towns this would also suggest that the Trojan State was not in fact highly urbanised. The question naturally arises whether a high rate of surplus extraction was deployed – as can be shown for Mycenaean states and inferred for Minoan – in a decentralised form of redistribution to palace personnel through the kingdom, rather than to swell the population of the state centre. Whilst this is possible, the absence hitherto at Troy of a palace archive with writing systems, which would seem necessary to co-ordinate such an administratively elaborate control over state resources, could rather suggest that the state did not maximise the resources of its kingdom in this way. The discovery of such an archive – certainly not to be ruled out with so many new discoveries discomfiting our previous knowledge of Troy – would of course help to resolve this issue, as would research at the larger contemporary sites to Troy in its deeper hinterland. Falconer's work (cited above) on the study of rural sites within the sway of city-state centres helps to show the way in clarifying issues surrounding the practical organisation of urban hinterlands.

From fig. 1 we can also suggest that Iron Age productivity could encourage a much larger regional town from a smaller sustaining area. The Roman City of Ilion, at 60 ha⁵⁰ (its maximum size in any period) would still require a larger sustaining area than the Trojan Plain district. However, a market radius territory would be sufficient, and allowing for local topographic realities already noted, this would most naturally have meant provisioning from the Middle Menderes Basin immediately upstream. In both Bronze and Iron Ages we have focused on the capacity for regional production to sus-

tain urban growth at Troy, by assuming that most foodstuffs came from the immediate landscapes controlled by city-state centres such as Troy. It is perfectly reasonable to suggest that some food supplies came from a wider region, especially by sea, as part of the trade systems Troy clearly participated in. On the other hand, our examination of current research on Mediterranean urbanism in the Bronze and Iron Ages has shown that the evidence and favoured models suggest a primary reliance for the sustaining of towns on those regions they arose from and directly dominate. The exception to this is the class of giant imperial centres ('megapoleis' of some hundreds of hectares in size in Kirsten's terms).⁵¹ In these terms the size and number of towns are closely related to the fertility and extent of territorial control in their hinterland(s).

In summary, Late Bronze Age Troy, with many thousands of inhabitants and its size of ca. 30 ha, represents for me a second stage of state formation, in which I would postulate that a prior stage witnessed a series of smaller proto-city states. This is very plausible when considering the more remote districts of the Middle and Upper Menderes, but also not implausible when including the larger of the tell villages of the Troy Plain itself. This assertion is of course dependent on the validity of my 1991 'guesstimates' for the carrying capacity of their territories in the Bronze Age (several could conceivably have supported 400 people and one over 600, apart from Troy itself). In this theoretical scenario Troy rose progressively to dominance first over the other population centres of its immediate region (perhaps during the Early Bronze Age, as our calculations have suggested). It then expanded its power upriver during the later Bronze Age into the fertile basins of the Middle and Upper Menderes with their own larger and smaller population centres and competing proto-city states.

⁵⁰ Jablonka 2001.

⁵¹ Kirsten 1956. – cf. also Bintliff 1994.

The clear evidence for regional and long-distance trade and for industry shows that portable wealth was an additional aspect of Trojan prosperity, especially for its elite. It is also likely that control over trade routes, both land and sea and in multiple directions – a role ideally suited to the location of the Trojan Plain – could have helped cement relations between the Trojan elite and the elite of satellite and allied centres around it, through gifts and trade agreements. There is evidence of uncertain reliability that Constantine the Great indeed took seriously the possibility of siting his New Rome, in the early 4th century AD, at Sigeum on the western coastal ridge of the Trojan Plain opposite Troy.⁵² He could then have shifted his energies to what was the far more militarily secure and navigationally advantageous location at Byzantium farther up the waterways linking the Mediterranean and the Black Sea. Nonetheless, many of the advantages of Byzantium-Constantinople-İstanbul for regional and long-distance commerce and 'command economics' (tribute from accessible regions) are shared by ancient and even more prehistoric Troy, particularly if we still allow for a sheltered Dardanelles harbour for the city as well as the more remote Beşik Bay. I would also reiterate here my earlier suggestions regarding the likely importance of the rich fisheries of the Dardanelles Sea of Marmara-Bosphorus for both enriching the food supplies of Troy and for encouraging its maritime development in commercial and maybe also military directions.

Conclusion

When some ten years ago I published an article on Troy and its regional importance, I felt the need to downplay its significance, even suggesting that the legends surrounding the Bronze Age city were probably amalgams of tales concerning many other small centres of power in the Aegean. In the light of Manfred Korfmann's discoveries, I am pleased to eat my words – or at least a good part of them – and praise the force of objective science in

overturning our cherished scenarios and models. Troy now finds its place as a major regional power in the big country of Anatolia. It is sufficient to become a player in the recorded political arrangements of the better-known regional powers of Central and Eastern Anatolia, and to justify the otherwise mysterious importance in Greek legend attached to a distant geographical area. And yet I have found strong support from a wider consensus amongst Near Eastern researchers of Bronze Age state formation and related urbanism, for my suggestion that the primary source of Trojan power and influence lay in its political expansion within Northwest Turkey, the aptly-termed Troad. This probably began with incorporation of the other nucleated communities of the Lower Menderes district (the Troy Plain) into a small city-state, followed by expansion of the state to dominate the Middle and quite probably also Upper Menderes Basins. Control over surplus cereal and pastoral production from this territorial state would have been necessary to feed a town of between 5000-10,000 people, allowing for adequate subsistence shares being retained by satellite towns and villages in its region of dominance. Secondary to this would come the benefits this state and its satellites drew from Troy's preferential location in relation to trade routes and active interaction spheres of cultural and technological diffusion, now known to reach back well in time to before the foundation of Troy itself. A more ample availability of practical tools and weapons, items of wealth for display and cementing alliances, can be considered under this heading.

All this flurry of rethinking Troy – and it will continue into unknown directions with later discoveries from the current project – owes its primary debt to Manfred Korfmann, to whom this short essay is respectfully dedicated.

⁵² Bintliff 1991.

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