I.1.1 Archaeological surveys in the Republic of Macedonia

The appearance and the development of archaeological research and surveys in particular in the Republic of Macedonia is closely related to the main historical developments in the country: 1) the resilient survival of Ottoman rule and way of life deep into the twentieth century, the slow emergence of national identity and civic society; 2) the 20th century wars and the imperialistic attempts of the young neighboring nation states; 3) stabilization within the frame of the Yugoslav Federation, then new crisis and consolidation as an independent republic. Respectively these are the periods of the second half of the 19th and the first decade and a half of the 20th century; the first half of the 20th century and the period after the Second World War. As elsewhere in the Ottoman part of the Balkans, modern archaeological research appeared only after capitalist civic society was established, along with a nation state ready to protect it. Its development is basically parallel to the appearance and the slow establishment of modern society and state, of institutions as we know them. Changes, particularly in a field like archaeology have normally come very slow, with the incentive or the causes often lying outside the field.

In view of organizational and technical advancements the development of archaeological survey went hand in hand with other forms of archaeological research. There are however certain differences when surveys and excavations are looked at separately. This is because in the country's archaeological tradition, like elsewhere on the Balkans and in Central Europe, surveys were seen as a supplement to excavations, as a first step in the archaeological study of a landscape. Technically the history of archaeological surveys is a series of independent and poorly related, extensive survey campaigns or, at best, waves of extensive surveys, organized by smaller regions. Nonetheless the scale and character of archaeological surveys and the ways in which they are perceived and valued by the local archaeological community varied considerably between the suggested general periods of development.

The factors of geography and natural conditions also bear a direct effect on the type and intensity of archaeological research. The territory of the Republic of Macedonia is situated in the southern central parts of the Balkan Peninsula, very close to the Aegean, less than 100km and the Ionian coast, less than 200km. But the country is typically continental. Influences from the sea are blocked by long mountain ranges, rising over 2 000 meters high. The Vardar-Morava Valley corridorties the territory of modern Macedonia firmly to the central parts of the Balkans. It is the back-bone of the entire region. Natural conditions are alike between the two valleys and communication is much easier. The coastal areas on the other hand are connected only by long and difficult mountain passes or narrow valleys (map I_1).

Map I_1:The central parts of the Balkan Peninsula.

In the regional context the country is an important cross-road. It is traversed by the two shortest communication lines in the region: the one between the Aegean and the Danube (the Vardar-Morava corridor) and between the Ionian and the Aegean (the Via Egnatia). On a larger scale however, the country lies outside the main routes between Asia Minor and Central Europe, passing through Istanbul, Sofia and Belgrade. Like the other countries in the western Dinarid half of the Peninsula, Macedonia is to a certain degree isolated, protected from the violent currents coming from Asia Minor and from beyond the Lower Danube. This geographical position also explains the tendency of retardation and the resilience of certain traits or practices, throughout the entire history of these lands.

A similar dichotomy can be observed within the territorial limits of the modern Macedonian state. Although measuring only about 25 000 square kilometers, there are very sharp regional differences in relief, climate, human development and population (map I_2). The parts of the country lying along the lines of the major interregional roads, the Vardar-Morava Valley line and the Thessalonica-Dhurres or the ancient Via Egnatia are the most developed sections of the country, hosting the greater part of the total archaeological research, both surveys and excavations. These are the large river valleys and plains in the central and the southwest parts of the country.The "interior", particularly the western half of the country, but also extensive mountainous and hilly regions in the east, have been left deserted and environmentally impoverished during the 20th century. These regions along with the high mountain ranges amount to almost two-thirds of Macedonia's territory. Relatively large areas feature only few inhabitants per square kilometer. Consequently certain parts of this land have never received archaeological studies of any kind until the present day.

Map I_2:The Republic of Macedonia with the main interregional corridors.

The archaeological tradition in the Republic of Macedonia is short-lived, even when compared to the other countries of the central Balkans. The prevailing historical and geographic conditions have not been very inclined to the development of the archaeological discipline in this country. It emerged very late and changed very slowly. Early travelers and archaeologist from most of the old European powers worked on the territory of the Republicof Macedonia. The most lasting however was the impact of the archaeologists that worked in the early institutions founded around the mid 20th century, in the old pre-war Yugoslav Federation. Most of them were trained within the school of the Classical Archaeology tradition. The influence of this "school" continued to operate throughout the 20th century, through Macedonian archaeologists studying at the Universities of Belgrade or Zagreb and through other historical or scientific disciplines, historical geography in particular. These influences have largely determined the theoretical and the basic fieldwork methodology that marks contemporary Macedonian archaeology: archaeology as culture history, as the prevailing theoretical paradigm and an unsystematicand non-quantitative approach to the archaeological remains in the practice of fieldwork. In the last couple of decades influences from other traditions will probably incite certain changes, but in general the basic paradigm and a good deal of the fieldwork methods have remained unchanged. The culture group approach is still fully relevant for the prehistoric periods, while for the historic periods, the main concern remains the revealing of buried ancient treasures or identifying names and events mentioned in the historical records, that is archaeology in the service of history and historical geography. The archaeologists' interests have rarely ever stretched beyond the late

14th century (the exception being scholars interested in the archaeology of churches or other public edifices). Whetherin prehistoric, classical or medieval archaeology, the site was the central term; a concept that shaped not only the way archaeological research was performed in the field, but also formulated interpretation of archaeological data and dictated solutions regarding heritage preservation and management.

But the achievements of a certain tradition cannot be fairly presented if only the negative side is considered. Archaeological research in the Republic of Macedonia and surveys in particular had and still has aims and methods that made a considerable advance in the knowledge of the archaeological topography of the country, despite the very unfavorable practical and technological conditions. Particularly fruitful and interesting were the numerous debates between ancient or medieval historians and archaeologists involved in field surveys. Within half a century, a great advance was made in unraveling the geography and the history of the country during Antiquity and the Middle Age[1]. Extensive, unsystematic archaeological surveys were used not unsuccessfully as contributions to historical and historical geographic problems. Surveys were also used during preparatory stages, prior to excavation, both on a site and on a regional level[2]. Unfortunately as surveys were assigned "a secondary" role in the ideal process of field archaeological research, survey results are most of the time poorly published and very often, only unpublished reports are available.

