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The historiography of landscape research on Crete

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1. The History of Landscape Archaeology: Major Traditions and Approaches

1.1 Introduction

This chapter aims at offering a wider context of the development of Landscape Archaeology within which the theoretical and methodological background of archaeological landscape research in the island of Crete can be viewed and understood. It should be noted that my focus lies on European archaeological landscape research and in particular Greece and Italy, due to the area's long tradition and vast number of works, but also because of my personal familiarity and experience. Taking into account that even though approaches and perspectives fall within identifiable trends in thought and practice over time, they should not be seen exclusively as parts of a strict evolutionary historical sequence, as they have always been at a constant interplay; thus, instead of adopting a historical, time-progressive viewpoint, I have preferred to approach landscape work by primarily looking at the differences in landscape perceptions and secondarily following these in time.

Even though landscape studies have always been inherent in most archaeological research from the beginning of the discipline, landscape archaeology has only recently formed a discrete sub-discipline and is now taught in universities as a separate course. In fact, the importance of studying the landscape systematically has been increasingly acknowledged since the early days of archaeology, and especially since the 60's. As a result, theoretical discussions in the Anglo-American academic tradition have led to a quite distinct border line between the practice of studying material culture in relation to measurable environmental factors and the development of a body of theory about landscape perception, even though region-specific archaeology is less involved in such discussions (e.g. Aegean archaeology). The term 'landscape' and its controversial perceptions over time have attracted intense discussion emphasising the deeply interwoven relationship between human societies and the environment, a realisation that makes the study of either of the two weak when performed as if existing in a vacuum. For some there is no clear distinction between the physical and social environment (Evans 2003), thus, the recognition of the relationship between human societies and the world around them makes the study of the two one and the same. Overall, landscapes may have different meanings for different people and so does sociality; some archaeological studies focus on economy linking it to the geometry of the landscape and its environmental properties, others focus on the personal and symbolic experience; some are interested in patterns of stability, others in patterns of change, some seek to identify systems, others might look for the divergences from patterns, while time and space may also be explored in totally different ways and in a variety of scales.

The latest trend that can be observed is an attempt to encompass almost all previous approaches in a more 'cohesive and complete' framework combining methodological correctness and interpretative complexity. However, in our effort to understand landscapes of the past and what these meant for the relative societies, I believe it is crucially important to understand what landscapes mean for the researchers who reveal past landscapes and under what theoretical and methodological trends landscape studies have evolved. In this context, I hereby discuss the main approaches to landscape and their related field practices, which I have divided into relevant traditions of archaeological landscape research. Landscape research has been used to answer questions of social and economic interest and explore relationships between people and environment. A historical retrospect of the questions asked by the relevant theoretical considerations in connection with the changing methodological and interpretative framework of surveys is of the outmost value if one wants to understand and assess its development. A brief summary of theoretical developments in archaeology can help illustrate the conceptual framework within which landscape explorations of an organised and energy-invested manner became an ever-growing popular archaeological tool operating in a diachronic level. I should state, however, that I do not provide a complete historical overview of archaeological landscape research; Such a theme is vast and very complex and one should take into account region and country specific circumstances as well as world-wide trends, relative to the historical development of archaeology as a discipline and which has

been influenced by developments in sister disciplines (history, anthropology, geography), but also in ideology and political history.

1.2 Landscape as Environment

1.2.1 Environment as Background of Human Activity

Studies that use environmental observations as background of human activity focus on what is visible and provide descriptions of varying detail and objectivity. Such descriptions of the physical environment form a basic context in which to view material culture and production. This approach may be noticed in all traditions over time, the following ones, however, are the most typical.

1.2.1. i Travellers

Travellers' accounts are numerous throughout the world, Greece being one of the most important destinations due to the specific socio-political circumstances in Europe the last centuries. The phenomenon of European Travellers has resulted to much secondary research (Simopoulos 1970-76 – important historical research including primary sources; Constantine 1984; Angelomati-Tsoungarakis 1990; Etienne, R and F. Etienne 1992; Bennet and Voutsaki 1991), sometimes focusing on specific areas (Gondica 1995; Warren 2000), in an effort to understand aims, perceptions and historical conjunctures of people who established a tradition of exploring both the physical and human worlds and nourished a deep desire for cultural knowledge in a wide spatial and temporal scale. The Travellers' tradition in reality starts in ancient times with Herodotus, Pliny, Strabo, Pausanias and others, who described cultures and monuments in their physical settings. 'Chorography' ('choros' = χώρος = space and γράφω = I write, describe) was a distinct discipline, which dealt with the description of space and everything cultural or natural that was included in it and could be observed by human eye. In particular Pausanias was one of the first who travelled through much of Greece in order to see and describe new places. His work can be seen as a guide and a source of information and entertainment. For Europe, he is the father of Travellers, but also topographers and antiquarians, showing a preference to the old over the new, the sacred over the profane. He followed a methodology of dividing space into geographical areas, moving about according to topography, and described it with a combination of 'logoi' (things to be said e.g. myths, traditions etc), and 'theoremata' (what is visible). His work is representative of an era when travelling in the lands of Greece and describing material culture had acquired a certain prestige; Greece in the 2nd century A.D. had already become a museum of housing the arts of a glorious past. Soon however, the decline of the Roman Empire, the instability caused by wars and the rise of Christianity put a halt to the interest in Greek monuments and art for a while. Although travelling throughout the Byzantium never actually ceased (Simopoulos 1970), Greece was not to be rediscovered by Europeans until the 15th century A.D. through Cristoforo Buondelmonti (1897 and 1983, edited by Alexiou and Aposkiti) and Ciriaco de Pizzicolli or Cyriacus of Ancona (Bodnar and Foss 2003). Influenced by the Italian humanism, they actually superseded interest in ancient texts and explored Greece from a much more diverse framework with a particular interest in geography and cartography, which were already at the route of revival with the maps of Claudius Ptolemaeus at the end of the 13th century (The manuscript of Geographike Hyphegesis with 10 maps of Europe is attributed to the monk and teacher at the Chora Monastery in Constantinople. It is contained in codex Urb. Gr. 82 of the Vatican Library - Zacharakis 2004). Cyriacus in particular was very interested in material culture and was the first to record it systematically appreciating its historical importance.

In the 16th century the European Humanism promoted a thirst for knowledge and nourished the desire for discoveries and adventures, evident in the explorations of Travellers who shared an interest in geography, sociology and natural sciences, botany and ancient history (e.g. Belon 1555). At the same time, travelling through Greece was also encouraged by pilgrimage to the sacred lands. The 17th century with the establishment of the 'Grand Tour' was a time that travelling became an important component of the British

education. Philology had established a long history of acquainting Europeans with the Hellenic past, but now texts are not considered adequate and for the first time 'hard data' or material remains are used in order to bridge the time-gap with ancient Greece. The collection of ancient Greek material culture was indicative of one's social and educational background The first to record ancient inscriptions in a consistent manner was Jacob Spon (1678), who together with George Wheler travelled through Greece in order to identify and describe ancient monuments. He also tried to compare his observations with those from ancient authors, a practice that was kept throughout the Travellers' epoch. Visits to Greece were continuously encouraged by a variety of historical circumstances; social (Enlightenment, American and French Revolutions based on ideas of the ancient Greek democracy), political (Napoleonian wars discouraged travelling through the mainland Europe), economic (British contacts with the Ottoman Empire), religious (pilgrimage to the sacred lands passed via Greece) and technological (publication of travelling accounts). By the 18th century Greece was a very popular destination, attracting many Travellers who were educated within the spirit of Enlightenment, influenced by aesthetics and philosophy of the ancient Greek world. An interest towards structured studies is developed, in particular in the realm of architecture and art. A leading figure of the time was Johann Joachim Winckelmann, who even though never actually managed to visit Greece, invented history of art and inspired the search for antiquities as a result of their artistic and aesthetic value. Architects, antiquarians and classicists, who explored Greece in a formal manner and often under the hospices of the philhellenic society of Dilettanti, established the roots for, and in many ways determined, the future of Greek archaeology. Overall, the period of European Enlightenment marked the beginning of extensive travelling in the newly discovered lands; there was a growing confidence in science and the objective study of the world and a desire to explore other cultures and lands in quest for knowledge. Travellers describe material culture and ideology as they perceive it at the time, whether English and French who travelled in the Mediterranean and the Middle East, or Spanish friars in Mexico, leaving accounts that formed the basis for the later development of archaeology.

Travels and travelling accounts followed a continuous development reaching their acme in the 19th century. Travellers may be merchants, ambassadors or adventurers, but they are usually polymaths, involved in many sciences of their time, often doctors, geographers, botanists. (Tolias and Koumarianou 1995). Depending on person and interests, some Travellers focused on environmental aspects of the land explored, others on cultural, some were more interested in the past, others in contemporary life. The polymathic spirit of the 18th century was followed by a new era of exploration and observation in the 19th, which produced detailed accounts on environment (Raulin 1869; Depping 1830), economics (Pashley 1837), folklore and ethnography (Sieber 1823), archaeology, agriculture and demography (Spratt 1865). There was a conscious effort to be 'scientific', which involved the acquisition of an as complete and precise set of observations as possible. Mapping had already quite a long history, but within the colonialist era cartography becomes an objective on its own and Travellers include in their aims the objective map representation of the places they visit (Spratt 1865: Production of Admiral Chart and geological map). At the same time, Travellers' accounts accompanied by picturesque drawings developed a romanticized interest in Greece, which inspired many Europeans to explore the newly rediscovered land and its ancient past.

Within this era of great developments in the natural and social sciences the dynamic idea of European identity found its roots in classical Greece and formulated the idea of Hellenism (Morris 2000:41-48). In the 19th century scholars still operated in the ancient Greek framework of a 'polymath' or else multi-scholarship and apart from individuals who travelled, explored and recorded new lands and cultures, we observe a more organised expression of the same phenomenon through missions such as the Expedition Scientifique de Morée (Bory *et al.* 1831-38) or archaeological ones such as Schliemann's and his collaborators'. Although there is a strong focus on the environment, an important characteristic of the era is that there was not a very sharp break between culture and environment and Travellers described both physical and cultural worlds. Remains from the ancient past were integrated in the landscape observed and were not distanced from it. Travellers perceived the world based on 'what could be seen', the environment and nature 'containing' the cultures discussed. They often give very detailed accounts of what they see, but also feel and think, thus they are valuable sources of

information about how the landscape looked like during the time of their visit, but also about the social and economic life of people at the time. We obtain a good idea about how the landscape was experienced by them, who were visitors and explorers, but also by the locals and at the same time it is interesting to reflect on their interests and therefore the interests of the people they referred to back in their countries. In general, there prevails the idea of environmental stability through time and the notion that a full picture of humanity requires also the description and study of the physical world that contains it.

At the same time, however, the illegal export of antiquities became a norm. The 19th century was the time of the founding of the great European museums – the time of the plunderers. Unlike Roman emperors e.g. Augustus and Hadrian who both had reproductions of the caryads of the Erechtheion, North/Western European 'ambassadors' felt it was within their jurisdiction to extract and consequently destroy monuments at free will (a typical example with political implications still in our days has been the case of lord Elgin and the marbles of Parthenon). On the other hand, this is also the time of the revived Greek 'aesthema' or feeling for the resurrection of the Greek state. The young state supports the study of its antiquities and develops frameworks for the management of its cultural heritage. Towards the end of the century we have the organised practice of archaeology and the beginning of organised excavations with figures such as Schliemann and Evans but also Kalokairinos and Tsountas. A key situation that has structured archaeological work and academic production till now is that the ancient Greek past became a trade good in the hands of the new state, which sold its antiquities to the competing foreign excavators in exchange for money and privileges.

To sum up, Travellers' accounts have indeed, inspired much later archaeological work and have been a valuable source of information much acknowledged and used in later traditions. Their vivid descriptions of what they saw and heard treat time as a united entity whether combining natural landscape and ancient monuments in their existing settings or mixing stories from mythology and contemporary everyday life. The significance of their accounts is even greater than those of concurrent historians because they are personal documents expressing thoughts and feelings quite freely; in this way they serve as brilliant and vibrant primary sources for the present historian and archaeologist. On the other hand it has been noted that Travellers often viewed the landscape 'through the filter of their own experiences' (Bennet *et al.* 2000:344) and therefore, their accounts should not be treated as objective beyond doubt images of a specific area/time, but they should be studied in relation to other documentary, but also archaeological evidence.

1.2.1. ii Topographic Tradition

The term 'Topographic archaeology' has been used to denote non-systematic extensive landscape research prior to organised, extensive and mainly intensive archaeological survey. However, in the context of this work Topographic archaeology refers to studies that focus on topography and which started with an interest in the reconstruction of ancient landscapes based on descriptions of ancient writers. In this sense, I make a distinction between archaeological research that focused on the recording of spatial geometry, and extensive research that aimed at the enrichment of site indexes; the latter is included in what I call 'Culture-History' archaeology.

