

THE ORIGINS OF THE CITY FROM SOCIAL THEORY TO ARCHAEOLOGICAL DESCRIPTION

1. INTRODUCTION

Today it is fashionable to speak about the unscientific nature of Archaeology and Social Science. This paper deals with this discussion, trying to create an observational archaeological theory to understand a social process.

What is archaeology? There are still many archaeologists working in a self-limited discipline dedicated to the unearthing of past treasures, and the static description of past ways of live. In that sense, most archaeological information seems to be *artifactual*, because it deals with the relevance of archaeological finds as self-important entities, which must be studied in themselves, as muted witnesses of unknown past facts. Social action is here reduced to a mere description of some objects made by human agents. This is a positivist approach where only directly observable entities (archaeological artefacts, natural landscape) are taken into account. "Society" is here artificially restricted to the notion of Artefact, because "artefacts" are the only observable feature usually associated with the concept of "social action".

However, we can imagine a much more developed definition of archaeology, that of a discipline dealing with the *history* of our society, that is, those processes which have *caused* our present. In this approach, emphasis is not directed to empirical things, but to events and non-observable concepts-processes or social actions. In this sense, the goal of archaeology would not be the documentation of ancient sites and objects, but studying the dynamics of society. Archaeological record is the "medium" by which this study is scientifically possible. We are looking for the formation process of our own social actions, using ancient artefacts as their observable consequences at specific time intervals. The purpose is to discover what cannot be seen (*social causes*) in terms of what is actually seen (*material effects*).

Archaeology should not be defined as the study of "past things or events". We archaeologists use the past, but it is not the object and goal of research. We should understand our present, that is, we should analyse its cause, and this is only possible by defining the specific continuity between Past and Present.

The only way to understand the origins and causes of these processes is by analysing the previous states of our society. We do what we are doing, because our fathers, and grand fathers made actions, reproduced the society of their forefathers and introduced some modifications. The Past is not like the Present, but we need to calculate what kind of relationship, causal or not,

connected or unconnected may exist between what we are doing here, and what individuals did in the same spatial location, at different temporal locations.

Archaeologists usually take an inductive approach, trying to explain why the archaeological record is how it is. However, pure induction is impossible with archaeological material. We end creating “universal dictionaries” which are useless and even wrong!

The only possible solution is by using deductive logic, but taking into account that archaeology is not a formal science. We are not trying to proof theorems, but trying to obtain the likelihood of alternative hypotheses. The best way is to consider archaeology as a way of problem solving, where the solution space has to be already known.

The problem with this approach is the risk of just “reading” archaeological material in social terms. Our goal is not to explain archaeological material, but to find evidences of social actions performed through different time intervals. In this case, we have not to explain why the archaeological material found in the Tarquinia area is like it is, but to describe the degree of capital concentration and the emergence of cities, using archaeological material as data.

If we do not know the solution of a problem, we will never solve that problem.

To know the solution does not mean to trick. We have to build a problem space, where all possible alternative solutions be included, even the wrong ones, and some procedures to detect in which case, a particular concept is a solution to a particular problem, and in which cases it is not the solution. Heuristic logic allows us to distinguish between “correct” solutions and “true” ones.

The study of the origins of cities and towns is a very good example of this way of understanding History. History is not a database of facts, nor a narration of past events. It is a way of thinking about the present. We think backwards, looking for previous states of our social system, and analysing whether they are causally connected or not.

We are not interested in learning everything is possible of how people lived in prehistoric cities. We think that social relationships during 9-8th Centuries in Central Italian Peninsula are causally connected with what we call today “cities and towns” in the same area. That means, a social process whose consequences still determine our social action, began to act in those times. We are not using modern economics concepts to understand past social structures. We are trying to “measure” the proper connection between the Past and the Present.

We are not saying that market relationships are correct to characterize Early Iron Age social relationships, but we question whether it is or it is not

the case. If we can detect evidences of capital accumulation and of reproductive dynamics in capital accumulation, then we will have a stronger basis for asserting the causal connection between our society and its state during that time interval.

It is for this reason that we need mathematical equations. It is not to give an impression of real science, but a way to link theoretical terms (social concepts) with observed data. However, it is true that we cannot obtain proper figures for most of the parameters. Archaeological record is only a part of the material consequences of social action. Thus, not any quantification of available archaeological material is a correct estimation of the quantity of material effects produced by a given social cause. Instead, we have to study the rate of change, that is, similarities and differences between different spatial and temporal contexts.

2. THE ORIGINS OF THE CITY AS A SOCIAL PROCESS

If we do not know, what a city is and in which way it may emerge, we will never discover cities in the archaeological record, nor understand their historical dynamics.

To the geographer, the city is usually described in functional terms as an “urban area”, which consists of a core administrative-government centre linked by journey to work movements to a commuting hinterland (CLARK 1982). The city is seen as a finite entity in geographical space, which exists by exporting urban goods and services in exchange for those of external suppliers. In opposition to *villages*, which exploit the resources of their site, cities have been conceptualised as entities which benefit from their political control and social dominance by exchanging and accumulating the wealth of several distant areas. This is possible through the various kinds of flows (materials, people, information, etc.) which connect cities to each other. The importance of those relationships for the functioning and the evolution of cities has led us to conceive urban areas, as a complex system of interdependent units (PUMAIN 1997).

Obviously all those definitions are not very useful for archaeologists. A better point of departure would be «a unit of analysis consisting of a collection of buildings, activities and population clustered together in space» (CAMAGNI 1992). The origin of cities and towns is then a social process involving two elements: the multiplication of points where people concentrates and the increase of individual concentrations (CARTER 1972). Therefore, urban systems may be defined through a main spatial discontinuity, a dialectical opposition between what seems to be a city (nucleated built space) and what is not a city (dispersed settlement). But also inside the nucleated built space we may find discontinuities in terms of activity areas: the social

and ritual area, a common decision-making area, an area addressed to the exchange activities (KROLL, DOUGLAS PRICE 1991).

Three important factors for the existence of cities are: concentration, accessibility and spatial interaction. They explain the formation (concentration forces), the location (accessibility), and its shape (organization) (CAMAGNI 1992). The main point for a definition of the city is then the formation of an institutional and nucleated space, protected, fortified, concentrated and imploded, which acts as the nucleus for the power, of the political, burocratical, military activities developed from the elites, and controls means of production (ROBERTS 1996).

Many authors suggest that the cities exist because people find more advantageous and efficient the management of personal, social, and economic relationships in a specially concentrated mode (CHRISTALLER 1933; LÖSCH 1939; BERRY, HORTON 1970; CARTER 1972; CLARK 1982; DICKEN, LLOYD 1990; WHEELER *et al.* 1998). Those approaches consider that cities are a mere spatial container of social relationships, and not a social relationship in itself. The wrong assumption is that human proximity is a way to obtain efficient methods to manage social reproduction. In this view, the spatially concentrated pattern of social and economic activities is only a function of production costs. Consequently, economic interpretation of urban growth lays stress upon the savings of assembly, production and distribution costs which may be achieved through concentration. Those authors argue that the emergence and growth of cities are the consequences of the search for the most economical forms of settlement.