Surveys are normally considered to be a rough, exploratory and orientational method of field research. By themselves they have never been accepted as a self-sufficient or even fully relevant method of field research. In the regional archaeological tradition, this type of fieldwork is usually related to pioneering studies in unstudied areas or for inspecting the preservation state of known sites. There have been at least two, unofficially accepted explanations for the reluctance to use surveys as a method of fieldwork, clearly emanating from the traditional concept of archaeological sites. First is the suspicion about the potential of surveys to register and especially date and "culturally determine" archaeological sites. There is a very strong distrust in the coherence of the archaeological record in general and especially when dealing with disturbed surface remains. The other remark often raised against archaeological surveys is its ability to recognize lower cultural strata on multilayered sites. Surveys are therefore logically limited to the study of later architectural remains and can only record the predominant phases on multi-period sites.

In general surveys were performed throughout the history of archaeological research in the country.They were used both as independent study projects and on a couple of occasions, for the preparations of archaeological atlases. In fact one type of study closely related to surveys has received a good deal of respect among domestic archaeologists over the past decades. These are regional, archaeological and historical syntheses, based on compiled information from

[1] R. Grujić, Položko-tetovska eparhija i grad Lješek, *Glasnik Skopskoga Naučnoga Društva* d.n. XII, 1933; Sv. Radojčić, Menada iz Tetova, *Glasnik Skopskoga Naučnoga Društva* d.n. XII, 1933; N. Vulić, Teritorija rimskog Skoplja, *Glasnik Skopskoga Naučnoga Društva*. d.n I/1 1924; N. Vulić, Geografija Južne Srbije u antičko doba; *Glasnik Skopskoga Naučnoga Društva* d.n. XIX, 1938; I. Mikulčić, Nepoznat antički grad kaj s. Mojno, *Godišen Zbornik na Filozofskiot Fakultet* 22, 1970 ; I. Mikulčić, Topografija na Eudarist, 173-197,*Macedoniae Acta Archaeologica* 1, 1975; B. Josifovska, Prilog lokalizovanja grada Argosa u Peoniji, *Živa Antika* XV, 1964; V. Sokolovska, Stadion stone from Isar-Marvinci, *Archaeologica Iugoslavica* XXII-XXIII, 1982-1983; T. Tomoski, Dali postoel grad Polog,*Glasnik na Institutot za Nacionalna Istorija* I-1, 1959; V. Lilčić, Fauces Pelagoniae,4-53, *Macedonian Heritage* IV, 1997.

[2]The material is compiled in the *Arheološka Karta na Republika Makedonija,* vol. II, Skopje 1996.

excavations, but mostly from surveys[3]. This type of regional study is naturally reserved for the best researched regions of the country. In most cases they cover larger micro-regions, occupying areas of several hundred square kilometers. On the other hand there are limitations regarding the type and the date of the archaeological remains: for instance, a survey of Early Christian basilicas or Prehistoric forts or inscriptions, very popular in the early days of Macedonian archaeology. In accordance with the Classical tradition, archaeological survey is primarily used to survey monumental building remains, architectural sculpture or inscriptions; those types of remains that unambiguously point to the phenomenon of site, that are "visible", describable and conceivable as "real", archaeological phenomena. Excavation data and stray finds are also incorporated. In regional synthesis usually the basic aim is to relate the monumental, the more attractive archaeological finds to the written sources and basically support or complement the existing historical narratives.

As an independent method of fieldwork, the scope of archaeological surveys is severely underestimated. This is predictably related to the prevalent method of extensive and unsystematic reconnaissance, but far more profound is the theoretical outlook and the attitude towards archaeology in general. Issues such as size and locations of rural settlements, problems of demography and economy or human-environment interaction have only been introduced in recent decades, even in Mediterranean archaeology[4].Partly because of the difficult socio-economic conditions during the past several decades, partly because of an inherent conservativism and reluctance to face the new global trends, the development of survey archaeology is even slower in the countries of the Balkan interior, its potential to contribute to the overall archaeological knowledge being completely underestimated.

I.1.2 Theoretical definitions; the study of human settlement as habitation practices; from settlements to landscapes

The major incentive for the following study is the almost complete absence of evidence for settlement positioning, distribution and dynamics on regional and especially on micro-regional level in the country. As mentioned in the preceding section, there is a strong tradition of very precise documentation of architectural remains. There were even isolated attempts of regional, long-term syntheses. But these studies are limited by their extensive, unsystematic character to the monumental remains, to locations close to modern habitation centres and communication and to certain time-periods. Indeed the present study was preceded by a number of attempts to explore the spatial distribution of published fortified locations or other types of monumental archaeological remains, but the quality of the published data, along with the usual form of fieldwork, always thwarted these study efforts in their very early phase of assembling reasonably complete chronological maps of settlements. Fortified settlements are particularly frustrating in this respect, as they often feature more than one occupation phase and this was rarely clearly distinguishable. Visits to a number of fortified hilltops in the past couple of years showed that the majority of these sites lacked sufficient amounts of datable surface material, the

[3] I. Mikulčić, *Pelagonija u svetlosti arheoloških nalaza*, Beograd-Skopje 1966; I. Mikulčić, *Staro Skopje so okolnite tvrdini*, Skopje 1982; V. Lilčić, Docnežnoantičkite tvrdini vo Tikveš i Vitačevo, 115-136, *Godišen Zbornik na Filozofskiot Fakultet* 41-42, 1988-89; Aleksova, B. Bargala i sredniot tek na Bregalnica, 61-71, *Glasnik na Institutot za Nacionalna Istorija* 3, 1983

[4] I. Morris, Archaeologies of Greece, 8-48, ed. I. Morris, *Classical Greece: Ancient Histories and Modern Archaeologies*, Cambridge 1994.

building technique providing only very general chronological terms. It was thus impossible to continue any further with the present body of knowledge. Not only because there lacked the basis for the chronological determination of the fortified sites, but primarily because the location, the form and the size of human settlements in most of the archaeological periods remained completely unknown. The lack of surface material on a very large number of fortified sites signaled that these could not have been normal civic settlements; there simply lacked the usual traces of long-term human habitation on the surface within or immediately around the fortification line. Similarly for a number of periods, the monumental sepulchral or other sacral remains still await the discoveries of the settlement centres to which they belonged.