The history of archaeological landscape research starts with Antiquarians' descriptions of ancient monuments, which date since the 16th century, but also Travellers' accounts, which awakened an increasing interest for past civilisations, but it is through the Topographic Tradition already in the 19th century that archaeological landscapes acquired an organised form of enquiry. Its roots can of course be traced in Pausanias's work, whose accounts have indeed been an invaluable source of information for later Travellers, topographers, historians and archaeologists (Alcock *et al.* 2001; Elsner 1994). A turning point for the history of topographic research, especially in Greece, was W. M. Leake (1824, 1835, 1967), a military geographer, who tried to identify ancient sites in his current landscape and for whom Pausanias was the main source of ancient topography in Greece (Wagstaff 2001). Gell (1819, 1804) was also an important figure in the area, even though his work concentrated more on the detailed description of surface remains he encountered in his travels. It seems that the characteristics that shaped the Topographic Tradition and formed the basis of Culture-History tradition as well, were the outcome of a military geographical interest and a time-division of

space focusing on the mapping of important locations. Leake's work in particular, established the topographic approach in landscape exploration, and represents specific historical circumstances in a complex interplay between concepts of landscape and media used to produce archaeological knowledge (Witmore 2004). Topographic studies flourished around the turn of the 20th century, together with and usually as part of Culture History archaeology. At the time new discoveries are promoted and there is an awareness of the importance of ancient remains as the only witnesses of past cultures. Within a methodological framework of scientificity, topographical studies focus on the geometry of the landscape and the monuments. At the end of the 19th century, articles with themes on the 'topography of ancient sites and regions' appear in the main archaeological journals (e.g.Pickard 1891), which until then published only excavation reports and objects' descriptions.

Works of the Topographic Tradition study contemporary topography and compare it with topographic descriptions of ancient sources trying to visualise places and events described by ancient historians. Effort is made to sustain how information from ancient historians and previous researchers may be confirmed through the situation of present remains and the site's topography. It is believed that via the identification of topographical checkpoints and the study of the relationship between ancient and modern topography, the accuracy and objectivity, thus historicity, of ancient historians can be assessed (Pritchett 1965, 1992). Earth sciences were soon acknowledged to play an important role in past landscape reconstruction and multi-disciplinarity (the co-operation of archaeology with geography, history, topography and geology) was often encouraged. The reconstruction of ancient battlegrounds, routes and paths are most favourable topics of research (Pritchett 1969, 1980, 1982; also 1985, 1989, 1991, 1992). Toponyms and ancient descriptions are very important and descriptive accounts of what researchers saw and did, give emphasis on the location of remains in relation to one another and in relation to modern features (quoting time and orientation) so that they can be relocated. There is also some consideration of materials used and their origin, but focus is guided by a geometric perception of the environment and ancient remains, providing detailed measurements on thickness, distances, length and height of walls, stones and features and also detailed descriptions of the topography of sites. Geometry, appearance, materials and spatial relationships between architectural parts are believed to relate to cultural identity, and thus they receive great attention. The history of the site is related to the environment and the physicality of the landscape, e.g. weather, marshes, the sea, mountains and gullies as the topography is believed to have played an important role on the site's character and function. Topographic maps/City plans are made and provide a visual distribution of features in space, complementary to detailed descriptive texts. Archaeological atlases also make their appearance in the beginning of last century (Gsell 1911), a practice that has continued till now. The Topographic Tradition can be seen as a paradigmatic expression of an 'orderly' world representing the belief in scientific objectivity, which is acquired through observation, and it demonstrates strong links with cartography and geography.

Italy constitutes one of the best examples of a wide application of topographical studies from the end of the 19th century. The work undertaken in the beginning of the century from both foreign and Italian researchers took a structured form in the 50's with John Ward Perkins, director of the British School in Rome, who motivated by the sudden land reformations of the Italian countryside started a long effort to record the Etruscan sites that started disappearing fast under the plough. The survey of south Etruria (Potter 1979), which lasted some twenty years, started within the Topographic Tradition and was one of the first to have a rescue character long before rescue archaeology was established. However, the long experience and multitude of data (some 2000 sites over 1000km²) made it also one of the first projects with a problem orientation towards landscape changes over time through the identification of changing settlement patterns (see below). Within the same framework of recording the fast vanishing ancient landscape of Etruria, the Topographic Institute of the University of Rome promoted a series of surveys known as the Forma Italiae surveys taking place throughout the 60's and 70's (Terrenato 2000). They were concerned with listing and mapping architectural remains, much guided by a nationalistic initiative of the time, but since the 70's they incorporated the recording of artefact scatters (Quilici Gigli 1970), something that had been initiated mainly by the British researchers much earlier and which in the 60's reached its peak under extensive landscape explorations within settlement

archaeology. The German school with its strong focus on Classical Greek and Roman cultures, has also had a long history of studying ancient topography, from the early 19th century (Karl Otfried Muller 1797-1840: he introduced a standard of accuracy in cartography of ancient Greece) until the present times (Lohmann 1993). Reports offer detailed records, plans and maps of sites, monuments and regions containing them. Topographic archaeology has in fact developed through classical archaeology and has always promoted a 2-dimensional visualisation of the ancient world through period site maps, sketch maps and site plans. In many countries site recording is now under the auspices of CHRM national projects, often with a strong rescuing character, even though nationalistic interests may still play an important role (e.g. Mexico: sites are being recorded by the National Institute of Anthropology and History). Site recording has in some cases been standardized (Britain and SMR's) and such records form an invaluable source of information whether for purposes of research or heritage management.

The Topographic Tradition is in a way embedded in all archaeological landscape research, even in modern regional intensive surveys. Although the Anglo-American approach to intensive survey and quantitative studies of the landscape characterises fieldwork in particular in Europe and the New World, topographic studies and intra-site architectural recording remain an integral part of archaeological explorations. Topographic surveys are now often part of large-scale landscape projects especially when such projects are urban surveys or context surveys, initiated by interest in a specific site and its relationship with the regional pattern diachronically. A human-geography problem orientation may also encompass advanced studies of topography as a means to understand settlement location choice and movement (e.g. Nowicki 1987). Indeed, when topographic studies do not aim at a sterile geometric record of surface remains but at a wider landscape understanding and visualisation, they offer valuable contributions to the understanding of archaeological landscapes.

1.2.1. iii Culture History Tradition

Before endeavouring in a discussion about landscape perceptions within the Culture-History tradition, it should be made clear that the term 'Culture-History' in this text falls within Renfrew's 'Great Tradition' (1980) and is not used with the same meaning as discussed in American New Archaeology theory books. In the Americas the term signifies archaeological research that has used material culture to *create* cultural groups; for example, during the 30's and 40's American archaeologists classified material culture into cultures and cultural units all of which form the Mesoamericas. However, in Europe, and in particular in Greek and Roman archaeology, but also in Egypt and the Near East, Culture-History archaeology studies historically known civilisations through the observation and typological categorisation of objects, which are the material expression of cultures familiar to us through ancient texts. The aim has been to prove the texts right, identify in the archaeological record sites known from the written sources and increase the number of sites in site indexes of the relevant civilisations. Culture-History in Europe has in a way developed out of the combination between Prehistoric archaeology with its dating methods, and art history, which is studied mainly within the realm of classical archaeology. The last has been defined and discussed as '(1) the study of ancient Greek and Roman artefacts with the aim of (2) showing how Graeco-Roman culture was expressed in material terms, (3) focusing on the connections between Greek and Roman works of art (4) and Greek and Latin literary culture' (Morris 2004:8). The focus given on the artefact and its artistic value, but also the importance between material culture and text has been applied in pre-classical periods also, in areas with rich material culture (e.g. Bronze Age Greece) and this approach characterises what I call Culture-History in Europe. This tradition especially in Greece had a narrative already before archaeological explorations and was interested in illustrating and visualising what was mentioned in ancient texts and myths. To sum up, the term here is used to stress the emphasis given on objects, which has promoted classifications and site indexes. It should be noted that in fact, it is within the culture-historical paradigm that archaeology flourished, and even though it lacked a complex interpretative framework, meticulous recording and typological studies have actually served as the foundations of all later archaeology;

undeniably, (Renfrew 1980; Snodgrass 1987) the great achievements of archaeologists such as Beazley, Dorpfeld etc can certainly not be undermined.

Archaeology as a discipline and specialised field of enquiry was born at the end of the 19th century and in a way it was the continuation of the antiquarian interest in ancient monuments and material culture from the past. At that time, organised excavations brought to light ancient civilisations that till then existed only in myths and ancient texts (Schliemann, Tsountas, Evans, Khatzidakis etc). The new discipline specialised in the definition of ancient cultural identities through the description of material remains and the building of typologies and chronologies following the Three Age System adopted by the Danish C. J. Thomsen and his assistant J. J. A. Worsaae, who categorised objects of the National Museum of Denmark into Stone, Bronze and Iron Age (in Fitton 1996). Earth sciences at the time were used to establish the great antiquity of humankind and helped to build a chronology for prehistoric archaeology. Their importance however, in shaping archaeological landscape perception was not the same for prehistoric and classical archaeology, which followed a different trajectory ever since (Morris 2004). Still, the echo of the developments in geography and material sciences is seen in the archaeological research of the Culture-History tradition, as a basic description of the physical environment was often part of the first archaeologists' observations. However, in the beginnings of the 20th century such mentions appeared to be of minimal importance and archaeologists concentrated almost exclusively in the study of art and architecture of long-lost civilisations. Influenced by the long-established Topographic Tradition and the Travellers' explorations, archaeological perception of the landscape kept its main characteristics, namely the notion that the physical environment is the observable spatial container of cultural activity. However, the approach of most archaeologists at the time did not coincide with that of many of the Travellers and general scientists in earlier years who attached a greater importance to environmental studies; neither did it totally match the topographers' approach that focused on the detailed recording of the measurable characteristics of both the physical landscape and the monuments. Environmental descriptions, if included in a publication in a more systematic way than occasional mentions, are treated separately in the beginning of a report before the 'real' archaeology, which describes material culture, creating thus, a man/nature dichotomy. Human activity, revealed through excavation and classified as secular, burial or religious expression of a specific culture, is seen in its environmental settings most often in the form of passive topographical descriptions. Nevertheless, there are some influences from Geography and Historical Geography when discussing site-location although in a rather simplistic framework, in which case 'common sense' explanations are demonstrated, e.g. location by the sea implies seafaring etc. At times, environmental explanations have also been used on a rather deterministic perspective, where at its most dramatic form the fall of past civilisations has been attributed to environmental catastrophes (e.g. the Minoan civilisation vanished in the ashes of the Santorini volcanic eruption). In general, systematic geographical studies are not a consistent part of archaeological research, even though there is an interest in imagining ancient cultures in their geographical settings (Cary 1949).

Categorisations of cultures and time are in fact valid till the present day, even though research now gives great emphasis to regionalism and local differentiation. In every country Culture-History archaeology has been linked to a nationalistic stage, especially in its early steps, to the articulation of political tension worldwide and the effort of many states to establish the old age of their culture, which could legitimise their sovereignty (e.g. Greece) or even their dominance over other cultures (e.g. Mexico). The fact that Culture-History archaeology, in particular in Greece and Italy, focuses on specific periods which coincide with an artistic and cultural acme that produced innumerable artefacts, expresses a complex socio-political scene worldwide, which has determined the development of archaeology as a discipline (Morris 2000). A social evolutionary theoretical framework, that typifies Culture-History archaeology, is also typical of the 19th century colonialism, the era within which archaeology was born. A strong criticism to treating societies as living organisms in a linear evolutionary process of birth-maturity-peak-fall and from simple to complex has been unavoidable (post-modern paradigm). The Culture-History tradition usually gives emphasis to the recording of ancient remains of periods considered of great importance in social evolution. Archaeologists'

questions of 'what' and 'where' involve the landscape in its spatial dimension aiming at the location of sites which prove cultural spread and significance, as well as sites with a rich yield in artefacts such as settlements or cemeteries, which are suitable to excavate. Archaeologists are mostly concerned with typological and chronological questions rather than with relationships between people and landscape, or mode of living. On the other hand, the value of artefact typologies can not be undermined as they are the archaeologist's most basic tool in studying human activity over time and space, even though absolute dating techniques have actually made a huge impact in chronological refinement and accuracy. Moreover, extensive landscape reconnaissance and topographic work have been much encouraged within a Culture-History conceptual framework and the resulting gazetteers have been a valuable source of information for later landscape projects and archaeological management.