Nevertheless, it is a wrong assumption that human proximity be a way to get efficient methods to manage social reproduction. We have no empirical evidence that the emergence and growth of cities be the consequence of the search for the most economical forms of settlement. The search of better resource allocation always implies social inequalities by stressing spatial differentiation. The increasing scale of production and the technical benefits that accrue through economies of scale are seen both to promote and to require an increasing concentration of capital, largely through the process of accumulation itself. Spatial concentration of people and institutions tend to be accelerated by a process of centralization of capital in which larger groups gobbles up the smaller. We should question the usual assumption that cities are always generative of economic growth and an amelioration of the quality of life: the city does not create wealth in an effective way, but it takes over resources to a population living outside the nucleated settlement. An element of inequality, hierarchy, dominance and power is emerging from what seemed purely functional relationships (CAMAGNI 1992).

Capital is transferred from many dispersed locations to a central location. It is this spatial transfer of capital (people, raw products, manufactured

goods, etc.) what we call urban system. Its main observable feature is then the apparition of a dichotomy between an emergent core area and the already existing settled area, which becomes a “periphery”. Core regions (*cities*) are defined as territorially organized subsystems of society which have a high capacity for generating and absorbing wealth. Rural-peripheral regions are those whose development path is determined chiefly by capital accumulated at core areas with respect to which they stand in a relation of substantial dependency. Growth in the centre tends to produce not a parallel growth in the periphery but a counterpoised decline, stagnation, or, at best, lower rates of growth.

Factors contributing to that dependency may include control over manpower, tribute collection, control of trade, and control of elite goods. The income earned by the periphery tends to be leaked away by spent on goods that the periphery itself cannot provide. The production of higher-order consumer goods tends to be largely in hands of the core centres. The scale economies existing in the centre and the accumulated competitive benefits of its early start inhibit the production of such goods in the periphery. Villages in the periphery tend to be lower-order centres, with a restricted variety of goods to offer, where population remains attached to domestic production or migrates to cities to access other means of production. There is not an evolution of social relations of production at the periphery, because it is prevented by the extractions from the centre.

In fact, it is the countryside which pays for the city, and not the city which justifies its existence in terms of efficacy, because capital accumulation systematically drains resources and manpower from the periphery into core to establish the conditions for an urban take-off.

This transfer of exchange of surplus connects all the society’s economic, social, political and ideological organization. That is, the transfer, exchange or sharing of surplus connects the urban elite not only to the workers from the periphery. Surplus transfer also allows the emergence of elites in the periphery reproducing the same processes of surplus management, their structures of exploitation and oppression by class and gender, which characterize the urban core. Through sharing sources of surplus the urban elite and the social classes it exploits inside the urban area are systematically interlinked to the “mode of accumulation” in rural elites in the periphery. By extension, if part of the surplus of rural elite is also traded for part of the surplus accumulated by rural elites in more distant peripheries, then not only core and periphery, but also related cities and rural territories are systematically connected in the same over-arching system of accumulation. Core-periphery systems are in fact never isolated, but they configure a complex network of interlinked social units (GILLS, FRANK 1992; FRANK 1993).

The historical formation of the Rural-Urban (or Periphery/Centre) continuum is then a progression of social and behavioural differentiation. It is a

social process involving three main spatial factors: concentration, accessibility and interaction. They explain the formation (concentration forces), the location (accessibility), and its shape (organization). As density of population increases, so areal specialisation results. The competition for space becomes so great that each area in the city tends to be put to the uses which yield the greatest economic return. The size of the social group determines the nature of human relationships. Elites can mobilize enough power to control the agricultural population once the nucleated settlements grow large enough. The critical consideration in determining whether spatial aggregates of people will form unequal urban systems is whether the power of the local elites is sufficient to enforce rural to urban migration in excess of the natural level of population growth.

In simple economies, one or two forces act strongly upon the system so that a single concentration is able to expand, by growing to dominance. As economic complexity increases, so does the range of urban specialization, so that there are many more stimuli to urban growth, and with the increasing size of intermediate and smaller centres, a rank size pattern emerges. New social groups develop with the control and management of the resources and production tools, administrate the economy and the surplus, strongly influencing the economical process, and acquire power from the products coming from the subordinate classes and labour force at their dependence (TORELLI 1981; GUIDI 2000).

The consequence of replacement of old egalitarian relationships is an increased social differentiation, spatially mediated, with concentration of the economical and political power in separate sites.

Spatially differentiated areas emerge (the Cities), where the elites will live, controlling the production but not doing the productive activities, while the territories, sites and regions depending from the city, are the places where production activities are performed and address their products to the city (LIVERANI 1986).

Why the spatial effects of social differentiation seem fast always regular? Why is so usual to find core-periphery relationships, if spatial consequences of surplus transfer may be so diverse? The range of possible spatial locations for capital accumulation may be very great. Even a state of the system where capital is accumulated at a central place, seems rather an exception than a rule. An explanation of this fact comes from the analysis of social dynamics. The exploitation of the working class and the process of accumulation of capital require a continuous process of urbanization, because of the search for ever lower costs of production and higher productivity, which favours geographic regions which allow savings in production. Individual economic units are obliged to embark on the process of accumulation because they are competing with each other and therefore have to em-

ploy their income (profit) in order to remain competitive, which means increasing labour productivity and exploitation margins and reducing the production costs of goods.

Production has to be increased in order to retain competitiveness: profits are invested such a way the production cycle increases. Therefore capital concentration grows continuously (MIGINONE 1981). In general, the progressive concentration of capital leads to the exclusion of a section of producers from the market, since they cannot keep up with competition because their limited basic capital does not allow them to produce at ever lower costs. At the same time, capital's discrimination between more profitable and less profitable sectors reproduces a deep economic dualism. Highly concentrated capital increasing exploits and discriminates against those sectors which are least able to practise capital concentration.

The behaviour of individuals is influenced by the size of settlement and by the relative location of cities. This may increase the inertia of the system. Such inertia is certainly another characteristic of urban dynamics, and it can be explained by the fact that a city is not only an aggregate of inhabitants but it also has a material built-up structure. This concrete inscription of processes of accumulation of wealth and values slows down the momentary trends, which would tend to change the ordering of the cities in the urban hierarchy. In other words, spatial flows (interaction) emerge as a result of dynamic spatial configurations.

The process can be described in the following terms:

- 1) An agricultural population grows, and an early human concentration emerges.
- 2) Those early cities provide a power base for emerging local elites, and their policies encouraging urban goods production lead to a rapid population shift from the periphery to the core area.
- 3) That moves some rural areas into net population decrease.
- 4) Elite control over the increased urban population continues until wealth produced and accumulated at the urban sector is no longer enough to maintain control over the transfers from periphery.
- 5) When elites lose control over social and economic interaction between core and periphery, urban population rebels or emigrates to the countryside.
- 6) If the regional population has decreased to the point that urban centres are weak and the population is restive, then loss of control over the population in one polity can spread rapidly. The local urban centre is sacked and many of the elite are killed, and the population then flees elite control. With no one left, remaining local elite groups begin hiring mercenaries to help them take over areas in better shape. The loss of elite control over large portions of the countryside gives the peasantry refuges against tribute collection and

elite control, leading to further migration and further decrease of the population of the remaining elite centres. Eventually, only locations isolated from the population movements or attractive to population can maintain the old levels.