There can be no doubts that the main reason behind this situation rests in the traditional technique of fieldwork and the lack of systematic and intensive archaeological survey campaigns. It is almost certain that the great majority of human settlements in the past were the open, more or less agglomerated types of settlement, preserved as vaguely discrete clusters of surface finds. The traditional method of archaeological surveys didn't have the means to document thistype of archaeological remains.The likelihood that this category of sites will be registered with the traditional way of fieldwork is minimal. In order to advance and contribute to the knowledge of past human settlement on the territory of the Republic of Macedonia, it became necessary to apply not only different methods of field survey, but also to promote a shift in the general perspective on the problem of past human settlement. The prevailing tradition in archaeology has usually dealt with the problem of settlements on larger, interregional levels and it remained focused on the formal aspects of the settlements, seen in isolation from their immediate environmental context – the method of fieldwork determined the principle research problems. This site-centered, overall perspective have so far given very limited results concerning problems such as rural habitation practices, the dynamics of individual settlements in the long run and especially, the extent and organization of settlements at the micro-regional level. In other words, this approach has left untouched a number of very complex and important issues that have been the subject of research for decades in World Prehistoric and Classical Archaeology. We stillargue that the study of fortifications has made a great contribution not only to archaeological, but also to problems of wider socio-historical and cultural interest. However it is far from adequately addressing the problem of settlements in general and through most periods of human habitation in this land. The continuing studies of fortification plans in understudied regions and revisits of earlier documented forts has certainly more to contribute to the archaeology of the country and the wider region, but if we are to have more complete settlement maps, to answer a great number of problems of purely archaeological and wider, socio-historical significance, it is necessary to intensify archaeological surveys and shift the research focus from the conspicuous and known archaeological sites to the blank, un-researched countryside.

In local archaeology as in the archaeologies of the surrounding countries, the study of the settlement remains mainly refers to the positioning, the type and rarely the size of a handful of settlements, most often the largest or at least those featuring conspicuous physical remains. Usually under the subheading of "settlements", one finds information about vernacular architecture, household and settlement level organization, research topics traditionally related to excavations[5]. To be sure, the complete story of human settlement can never be told without these components of settlement life. As will be shown during the interpretation of the survey results, it is often difficult to infer conclusions about the socio-historical character of the surface remains

[5]The massive and very ambitious edition entitled *Praistorija Jugoslovenskih Zemalja*, vol.1-5, Sarajevo 1977-1989 exemplifies this normally adopted approach.

when lacking information about the size of individual dwellings, the existence of subsidiary buildings, pits and other similar manifestations. This is why in the past couple of decades, regional survey projects combine intensive and systematic field survey with various methods of geophysical and geochemical prospection[6] and work on improving techniques of artifact collection.[7] This is finally a point where survey and excavation data can complement each other. The problem in regional archaeology however is that settlement has never been researched in the light of its spatial distribution, from a regional perspective. For example, unless there are visible, non-movable surface remains, the size of the settlement area remains unknown. Excavations, inevitably focused on a limited number of non-representative sites and further limited to unearthing very small portions of these sites, can be of little help concerning this problem. But even when it comes to vernacular architecture and inner organization, with the exception of a few larger prehistoric and antique settlements, very little has been learnt[8]. This is particularly problematic for prehistoric periods, but rural settlement in Antiquity presents a no lesser mystery.

However there is a necessary step further to be made. The study of settlement has so far been synchronic; like most other general categories of material culture, the study of human settlements was limited to certain time-periods. In purely theoretical terms a certain time-period is being studied, rather than a certain region or even a certain settlement. In this theoretical perspective the specific settlement and more rarely, the specific region are seen as mere data repositories, as the physical limits of a concrete study material. A certain region is surveyed or certain sites are excavated for the purpose of studying formal categories of material culture belonging to certain time-periods, not for the sake of studying the region or even the site itself. This is another fundamental difference between the traditional approach and the one advocated in the present study. If one wishes to study habitation practices in a certain area, it is inevitable that we adopt a long-term perspective. Habitation practices can never be fully understood if studied synchronically. The distribution pattern and hierarchy of settlements during certain archaeological epochs is hardly comprehensible if nothing is known about earlier and even later settlements in the same region[9]. In essence the difference is again related to the way in which the topic of human settlement is defined: for the traditional excavation-oriented archaeologist, settlements are categories of material culture, identified solely with the settlement proper that vary in form, type and size through different time-periods and regions. In the perspective of the

[6]The Leiden-Ljubljana Ancient Cities of Beotia Projects, annual reports published in Pharos; the Nicopolis Project, A. Sarris et al, *The Nicopolis Project – the integration of geophysical prospection, satellite remote sensing, and GIS techniques in the study of Epirus, Greece*, Archaeometry conference, 1996; J.Bintliff, B. Davis et al, Trace metal accumulations in soils on and around ancient settlements in Greece, 9-24, ed. P. Spoerry, *Geoprospection in the Archaeological Landscape*, Oxford 1992.

[7] P. Bes, J. Poblome, J. Bintliff, Puzzling over pottery. Thespiae, Tanagra and methodological approaches towards surface pottery, 339-345, eds. D. Malfitana, J. Poblome, J. Lund, *Old pottery in a new century: Innovating perspectives on Roman Pottery Studies*,Ibam, National Museum of Denmark, Leuven, Icrates2006.

[8] The few exceptions are the systematic, long-term excavations on larger urban sites, J. Wiseman, et al.*Studies in the Antiquities of Stobi*, vol. I-III, 1973,1975, 1979; D. Koračević, *Skupi- gradska teritorija*, Skopje 2004, D. Mitrevski et al, *Vardarski Rid* vol.I, Skopje 2004.