Landscape researches undertaken within a cultural-historical framework led to the enrichment of the settlement data record with new sites of the studied 'cultures' in various regions and in turn, settlement archaeology with the recognition of patterns in settlement location encouraged landscape explorations for the discovery of new sites. The extensive survey tradition was already established in the 30's (e.g. Pendlebury), but attested a peak towards the middle of the 20th century, in particular from the early 60's (e.g. Greece: Hope Simpson 1965; Hope Simpson and Dickinson 1979; Hood 1965, 1967. Hood *et al.* 1964). It should be noted that such work could be problem oriented and rather intensive (MacDonald and Hope Simpson 1961), even though not in the sense of regional intensive surveys (see below). The creation of site indexes and gazetteers with descriptions of known sites as well as newly discovered ones (mainly settlements), is of course an on-going practice (Gallis 1992; Spencer 1995). There are numerous examples of such work across the world often promoting research interest to a level that later led to intensive surface survey projects, which usually publish a concise bibliography of such extensive previous work in the respective region. Researchers are trained archaeologists, specializing in material culture of specific areas and periods. They explore the landscape in order to find sites, which belong to periods that have produced rich material culture and have been the centre of attention for Culture-History archaeology e.g. Classical, Etruscan, Minoan or Mycenaean, the underlying purpose usually being to locate sites worth of excavation. However, they usually also record broad periods other than their main interest, but often discarding sites of the last millennium and small sites with no obvious standing architecture. Focus, thus, is on the identification of significant material culture and its spatial spread and questions include the recognition of areas more densely inhabited and the character of sites in terms of size and location, allowing general statements about the culture of interest. They are influenced by the Topographic Tradition often giving quite detailed reports and measurements of monuments and architectural remains found, as well as the physical environment that surrounded them. The landscape is seen as a wider geographical area where human activity takes place, but sometimes they do not confine themselves to basic mention of the environment around the site in question, they also consider some possible relationships between people and environment from an ecological perspective without, however, studying these in an organised and structured way such as promoted by environmental and landscape archaeology. Thus, while sometimes landscape as physical environment appears only through basic mention in reports, in other cases physical resources are considered, as well as communication routes or subsistence potential. Archaeologists concentrating on typological classifications also study the location of settlements in relation to environmental characteristics of the landscape and with a geometric perception they focus almost exclusively on spatial relationships. The identification of new sites has usually been based upon environmentally deterministic judgments (e.g. hills are a good choice for settlement locations of a specific period). Extensive researches of this kind have often operated within a Sites and Monuments Record framework. A pioneering project that deserves special credit is Catling's Cyprus survey (Catling 1962; Cadogan 2004), which took place from 1955-1959. It aimed to record all ancient sites from the earliest times to 1700 and was in fact a great inspiration to all later landscape projects in the area.

Within this tradition we can partly include the development of British, Italian and French aerial photography studies. Aerial photography has a very long tradition linked originally with military purposes,

but its value for archaeology was soon recognised. The First World War produced pioneers such as O.G.S. Crawford and G.W.G. Allen who demonstrated how aerial photography could complement ground surveys since it could reveal subsurface monuments, which leave a distinct cropmark visible during early summer (in Strachan 1998; for a bibliography of early studies check Chevallier 1957). It has had an immense impact on landscape archaeology so much in locating sites as in interpreting them (e.g. Schmiedt. in the 50's and 60's demonstrates the use of aerial photography in topographic studies of ancient sites (e.g. Schmiedt 1964), while Soyer in the 70's (1976) studies the centuriation systems of Algeria). It was the first form of remote sensing and is still widely used in CRM but also within the Landscape Tradition in order to reconstruct and interpret past landscapes (Aston 2002). Nowadays, aerial photography and satellite imagery provide a wide spectrum of land visualisation and study.

1.2.2 Environment as Influence on Human Activity

Views that see the environment as influence in human activity stress the environmental attributes of the physical landscape and study cultural activity in relation to a specific environmental context. Archaeological research is not only interested in the location of human activity and in a general picture of the surrounding environment, but acknowledges the importance of studying societies in relation to geography and environment. Past societies are approached through an economic perspective and much attention is given to subsistence questions and man's adaptation strategies in specific environmental situations. Settlement location is explained on the basis of environmental factors and cultural behaviour is seen as a response to environmental stimuli. Concepts as to the degree of the environment's influential role vary from systemic to culture and region specific, to man-environment interactions.

1.2.2. i Historical and Human Geography

Interest in the relationship between history and geography is claimed to have started by Herodotus and passed on to later historians like Thucydides, Polybius and others. Ancient Greek historians were very concerned with the geographical background of the people and events they described in their works. The information we have from ancient writers on the geography and history of their time served as the primary sources for the late 19th –early 20th centuries' revived interest in Historical Geography as well as History and Geography. Already in the 18th century the French tradition in historical and geographical studies explores the landscape as the combination of time/space relationships (Frieseman 1789).

By the end of the 19th century, history, geography and topography were established disciplines, developing in close interaction. At that time, the German geographical thought promotes systemic alignments and describes the environment focusing on its determinant role over human activity, while history is involved almost exclusively in the description of political events. The French school however follows a different trajectory with the leading figure of Vidal de la Blache, who educated in history and even Greek archaeology, shaped the future of French geography. In the beginning of the 20th century he refutes German environmental determinism emphasising geography's identity in its interrelationship with human activity. He studies regions and modes of life seeking their unique associations and introduces the idea of 'Possibilism' to describe the variable dynamics of different geographical areas; these are proposed to be studied as spatial entities characterised by a particular environment whose variable influential potential on modes of life can be seen in the region's specific cultural expression. The concept of a region is thus established and Vidal de la Blache's book (Principles of Human Geography, 1926) marks an era of a new approach in Human Geography (Martin and James 1993). Vidal de la Blache influenced geographical thought even outside France's borders; British Herbert J. Fleure together with others promoted the concept of 'region' in British geography over the 20's and 30's. The associations between geographical region and cultural developments are a focal point in his work with Harold Peake (Peasants and Potters, 1927: in Hassan 2004), where they emphasised the importance of studying the relationships between people and environment.

Historical thought also receives a major boost with the founding of the Annales by Marc Bloch and Lucien Febvre in 1929. The Annales school combined geography, history and sociology and turned its attention from describing events to seeking explanations of the long-term historical structures (la longue durée), and mentalities of epochs that characterise the medium-term evolution of economy and social structures. A true offspring of Annales thought and the one who expanded its influence at international level is Fernard Braudel with his masterpiece *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*, in 1949, which was translated into English and had a great impact in the rest of the world from 1973. Braudel focused on the long and medium term in order to understand societies and emphasises technology and exchange (Dosse, F. 1994; Revel and Hunt 1995). The importance of an Annalist approach in studying past societies embracing the concept of different temporal scales in the study of humankind (long-term, medium term and short term) has been much recognised and stressed by certain archaeologists (papers in Bintliff 1991 and Knapp 1992a; also Barker 1995), however, unfortunately, most current research seems to lack such a valuable framework.

The influence that developments in Human and Historical Geography had in archaeological research can be discerned in works throughout the century even if this specific theoretical framework was distinct from mainstream archaeological practice. In 1932 Cyril Fox publishes *the Personality of Britain,* combining concepts of French geography and the personality of regions, together with settlement and environmental studies. In general, towards the middle of the 20th century scholarship describes the geography of ancient civilisations and pays attention to the geographical influences in the evolution and character of cultures (Semple, E. 1932; Cary, M. 1949). Scholars describe climate, mineral and other resources, the coast and the role of the sea, physical topography, fauna and flora, landuse in relation to socio-economic aspects and settlement patterns. The importance of geography is stressed by Myres (1953), who instead of 'historical geography', he is concerned with 'geographical history'.

Towards the middle of the 20th century German human geographers developed the concept of the 'Siedlungsräume' or 'Chamber Theory' (Lehmann 1939, Philippson – with contributions by Lehmann and Kirsten 1950, 1956, 1959). They highlight the long-term relationships between man and geographical space and promote understanding of the role of geography and environment in patterns of human behaviour. This model is based on the idea that a resourceful landscape unit identified as self-sufficient, will have always supported a local community and even though the housing location of this community shifts over time, it still remains within the chamber (Bintliff 2000a). Natural boundaries not only define the ecological resources of such a landscape unit, but seem to also determine or at least influence cultural coherence. The aim of the landscape analyst (whether human geographer or archaeologist) is a diachronic analysis of settlement geography within the 'chamber' studying why settlements shift location, how they relate to their environment and what the socio-political circumstances over time may have been. An understanding of the changes in settlement locations is believed to also reveal the character of the societies under study by shedding light to those socio-political situations that caused such changes and the relevant man-environment relationships. The emphasis given to environment for the understanding of societies is indeed great, e.g. Kirsten (Kirsten *et al.*. 1956) identifies the phenomenon of the Greek city-state as the result of the ecological advantage some societies had to combine polyculture practice (olive/wine/cereal) with easy access to the sea and crop surpluses.

A typical example of the Siedlungsräume is Lehmann's study of Minoan settlements in Eastern Crete in 1939, where he notes that there are locations that have always been preferred whenever socio-political factors have allowed it, e.g. fertile areas. However, their importance for settlement location changes over time; settlement size, number and location are noted to change according to farming economy, defence needs and ethnographic traditions. For instance, during Early Minoan times (3rd millennium BC) eastern Crete is far richer in settlements although it doesn't offer large fertile areas such as in the centre of the island, which shows that at the time fertile areas were not the only or most important factor to determine choice of location. On the contrary it seems that proximity to the sea was the most important factor, and he notes that the coast is settled even by temporary or seasonal dwellings also at times of trouble when settlements withdraw to more

secure inland locations. Using several examples of discrete regions, he considers geography and environmental potential in relation to settlement location, explores socio-political situations and notices behavioural similarities over time. Influenced by a Siedlungsräume approach, Wroncka (1959) declares the need for a complete study of the geography and topography of the island of Crete so that human societies can be understood. She studies density of sites as well as the development of a palatial society and her interpretations are based on geographic remarks and correlations. Thus, Middle Minoan and Late Minoan (palatial times) settlements are usually linked to proximity with the sea and alluvial plains opening to the interior of the island. The combination of these two factors is regarded as the leading cause for the settlement development around Siteia in MM and LM; solely proximity to the sea or alluvial plains is not a strong enough feature at the time to determine locational preference. The Siedlungsräume approach can also be used in relation to intensive surface survey as demonstrated by Bintliff (2000a), who uses survey and historical data within a 'Chamber Theory' model in order to understand settlement patterns of early Byzantine through to later medieval times. He seeks settlement continuity and location shifts exploring the chamber's potential in combination with material culture and historical evidence. Thus, he arrives at his model of continuity and population merger for the little understood dark times of the Late Roman/Early Byzantine period.

Another interesting landscape approach within the Human Geography tradition is the extensive work of Polish researchers, who studied cultural and social behaviour in relation to geographical conditions and in a historical framework on the island of Crete (Nowicki 1987; 1999a; 1999b; 1999c; 2000; Rutkowski 1986). Topography and geography have been studied in great detail and they have been the leading tool for the understanding of specific site types and the reconstruction of regional settlement systems, guiding both fieldwork and interpretation. The study of past settlement organisation identified recurrent patterns in settlement location, a human choice that may reveal comparable socio-economic circumstances over time, for example defensible sites may be re-settled in times of trouble.

1.2.2. ii Evolutionary and Ecological Approaches

Darwin's book 'On the origin of species' (1859) has been amongst the most influential works over time and his ideas on 'evolution' and 'natural selection' have formed the basis of much later work till the present. However, the concept of cultural evolution is linked rather with the philosophical school of Herbert Spencer in the mid-19th century. It expresses a colonialist ideology, characteristic of the time, which has shaped Victorian archaeology. Based on the belief that Western European civilisation was at the top of the cultural chain, it considered cultural development as following stages of a linear progress from simple to complex or primitive to civilised (Dunnell 1980; Johnson 1999). In the 20th century evolutionary ideas thrive, and G. Childe (1928, 1951) talks about cultural 'revolutions' such as the 'Neolithic Revolution' or the 'Agricultural Revolution' based on the importance of environmental impact on human behaviour. According to his 'Oasis Theory' (Childe 1928) 'agricultural revolution was facilitated by climate, climatic change and the evolution of domesticable plant species'. In these terms, cultural evolution and progress is thought to be natural in favourable environmental conditions. Later on, L. White promotes the idea of culture evolving as a system (1959) and explains cultural 'development' upon adaptability to environmental stimuli. His statement 'Culture is man's extrasomatic means of adaptation', which emphasises a dominant role of the environment upon human behaviour, inspired a great number of anthropological researches, but also archaeological some years later. The conceptual framework of Cultural Evolution under the influence of Spencer's 'survival of the fittest', where individual and species survival laws are responsible for the genesis and structure of the natural world as it is, went hand in hand with the ecological approaches that had already appeared since the beginning of the 50's Barth (1950). The emergence of ecology had an important impact on archaeological direction in the next generations. Archaeologists borrowed concepts such as ecosystem, niche, optimal foraging, population etc in their study of cultural behaviour, mainly of course within the sphere of prehistoric archaeology. Cultures are now viewed as living organisms governed by the same ecological laws as other species. Steward in (1955) supported that cultural ecology is a means of studying change and progress in human culture. Within

a cultural ecological perspective a systemic approach is promoted and cultures are seen as the expression of man's response and adaptation strategies to a particular environment. Relevant studies figured widely in anthropological and archaeological research of the 60's and 70's. At that time New Archaeology makes a revolutionary appearance borrowing ideas of cultural, but also Darwinian biological evolution, such as adaptation and natural selection. Many landscape projects based on ethnoarchaeological work aim to study cultural adaptation using concepts such as optimisation, SCA, risk and seasonality. The movement of New Archaeology, promoted by Clarke (England) and Binford (USA) from the end of the 60's focused on change (perceived from an evolutionary perspective) and used ecology to approach socio-economic questions particularly encouraged in the years after the 2nd World War. Overall, the view that cultural evolution should be seen as the result of environmental influences is very strong albeit opposing views which stress internal cultural and social factors as the correct explanatory route for cultural change (Flannery 1972 in Dunnell 1980; Crumley 1994)