7) System collapse takes place, the urban centres rapidly disappear, and the system returns to an agricultural economy and the first stage of the cycle (FRANK 1993; ERWIN 1997).

This process suggests a non linear dependence of political power on urbanization. The intensity and duration of the urban process (involving the internal dynamics, dialectical and social struggle) is connected with the increasing spatial complexity and hierarchy. The dominance of single nucleated settlements is the final step of a process beginning with individual farms scattered over a territory, single village formation/nucleated village emergence/extension of the nucleated villages out of their areal borders/ and the formation of depending territories (ROBERTS 1996). By implication, control over population movements should be a primary concern of any emerging elites. This reflects the necessity to organize a region co-operatively with a common elite culture to stabilize local polities against emigration. The requirement for multiple centres, rather than a single city, is due to the limited span of control of local elite groups. Without cooperation between local elite groups in neighbouring areas, agriculturalists had the option of migrating away. The urban system at this stage of development can not produce enough surplus to support additional levels of hierarchy and centralized control – that would not be available until the introduction of the market system. It is in this context, where the very notion of Territory and political frontier appears (ROBERTS 1996). Once the system begins to generate a surplus, and is able to reproduce the means of capital accumulation, it depends critically of the frontiers created that ensure the dominance of periphery from the city. But when the reproduction of the frontier is impossible, capital transfers from periphery to the centre result in a cyclical process of expansion and contraction.

The social processes towards the “origins of the city” are necessary the same as those bringing to the “origins of the state”, the “origins of social division of labour”, or even the “origins of capital accumulation”. The urban process is dependent upon the larger social order in which it occurs, and does not operate independently of that order. The city has to be studied as a relevant phenomenon in the context of production and distribution. The key point is here that the uneven spatial distribution of population and resources is a fundamental aspect of the general social reproduction process. Consequently, the increase of social power is always related to urbanization and the controlled nature of spatial interaction.

3. THE ORIGINS OF THE CITY AS AN ARCHAEOLOGICAL PROCESS. TOWARDS AN OBSERVATIONAL THEORY

Given that the origin of the city is only a material (observable) effect of the origins of the State and the formation of class society, we should use this definition of the city and its dynamics in order to “observe” class society in the archaeological record. That is, “State” or class society are theoretical entities, without clear observable referents. Built spaces and human settlement concentrations are observable entities which should be related to social processes.

Our problem is then to understand the causal process producing the spatial accumulation of capital, and its “urban” consequences, as present in the archaeological record: spatial division of labour and the emergence of core-periphery relationships between the *locus* of capital accumulation and the hinterland whose exploitation allows the reproduction of the capital accumulation process.

Accumulation implies *concentration*. That is, concentration of people, resources and means of production is only the spatial appearance of the capital accumulation process. Consequently, where we find archaeological evidences of capital accumulation, we should calculate whether it is a related increase in the probability of human settlement in the vicinity or not, and then to be able to infer the existence of a dialectical process of territorial domination.

Our preliminary investigation should be then the analysis of the *degree* of accumulation, in terms of the spatial concentration of capital components. Therefore, we have to investigate:

- The archaeological correlates for *generators* of capital accumulation;
- The archaeological correlates for *restraints* on capital accumulation.

We begin by measuring qualitatively the presence/absence of social actions (settlement, resources acquisition, labour action, distributive/exchange activities, ritual action). For instance:

- Presence/absence of colonial import goods;
- Presence/absence of indigenous import goods (pottery, metal);
- Presence/absence of locally produced valuable pottery;
- Presence/absence of weapons;
- Presence/absence of metallurgical activities;
- Presence/absence of store buildings and structures;
- Presence/absence rich burials;
- Presence/absence of complex residential structures (multi-room houses);
- Presence/absence of subsistence activities (farming, husbandry, etc.).

This data allow us to calculate the following factors:

3.1 *Spatial density or settlement concentration*

It is the Dependent Variable in our model. It can be empirically measured in terms of a spatial probability density measure associated to each location, based on the geographical proximity with neighbouring locations. Concentration maps, however, can be misleading. The causal mechanism of urban emergence is not physical proximity, nor spatial density. The real cause should be explained in terms of the “influence” capital accumulated at a location has over the residence or productive actions performed at other locations in the proximity. The analysis then pretends to examine if the characteristics in one location have anything to do with characteristics in a neighbour location through the definition of a general model of spatial dependence (BARCELÓ, PALLARÉS 1998; BARCELÓ, this volume).

3.2 *Global interaction*

If settlement concentration is a relevant variable, then *distance* is one of the main dynamic factor determining the process of city formation. Spatial Interaction is related to distance, in such a way that the less distance between social actor, the higher the probabilities of social interaction. If a city is a topological point where social interaction has its higher levels, then, any modification of the settlement pattern towards an increasing concentration of sites, and a reduction of inter site distances, should be also related. However, we have to remember that a city is not only a spatial container of people. It is an *attractor* for interactions all interactions generated in its periphery and directed to the core area. Interaction flows between various places are proportional to the probability of contacts of their residents, and this probability is a function of the size of the places. We need demographic estimates to calculate the theoretical maximum degree of interaction depending on population (CRISTOFANI 1984a; STEINGRÄBER 2000). Demographic estimates can be obtained through extension measures of settlement areas (HASSAN 1981). Estimates are always misleading, but we are not interested in the real figures of population at different historical phases, but in the population growth indexes. We will never been sure of the population during the 10th century B.C., but we can calculate if population grows or not between 10th and 8th centuries.

3.3 *Dominance and coercion*

We need to estimate also the inequality and directionality of interaction flows. In other words, we have to integrate into the model the hierarchy between core and periphery. We are studying the differentiation between the emergent urban core and the exploited rural periphery, therefore, capital accumulated in the centre *is a function of* capital extracted from the periphery, and transferred:

- By force (through taxation);
- Through the coercitive fixation of prices between the city commodities and countryside commodities;
- Through market relationships (supply and demand). It is always easier for urban products (manufacture) to be monopolized, than for agricultural goods.

Therefore, if Power and Dominance may be analysed in terms of spatial attraction, then the inequality of interaction from core to periphery is directly proportional to capital generated in both points, and inversely proportional to the cost of coercion and domination.