[9] Discussions in, D. R. Keller, D.W. Rupp eds. *Archaeological Survey in the Meiterranean Area*, Oxford 1983; J.F. Cherry, Frogs around the pond: Perspectives on current archaeological survey projects in the Mediterranean region, 383-417, the same volume; J.L. Bintliff, A.M. Snodgrass, The Cambridge/Bradford Boeotian Expedition: The first four years, 123-161, *Journal of Field Archaeology* 12, 1985; G. Barker, Approaches to Mediterranean Landscape History, 1-16; ed. G. Barker, *A MediterraneanValley: Landscape archaeology and Annales History in the BifernoValley*,Leicester 1995.

now predominant strand of LandscapeArchaeology in the Mediterranean, the topic of human settlements has a much broader meaning. It refers neither to individual settlements nor to certain formal categories of settlements, but to human settlement as a continuous and dynamic long-term process; a theoretical shift that goes back to the 1960's and the emergence of the New or Processual Archaeology[10]. Hence the turn towards the long-term regional studies; if human settlement is conceived of in broader anthropological terms, the long-term regional approach is an inevitable theoretical implication. In this perspective the human settlement in a certain region is the history of habitation practices and strategies in the long run, not a dis/continuous sequence of styles of vernacular or defensive architecture. The distribution of settlements during a certain period is to a large degree predetermined by the situation in the preceding periods and preconditions the settlement pattern of subsequent periods.

The currently prevailing theoretical approach in Mediterranean settlement archaeology has broadened the concept of settlement to include elements of settlement practices other than the settlement proper or the various military installations. The continuously perfected method of intensive, systematic surveys allowed archaeologists to study a wider range of smaller or seasonal features of settlement practices. After almost four decades of experience, practitioners of this method of field survey are able to recognize a series of anthropogenic installations that form an inextricable part of the human settlement, in most historical and geographic conditions. Open settlements of minor size, groups of hamlets or individual farmsteads, rural shrines and cemeteries are now regularly appearing on reconstructed settlement maps[11]. Non-residential, less intensive habitation practices (ancient zones of intensive agriculture, industrial areas) are also documented through the study of off-site scatters[12]. As mentioned earlier, these and similar categories could hardly be recognized by the traditional method of field survey and even if they were accidentally discovered, there simply lacked an adequate documentation technique. Consequently the new method of fieldwork offers a far more complete picture of human habitation practices.The maps of settlements are no longer simply indicating locations of major habitation centres in certain time periods. The systematic quantification of surface finds can produce surprisingly detailed and nuanced reconstructions of population distribution, productive and religious foci, landscape modifications and so forth. These elements of habitation practices are of no lesser importance than the interior elements of the settlements proper. Researching these "secondary" features, modern settlement archaeology makes a valuable contribution to the understanding of past agricultural economy, demography and landscape planning. It is by these means that human settlement is studied as a long-term, anthropogenic process.

Inseparably connected to the intensive survey projects in the Mediterranean and to the general shifts in the theoretical approach was the increasing interest and appreciation of the past

[10] L.R. Binford, Archaeology as Anthropology, 217-225, *American Antiquity* 28-2 1962,; Ibid, A Consideration of Archaeological Research Design, 425-441,*American Antiquity* 29-4 1964,; T.K. Earle, and R. Preucel, Processual Archaeology and the radical critique, 501-512, *Current Anthropology* 28-4 1987; B. Trigger, *A History of Archaeological Thought*, Cambridge 1989.

[11] J.L. Bintliff, P. Howard, Studying needles in haystacks-Surface Survey and Rural Landscapes of Central Greece in Roman Times, 51-91, *Pharos* 1999; S.E. Alcock and, J.E. Rempel, The More Unusual dots on the map: Special purpose sites and the texture of landscape, 27-46, eds. P. Guldager Bilde, V.F. Stolba, *Surveying the Greek Chora: The Black Sea Region in a Comparative Perspective*, Aarhus 2006. For concrete examples, M.H. Jameson, et al, *A Greek Countryside: The southern Argolide from Prehistory to present day*, Stanford 1994, tab. 4.5.

[12] J. Bintliff, A. Snodgrass, Off-site pottery distributions: A regional and interregional perspective, 506-513, Current Anthropology 29-3, 1988; T.J. Wilkinson, Extensive shard scatters and land-use intensity: some recent results, 31-46 *Journal of Field Archaeology* 16-1, 1989.

environmental context. The study of cultural change and stability was closely related to environmental factors since the early days of Processual Archaeology and the dynamics of settlement pattern was the obvious candidate topic to test the newly discovered interdisciplinary field of research. The significance of the changing environmental conditions needs little elaboration. The possible impacts on human settlement and economy, as well as on the formation of the surface archaeological record were realized immediately and human-environment interaction ranked high in the agenda of all major research projects influenced by the new tendencies in Anglo-American archaeology. The human-environment relations present a very wide and complex research topic, involving the expertise of a number of different disciplines, most prominently, geomorphology, soil science and palynology. The fruitful cooperation between these various disciplines was best reflected in the large, interdisciplinary regional survey projects in the Mediterranean[13]. Even the earliest of these studies already included geomorphologic surveys, soil and vegetation mapping and often, coring for pollen samples. The aim of these large research projects was a complete environmental and landscape reconstruction. The study of settlement and environmental change went not only hand in hand, but were deeply interwoven; changes in one of the spheres were regularly related to changes in the other.

Implications on a theoretical plan were once more unavoidable. Even without involving the study of past environment, there was already a fundamental shift in research strategy. Actually the abovementioned shift in the research focus, from individual sites and certain time-periods to the region as a whole is two times underlined. First, by redefining the study of settlements in archaeology, the study of settlement as a continuous, long-term process and secondly, by broadening the concept of settlement with an array of features and activities for which traditional survey archaeology lacked the appropriate methods of field study. Human settlement is not simply an agglomeration of houses with their defenses and communications; it is also seasonal and auxiliary establishments, satellite settlements, water supply, agricultural fields and terraces, ritual locations and cemeteries etc. This vast range of human activities can only be studied on a supra-settlement level, by looking at a region or a micro-region in its entirety. It is very logical then to see landscape archaeologists joining their forces with natural scientists in an effort to understand the dynamics of human-environment interaction. The study of human settlement as defined by this approach can never be complete without the integration of environmental data.In fact the correct interpretation of the data gathered by intensive field surveys is itself greatly dependent on the understanding of past and present sedimentation and erosion processes. The departure from the traditional approach of studying settlements as discontinuous and formal categories of material culture, unstoppably led the way to the present developments in the field of Landscape Archaeology.