During the 70's the Cambridge Palaeoeconomy School tries to reveal economic patterns by studying the origins of animals and plants, their domestication and exploitation (Higgs 1972). It seems that Chisholm's work on rural settlement and landuse (1968) played an important influential role on the new approach, which now defines the theoretical framework of many landscape projects; focus lies on the relationship between culture and environment and cultural expression may be viewed as economic adaptation strategies to environmental opportunities, subject to technological potential. The principle concept is that human behaviour will adapt to environmental, technological and demographic changes and new economic opportunities. Characteristic landscape studies in this framework were published in 'Palaeoeconomy' (Higgs 1975), where for example Wilkinson talks about the relationship between animal and human behaviour since animals play a leading role in human subsistence particularly in hunter-gatherer societies, while Barker uses territorial techniques studying settlement in central Italy and explains patterns from Mid-Palaeolithic as rational economic adaptation to opportunities offered by technology and resources. Within the same problem orientation, Higgs and Vita Finzi (1972) develop the approach of Site Catchment Analysis (SCA) in search for the origins of agriculture in SW Asia. This theory supports that land exploitation decreases as one moves further away from a site. In geography the idea of landuse being studied in relation to distance from central settlement was explored much earlier – for Africa by Prothero 1957, and Steel, Fortes and Ady 1947; for India by Ahmad 1952; for Brazil by Waibel 1958 – (Henshall 1967: 445, in Hodder and Orton 1976). The strong theoretical interest in the economic nature of societies, which is seen almost as a natural result of the physical environment, encourages environmental studies in archaeological projects, which now focus on subsistence potential, but also the constraints, which demarcate the playground for human behaviour. In this framework Geoarchaeology and Soil Sciences become very important in archaeological studies in the 70's and many new studies seek to explore the relationships between settlements and the natural environment (e.g. Bintliff 1977; case study of Knossos: Jarman 1982). Geology and geomorphology are acknowledged to enhance understanding of long-term landscape changes and thus when linked to human activity (settlements) they can help towards a clearer picture of man-nature interactions.

Within a systems approach, interest in long-term man-environment relationships encouraged the search for patterns and models of human behaviour that could be tested on a wide temporal and spatial scale. Approaches that focus on the environment see it as the constraining or enabling force of human activity, which adapting according to ecological laws can be predictable. Besides that, with the aim of understanding cultural response to external environmental conditions, archaeological studies explore change versus stability and homogeneity versus heterogeneity, as e.g. weather changes instigate a seasonally variable landuse approach (e.g. change of croplands to pasturelands). The strong economic stance in cultural studies of the time in combination with influences from geography saw the landscape as divided in geographical areas of specific environmental description and economic potential spatially relevant to the settlement(s) of interest. Butzer, interested in the archaeological study of adaptation, sees 3 major goals of environmental analysis in archaeology (1971:401-2): 1) understanding of the *regional environment*, including climate, vegetation,

geomorphology etc, 2) understanding the *economic area* of regional food base and 3) understanding the *local setting* of the site(s) in question (in Kirch 1981:135 emphasis in the original). In 1982, seeing Archaeology as Human Ecology, he supports a geoarchaeological approach to landscape exploration, in order to both assess site preservation, and study human locational choices. Advocating studies of continuity and change he gives importance to the impact of human activities on landscape modification and again defines the goal of environmental archaeology as: 1) to define the characteristics and processes of the biophysical environment that provide a matrix for and interact with socioeconomic systems, as reflected, for example, in subsistence activities and settlement patterns, 2) to understand the human ecosystem defined by that systemic intersection (Chorley and Kennedy 1971:4 in Butzer 1982). His 'contextual' ecological approach encompasses geoarchaeology, archaeobotany, zooarchaeology and spatial studies.

1.2.3 Environment in Relation to Surface Record

1.2.3. i Settlement Archaeology and Settlement Patterns Studies

Landscape explorations have in general focused on settlements. Settlement Archaeology flourished in Great Britain as early as the beginning of the last century with figures such as J.P. Williams-Freeman (1915) and his successors such as O.G.S. Crawford (1953) who established field survey in order to collect settlement information. Another important figure of the first half of the 20th century is Cyril Fox (1932), who demonstrated the importance of studying settlement history in relation to the environment. Settlement studies have in general developed in different and at the same time often overlapping trajectories across Europe (Trigger 1989; Gojda 2003); for example Siedlungsarchäologie in Germany as defined by Herbert Jankuhn (1977: in Gojda 2003) was guided by an eco-deterministic worldview focusing on economic questions of Prehistory and relationships between settlement and natural environment, Anglo-American theoretical developments have stressed ecological issues, the post-modern paradigm has risen the importance of the social, conceptual and symbolic nature of landscapes, while CHRM projects collect settlement information focusing on locational and chronological-typological issues.

Overall, throughout the last century, landscape research has acquired an ever-increasing organised structure. Settlement patterns' studies in the Anglo-American tradition have been established since the 50's (Willey 1953), and over the 60's received many influences from the theoretical framework of Geography, ultimately adopting many concepts and methods that characterise landscape archaeology till now. In general, they stress interrelationships between settlements and their socio-economic context. The most important innovations were the implementation of: 1) the concept of the 'region' with definitions such as 'a unit of country larger than that associated with one particular settlement and smaller than that commonly found to be occupied by modern nation states (Bintliff *et al.*. 1988; definitions of 'region' also in Kardoulias 1994 and Relaki 2003) and 2) sampling theory (studies in Flannery 1976; Read 1975; Mueller 1975; Kalton 1983; Cherry and Shennan 1978). A regional approach is considered a prerequisite for the study of cultural change, an issue firmly raised by Binford in 1964. End of 50's beginning of 60's we attest the birth of large-scale regional projects seeking to answer big questions such as the origins of agriculture, domestication and processes of 'cultural evolution', opposing to plain descriptions of material evidence for the definition of cultural units. Such projects developed across the world, some of the most characteristic taking place in the Near and Middle East, but also at the other end of the Atlantic.

1.2.3. ii Regional Extensive Survey

The term Regional Extensive Survey is used to denote landscape researches of an organised structure and large scale, influenced by ecology and studying a specific region as the combination of environmental and cultural developments. It should not be confused with extensive researches of the Culture-History tradition, which were of smaller scale and focused on the description of archaeological sites within a specific area.

One of the most influential works in both theory and method of landscape archaeology in the second half of the 20th century has been Braidwood's and Howe's (1960) project in Iraq (ancient Mesopotamia). The aim was to look for the origins of agriculture from a palaeoecological perspective, incorporating studies of several scientific fields such as zoology, palaeoethnobotany, geology, plant genetics, ceramic technology etc. Their work sees the transition to farming as 'the normal consequence of evolution since it is inherent in human nature to domesticate and cultivate as soon as he becomes familiar with the biota of a particular environment' (in Harris 1977). Within the same conceptual framework the Diyala Basin Archaeological Project (Adams 1965) operated in a diachronic level (4000 BC-1900 AD) and focused on the development of intensive agriculture, seen as the result of human adaptation to environmental stimuli and opportunities. In this perspective, once food-production was invented, it was 'natural' to spread because it was a superior subsistence strategy (under the influence of colonisation and Christianity, agriculture was thought to be superior to hunting and gathering in western ontology). Ecological considerations encouraged attempts for environmental reconstructions with the belief that understanding ancient civilizations can be achieved via viewing them in their environmental settings (Adams and Nissen 1972). In Mexico, the well-known Teotihuacan Valley Project was carried out in the years 1960-1964 and aimed to explore the development of agriculture in Mexico within the context of cultural evolution (Sanders 1965; Sanders and Price 1968; Sanders *et al.*. 1979). Patterns of relationships between environment, agricultural techniques and settlement organisation were sought within the interpretive framework of seeing cultures as a complex of adaptation strategies to specific environments.

In Europe, the Minnesota Messenia Expedition in SW Peloponnesus in Greece, starting in the late 50's and fully published in 1972 (MacDonald and Rapp 1972), was a true offspring of the above three projects and the first large-scale regional project in Greece. Representing the political and historical circumstances of the time, it adopted a model of practice guided by scientific humanism and a cultural evolutionary ideology, emphasising the importance and tradition of scientific co-operation (Trigger 1989; Fotiadis 1995). Fieldwork was based on extensive survey, and the aims were claimed to be the diachronic interrelationship between man and natural environment. Questions were indeed wide; more specifically, they involved population fluctuations, the character of sites in economic terms and economic life in general, social differentiation, subsistence and environmental impact on site location. In Italy, Ward-Perkins's landscape explorations since the 50's led to a very long survey project in south Etruria (Ward-Perkins *et al.*. 1968; Potter 1979) starting as a topographic survey and in the end encompassing all levels of survey intensity and seeking to explain changes in the landscape of S.Etruria in the course of time.

Thus, landscape archaeology develops as a distinct part of the discipline that gathers a variety of data from large regions with various methods and seeks to explain site interrelationships and cultural development within a given region. The past is approached via questions of economic and social content. The 50's and mostly the 60's saw the rebirth of a multi-disciplinary approach in studying regional landscapes through the collaboration of many specialists in order to understand processes of natural and cultural ecology in the region under question. Within the era's beliefs, archaeologists make a great effort to be considered 'scientific' by working together with natural scientists, the scale and organisation of the research projects is greater than ever, and most importantly, objectives are not confined to reports and descriptions of material culture, but involve questions about cultural process. Such questions emphasise the influential role of the environment upon human activity and its relationship with subsistence strategies and economic endeavours. The archaeological landscape is explored more systematically than before, gathering a large number and variety of new data, while knowledge acquired through previous extensive explorations is also incorporated.

Landscape reconnaissance came to be acknowledged as the only tool that can help understand regional histories. The extensive approach such as used in the above projects, is based on a firm knowledge of the history of the area through written sources and a combined use of maps, aerial photography, local information, walking and driving around the area, in order to locate and discover sites. The choice of areas to be explored is based upon judgment of the most likely places to have supported settlement using geographical and environmental factors. After the 70's, however, we attest the rise of a new approach, the so-called 'New

Wave' surveys (Bintliff 1994; Cherry 1994), where projects operated in a much smaller spatial scale, but with much larger intensity, aiming at recovering human activity remains at a variety of hierarchical levels in order to elucidate subtle patterns of human behaviour and cultural change, still usually within an eco-determinant interpretative framework. Theoretical changes include a shift from the search of the origins of civilisations to the study of 'state' evolution and the rise of complex societies (Wright 1977). This is still a very popular research aim in archaeology and regional survey has understandably been acknowledged to be of fundamental importance trying to link major sites with their rural hinterlands and reveal inter-site relationships; however it should be stressed that interpretations do depend on the perception of state organisation and the nature of economic, ideological and political power (Knappett 1999).

1.2.3. iii Regional Intensive Survey

Intensive survey started by also being site-oriented, however, field-methods aimed at studying the landscape at a higher resolution than before, identifying and walking fields over a small geographical region in a structured and intensive manner. In the beginning, the identification of sites took place on the basis of empirical and qualitative criteria, namely the presence of architecture and high pottery concentrations (e.g. Ayiofarango and Lasithi surveys). In the course of time a much more sophisticated, quantitative approach was developed, that aimed to study human activity in the landscape at a finer resolution and concentrated on the recovery of the rural landscape, so as to elucidate further local settlement trajectories and cultural development. The approach is strictly regional and a multi-disciplinary frame of work is pursued, relating cultural history to areas of definable natural boundaries. The aims of intensive survey focus on the study of spatial continuity of human behaviour and the reconstruction of variability over time (Cherry 1983:381). The way to do this is via assessing site location in relation to environment, determining population fluctuations over time and studying economic and political organisation (Cherry 1983:380). The most basic information expected from surveys concern space, time, function and environment. It has been argued that survey data are used to answer four crucial questions (Cherry and Shennan 1978: 21-2):

How many sites of all types and sizes are there in an area? (total density)
How are they distributed by function and period? (density per function and period)
What is the relationship between site distribution and environment variables?
How do sites relate to one another?