3.4 *Attraction*

The *attraction* force exerted by a city core area is directly proportional to the number or intensity of interactions between *periphery locations* and *the centre* and the squared distance between both entities, and inversely proportional to the attraction force exerted by alternative periphery locations. Local factors may be understood in terms of locally accumulated mobile capital (for instance: quantity of colonial imported goods, presence/absence of metallurgical luxury objects). If we consider process of capital accumulation at the city, then the volume of capital or wealth accumulated there is directly proportional to the level of dominance or power of the city over the surrounding rural area, plus the frictional effects due to the cost of coercion, and inversely proportional to the total amount of capital accumulated at the periphery. The more productive is a location, and the more independent are their local elites, the most difficult is to ensure dominance and capital transfers from periphery to core areas.

3.5 *Migratory flows*

It is a measure of the probability of social agents at a given point of the periphery *i* travelling to a given urban centre *j* because of the work advantages the urban centre has to offer. It implies the conversion of human labour into a good, and the social consequences of market relationships. Core area attracts not only interaction flows, but also people from the countryside who go to the city for obtaining resources in the urban labour market. One of the main reasons to explain demographic advantages of urban-core areas is the increase in population due to migratory flows. Consequently, net migration is also roughly proportional to city size, as long as the migration and out-migration flows are also proportional to this size (HUFF 1963; see also CARTER 1972; NIJKAMP, REGGIANI 1992).

We can obtain estimates of population and population growths, but migratory flows fast never are represented in the archaeological record. This is a sensible lack of archaeological information. In any case, the relevance of

migration depends on the development of labour market. Migratory fluxes were not especially relevant in Europe until Industrial Revolution. It is important to differentiate those migratory fluxes to global population movements or settlement waves. The relevance of migration can be estimated in terms of population growth beyond fertility rates. If population estimates in an urban area increase in a very short time interval, beyond the reproductive rate, we have to include a migratory factor.

4. THE ORIGINS OF THE CITY AS AN ARCHAEOLOGICAL PHENOMENON. THE ETRUSCAN CASE

It is in Central Italian peninsula, ancient Etruria, where between the Final Bronze Age and the first Iron Age began a social process towards the development of cities. This process took place in a relatively short chronological period of time when scattered villages began an aggregation process (*sinecism*) towards urban formations (ProtoCities and City-State) (TORELLI 1981; COLONNA 2000).

It is particularly interesting the case South Etruria, and the formation of the city of Tarquinia. It can be considered a very suitable example and one of the most important (in its evolution from late Bronze Age to Early Iron Age) (MANDOLESI 1999).

Tarquinia's historical territory consists of the Etruscan urban site called Civita and a vast region around it connected with important ancient roads. This area located between the coast line and the Marta river valley, once an important route to inner Etruria, was the heart of a very fertile land whose richness came from the sea, the coastal lagoon, the great extent of woods and the proximity of Tolfa mountains mineral deposits. The territory of Tarquinia is a homogeneous geographical area characterized since proto-history by a strong historical, political, cultural and economic unity. Here villages founded at the end of the Bronze Age gave rise to the development of Iron Age Tarquinia (9th-8th centuries B.C.) (MANDOLESI 1999, 1999a).

Archaeological researches at the Civita, focus of the settlement of Tarquinia, brought to light a relevant presence of Iron Age findings covering an area of 150 hectares (Fig. 1), the average size of proto-urban villages rising on plateaux in coastal Etruria. The Civita Villanovan settlement develops on a vast area including several wide, flat summits (Pian di Civita, Pian della Regina, Castellina, Cretoncini). The bounds of the settlement, defined by the findings emerging on the surface, correspond exactly to the natural edges of the plateau. The proto-historical materials prove that the Iron Age settlement covered the whole surface of the Civita and had a high population density. Moreover, the even distribution of Villanovan remains shows the unitary character of the proto-urban settlement. The archaeological situa-

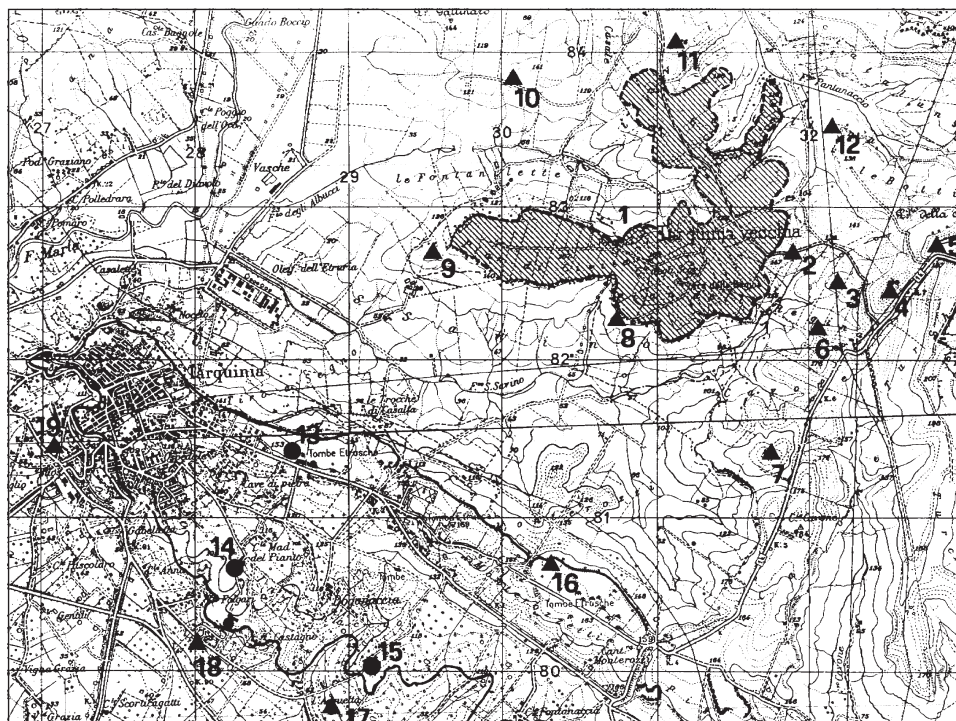


Fig. 1 – The distribution of the proto-historical settlements and burials around the Civita and the Monterozzi areas (MANDOLESI 1994).

tion allows us to hypothesize the existence of a village organized into a number of “neighbourhoods” of different dimensions, each one consisting of several houses and functional constructions. They covered the whole plateau and were separated from each others by small fields destined to farming, breeding and open-air working activities.