These were the basic changes in the theoretical premises; the refocusing of the study interest from specific settlement centres to the process of settlement, to the long-term habitation practices taking place on a supra-settlement, regional or micro-regional level. Among the implications of this fundamental change, there were also realignments in the traditional relations with history and geography. Certain schools of thought within these traditional disciplines have developed advanced and elaborate methods and theories by the mid 20th century that became

[13] For instance the Pylos Regional Archaeological Project, E. Zangger et al. The Pylos Regional Archaeological Project, part II: Landscape Evolution and Site Preservation, 549-641, *Hesperia*66-4, 1997; M.H. Jameson, C.N. Runnels, T.H. van Andel , 173-194, 1994. In fact, environmental reconstruction was also one of the goals of the Messenia survey project, G.R. Rapp, A.W. McDonald eds. *The MinnesotaMessenia Expedition: Reconstructing a Bronze Age Regional Environment*, Minneapolis 1972.

very influential among the new settlement and landscape archaeologists. The influences of the French, *Annales* School or the New Geography movement was actually far more significant than the newly introduced theoretical concepts of Processual Archaeology[14] (although we stress that in general the split between the old and the new approaches in settlement archaeology can be traced along the same axis that divided Old and New Archaeology in the 1960's). The overall impression is that the theoretical concerns of the "new wave" of surveys remained to a certain degree unaffected by the later Processual - Postprocessual debate. Other mostly non-archaeological traditions have been for a century busy theorizing the landscape as a research subject or elaborating models for intra and interregional interaction. Their efforts were far more relevant to the newly discovered field of archaeological research and the models offered proved practically applicable for the interpretation of survey archaeological data. Particularly promising were F. Braudel's concept of the tri-fold structure of historical change (for examining settlement dynamics in the long run) and I. Wallerstein's core-periphery model (for understanding trans-regional and global developments)[15]. Predecessors and inspiration was also found in the work of the German Anthropogeographic tradition, the *Landeskunde*, very influential throughout continental Europe in the early twentieth century[16]. Somewhat less prominent are the applications of ecological, Darwinian or Malthusian models and the spatial analysis models, borrowed from the New Geography[17]. Finally, the Postprocessual critique during its apex in the late 1980's-early 1990's attempted to build its own approach to the problem of settlement and landscape archaeology, insisting on the study of ideational landscapes or authentic landscape perceptions.[18]

Apart from problems and concepts borrowed from these major theoretical traditions, the "new wave" of regional survey archaeology was generating its own set of theoretical and methodological topics. The very practice of the method of intensive, systematic survey was delineating the range of questions that could be adequately addressed on the base of the gathered set of data. First and foremost was the question of defining known or hypothetical forms of cultural/human activity on the basis of the field records. Traditional survey and excavation archaeology operated with a universal set of terms designating the usual manifestations in the archaeological record revealed by these fieldwork techniques. They mostly borrowed from standard architectural terminology or referred to past socio-historic phenomena: the various

[14] D. Clarke ed. *Spatial archaeology*, New York 1977; J.L. Bintliff and C.F. Gaffney, eds. *Archaeology at the interface; Studies in archaeology's relationships with history, geography, biology and the physical sciences*, Oxford 1986; T.K. Earle and R. Preucel, 501-512, 1987; J.L. Bintliff, ed. *The AnnalesSchool and Archaeology*, Leicester 1991; A.B. Knapp, ed. *Archaeology, Annales and Ethnohistory*, Cambridge 1992; G. Barker ed. 1995.

[15] C.K. Chase-Dunn, T.D. Hall, *Rise and Demise: Comparing World – Systems*, Boulder 1997; E.M. Shortman, A.Urban, *Resources, power and interregional interaction*, Springer1992. For archaeological applications, A. B. Knapp, Independence and Imperialism: politico-economic structures in the Bronze Age Levant, 83-98, A.B. Knapp, ed, 1992; J. L. Bintliff, Regional Survey, Demography, and the Rise of Complex Societies in the Ancient Aegean: Core-Periphery, Neo-Malthusian, and other Interpretive Models, 1-38,*Journal of Field Archaeology* 24 1997.

[16] J.L. Bintliff, History and Continental Approaches, 147-164, eds. R. A. Bentley, H. D. Maschner, *Handbook of Archaeological Theories*, Altamira Press 2008. Closely related to this approach are a group of Czech Archaeologists, E. Neustupny, ed. *Space in Prehistoric Bohemia,*Prague 1998; M. Godja, ed. *Archaeology, Ancient Landscape, Settlement dynamics and Non-destructive Archaeology*, 2004.

[17] C. Orton, I. Hodder, *Spatialanalysis in archaeology*, Cambridge 1976, K. Flannery ed, *The Early Mesoamerican village*, New York 1976; J.L. Bintliff, 23-28, 1997.

[18] C. Tilley, *A phenomenology of Landscape*, Oxford 1994, B. Bender ed. *Landscapes, politics and perspectives*, Berg 1993.

categories of architectural remains or the levels of urban settlement hierarchy. Standard architectural terms such as walls, floors, basilicas or terms such as a polis, a roman villa and a Medieval castle have a centuries-long usage in archaeology. But the majority of these apply to monumental, architectural remains, immediately recognized as known architectural or socio-historical phenomena. There lacked criteria for interpreting sites without visible architectural remains.The occasionally registered clusters of surface finds were roughly designated as small, open types of settlement. As explained in preceding paragraphs, traditional survey archaeology recognized and documented manifestations in the archaeological record as perceivable, isolated phenomena. Only with the application of intensive, systematic surveys did there arise the need to define quantitative criteria for site definition and categorization, always specific to the surveyed region. The task is far from simple, as sheer quantity and extent are not always direct indicators of the type and intensity of past human activity[19]. Not only because traces of human activities vary across and within different time-periods, but also because surface remains are further transformed under the work of the various post depositional factors. Moreover since the study focus is now on the entire surveyed area and since most of it is continuously covered with a carpet of broken pottery, it becomes also necessary to find criteria to distinguish between the site and the off-site; or inversely, to interpret the distribution of surface material outside the limits of the traditional categories of sites-settlements, cemeteries, farms etc[20]. These are clearly problems of interpretation that can only be adequately approached through accumulation and careful study of sufficient field data, separately for each studied region.