The surveys of the 80's define their aims along the route of settlement patterns reconstructions, (example surveys: Megalopolis; Nemea; Pylos[1]) and the discovery of changes in population densities and landuse (Bintliff and Gaffney 1988). All projects employing a systematic, intensive approach operate in a multi-disciplinary level and emphasise the method's controllable reliability and advantage on revealing concealed rural landscapes, without which histories can only be partial and far from reality. From the 90's projects are interested in diachronic collections of material and multi-disciplinarity often proceeds to a real inter-disciplinary framework of synthetic data analysis. Theoretical and methodological discussions of the 70's and 80's have guided archaeological landscape research till now; thus, systematic sampling (usually stratified) is probably the most popular sampling technique used, multi-stage designs are encouraged, bias and the relationships of surface-subsurface as well as site-offsite material are discussed (Bintliff and Snodgrass 1988a; Bowden *et al.*. 1991; Schofield 1991a; Barker and Lloyd 1991; Dunnell and Simek 1995), cultural-ecological approaches are widely applied, and a socio-economic interpretative framework is used.

Sampling and statistics; methods borrowed from ecology

The new landscape approach was implemented widely and many new projects started worldwide. Theoretical considerations about what archaeologists should look for went hand in hand with methodological developments. The main focus of interest under the influence of New Archaeology was on defining the

1 For a list of references look at the Survey Bibliography section

best methodologies in the quest for settlement patterns and on identifying relationships between sites and environment. By the mid -70's starting in the USA and England and especially by the 80's, intensive fieldwalking and sampling were acknowledged as the future of archaeological landscape research and many have written on the methods to be followed in both the field and the analysis of the data (Fasham *et al.*. 1980; Hodder and Orton 1976; Boismier 1991; Kuna *et al.*. 1993; Bintliff *et al.* 2000a; Rupp 2004 etc). Statistics and sampling employed in geography and ecology since the 50's - 60's, became a major characteristic of New Archaeology's methodology particularly observable in landscape studies (Read 1975; Flannery 1976; Cherry *et al.*. 1978; Kalton 1983; Shennan 1988; Orton 2000). Intensive surveys of the 70's employed sampling for the first time in an effort to explore the landscape record scientifically and extract information of definable reliability. Survey designs used a variety of sampling methods and much debate followed over their efficiency (Plog 1976); thus, the implementation of probabilistic theory (Binford 1964; Cherry and Shennan 1978; Cherry 1982) was challenged by the belief that surveys should be of 'total coverage' (Fish and Kowalewski 1990), a proposition, which has also been reviewed (Kintigh 1990; Plog 1990). Within the ecological concerns of the time landscape is approached as a spatially measurable entity and the definition of site typologies and settlement hierarchies become of ultimate importance in the study of past settlement systems. Site densities and distribution in relation to environmental variables is a principle objective of intensive surveys and methodological concerns arise accordingly. Methods such as Site Catchment Analysis and Thiessen polygons have been used in order to explore land resources on a micro and macro-regional level (Bintliff *et al.*. 1988), but also site hierarchies (Moody 1987).

Surface record

Within a problem orientation of what we are looking for and how best to find it, Thomas (1975) was one of the first to support non-site sampling of the surface, an approach much endorsed later on (Folley 1981; Bintliff and Snodgrass 1988a; Kuna 2000) and considered the norm in most current survey studies. The experience acquired with the complexity of the archaeological record and the almost continuous spread of material across the surface, led to the acknowledgement that the landscape has been used continuously and human activity has not been site-restricted. This is revealed in the development of approaches such as the 'settlement area theory' (Neustupny 1986 in Kuna 2000), which is based on a deductive model of living culture, whose behavioural rules are believed to provide an explicit spatial model reflecting a whole range of human activities carried out in their community areas.

The value of intensive artefact survey has been emphasised, as it offers the opportunity to "reveal the settlement and population history of entire landscapes" (Bintliff *et al.* 2000a:1). On the other hand, the difficulty of drawing inferences from ploughsoil assemblages has also been stressed (Haselgrove *et al.*. 1985; Schofield 1991a; Francovich and Patterson 2000) and even though surface survey is acknowledged to be an invaluable archaeological tool, its specific restrictions are highlighted. It is seen as only one tool amongst others, which are also needed in archaeological exploration, namely excavation, remote sensing etc, depending on situation and questions asked (Gaffney 2000). The complexity of surface scatters has indeed been an inexhaustible theme of discussions. The almost continuous carpet of surface pottery across the landscape has been argued to constitute evidence of past agricultural practices (Bintliff and Snodgrass 1988a; Wilkinson 1982) and transhumance (Barker 1989), while terracing, random dumping and other landscape uses (Alcock *et al.*. 1994; Halstead and Frederick 2000) as well as post-depositional processes increase the problem of interpreting surface scatters (Taylor 2000). Discussions over the nature of the surface record explore formation processes and retrieval potential amenable to factors such as geology, topography, landuse, pottery survival, visibility and walker differences, but also sampling and quantitative methods used (Plog *et al.*. 1978; Schiffer 1987; Shennan 1985; Ammerman 1981; Ammerman and Bonardi 1981; Hodder and Malone 1984;Terrenato 1996; Bintliff *et al.* 1999; Banning *et al.* 2005). Field and analytical methodologies have often sought to account for depositional and post-depositional effects on the recovery of surface material, studying mainly the effect of modern agricultural techniques and landuse, but also geological and geomorphological factors

(Taylor 2000 and his bibliography). At the same time, the importance of pottery studies on the same issues has also been stressed (van Dommelen 2000), since recoverability, which depends on a variety of factors from geological to cultural to collection techniques and visibility, is always case dependent; in other words the above factors do not have the same effect on all artefacts and therefore ceramic analysis (from size to firing and consistency) should acquire more attention. Regional ceramic studies have also proved to be a key to the problem of dating since most material recovered on the surface is coarse ware (Moody *et al.* 2003).

Another issue that caused long debates and still remains one of the hardest to deal with in archaeological theory is that of site definition (Dunnell 1992). A natural consequence of intensive surveys was the discovery of a very complex surface record and an overwhelming number of pottery concentrations not easily definable and understood (Bevan and Conolly 2003) However, our interpretations and reconstructions of past societies depend on how we define sites, a process that requires a good understanding of the role of cultural processes in the formation of the surface record (Pettegrew 2001; Osborne 2001; Foxhall 2001). Discussions over the 'right' set of criteria for defining sites have been extensive, supporting factors that vary from quantitative to spatial and qualitative (Plog 1978; Gallant 1986; Schofield 1991b; Gaffney *et al.* 1991; Gaffney 2000). Experiments (Reynolds 1982; Ammerman 1985; Shennan 1985; Odell and Cowan 1987) aimed at a better understanding of the ploughzone and the archaeological material recoverable through intensive survey, so as to achieve a more reliable level of inference. People's perceptions of a site have indeed been wide, often based on preconceptions and factors irrelevant to quantification, and may be period or area dependent (Binford 1996). For some, sites are nothing more than archaeological constructs (Fentress 2000; Bowden *et al.* 1991).

On-going discussions on the nature and interpretation of ploughsoil assemblages (Haselgrove *et al.* 1985; Francovich and Patterson 2000), the problems of non-response (Kamermans 1995) and survey bias (van Leusen 2002: ch.4) demonstrate a growing maturity in the theoretical framework of surface survey. In this context, environmental studies are used in order to understand taphonomic processes and the effects of landuse on the condition of the surface record, as well as to provide an environmental context for past behavioural patterns and to enhance patterns of changing human activities. As a result, multi-disciplinarity consists of the combination of survey with, geophysics, material culture studies, palaeoenvironmental studies, excavation, and documentary sources, but also social anthropology, ecology and ethnography (e.g. Biferno Valley; Phaistos; Sphakia[2]).

Site Survey

Special collection strategies are also pursued on the level of site so as to study the site's size changes and if possible functional character through time. Sampling techniques, of course, vary and opinions over the best strategy (random, systematic along transects or perpendicular axes, grid-based and grab) have differed accordingly. In reality, collection techniques may vary also within the same project depending on practical issues such as time available. To my view, there should be a balance between not 'extinguishing' all traits from a site and revealing extents and diachronic intra-site function differentiation, best achieved through grid-sampling. In the case of context surveys where landscape intensive survey springs from interest on a particular site and its history, a combined multidisciplinary approach incorporating artefact collections, topographic study and the use of historical sources is considered as the only way to elucidate internal organisation and functional differentiation as well as size changes at a diachronic level.

Modern site surveys usually consist of two components: 1) the detailed recording and mapping of extant architectural features and 2) the intensive collection of artefacts from as much of the surface of the site as possible. It is argued that the diachronic and functional variations of a site can be studied only with such a site survey approach and in combination with regional landscape survey the history of an area can be elucidated in terms of population changes and socio-economic relationships between central place and

2 For a list of references look at the Survey Bibliography section

countryside (Alcock 1991). Remote sensing, including aerial photography and geophysics are increasingly used in relation to intensive survey comparing surface with sub-surface information, with great success in illuminating the structure and history of towns (Falerii Novi; Tanagra; Palaikastro[3]). Archaeometric methods can indeed enhance site understanding, even more so when applied in a conceptual framework of integrated field strategies. The case of Rodik-Ajdovscina (Music 1995, Music *et al.* 2000) is a very good example of the potential of such an integrated approach employing the following strategies: 1) a micro-topographic study with the creation of a very detailed scale of the site's digital elevation model (DEM[4]), 2) the mapping of surface occurrences of rubble and stone, 3) archaeological surface survey, 4) Geoelectric survey, 5) Magnetometer survey, 6) Geochemical survey and 7) Magnetic susceptibility survey.

The combination of landscape and site surveys in an interdisciplinary framework is in fact pursued by many projects, which aim at revealing the relationships between urban and rural life and thus elucidate cultural, social and regional histories (examples: Tanagra; Phlius; Terralba, Sardinia[5] etc).

1.2.3. iv Interdisciplinarity

The co-operation with other disciplines from the natural and human sciences is considered a must in regional studies especially in projects that involve intensive survey techniques (Biferno; Argolid; Methana; Boeotia; Laconia; Palaipaphos-western Cyprus; Sydney Cyprus Survey; Phaistos; Nikopolis; Kythera; Sphakia[6] etc). In particular geomorphology has been recognised indispensable as regards field survey, because it helps assess site recovery on the surface over time and allows the integration of post-depositional and site movement biases into interpretation (Ammerman 1981). It is indeed, a most important tool towards the reconstruction of past physical landscapes and their changes. Furthermore, the study of the history of surface morphology gives us information on water sources, distance to the sea, vegetation and landuse over time, whereas degradation of the landscape and human impact on the environment can also be assessed. Soil studies are used to study landuse and subsistence as well as to identify raw material sources, but also to reveal man's impact on the environment and assess the state of the surface record (Morris 2002; van Andel *et al.* 1997). Palaeofaunal, palaeobotanical and palyntological analyses on sediments for the reconstruction of vegetation and climate are relevant to subsistence studies and in fact an indispensable tool for the understanding of past landscapes, in particular quaternary landscapes (Bailey 1997). Slag analysis illuminates the chemical and physical properties of metals and allows inferences regarding technology, mining and metallurgical activities. Many current projects may use petrographic analyses of cherts and clay in order to identify raw material sources and in particular clay provenance studies may be augmented by Instrumental Neutron Activation Analysis (INAA) characterisation. Information Technology has been of increasing importance used in data manipulation, mapping, and landscape studies (Remote Sensing, GIS[7]). Lastly, historical and documentary sources provide an invaluable tool in particular for post-classical periods whose archaeological material is little known; Regional intensive survey projects nowadays sponsor archival research as it is perhaps the most significant component of reconstructing settlement patterns in Byzantine, Venetian and Ottoman periods (Kiel 1997; Nixon *et al.* 1999; Bintliff 1999).

Overall, New Wave surveys have played a key role in the optimism that new methods and technologies, a multi-disciplinary approach, and the development of interpretative models (based mainly on

3 For a list of references look at the Survey Bibliography section

4 DEM is a quantitative model of a topographic surface in digital (raster) form. Also known as a 'digital terrain model' (DTM). It is often used in reference to a set of elevation values representing the elevations at points in a rectangular grid on the Earth's surface. The resolution, or the distance between adjacent grid points, is a critical parameter.

5 For a list of references look at the Survey Bibliography section

6 For a list of references look at the Survey Bibliography section

7 GIS (Geographical Information Systems) are computer programmes for capturing, storing, checking, integrating, analysing and displaying data about the earth that is spatially referenced. They perform analyses that combine relational databases with spatial interpretations and produce outputs usually in the form of maps.

ecological geography) can reveal a rich picture of the rural countryside, but also 'rediscover the heritage of previous research' (Bintliff 1994). Intensive surveys have naturally resulted in an amazing quantity of new data, which have encouraged the rise of demographic archaeology (Bintliff and Sbonias 1999, 2000; Hassan 2004) as well as synthetic works regarding long term patterns or period specific studies over large areas, based on the integration of results from different surveys (Alcock 1993, 1994; Blanton 2000; Wilkinson 2000; Halstead and Frederick 2000; Halstead 1994; Jameson 1994; Jameson *et al.* 1994; Blanton *et al.* 1982; Adams 1981; Bintliff 1997; Attema and van Leusen 2004; Galaty 2005; Mee 1999; Driessen 2001etc).