Several Iron Age cemeteries have been traced all around the Civita (Poggio Selciatello, Poggio Sopra Selciatello, Impiccato, Poggio della Sorgente, Quarto degli Archi, San Savino, Civitucola, Gallinaro) some of which dating from the end of the Bronze Age (Fig. 2). The burial areas tend to surround the vast Villanovan settlement according to a model traced in many other sites of Etruria (Veio, Cerveteri, Vulci, Bisenzio, Vetulonia). The cemeteries organization around the main site at the Pian di Civita plateau presents a radial disposition of the burials around the scattered villages of the previous phase, and are aligned directly to their original and dispersed pattern (with spatial neighbourhood between the burials and the settlements). From the half of the 8th century B.C., the Cretoncini hill is no longer used as a settle-

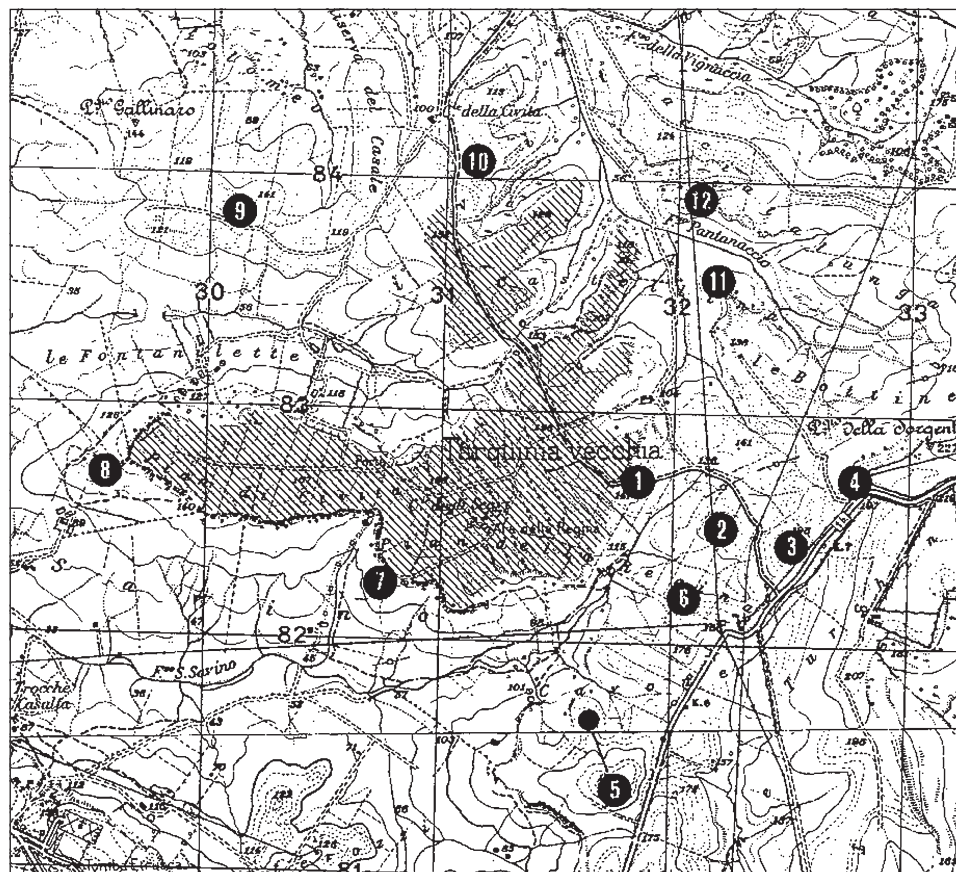


Fig. 2 – The funerary areas around the Civita plateau (MANDOLESI 1999).

ment and a small cemetery developed in the area. At the end of the 7th century B.C., however, the suburban area is inhabited again and constructions used for farming activities are built.

At the beginning of the Iron Age the Monterozzi hill, seat of the major Etruscan necropolis in Tarquinia, is settled. The area, located between the Civita hill and the coast line, was in a perfect strategic position as for territory control. Here, in contrast with the archaeological situation found on the Civita where one large settlement covers the whole plateau, three isolated Villanovan villages have been traced so far (Calvario, Infernaccio, Acquetta). Large fields used for farming and herding separate them from each other. These villages were presumably dependent on the proto-urban centre of the Civita.

They played not only a strategic role controlling the coastal area and the roads that lead from the coast to the Civita, but also an economic role based on the exploitation of the vast coastal plain and lagoon, both rich in natural resources. The most important site at Monterozzi is the Calvario settlement where the excavations allowed the analysis, even if partial, of the urban organization of a Villanovan village covering an area of more than two hectares. Here rectangular shaped huts are flanked by more traditional oval shaped constructions probably used for functional purposes such as storage, stabling or working activities. These oval huts were probably dependent on the rectangular ones, presumably the houses, while the areas between them were probably destined to open-air domestic and working activities (LININGTON *et al.* 1978). The dominant topographic position of this village compared to the other settlements at Monterozzi leads to the hypothesis that the Calvario was the main centre on the hill, the focus where all strategic and economic activities carried out by the smaller villages (about one hectare) were planned and organized.

The Tarquinian community began to exploit coastal resources at the end of the Bronze Age when small villages rise along the lagoon. At the beginning of the Iron Age an intense settlement of the coastal region takes place. The materials found at the Saline (Fig. 3) display a large quantity of impasto containers while there is little evidence of pottery for domestic use (MANDOLESI 1996). It is worth noting that domestic pottery is usually found in great quantity only in coastal areas destined to residential purposes. Therefore, the absence of this kind of pottery and the abundance of container fragments in certain sites should presumably be the evidence of productive activities carried out in the area. In the case of the Saline site we can presume the presence of different specialized activities such as food storage and preservation and salt production. In ancient times salt was considered an extremely important resource not only for the preservation of meat but also for its religious significance being considered a protective, apotropaic element. An interesting theory concerning the Saline hypothesizes a massive salt production in the area and a consequent exportation of it as a means of exchange to the most of Southern Etruria (MANDOLESI 1996).

As a consequence of east Mediterranean colonialism, this coastal area becomes an important *attraction* centre. Along with the proto-urban centre of the Civita another large and organized settlement develops on the coast in the Saline area. It is the bigger port of Villanovan Etruria ever discovered so far.

It occupied an area of at least 60 hectares and it was probably organized into different sectors where various activities linked with sailing and marine resources exploitation took place (MANDOLESI 1996, 1999; PELFER 1998, 1999, 2000; PELFER, MANDOLESI 2000).