Another set of hotly debated issues, intrinsic to the methodology of regional, intensive surveys was the reliability and congruence of the surface data and consequently, the very limits of interpretation based on this type of data[21]. The very detailed and controlled surface coverage is the key advantage of intensive surveys; it is an attempt to register and map the smallest traces of past human activities in the studied area. But even if coverage is 100%, the map of past habitation practices is neither complete, nor equally representative for each period of human settlement in the studied area. The problem is two-fold: Is the surface record truly reflecting the amount and character of the buried material and how much of the perished landscapes has actually survived in the surface archaeological record[22]? These questions must be considered seriously before the final word is said on the history of settlement based on the surface record. Absence of certain periods or certain categories of sites can equally be explained as the result of destructive erosive forces, low visibility or as evidence of low population density and sparse permanent settlement. The problem is hardly trivial, because the preservation and visibility of the surface record vary not only region-wise, but also vary for chronologically and typologically different categories of surface artifacts. Thus the rate of preservation of surface remains is

[19] J. L. Bintliff et al. Classical farms, hidden prehistoric landscapes and Greek rural survey: a response and an update, 259-265, *Journal of Mediterranean Archaeology* 15, 2002; J. L. Bintliff, P. Howard, 57-67, 1999.

[20] J.F. Cherry, et al, Archaeological survey in an artifact rich landscape: a Middle Neolithic example from Nemea, 159-176, *American Journal of Archaeology* 92-2, 1988; J.; S. E. Alcock, J.F. Cherry, J.L. Davis, Intensive survey, Agricultural practice, and the Classical Landscape of Greece, 135-168, ed. I. Morris, *Classical Greece: Ancient Histories and modern Archaeologies*, Cambridge 1994; A.M. Snodgrass, The Archaeological aspect, 197-200, ed. I. Morris, 1994; J. L. Bintliff, The concepts of 'site' and 'offsite' archaeology in surface artifacts survey, 200-215, eds. M. Pasquinucci, F. Trément *Non-Destructive Techniques Applied to Landscape Archaeology*, Oxford 2000.

[21] J.F. Cherry, 483-489, eds. D. Rupp and D.W. Keller, 1983, contra R. Hope-Simpson, *Mycenaean Greece*, Noyes Publishers 1981, for instance.

[22] J. Bintliff, P. Howard, A. Snodgrass, The hidden landscape of prehistoric Greece, 139-168, *Journal of Mediterranean Archaeology* 12-2, 1999.

naturally lower as their age increases, simply because of the accumulative effect of post-depositional processes through longer periods of time[23]. However certain categories of surface material and in some cases, remains from entire archaeological periods are poorly represented in the surface record because of poor physical qualities or equally possible, due to decreased usage and discard rate[24]. It is thus rather difficult, if not impossible to project a general loss-rate for all archaeological periods. Each period is represented in the surface record to a degree limited by the intensity and longevity of habitation and the durability of material culture among other factors. The obvious problem is that these period and region-specific factors can only be known through the study of the truncated surface record; the above-posed questions can only be addressed through a range of empirical observations: On relations between visibility conditions, land usage (both seasonal and short-term) and the variations in the amount of documented material, on relations between the type and amounts of surface and sub-surface material, relations between conventional and other forms of traces of human presence and activity (element traces in soils, geo-magnetism)[25]. It is only certain that these sets of relations are highly variable and that consequently, there is always a gap of unknown expanse, separating the visible (surface) record and the (always presumed) original amount of discarded artifacts. It has to be underlined though that the latter is always in the hypothetical realm, regardless of whether one predicts the height of a building on the basis of the quantity of building rubble or extrapolates population levels on the basis of the amount and distribution of surface finds. In both cases the pre-depositional context is not lying somewhere hidden, awaiting its discovery but is gone for good.

The uncertainties of field data are not the sole property of intensive surveys. Excavation data are equally incomplete and difficult to interpret, (especially when the very small, unrepresentative sample of excavated data is considered) and yet, archaeologists do not seem to have refrained from far-reaching inferences in its interpretation[26]. Later in this chapter, under the subheading of field method, I'll return in a greater detail to this issue. For now it suffices to remark that the method of intensive, regional surveys has opened up a new dimension in the study of human settlement.The detailed data it offers may not be "complete", but they certainly offer a better, far more accurate picture of past human settlement than the one offered by the centuries of extensive, non-systematic surveys. Even after a generation of scholars employing this technique and interpreting its results, there still remains much to be learned about the potential and limits of intensive survey data. Perhaps the best, the most logical way of delineating the legitimate limits of a certain method of research is through continual practice and experiment.

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[23] J.L. Bintliff, A.M. Snodgrass, 137-138, 1985; J. F. Cherry et al, *Landscape archaeology as long-term history: northern Keos in the Cycladic Islands from earliest settlement until modern times*, Los Angeles 1991.

[24] J.L. Bintliff, E. Farinetti, Landscape and Early Farming: Settlement Dynamics in Central Greece, 665-674, *Geoarchaeology* 21 2006; M. Millett, Pottery: population or supply pattern? The Ager Tarraconensis approach, 18-26, eds. G. Barker, J. Lloyd, *Roman Landscapes: Archaeological surveys in the Mediterranean Region*, London 1991.

[25] W.G. Cavanagh, S. Hirst, C. Litton,Soil Phosphate, Site Boundaries and Change Point Analysis, 67-83, *Journal of Field Archaeology* 15 1988; G. Barker, 51-54, ed. G. Barker, 1994; J. L. Bintliff, E. Farinetti, et al. The Tanagra project: investigations at an ancient city and its countryside (2000-2002), 541-606, *Bulletin de Correspondence Hellènique* 2004-5;W. Cavanagh, C. Mee and P. James, et al. *The Laconia Rural Sites Project*, Athens 2005.

[26] J.F. Cherry, 382-385, eds. D. Keller, D.W. Rupp, 1983; A.M. Snodgrass, J.F. Cherry, On not digging up the past, 9-13, *The Cambridge Review* 109, 1988.