1.2.3. v Excavation / Survey - Intensive / Extensive Survey Debate

Although the merits of intensive survey have been fully acknowledged and it is widely applied as the only viable method that can offer some insights to complex questions about settlement history, its acceptance did not come easy. As soon as large-scale extensive survey projects started being implemented widely, survey became a new methodological tool that encouraged optimism for new possibilities in archaeological research (Macdonald 1966). Its non-destructive character (even though this is now debatable) and its practicality in comparison to excavation regarding issues of storage and legislation in the countries of research interest (Bintliff and Snodgrass 1985) have played an important role in its increasing popularity. Long debates over whether excavation or survey is of highest value have promisingly come to a halt, acknowledging the different purposes they both serve and their complementary rather than opposing role. Surveys need excavation data as reference to the building of their chronological sequences and in-depth understanding of specific sites. In turn, they provide a context for excavated sites and illuminate their regional histories. Past social reconstructions require the close co-operation of both methodological tools (Sjogren 2003; Cunningham and Driessen 2004).

Such debates were often quite fierce also a propos to extensive and intensive survey traditions, which even though they shared some common methodological issues such as the organised coverage of large areas, site-based recording and the comparison of site distribution maps per period, they also differed greatly on the issue of using sampling methods (Terrenato 2000). A classic debate on the value of intensive versus extensive survey based on the merits, potential and limitations of both has been between S. Hope-Simpson(1984) and J. F. Cherry (1984) triggered by Cherry's criticism on earlier extensive work (Cherry 1983). Doubts on behalf of the traditional approach which were perfectly encapsulated into Flannery's R.M.A. (Real Mesoamerican Archaeologist) character (Flannery 1976) were still strong almost a decade later as seen from Hope-Simpson's words: "Siteless survey" (i.e., the recording of all surface artefacts within a quadrant or transect, without any attempt to assign them to "sites") would obviously be both ridiculous and impracticable in the Mediterranean area, because of the high overall density of surface artefacts in this region'. In reality, the above statement holds some truth and this is why quite often collection is restricted to diagnostic artefacts; however, it has been acknowledged that at least the recording of the presence of all artefacts is very important. Intensive survey should indeed be combined with off-site collection methods, as it is siteless survey that illuminates interactions between people and the physical landscape and gives us a full picture of human activity in space by treating the archaeological record as a continuous data surface. As a result, it allows a better understanding of human behaviour over time. Siteless survey has certainly been a complex but leading theme in academic scholarship (Dunnell and Dancey 1983; Dunnell 1992; Caraher *et al*. 2006). Non-site oriented landscape explorations have also led to the development of concepts such as 'settlement area theory' (Neustupny 1986: in Kuna 2000) and community archaeology (Neustupny 1991; Kuna 1991; Gerritsen 2003; Knapp 2003), opening up themes of dynamic relationships between human societies and landscapes, at a variety of temporal and spatial scales. Overall, systematic, intensive, problem-oriented surveys gained credibility throughout the 80's and continued an upward course as shown in the increasing number of publications using or presenting survey data (Cherry 2004).

Most projects now treat the landscape as a continuous record of human activity and even if judgmental fieldwork still takes place, this occurs in combination with quantitative approaches as an indispensable requirement in defining 'sites' and understanding their interrelationships. However, the a priori belief that

higher intensity leads to increased quantity and quality of results (Cherry 1994) is challenged especially for the prehistoric patterns (Rupp 2004, Bintliff *et al*. 1999). Survey experience has promoted critical assessments and debates over the reliability of survey results within a Quellen Kritik framework (Bintliff *et al*. 1999 and responses by Barker, Mee and Cavanagh, Schonn, Tompson in JMA 2000; Davis 2004; Fentress 2000; see also research designs of most current surveys). In current projects, more often than not, research strategies combine both extensive and intensive approaches as it is acknowledged that they are complimentary to each other and they should be employed according to research aims, but also topographical, time and personnel considerations. Indeed, collection strategies have to be decided upon specific circumstances and questions asked, and methodology has to be flexible enough as to allow variability and improvements within the same project.

1.2.3. vi Survey Comparability

The quantity of landscape projects worldwide and particularly in the Mediterranean, which is still the focus of a vast amount of landscape research, triggers every so often discussions on survey methodology and comparability (Dyson 1982; Keller and Rupp 1983, Cherry 1983; Mattingly 2000; Alcock and Cherry 2004). Mattingly (2000) writes about methods of collection, recording and quantification in a whole volume dedicated to survey assemblages (Francovich and Patterson 2000) and demonstrates the variability in survey methods via a brief overview of current practices. Methods of collection and recording are of crucial importance because they define the data upon which interpretations may be derived. While it can be argued that some projects have employed a better methodology for the acquisition of data necessary to answer specific questions – e.g. siteless survey allows studying the intensity of landscape use over time – logistics play a leading role in the decisions taken. In any case, it has been acknowledged that we need inter-disciplinary and expert studies, explicitness on the relationship between questions asked and methods chosen as well as results that can be compared and integrated into synthetic works. The importance of comparability has been stressed as much by individual articles, as by survey project reports. Indeed, what is most important is to understand the potential of the methods chosen so that we can appreciate the results and assess the scale upon which comparison of survey projects can be undertaken. For this purpose it is crucial for the academic community to achieve an explicit standard of survey publication. Within the current survey critique framework, Cherry (2004) states the need to be explicit over the terms we use, discusses problems and suggestions regarding survey comparability and urges for the need to establish publication standards which are necessary if we ever want to communicate data and interpretations and compare survey results in a meaningful way.

1.2.4 Landscape Studies and GIS

One of the greatest innovative developments in landscape archaeology since the 90's has been the introduction of Geographical Information Systems (GIS) that have considerably increased the analytical potential of archaeological data. GIS are primarily a methodological tool emphasising the spatial relevance of environmental and cultural systems, but they are continuously interacting with archaeological theory as well. The publications that have played a crucial role in the increase of GIS applications within archaeology are Allen *et al.* (1990), Reilly and Rahtz (1992) and Lock and Stancic (1995), each making a noticeable impact in the discipline with the presentation of a variety of projects, new ideas and methodological suggestions.

GIS have been particularly useful for CRM purposes as they can store, manipulate, analyse and provide map visualisations of large numbers of disparate sets, which are spatially related. The ability to integrate the results from different types of landscape explorations such as field survey and aerial photography and produce an infinite number of map representations of surface datasets, allowing the combination of qualitative, quantitative and locational information, has led an increasing number of countries to adopt GIS as their main management tool of archaeological data. Britain has totally changed the way SMR's are handled; aerial photography traditionally used for the identification of cropmarks and therefore archaeological sites,

is used in combination with GIS allowing high resolution mapping while the production, management and analysis of both raster and vector data and their relevant databases improves interpretative potential. GIS can also play a significant role in the protection of archaeological sites and new suggestions regarding their abilities in planning and site monitoring are coming to light (Sullivan 1997; Hamari CAA 2004; Konstantinidis 2004a). In this framework, their potential in predictive modelling is particularly important for CRM. This research area that provides models for the employment of better and more effective strategies in the decision making process of planning, in an effort to ensure the protection of archaeological sites is continuously developing. The significance of protecting our Cultural Heritage and therefore historical and scientific study, but also the quality of modern human environment is now recognised at a European level (Valletta Convention), highlighting the danger caused by modern development, which destroys sites at an alarming pace. However, the construction of maps that predict where ancient sites might be located is not an easy task and proposed models have often caused much doubt and debate. The need to formulate a robust theoretical and methodological framework that operates inter-disciplinarily and connects governmental planning and economic development with the protection of our historical past is indeed urgent. New research has been implemented in this framework focusing on the adoption of the best possible methods (Kamermans *et al.* 2004). Predictive modelling is also used in scientific research mainly via the production of inductive models that are based on the observation of correlations between sites and usually environmental variables, an approach almost inherent in landscape studies from the beginning of archaeological research. Deductive models are also used, constructed on the basis of prior knowledge and proposals are then tested against data collected (Kamermans *et al.* 2004; Kamermans 2000). The theoretical as well as the methodological issues concerned regarding the application of predictive modelling for both CRM purposes and research are now the major discussion theme among GIS archaeologists (Westcott and Brandon 2000).

The acknowledgement of the great capabilities of GIS and IT in general has triggered an increasing desire for better management of archaeological locations, digital archives and the distribution of archaeological information. However, their deployment across Europe has been differential, slow and inconsistent due to problems of variability in recording systems, lack of standards, technological skills, the variability in spatial definition of archaeological evidence and the definition of analytical concepts (Sanjuan and Wheatley 1999). There are numerous projects across the world that have attempted the creation of digital archives including map representations on a national level and many smaller ones that demonstrate yet again the ability of GIS to store, share, manipulate and visualise digital data promoting research, management and dissemination. The quantity of digital information produced has created a need for their preservation and thus services such as the Archaeology Data Service (ADS) in Britain provide standards of digitally published archaeological data allowing the publication of a great number of information as well as their usability by a wide audience. At a wider spatial scale, the European Union has funded research for the electronic management of Cultural Heritage at a European level (Kenny and Kilbride 2004).

However, although the potential exists it does not come as a consequence that it is satisfactorily exploited. Dissemination in particular pauses serious problems that relate to the cost value of digital data; thus, instead of taking advantage of digital libraries available to all interested parties and which abide with necessary standards regarding their creation, documentation and publication, we attest an abundance of individual efforts that use different sources, have no standards and produce different errors and which most often are not usable by third parties and they do not inspire scientific trust anyway. The need to cope with the vulnerability of digital data, their dissemination and usability in the wider archaeological community as a prerequisite for future research and effective management, is indeed urgent and widely adopted standards are needed.

Archaeological surface survey has also been substantially influenced by GIS. One obvious reason for this is their strong mapping abilities allowing the overcoming of problems caused by the acquisition of data at different scales. Management, analysis, synthesis and visualisation of data in both vector and raster formats, such as environmental, topographical, remote sensing, archaeological and historical in the same working environment, are qualities of utmost value for the landscape archaeologist. Although GIS have and are often

being used to visualise archaeology as dots on a map, mapping of spatially referenced artefact densities do allow the visualisation of archaeological material as continuous surfaces. The variation of material densities is taken to reflect the differential intensity of landscape activity over time and its visualisation enhances greatly the understanding of site-offsite relationships. Correlations between environmental data such as geology, topography, hydrology and landuse with surface artefacts allow the evaluation of surface collection methods and inherent survey bias, as well as the assessment of various interpretative models. The majority of intensive surface surveys now integrate their data within a GIS environment and archaeologists explore advantages and problems concerning both field and analytical methodology as well as the interpretative process (example surveys: CPSP; SCSP; KIP; Boeotia survey; PRAP[8]). Regarding the assessment of the efficiency of survey crews, experiments have shown that it is possible to evaluate inter-walker variability relevant to different artefact types and visibility so that survey designs are improved and a more objective picture of what we recover is acquired (Banning *et al.* 2005). Even though little work of this kind exists in the archaeological literature, it is evident that such research is very important and can be particularly enhanced with GIS applications.

Landscape research and reconstructions over time have undeniably profited greatly by GIS applications even more so due to their ability to integrate data from science based research areas such as cartography, GPS and remote sensing, but also human sciences such as archaeology and history. Indeed, as CAA conference papers show, the new Geographic tool has been increasingly fashionable in landscape studies (Peterson 2001). Inherently interdisciplinary they promote studies of ecological and cultural systems in a holistic sense. Landscape changes inflicted by processes such as erosion, sedimentation, deforestation and coastline changes can be simulated and thus allow to propose explanations of a dynamic landscape rather than simply offer static visualisations of synchronic landscapes.

Period-specific reconstructions deploy GIS techniques to elucidate the social structure, subsistence policies and demography of past settlement systems, combining survey and environmental data and exploring a variety of statistical methods within current theoretical approaches such as hierarchy, site catchments, settlement patterns and locational modelling (Bevan 2002). The analytical potential of GIS has been used by many projects which focus on landscape evolution, one of the first being the interdisciplinary research on the island of Brac (Stancic *et al.*. 1997), while their intrinsic interdisciplinary approach also promotes the comparative study of different regions (van Leusen 2002; Witcher 2002). Besides that, cultural trends and processes can be studied and compared at a wide variety of scales, revealing dynamic spatial and chronological relationships.