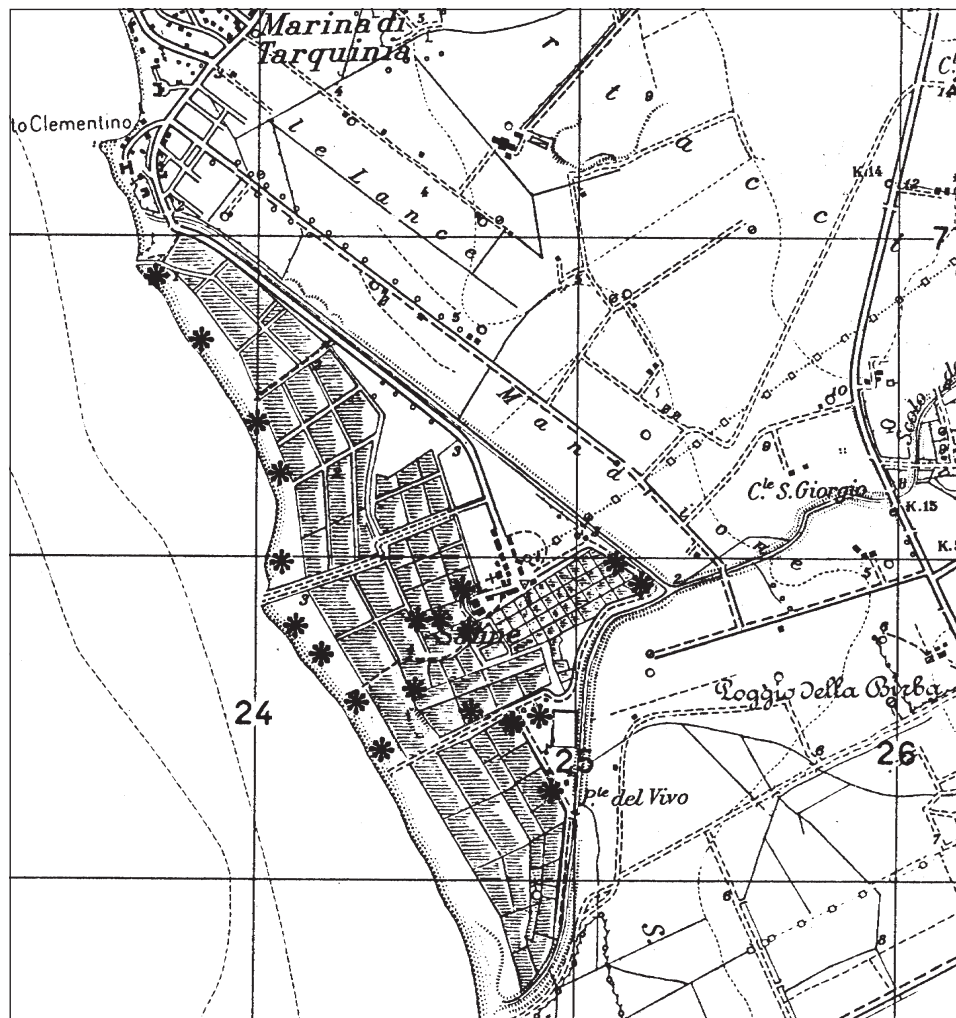


Fig. 3 – The settlements of the Saline (1st Iron Age) (MANDOLESI 1994).

The archaeological materials found in the settlement lead us to hypothesize the existence of a functional area with berthing places, warehouses for the exchanged goods and for the preservation (salting) of seafood. The residential area was located in the inner part of the site, behind the sector destined to economic activities. The materials found at the Saline display a large quantity of impasto containers while there is little evidence of pottery for domestic use (MANDOLESI 1996).

At the same time a number of little villages rose along the coast of Tarquinia, and not only on the Saline area. Their archaeological layers have been brought to light by the erosive action of the sea on the sandy cliffs. The archaeological excavations on the sites located in the southern coastal area brought to light residential and functional constructions. In the villages of Mattonara and Torre Valdaliga round shaped huts feature pits of different shapes and dimensions dug into the rock (BELLARDELLI, PASCUCCI 1999). Some of them were meant for supply and food storing and cooking whereas others were used as basins for seafood preserving processes. The overall economy of these coastal centres was therefore based not only on trade and exchanges but also on the exploitation of marine resources, even though the main centre for this kind of activities remained the Saline settlement. In the site of Acque Fresche an area destined to food preservation has come to light. It is an elliptic construction used in late Iron Age (second half 8th century B.C.) equipped with a circular furnace. The fact that most materials found here are impasto containers, shows that the site was destined to specialized preservation activities based on the use of fire (MANDOLESI, TRUCCO 2000).

The geographical vicinity and the homogeneity of the materials found in the coastal villages show that they were connected by social and economic links, probably under the political and cultural control of Tarquinia (MANDOLESI 1999). The coastal settlements are therefore to be considered as a unit designed according to a precise project of the Tarquinian community. The coastal territory of Tarquinia appears divided into two different areas: the main settlement of the Saline, directly ruled by the political centre of the Civita and rising on the coast right in front of it, and this series of little villages covering the southern part of the Tarquinian coast. They were probably meant to control sailing along the coast making profits on the flourishing trading and exchanging activities which took place in the central Tyrrhenian sea at the time.

They also controlled the routes from the coast to the Tolfa Mountains protecting their precious mineral deposits (MANDOLESI 1999; PACCIARELLI 2000).

Towards the end of the Iron Age (late 8th century B.C.) the southern coastal area seems to be abandoned while another settlement develops on the nearby hill called Castellina del Marangone (GRAN-AYMERICH in print). The village was located in a strategic position from which it was possible to control most of the coastline. The large quantity and high quality of the pottery findings uncovered on the site (imported geometric pottery), together with its strategic position on the main route to the mineral deposits of the Tolfa Mountains (Marangone valley), prove the great importance of this settlement. Densely populated during the Bronze Age, the mountainous region of Tolfa seems to be almost abandoned at the beginning of the Iron Age. This

phenomenon is probably due to the increasing settlement of the Tarquinian coastal area encouraged by a powerful political and social organ whose goal is to create an administrative centre at the Civita. Only in the 8th century B.C., once again following a design of Tarquinia to control and exploit the northern area of the mineral deposits, the Tolfa Mountains start to be inhabited again and small villages are founded.

In conclusion, on the basis of this complex archaeological framework, it is possible to analyse the different areas of Civita, Monterozzi, Saline, Southern coast, and even the Tolfa Mountains as a whole. They were parts of the same large territory and productive system organized by one community whose administrative focus was represented by the Civita centre (MANDOLESI 1999).

The process can be described in terms of a very gradual process of spatial concentration and capital attraction, where a core area placed on a large and uniform plateau, exerted domination upon the surrounding hills, mountains and coastal areas. Inertia is certainly another characteristic of such a dynamic system, and it can be explained by the fact that an evolving core area is not only an aggregate of inhabitants but that it also has a material built-up structure (capital concentration), which attracts spatial flows of capital (people, resources, information). Consequently the location of the main administrative centre (the Civita) is not *adapted* to environmental conditions or resources, but it is the place where social agents perform actions like capital accumulation and the reproduction of capital accumulation through political and social control. The behaviour of individuals is influenced by the size of settlement and by the relative location of cities.

We are not looking for an *optimal* spatial allocation of resources, but studying how the spatial features of capital accumulation are related to the development of spatial division of labour, which imploded in a unique geographical and topographical point or core area, because of the social difference expressed in spatial inequalities. A large and densely occupied core area was surrounded by different settlements through a network of dominance relationships. The core area built and reproduced spatial dominance on the base of social and economic activities that promoted a market economy, linked to the exchanges, trades and goods circulation. The urban centre became the crossroads for the network of the economical activities and interaction flows (GUIDI 1992).

This change was favoured by the emerging *clientes* relationships, depending on the elites. These dominated population acts as labour force able to increase the elite's prestige; it is maintained and paid for its work, and it is specialized in some specific activities, according to the elite needs (TORELLI 1981; PERONI 1994; GUIDI 2000).

The consequence is the appearance of a true market and exchange economy. At first this new economic setting is defined on a local scale, and

after on a global dimension: this one implies an increase of the elites capital accumulation, their control on the craftsmanship and specialized activities (TORELLI 1981; GUIDI 1992; GUIDI 2000). In this way, the origin of the city is also determined by the development of a territorial division of work, which relates in an unequal tie the developed societies of the Near East and indigen-ous central/western Mediterranean societies.