I.1.3 The principle aims of the survey, definition of the survey areas and a couple of old-new concepts

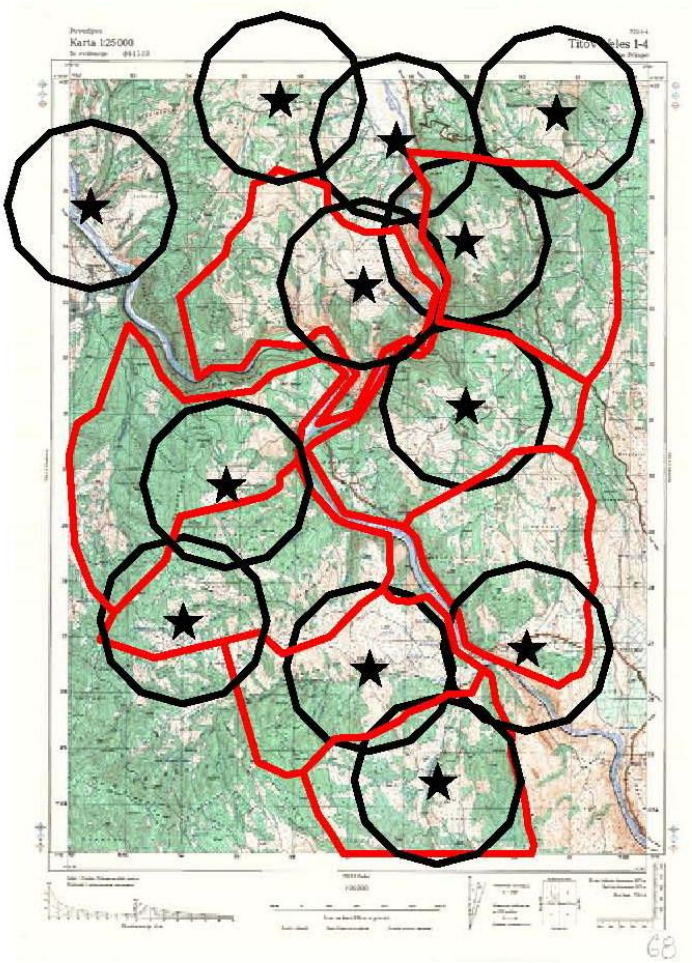
It seemed appropriate to insert the present study into a wider historical and theoretical context; to consider the situation with surveys and settlement studies in regional archaeology, as well as the context of contemporary tendencies in Mediterranean and world survey archaeology. Further references will be made throughout the text, as the present research is modeled after the regional survey projects in the Mediterranean. Limitations regarding financial means and expertise are naturally reflected in the very small scale of the survey, as in the limited focus of field research. It is therefore necessary to define research goals that can be realistically pursued with the present means. Some of these limitations require modifications and adjustments in the basic theoretical premises and particularly, in the practice of fieldwork.

The small size of the survey team, consisting of not more than 4 or 5 persons in the field, significantly narrowed the extent of the survey area. With a team of maximum five inexperienced field walkers it was clearly impossible to survey more than 1 to 1.5 square kilometers per year. This meant that the idea of surveying representative samples of certain types of terrains was out of the question[27]. The only option to obtain meaningful and interpretable results from an area of such a miniature scale was to ensure that the limits of the survey correspond to the narrower territory of at least a single settlement – a *Siedlungskammer* or a settlement niche in the terminology of early 20th century Anthropogeography[28]. A settlement niche is a geographic concept, particularly applicable to the circumstances of the fragmented discontinuous reliefs, very common for the lands surrounding the Mediterranean Basin. It refers to the settlement and its immediate physical surroundings, the parish or the village area in administrative terms and thus, it is to a certain degree equivalent to the more widespread concept of catchments. It is a simple but fascinating theoretical connection between the settlements' areas and the hydro and orographical units: the small lateral valleys, the little plateaus, the gentle mountain slopes, all present natural, pre-given human habitats, often displaying very clear topographic limits. Unlike the geometric methods employed by the New Geography and later by a certain number of archaeologists[29], the concept of the Siedlungskammer has the advantage of recognizing the natural divisions of the terrain. The ingeniousness of this concept was confirmed through simple observations on the locations of still standing, Late Ottoman-Early Modern villages in the geography of the Republic of Macedonia. The territories of most villages, at least those situated along the Middle Vardar Valley occupied the drainages of minor streams, flowing directly into the Vardar. In principle every stream featuring a more developed relief hosted a village of a minor or a medium size (mapI_3).

[27] Sampling has figured high on the agenda in almost all regional survey project, for obvious reasons, M.B. Schiffer, A.P. Sullivan, T.C. Klinger, The design of archaeological surveys, 1-28, *World Archaeology*, 10-1, 1978; J.F. Cherry, A Preliminary definition on site distribution on Melos, 16-23, eds. C. Renfrew, M. Wagstaff, *An Island Polity: the archaeology of exploitation on Melos*, Cambridge 1982; D. R. Keller, D.W. Rupp eds. 1983; J.L. Bintliff, A.M. Snodgrass, 129-130, 1985.

[28] J.L. Bintliff, 158-159, eds. R. A. Bentley & H. D. Maschner, 2008; for similar, though not identical concepts, E. Neustupný, 45-61, ed. E. Neustupný, 1998; M. Kuna, Surface artifact studies in the Czech Republic 29-44, eds. J. Bintliff, M. Kuna, N. Venclová, *The future of archaeological field survey in Europe*, Sheffield2000. For criticism see R.E. Blanton, Mediterranean myopia, 627-629, *Antiquity* 75, 2001.

[29] C. Vita-Finzi and E.S. Higgs, Prehistoric economy in the Mount Carmel area of Palestine: Site catchment analysis, 1-37, *Proceedings of the Prehistoric Society* 36, 1970; K.V. Flannery ed, 1976; summarized in B. Erdoğu, *The Prehistoric Settlement of Eastern Thrace*, Oxford 2005.



Map I_3: Section of the mid-Vardar Valley showing borders of topographic entities, red line and 1.5 km buffers, black circles, around existing settlements.