Theoretical problems concerning the use of GIS vary, the most important being the Environmental Determinism debate (Gaffney and van Leusen 1995; Kvamme 1997; reply: Wheatley 1998). E.D. has been extensively discussed and many researchers call for the use of a theoretical framework that pays attention to social factors and defies environmentally deterministic explanations, which lay flat cultural differences (Gillings and Goodrick 1996; Wheatley 1993). The varied scales in data acquisition, but also the dynamic nature of the landscape and its interaction with cultural behaviour do not justify systemic explanations and indeed recent studies have proved that settlement patterns can not be a priori explained on the basis of environmental variables (Bevan 2002:238). GIS is now considered a valuable tool whether from an ecological or phenomenological perspective pursuing analyses such as relationships between site location and preferred environmental variables, visibility, cost (time) distance (Wise 2000; Witcher 2000). Many new GIS studies explore past sociality via themes such as mobility (Fairen 2004), visibility (Fairen 2004; Soetens 2006) and taskscapes (van Hove 2004), allowing space and time to be analysed in a wider perspective than settlement pattern analysis. Offsite activities reflect, indeed, the complex relationship between people and their environment, including economic strategies, taskscapes (Ingold 1993) and agency and developments in GIS archaeological theory demonstrate serious attempts to deviate GIS methodologies from Environmentally

8 For a list of references look at the Survey Bibliography section

Deterministic explanations. It is quite interesting that phenomenological perspectives have been proposed to be analysed through GIS (Konstantinidis 2004b) where settlement interconnectivity can be studied in terms of sights' and sounds' territories as an analytical variable of cultural interaction.

Historical cartography can also be used as a source of past territorial perceptions but also analysed from an historical and geographical perspective and viewed in relationship to modern environmental and cultural reconstructions. Seen as a historical document, historical maps allow insights into past mapping themes and techniques while GIS analysis allows quantitative and qualitative comparisons over time (de Silva and Pizziolo 2004, de Silva 2004). What I would like to draw attention to is the fact that GIS give us an example of a methodological tool that is not only the outcome of a specific theoretical background, but which also influences the questions asked. The ways in which we perceive space in the western world are inherent in our computer studies, which relate to geography and geometry, surface and distance, environmental properties such as vegetation cover and soils. At the same time, the strong spatial and relational capabilities of these systems may explicitly enhance such perspectives.

However, it can not be overemphasised that GIS are subject to the restrictions of the data they use and the questions asked by researchers. They are only a methodological tool following theoretical viewpoints and their powerful abilities should not be taken as panacea. One of the weaknesses of GIS has been acknowledged to be in representing time. Clark's observation (1989) that Geography has been dominated by a static viewpoint applies directly to Archaeology as well, which although aims at revealing and understanding processes of change, it only achieves to present spatial relationships of activity traces in 'frozen' time slices. Clark states that "the temporal resolution with which change of form or process should ideally be viewed is related to the rate of change", which of course depends on the rate of observations and putting it into surface survey data on quality and refinement. On the other hand it is important to remember that the time-space separation inherent in all human studies is a construct of western society expressed through the separate uses of nouns and verbs in language, while for example the Hopi Native Americans do not make such a distinction.

1.3 Landscape within a Post-Modern Context

Archaeological questions have traditionally been influenced by sister disciplines and mainly Geography, focusing on economic and demographic issues and studying resources, risk and subsistence. Prevalent theoretical perspectives in archaeological landscape research have represented a world view of an 'orderly and objective – thus observable – physical environment within which human activity is contained; this is conditioned by the environment, but it is also transforming it. However, the increase of regional research and the wide spatial and chronological scales of data acquired, together with developments in social archaeological theory (Hodder 2002; Johnson 2004), mark a new era in archaeological landscape studies; survey data are required, critiqued and used for past social reconstructions from a variety of perspectives, with an emphasis on communities, ideology and complex socio-political relationships (Relaki 2003; Knapp and Given 2004; Diacopoulos 2004). Recently, post-modern archaeological thought has drawn attention to the 'meaning' of various spatial concepts such as environment, region, landscape, space and place and tries to understand past societies not only through the identification of large-scale economic patterns and political hierarchies, but by focusing down at the community and the person level, engendering space, exploring agency, highlighting symbolism and trying to reveal personal experience. Since the 80's, landscape has been a most popular theme and a concept most responsible for a new 'Great Divide' between the Modern and Post-modern paradigms, which is discussed at length in most recent papers of landscape studies.

Overall, there has been a great diversity of landscape approaches indeed, fact that has attracted scholarly interest in itself (Stoddart 2000; Ashmore 2002; Gojda 2003). Post-modern literature now discusses the development of landscape studies looking through to the origins of the concept of the landscape in the western world, which relates to a geometric and rational perspective of the world as perceived through vision, and reflects a new political order, namely the emergence of capitalism (Cosgrove 1984, 1985, 1989;

Thomas1993). The main goal of such on-going discussions is to resolve the ambiguity of the term landscape which has primarily been used as equivalent to the term environment or the aesthetic representation of the visible world, but which is now also studied in relation to perceptions of people in the past as well as perceptions of researchers in the present. Discussions of the post-modern paradigm have dealt explicitly with the notion of the landscape and the variability of perceptions, and such a hermeneutic approach is probably responsible for the emphasis given on symbolic and sacred landscapes. Landscapes may be termed ritual, symbolic, sacred, burial, mythical, urban or aesthetic, while it is interesting to note that if no adjectives of reference to cognition and perception are used, focus usually lies on settlement patterns and their economic aspects. Three additional landscape categories are to be found in Knapp and Ashmore (1999), who classify landscapes into broad classes, expressing relationships between what people see, think and how they socially interact with their environs. According to them, constructed landscapes describe human impact via continuity of activity, transformation or abandonment, conceptualised landscapes refer to cultural meanings assigned to natural features and ideational refer to landscapes that exist as ideas rather than perceived through human senses.

Numerous definitions of the word landscape and relevant writings offer, indeed, an impressive variability of identified landscapes that combine natural and cultural characteristics. Current researchers luckily tend to use the term as inclusive of both the physical and social qualities of man's interaction with space around him. Modern approaches that oppose evolutionary and ecological interpretative models emphasise the distinctive socio-cultural traits of humans that have nothing to do with biology and observe that social beings and environment can only be understood if conceived in their real inseparable relationship (Evans 2003). Bayliss-Smith (1988) argues that societies do not necessarily exploit their landscape to the best of its potential given their technology, but according to their cultural needs, and thus historical variance can be explained. In fact, many man/environment relationships cannot be explained from an environmentally deterministic point of view; some human choices may make no sense at all in terms of cost-effectiveness or adaptation to the environment, but may originate from social conditions and worldviews. On the other hand, we cannot ignore the role that the physical environment may play in the formation of social, economic and psychological conditions.

Interest in the 'sociality of the landscape' has of course not been new and an achievement solely of post-modern approaches, even though it is within post-modern writings that it acquires a central position in research interest. The interest of modernist approaches in the social and symbolic should not be overlooked (Flannery 1976; Renfrew 1973; Renfrew *et al.* 1982), and in fact social archaeology starts already with Childe (in Preucel and Meskell 2002); however, it is post-processual hermeneutic and phenomenological traditions that emphasise social dynamics, structuring principles and agency as opposed to ecological, demographic and technological explanations (Thomas 2004). Regarding explicit discussions of relationships between the social and the landscape, one of the first to treat the social aspect of the landscape was geographer Carl Sauer who talked about 'cultural landscapes' that emerge from man's impact on the natural environment (Sauer 1952: in Cosgrove 1989). In the process, from the study of distinctive landscape structures culturally created, cultural geography acknowledged the possibility of simultaneous and equally valid different readings, discussing relationships between culture and consciousness, nature, power and symbol (Cosgrove 1989). Within a post-modern context, landscape is not seen as a system with sites belonging to specific politico-economic structures and subsistence systems, but as the manifestation of particular social relationships born from internal social processes and these are sought to be explained.

A distinctive characteristic of post-modern landscape archaeological theory is the use of modern sociological theory and in particular of phenomenological perspectives founded by figures such as Heidegger and Husserl. Among the most important meanings highlighted in post-modern writings are:

- Experience and the variety of consciousness experiencing the outside world. Landscape is studied in relation to time, space, place, memory, movement, continuity and perception (Tilley 1994), as a counteraction to interpretations based on top-down approaches focusing on ecological/systemic analysis, population levels,

climate, land use patterns, technology, settlement patterns and the organisation of places (Aston 1985). Places have different meanings for different people, perceptions vary and emphasis is given to understanding how landscapes are experienced by people who live in them as the social and experiential are taken to reveal a more objective picture of the landscape than supposedly 'objective' outsiders' views. Phenomenology forwards the idea of 'dwelling' in the landscape (Heidegger 1977) that stresses that man and landscape are characterised by relationships of meaning and not of mechanism. The idea of different meanings and perceptions of space, place and the landscape for different people at the same time is stressed, as is the continuity of landscape and man's dwelling in it, which oppose interpretations of fragmentary time-space slices with man contained in an empirically observable and apparently objective setting (Thomas 1993). Landscape is inhabited and assigned meaning on a continuous basis, thus it is acknowledged that there are different chronologies of landscape depending on 'who' and 'when' and there should also be a distinction between chronologies of 'inhabiting' and 'interpreting' (Barrett 1998).

- Power: contradiction and conflict are seen as embedded in the landscape Bender (1992); examples of landscape forms created by power struggles include land divisions and landuse enforced by socio-political tensions and power relationships. Expressions of power are indeed seen everywhere in the landscape, from territorial divisions and building structures to the appropriation of cultural heritage by nation-states. Power has been embedded in archaeological interpretations from the very beginnings of the discipline, but traditional views have recently been debated (Rehak 1995). Going a step further, writings that question a modernist standpoint have revealed a variety of power relationships conditioned by inequality in accessing material and social resources (Hamilakis 2002:14). At the same time attention has been drawn to present-day power relations that in a way dictate our views on power, and which in fact may seriously restrict our ability to really understand and correctly interpret the societies of the people we study (Jansen 2004).

- Agency: Bourdieu's works (in particular Bourdieu 1984) and Giddens with his structuration theory (1984) have introduced new methods in social studies, where they try to reconcile 'structure' and 'agency' and analyse their intrinsic and complex relationship. Their thought has encouraged archaeological discussions on the nature of society, where the individual is given attention and acknowledged an important role in the way society is constituted. Even though it is much easier to describe a general structure, history and society can not be understood if we consider people only as a passive recipients and ignore their active role as agents in the construction and perpetuation or change of identifiable larger economic, ideological and other 'structures'. Evans (2003) proposes to consider the individual from a socio-psychological point of view and study environments as being used by people to mediate their social worlds. Agency refers to the establishment of social condition through the mediatory influence of land or indeed any part of the social or physical environment and is now a key topic in archaeological theoretical discussions (Dobres and Robb 2000).

- Time, space and place: attempts to define the term 'landscape' emphasise its socially constructed meaning subject to space-time relationships (Rossignol and Wandsnider 1992; Gosden 1994). Landscape is seen as the context of people's actions, which take place 'within a certain tempo and at certain locales' (Barrett 1991:8). Focus on the social aspects of man's living in space brought the realisation that societies are based upon complex and variable notions of time and space, which define actions and structures of different scales. Terms such as 'Chaînes opératoires' and 'taskscapes', have been created in order to express new meanings in landscape studies. Chaînes opératoires refer to the social relationships developed at specific locales and concerns the study of annual or of other time-scale processes e.g. of movement and social action at specific locales. It is a term originally used by Andre Leroi-Gourhan (1943: in Evans 2003) in connection with the manufacture of small artefacts in the Palaeolithic. Ingold (1993) discussing 'temporality' and 'landscape' introduces the term 'taskscape', emphasising the intrinsic relationship between time and space, which is diffused by social meaning. Landscape is a living organism, socially created and variably understood, structured by temporal and spatial relationships. Time and space are studied in a wide spectrum of complexity, and are focal concepts in archaeological research that struggles to reconcile the momentary stratigraphical record with the processes of millennia that it might represent. Recent theoretical discussions, inspired by

the Annales analytical framework, produce in-depth insights into the history of dealing with time and space and analyse problems and issues that cannot be overlooked (Knapp 1992b). Still, quite often, archaeological explanation dissects landscape in different time-slices and fails to resolve problems of the relationship between the long term, conjuncture and event as well as problems between time of study and time that is studied. Considerations of time, space and place are intrinsic in archaeological research and in particular in a social archaeology of landscapes. Archaeological data in the landscape represent human activity at the community level, which is time, space and place bound. As a result, landscape research allows us to study how communities relate to space (resources, routes), time (seasonal or temporal activity) and have a better understanding of the wider social, economic and habitational network / inter-site relationships (Knapp 2003).