We may compare the Etruscan way to urban systems with older process that first began in the Near East. Old Eastern cities represented the main agglomerations within very large territories: the Town became the main centre for the work specialization, while the smaller centres are subjected to lose their importance in this framework (LIVERANI 1986). The situation of the Near East is characterized by a very strong State organization, centred on the Towns that acquire a predominant rule and, from an autocratic and organizing point of view, carry out a very large effort, coordinating and controlling the territories on the largest scale, and extending their influence at great distances. As a consequence, the Town exercises its absolute power on a very large territory, against the smaller centres absorbed in the urban predominance. The hegemonic and centralized control on a very large scale is connected also to some needs of the environmental planning, deriving from the physical conditions and the management of the great alluvial plains (LIVERANI 1986).

5. CONCLUDING REMARKS

In this paper, we have archaeologically defined a city or town in terms of some specific *built space*. We use this concept as an archaeologically observable effect (correlate) of unobservable social processes, especially capital accumulation and social division of labour.

We have tried to study the differentiation between the emergent urban core and the exploited rural periphery. The main point to focus is to understand the origin of town and cities in terms of intensification of production and concentration of wealth and capital, and the transformation of relations of production, characterized by a transition from domestic production to different forms of capital accumulation, individual enrichment, and class formation.

In the case commented here, during the Iron Age, Tarquinia territory (1000 km²) was structured by the attraction force of a core area (City), concentrating the political, social and economic functions, over a periphery, where primary raw material production was located. This spatially more dense area is viewed as a deep and narrow *attraction basin* where all locations – settlements – are concentrated.

Nucleated settlement in the Pian di Civita area was followed by the further spatial articulation in neighbouring Monterozzi and Saline area, in search for maritime resources (MANDOLESI 1999).

In a colonial economy (8th century B.C. onwards) the control and dominance of coastal areas is basic. This fact is exemplified by the creation of the *Graviscae emporium* (PELFER 1998, 1999), which represented a first step in the origins of market circulation of resources, and favoured the participation of emergent towns into a network of traffics and exchanges.

The Town became a focal junction of the exchanges utilizing directly the *emporium* for the immediate and fluent contact with the foreign colonial centres, which enable indigenous societies the participation into a market economy on a larger scale.

This spatial configuration is also reproduced in the organization of ritual areas (cemeteries), initially surrounding the Civita and constituted by the cemeteries of the Eastern Hills (Poggio Selciatello, Poggio dell'Impiccato). The location of cemeteries later extended in direction of the Monterozzi hill, where a new strategic area for the control of the market and the exploitation of the maritime resources emerged. Monterozzi becomes the main funerary area with individual and monumental burials depending from the Civita (BARTOLONI 2000; STEINGRÄBER 2000). The situation of Tarquinia cemeteries is interesting for the understanding of the complex dynamics that, together with the increasing social complexity, lead to an increasing spatial articulation through:

- Dispersion, expansion and organization in a core area;
- Further extension of the core area;
- Final concentration in a great nucleous (the City and City-State).

The consequence of all these social and spatial transformations is the creation of a very clear ideological frontier between Live and Death, Town (Pian di Civita) and Cemetery (Monterozzi). This ideological frontier appears also in other ambits the division between the Exchange areas (represented by the rest of the territory and the maritime lagoons) and the Political ones (the imploded Town), or between these ones and the Agrarian.

This historical process has been usually explained in terms of traditional economic theory, that is, prehistoric populations were looking for better resource allocation, in connection with agrarian facilities, salt, metal resources and exchange routes.

Classical theory is empirically wrong, because the friction factor is not only travelling costs. We are not looking for an *optimal* spatial allocation of resources, because the causal mechanism of urban emergence is not the physical proximity to valuable resources or routes, nor the spatial density of human settlement locations. On the opposite, greater spatial interaction is more likely to appear where the effects of unequal exchange and social exploitation are also higher. The real cause should be explained in terms of the “influence” capital accumulated at a location has over the residence or productive actions performed at other locations in the proximity. Empirical evi-

dence of inter-penetrating wealth or capital accumulation between the city and the rural countryside through the transfer or exchange of surplus is the minimum indicator of the action of this social process. Concomitantly, we should seek evidence that this inter-linkage causes at least some element of economic and/or political restructuring in the respective zones.

In the Tarquinia case, spatial nucleation and the territorial expansion of dominance relationships was accompanied by a social transformation from tribal and kinship structures, to the emergence of elites. Evidences of social change are very clear during Early Iron Age: increase of agrarian production and productivity, control of strategic resources, like the metals (also favoured by the introduction of a colonial market economy through the contacts with Greece and Eastern Mediterranean Empires) (BONAMICI 2000).

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REFERENCES

- BARCELÓ J.A., PALLARÉS M. 1998, *Beyond GIS: The archaeology of social spaces*, «Archeologia e Calcolatori», 9, 47-80.
- BARTOLONI G. 2000, *Le origini e la diffusione della cultura villanoviana*, in TORELLI 2000, 53-71 (with previous bibliography).
- BELARDELLI C., PASCUCCI P. 1999, 'Torre Valdaliga' and 'La Mattonara', in *Atti del Convegno F. Rittatore Vonwiller e la Maremma, 1936-1976: paesaggi naturali, umani, archeologici*, (Ischia di Castro 1998), Grotte di Castro, 79-102.
- BERRY B., HORTON F.E. 1970, *Geographic Perspectives on Urban Systems*, New Jersey, Prentice-Hall.
- BONAMICI M. 2000, *La struttura economica*, in TORELLI 2000, 73-87 (with previous bibliography).
- CAMAGNI R. 1992, *Economia urbana*, Roma, La Nuova Italia Scientifica.
- CARTER H. 1972, *The Study of Urban Geography*, London, E. Arnold.
- CHRISTALLER W. 1933, *Die Zentrale Orte in Süddeutschland*, Jena, Gustav Fischer Verlag.
- CLARK D. 1982, *Urban Geography*, Baltimore, The John Hopkins University Press.
- COLONNA G. 2000, *I caratteri originali della civiltà etrusca*, in TORELLI 2000, 25-41 (with previous bibliography).
- CRISTOFANI M. 1984, *Etruschi. Una nuova immagine*, Firenze, Giunti (2nd ed. 2000).
- CRISTOFANI M. 1984a, *Demografia e storia*, in CRISTOFANI 1984, 29-32.
- DICKEN P., LLOYD P.E. 1990, *Location in Space*, New York, Harper and Row.