- Memory: People do not just occupy the landscape; they experience the landscape and in fact life itself, with body, senses and mind. Memory plays an important role in how the landscape is perceived and experienced over time and contributes to the creation and perpetuation of social and national identity. It guides the survival of past beliefs that are inscribed in later practices and monuments, and an appropriate conceptual framework may allow us to use materiality in approaching past belief systems (van Dyke and Alcock 2003). Myths and beliefs give landscape special meaning and are the founding structure that supports and preserves its memory. The past survives through memory and affects the present, which in turn influences the way the past is seen (Alcock 2002). Examples from across the world demonstrate the power of memory that guides preconceptions and world beliefs, perceptions and man's living in a landscape (Brady and Ashmore 1999; Rowlands 1993; Schama 1995; Kuna 1998). Social memory substitutes environmental factors in the explanation of settlement location choice and as a result symbolic landscapes receive most attention. The role of memory in landscape experience is not solely a product of post-processual thought; Bintliff (in Blackman and Branigan 1977) studies the relationship between settlement location and soils, but at the same time considers the continuity of a belief system that has practised rituals on tops of mountains from the Minoan times to the present. However, it is only recently that memory has acquired an important role in archaeological studies.

- Phenomenological approaches have also been applied to archaeologies with very strong links to traditional paradigms such as Minoan archaeology. Within a post-modern reaction to both the lack of a strong theoretical framework in Culture-History and the law-like strength of processual representations of past societies with emphasis on homogenous patterns of economic strategies, environmental impact and socio-cultural evolution, recent texts emphasise the corporalisation of the Minoan past (Hamilakis 1998). Interest lies in the human actors of identified social systems, the use of space, the symbolic meaning of iconography and representation, the social meaning of professions, and the engendered action (Nikolaidou 2002; Alexandri 1994; Barber 1997).

Overall, such approaches have mainly focused on reforming the interpretative framework of archaeological thought and they suggest new viewpoints. However, there seems to be quite a hiatus between archaeological practice and the new theoretical developments, ironically most obvious in landscape research, namely regional survey. Organised landscape explorations in the form of surface survey have traditionally tried to reconstruct historical and economic processes. No doubt, most regional surveys are becoming inter-disciplinary, and reveal a new picture of landscape ecology with discussions on a variety of human activities in space and time and the study of the co-evolution of cultural and natural landscapes. However, post-modern concepts are not often explicitly discussed. An example of the application of recent concepts of social theory in archaeological survey is offered in Given and Knapp (2003); they have used socio-cultural criteria as well as spatial and geomorphological on the definition of the region that they surveyed, and they tried to interpret the physical landscape into social space, in other words, they studied consistently the changing human use of the landscape. Methodology involved the integration of spatial, geomorphological, geobotanical and artefactual data into a GIS environment in order to assess surface data recovery and meaning as well as to interpret the relationships between space and human activity over time. The interpretation and discussion of survey data in terms of abandonment, movement, contacts, and intensity of landscape settlement and landuse, represent a

social archaeology of space, which instead of focusing on the physical remains of a place it tries to reveal the human experience *of place* that takes into account individuals, households and communities who dwell in the landscape and transform it (Knapp and Given 2004: 89, emphasis in the original). The integration of spatial, social and historical approaches is now part of most intensive survey projects, however, Knapp and Given discuss explicitly the role of such an integration in the understanding of meaning, memory and monumentality of the past (ibid: p.92).

Archaeology is a social science targeting past societies and as such, it needs to address all aspects of social expression and existence. These include subsistence, economy, social relationships of power, political expression, ideology, religion and symbolism, agency, gender and community, and all these should be explored in their intrinsic inter-relationships and at the variety of temporal and spatial scales in which they operate. Post-modern approaches including phenomenology, offer revealing insights into past societies indeed, but so do concepts such as the 'Chamber Theory' (Lehmann 1939, Philippson and Kirsten 1950-59), off-site archaeology and 'settlement area theory' (Neustupny 1986: in Kuna 2000, Neustupny 1991, Kuna 1991), but also the Annales framework. Views that oppose the great emphasis given in phenomenology stress that settlement changes seem to relate more to geographic and social issues rather than emotional 'senses of place' (Bintliff 2000b); at the same time, Knapp and Ashmore (1999:8) are optimistic that 'while we may never know the precise content of stories told from ancient landscapes, we can increasingly infer some of the contours of their telling and the social impact that they had'.

It seems to me that the new 'Great Divide' lies in the difference between archaeological questions. Some landscape studies focus on the structure and appearance of the landscape, others on post-processual concepts of social expression and experience. It seems perfectly valid to be interested in general patterns as much as in variance and individuality and in order to reconstruct past societies we should perform research on a multi-scalar level, recognising the fact that humans are social beings living in a physical environment; they create and transport belief systems, but are also characterised by economic relationships and they act at a personal, but also at a communal level. Landscapes are perceived differently by different people, certainly so by people who live in them and people who study them. They are subject to viewpoint, literally as they change with eye's movement, and conceptually as people's concepts, interests and beliefs vary. It should be stressed that the term 'landscape' in other languages does not only refer to a piece of land that can be visualised, lived in and assigned meaning, but a piece of space including land, sea, air and sky. The problem could perhaps be identified in the appropriation of the term for the transmission of absolute and incomplete models. Most important is to be clear about what research questions we set and what methods we use, paying most attention to the validity of our data and acknowledging as much our limitations, as the possible validity of different interpretative suggestions.

1.4 Current Trends

Landscape archaeology developed as the offspring of settlement archaeology encompassing traits from all traditions. Under the influence of New Geography and New Archaeology it developed a processual methodological framework studying societies with a focus on ecological and spatial concepts. Intensive survey is considered as the only tool that allows us to unravel regional landscapes at a diachronic level by collecting a large number and variety of data which can help us understand historical process inclusive of landscape and societal evolution. Edited volumes present and discuss regional studies on a variety of levels including the theoretical and practical basis of regional archaeological work (Crumley and Marquardt 1987; Kardulias 1994; Bintliff *et al.* 2000a; Papadopoulos and Leventhal 2003; Alcock and Cherry 2004). In general, there has traditionally been a strong environmental focus in landscape archaeology, and people's important role in conditioning their environment was also realised quite early (Sahlins 1964:133 in Kirch 1981) and has been stressed throughout the last decade or so (Bottema 1990). However, projects with a strong evolutionary perspective, which are characterised by a human ecological focus, have received austere criticism since 'all

human behaviour cannot be reduced to function at the level of interaction with environment, and thus not all behaviour is adaptive, or explicable in an evolutionary framework (Kirch 1981:131). Most landscape research is of course governed by ecological considerations, however, cultural ecological approaches are now governed by a man-environment interaction subject to cultural idiosyncrasy (papers in Kardoulias 1997) and the idea of co-evolution of man and his environment prevails in archaeological studies. P. Nick Kardulias and Mark T. Shutes in the preface of Aegean Strategies declare: *'The study of human interaction with the environment stresses the role of ecological considerations which often influence the development of mental and symbolic constructs in an intricate relationship'*. A most important development resulting from the increasing integration of survey results in the construction of regional histories, is the acknowledgment of the need to pursue survey comparability. Suggestions recommend the adoption of standards on methodologies that will allow to control 'walker effects' and 'field effects' and it is also stressed that we should be explicit over the terms we use so that communication is facilitated (Cherry 2004).

The interpretative arena of surface survey data could be summarised as one based on a regional scale of spatial analysis in studying settlement inter-relationships and man-environment relationships, using ecological models and territorial approaches and resulting to both inductive and deductive inferences about behavioural patterns. Current research studies the archaeological record as a continuous surface and tries to reconstruct human dwelling in the landscape through the identification of a wide variety of 'site' functions and there has also been an interest in the variable time-scales of site use (Bintliff and Howard 1999; Whitelaw 2000; Pettegrew 2001). At the same time, the multifaceted relationship between culture and environment has been increasingly acknowledged over the last couple of decades, as explanation has moved from ecological and environmentally deterministic approaches to the appreciation of cultural uniqueness and the interpretive integration of complex factors such as time in the shaping of man-environment interrelationships. The recovery of palimpsests of human activity through time has encouraged a Braudelian perspective of historical change (Barker 1995), identifying in the surface record mainly the long (environmental data) and medium term (archaeological data). Recent case studies (in Knapp 1992a; Bintliff 1991a) approach the past historiographically and support an Annales framework as offering the potential to incorporate 'science' into a 'narrative'.

Landscape studies operate in a constantly developing theoretical and methodological framework, which in a way integrates a processual methodology with post-processual concepts, encourages intensity of observations and interdisciplinarity, including IT, and stresses sociality. A representative example of landscape exploration operating with influences from both the 'processual' and 'post-processual' paradigm is the Czech school (Gojda 2003; Kuna 2000). Wilkinson (2004) refers to Landscape Archaeology as the tool to reconstruct and understand past societies by studying taphonomic processes, economic models and social and symbolic systems and using methods of geoarchaeology, aerial photography, remote sensing and surface survey. Current theoretical approaches in archaeological interpretation seek to escape both the frigidity of eco-deterministic views and the domination of post-processual concepts of 'memory' and 'gaze' by studying landscapes as multi-dimensional constructions, historically dynamic, the products of long-term social-natural co-evolution (McGlade 1995). The concept of human eco-dynamics seeks to unfold the multi-scalar spatio-temporal nature of socio-natural relationships and suggests an appropriate methodological and interpretative framework that is based on inter-disciplinarity and studies the dynamic relationship between social and natural phenomena over time (McGlade 1998).

Encompassing settlement archaeology at both a synchronic (spatial) and a diachronic (time) level, landscape archaeologists can try to distinguish between different forms of landscape organisation over time and assess how these may have related to environmental factors and social (including economic, political and ideological) needs. Landscape archaeology can in fact be the most inclusive branch of archaeology in terms of both theory and method, using both scientific methods and a socio-culturally based level of explanation. It is also encouraging that there is a developing source critique where researchers discuss the development of their survey strategies and results in a reflexive manner (Bintliff *et al.* 1999; Rupp 2004; Ammerman 2004).

Landscape research now seeks to adopt a middle position between the extremes of reductionism and relativism and indeed we should transcend divisions between Old and New World Archaeology (Knapp 2003). Moreover, Kuhn's impact after the 70's has led to a historiographical and epistemological approach to archaeology, which now forms a theme of study in itself and its course as well as its present are seen in relation to concurrent historical and political circumstances (Fotiadis 1995; Hamilakis 1995; Mantzourani and Catapoti 2005).

1.5 Concluding Comments

It is now widely accepted that Archaeology tries to understand the process of cultural change through time. Therefore, the purpose of archaeological research can not be limited to the discovery and description of material culture on its own right; the discovery of 'sites' is not a surprise given the fact that people have always existed and interacted with their environment. The question is how landscape has evolved through time and what sort of societies left the traces we find now. In our attempt to understand cultures long gone, we also need to understand the 'environs' of these cultures and try to reveal how landscape was perceived, experienced and used. Our readings of past human-environment relationships should reveal but also extend beyond economic and political relations to the process of 'socialisation' of landscape. In our doing so, we should also be aware of our society's and personal perception of space, but also of the political agenda of archaeology as a discipline and the restrictions it sets in our understandings and interpretations of the world in the past. Within these restrictions we can still do our best to understand and reconstruct past processes, something that certainly requires a fully interdisciplinary approach.

Landscape research in a wider sense, has been a fundamental stone of archaeology from the very beginning, going through different stages of research focus and the most vigorous methodological and theoretical process. Inclusive of environmental, archaeological, historical and ethnographic studies, it offers us the opportunity to understand better the local and regional temporal and spatial complexity, shed light to patterns of human action and social structure and result to more plausible interpretations of the archaeological record. Intensive surface survey projects have resulted to an exceptionally large amount of very variable data, which, however, call for an integrative framework so that their potential to understanding landscape and cultural process is fully exploited. As a consequence, we need to take into account the effects that different methodology and other bias problems might have on surface data recoverability, as well as the constraints set by theoretical background. It is also important to study the relationship between theory, method and results over time, and be able to be self-reflective. Undeniably, it is essential to work within an interdisciplinary framework studying local, regional, diachronic and human-environment dynamics and interrelationships.

Archaeological techniques and supporting technology improves and so do, I believe, theoretical concepts influencing methodological and interpretative frameworks. To use the discipline's advances we need to be more explicit on what we look for, what kind of data we recover and therefore what we interpret, and we should be open to a wide range of interpretative possibilities. An issue that requires and deserves the greatest attention, however, is the communication and integrability of data recovered. In fact, second-generation analysis has demonstrated the severe difficulties in using surface data to extract models of socio-cultural change, difficulties that are enhanced by obscurity in the presentation of data and interpretations (Diacopoulos 2004). Unless archaeologists work on how data and information can be comparable and used in an integrated framework, they risk to work in a vacuum and produce knowledge that unless useable, is I fear, meaningless. Lastly, we should remember that the production of knowledge is based on the ideological systems represented and reproduced by researchers throughout a discipline's process. Research interests and interpretative frameworks are part of a historical process; they are based on previous work and they have complex implications for the perpetuation and structure of ideology, but also for the future of political and social histories. This is why it is of crucial importance to adopt a historical stance to the products of archaeological work, understand it and at last accept responsibility for the social and political consequences that our work has (Mantzourani and Catapoti 2005).