- ERWIN H.R. 1997, *The dynamics of peer polities*, in S.E. VAN DER LEEUW, J. MCGLADE (eds.), *Time, Process and Structured Transformation in Archaeology*, London, Routledge.
- FRANK A.G. 1993, *The Bronze Age world system and its cycles*, «Current Anthropology», 34,3, 383-430.
- GILLS B.K., FRANK A.G. (eds.) 1992, *The World System. Five Hundred Years or Five Thousand?*, London-New York, Routledge.
- GRAN-AYMERICH J. (in print), *La Castellina près de Civitavecchia: les travaux en cours par l'équipe du CNRS*, in XXIII Convegno di Studi Etruschi ed Italici "Dinamiche di sviluppo delle città nell'Etruria meridionale: Veio, Caere, Tarquinia, Vulci" (Roma-S.Marinella-Tarquinia-Montalto di Castro-Viterbo 2001), Firenze.
- GUIDI A., PIPERNO M. (eds.) 1992, *Italia preistorica*, Roma-Bari, Laterza.
- GUIDI A. 1992, *Le età dei metalli nell'Italia centrale e in Sardegna*, in GUIDI, PIPERNO 1992, 420 ff.
- GUIDI A. 2000, *Preistoria della complessità sociale*, Roma-Bari, Laterza (with previous bibliography).
- HASSAN D. 1981, *Demographic Archaeology*, New York, Academic Press.
- HUFF D.L. 1963, *A probabilistic analysis of shopping centre trade areas*, «Land Economics», 39, 81.
- KROLL E.M., DOUGLAS PRICE T. (eds.) 1991, *The Interpretation of Archaeological Spatial Patterning*, London-New York, Routledge.
- LININGTON R.E., DELPINO F., PALLOTTINO M. 1978, *Alle origini di Tarquinia: scoperta di un abitato villanoviano sui Monterozzi*, «Studi Etruschi», 46, 3-23.
- LIVERANI M. 1986, *Le origini della città*, Roma, Ed. Riuniti.
- LÖSCH A. 1939, *The Economics of Location*, Yale University Press (English translation, 1954).
- MANDOLESI A. 1994, *Ricerche di superficie relative alla Prima età del Ferro nell'area di Tarquinia antica e nel territorio immediatamente circostante*, in *La presenza etrusca nella Campania meridionale. Atti delle Giornate di Studio (Salerno-Pontecagnano 1990)*, Firenze, Olschki, 329-339.
- MANDOLESI A. 1996, *L'insediamento villanoviano*, in *Le Saline di Tarquinia*, suppl. a «Teknos», 9, sett., 35-37.
- MANDOLESI A. 1999, *La 'Prima' Tarquinia. L'insediamento protostorico sulla Civita e nel territorio circostante*, Grandi contesti e problemi della Protostoria italiana, 2, Firenze, All'Insegna del Giglio.
- MANDOLESI A. 1999a, *All'origine dell'Ager Tarquiniensis: il cantone meridionale tarquiniese nella prima età del Ferro*, in *Leopoli-Cencelle. Una città di fondazione papale, Le preesistenze*, I, Roma, Palombi Editori, 19-35.
- MANDOLESI A., TRUCCO F. 2000, *L'abitato costiero della prima età del Ferro di Acque Fresche (Civitavecchia)*, in *Atti Preistoria e Protostoria in Etruria*, IV, Firenze, Octavo, 376-382.
- MINGIONE E. 1981, *Social Conflict and the City*, Oxford, Blackwell.
- NASO A. 2000, *Le aristocrazie etrusche in periodo orientalizzante*, in TORELLI 2000, 111-129 (with previous bibliography).
- NEGRONI CATAACCHIO N. 2000 (ed.) (in print), *Atti Preistoria e Protostoria in Etruria, 'Paesaggi d'acque' (Sorano-Farnese 2000)*, V.
- NIJKAMP P., REGGIANI A. 1992, *Interaction, Evolution and Chaos in Space*, Berlin, Springer Verlag.
- PACCIARELLI M. 2000, *Dal villaggio alla città. La svolta protourbana del 1000 a.C. nell'Italia tirrenica*, Grandi contesti e problemi della Protostoria italiana, 4, Firenze, All'Insegna del Giglio, 170-176.

- PELFER G. 1998, *Evoluzione del paleoambiente lagunare nella pianura costiera di Tarquinia fra i fiumi Mignone e Marta*, «Bollettino della Società Tarquiniese di Arte e Storia», 27, 5-36.
- PELFER G. 1999, *Situazione paleoambientale e viabilità romana antica: nuovi risultati sulla via Aurelia nell'area di Tarquinia ottenuti dalla elaborazione digitale della foto aerea con MATLAB*, in F. LENZI (ed.), *Archeologia e ambiente. Atti del Convegno Internazionale (FerraraFiere 1998)*, Forlì, ABACO, 121-129.
- PELFER G. 2000, *Il paleoambiente lagunare di Tarquinia*, in NEGRONI CATAACCHIO 2000.
- PELFER G., MANDOLESI A. 2000, *Rapporto fra l'insediamento umano e l'evoluzione delle lagune nel litorale di Tarquinia dall'epoca protostorica al periodo della costruzione della via Aurelia romana*, in NEGRONI CATAACCHIO 2000.
- PERONI R. 1994, *Introduzione alla protostoria italiana*, Roma-Bari, Laterza.
- PUMAIN D. 1997, *City-size dynamics in urban systems*, in S.E. VAN DER LEEUW, J. MCGLADE (eds.), *Time, Process and Structured Transformation in Archaeology*, London, Routledge, 97-117.
- ROBERTS B.K. 1996, *Landscape of Settlement. Prehistory to the Present*, London-New York, Routledge.
- STEINGRÄBER S. 2000, *L'urbanistica etrusca*, in TORELLI 2000, 291-313 (with previous bibliography).
- TORELLI M. 1981, *Storia degli Etruschi*, Roma-Bari, Laterza.
- TORELLI M. (ed.) 2000, *Gli Etruschi. Catalogo della Mostra di Venezia*, Milano, Bompiani.
- WHEELER J.O., MULLER P.O., THRALL G.I., FIK T.J. 1998, *Economic Geography*, London, John Wiley.

ABSTRACT

This paper will focus on the origins of the city. This subject has been studied in sociology, anthropology, history and geography, but there is not a unified approach. Our paper deals with the specific way social theory can be used in archaeology. We consider that a "city" is a specific form of social space "produced" by a series of social actions. However, this "production process" cannot be described easily in archaeological terms. As a result, there is a deep gap between social theory concepts and archaeologically observable evidences.

Today it is fashionable to speak about the unscientific nature of Archaeology and Social Science. This paper deals with this discussion, trying to create an observational theory to understand the process of city formation. We reject traditional positivist approaches of concept and reference, because of its simplicity. However, this fact does not mean that the analysis is impossible in scientific terms. We show how to use spatial statistics, probabilistic modelling and visualization technology in order to obtain a simulation of the spatial process, and then use the resulting model to build a representation of social theory in archaeological terms.

In the paper we use the Italian city of Tarquinia as a case study. It is suggested that the origin of the city can be represented as a spatial process beginning with preliminary scattered villages, which join together forming bigger spatial units, which become attractive for the better geographical and geomorphologic conditions. The gradual consolidation of the main settlement in the best location is determined by the population growth, and the development of new productive system and new social relationships.