Their territories clearly correspond to the micro-hydrographic entities.Communication with the neighboring villages, not more than 4-5 kilometers away is possible via a limited number of points, usually mountain passes and small valley floors. It is thus possible to identify with a great ease the basic settlement units in the region of the Middle Vardar. As these are primarily natural micro-regional units, it seemed reasonable to believe that human settlement followed these frames throughout its history in this region. It was therefore decided to set the limits of the first survey area within the limits of one of these natural settlement chambers, hoping to discover at least some degree of settlement continuity. However the identified settlement chambers usually extend over an area of several or a dozen square kilometers, if the natural limits of the watershed are followed. As the entire village hinterland was too large for a complete, intensive coverage, it was necessary to further narrow the survey area, within the limits of the settlement chamber. This proved to be a minor difficulty, as only a smaller percentage of the village areas in the hilly country of the Middle Vardar presented flat or gently sloping terrains; the rest were mainly steep slopes or bare rocky ridges, where systematic field walking was technically impossible. It was further possible to define elements in these micro-regions that were most likely to host traces of past human settlement. When the territories of settlement chambers from a certain micro-region are looked at in greater details and compared, it

becomes possible to observe a number of repetitive components such as a central surface (hosting the settlement and the bulk of arable land), higher plateaus (usually, pastures and cultivated fields, but also locations of alternative or satellite settlement), the valley floor (gardens, watermills, but also communication and defenses), the dominant hilltops (military and religious installations) and so forth. All permanently inhabited settlement chambers in the Middle Vardar Valley display some sort of inner differentiation related to topographic, functional and symbolic divisions. Of course it is wrong to ignore the possibility of changes in this inner organization during the various periods of human settlement (for example, what one sees at present is clearly a deformed and contracted land-usage pattern dating to Late Ottoman-Early Modern times, the late 18th - early 20th century), but as these divisions are primarily of a topographic nature, it seems reasonable enough to expect a good deal of landscape and land-use stability, naturally leaving aside the major geomorphologic transformations. The idea is that within the usual territory of 10 to 15 square kilometers it is possible to distinguish between "central" and "marginal" surfaces and locations, on the basis of the physical configuration of the area and on the basis of the present day land-use.

One of the principle aims of the present study will be to explore the distribution of surface archaeological finds in relation to the observed – "anthropo-topographic" - fragmentation of the surveyed area. The changing locations of the focus of human habitation within the narrower settlement chamber will hopefully aid in the understanding of the inner dynamics of the settlement chamber: the changing of settlement and production foci, the changing importance of the local communication lines, even the changing limits of the entire settlement chamber[30]. Much is expected at least for later historical periods, the Late Roman through the Late Ottoman, from which more substantial remains can be observed on the surface. In this context it is a particular handicap that there lack published micro and messo-regional geomorphologic studies in the country.There is little interest and information about the potential of interdisciplinary regional studies, both among local archaeologists and environmental scientists. Geomorphologic and other environmental data are equally crucial for understanding the dynamics on a supra-settlement level and of the taphonomic processes in the surveyed areas. In the present study the local geo-pedological layer can barely be tied within the larger regional series and facies. It should be noted however that even on large-scale geologic maps, the correlations between the geo-pedologic layer and the actual land-use patterns are striking.

In a way the proposed approach goes a step further in theorizing the area of the settlement chamber (and landscape in general) as a fragmented, composite, but relatively integrated entity. In this perspective the territories of settlement chambers consist of a number of recurrent anthropo-topographic components: the settlement proper nested into certain physical features, the narrow valley floor with its small gardens and local pathways, the flat foothills and plateaus hosting the arable fields, to number only the most apparent ones. An anthropo-topographic component is a relief feature transformed and modified through a long-term, repetitive usage.It is assumed that the observed divisions of the terrain are primarily a response to the natural, topographic configuration. Just as a certain region is broken up into a number of naturally defined settlement niches, so the inner topographic fragmentation of the settlement chambers

[30] Cf. J.L. Bintliff, Archaeological survey of the Valley of the Muses and its significance for Beotian history, 193-224, eds. A. Hurst, A Schachter, *La montagne des Muses*, Geneva 1996.

antecedes and determines the anthropogenic divisions. As in so many other aspects nature offers archetypes for material culture forms and human behavior in general[31].

Adjusting to the limited means and potential of the present research, it was decided to survey and compare human settlement in two settlement chambers. We hoped to see if certain regularities can be observed in the long-term settlement dynamic. To ensure that there will be sufficient evidence on the surface, the limits of the first study area were drawn along the limits of the narrower territory of a still standing village, whose existence can be traced back into the Early Ottoman (and most likely, the Late Byzantine?) Period on the basis of the written evidence. The tactics gave results, thanks to the facts that in the first study area settlement dynamics comforted to the so called, restrictive mobility model: in most periods of human habitation history, the settlement proper was somewhere within a radius of one kilometer or less[32]. There were however considerable problems with this choice, which became apparent at the very beginning of fieldwork (the extreme variations in ground conditions between neighbouring fields) and especially later, during the analysis of the results (much of the surface material distribution had to be attributed to modern anthropogenic activities, while the surface was covered with a considerable layer of modern and Early Modern artifacts).

Therefore a different tactics was adopted in deciding on the location and the limits of the second survey area. Bearing in mind the settlement chamber concept and the peculiar overlapping between the basic settlement units and the topographic fragmentation on a regional level, it is possible to identify potential, but vacant settlement chambers within the limits of the general region and avoid the background noise created by present-day human activities. Obviously this approach is not without pre-assumptions. How to be sure that a certain valley is a potential settlement chamber? The only clue is offered by the size and the degree of complexity of the stream. In reality however it is impossible to put all hydrographic units in one of the two categories of spacious, developed valleys and small, inarticulate streams. Hydrographic units range from bare fissures, a couple of hundred meters long, to deep inaccessible ravines, to complex little valleys with terraces and even minor tributary streams.

Moreover the fairly isolated valley presents the basic micro-regional unit and basic settlement niche only in certain regions of the country, most prominently in the Mid-Vardar Valley. In other topographic settings, such as the extensive mountain plateaus or the large basins, there lack a pronounced hydrographical fragmentation of the region. These types of regions are usually drained by a single larger river, fed by small streams with undeveloped hydrography. As will be shown in these geographic conditions other types of topographic units take over the role of settlement loci. Various orographic units, river or lake terraces become the focus of human settlement. Although these micro-topographic units also feature more or less clear boundaries, they lack the physical integrity and the size of the "normal" settlement chamber, the small, isolated valley. Theoretically they correspond to the micro-topographic units that constitute the drainage basins along the Mid-Vardar. The micro-topographic units that constitute a larger plain or mountain plateau can accommodate a small or medium sized nucleated settlement, along with the fields and gardens in its immediate surroundings, but the full extent of the settlement's territory had to extend beyond the faint, micro-topographic boundaries. This circumstance has important implications, because the territorial boundaries between two neighbouring settlements

[31] A very similar theoretical approach has been explicated by J. Benesh, M. Zvelebil, A historical interactive landscape in the heart of Europe: the case of Bohemia, 73-93, ed. P. Ucko, R. Layton, *The archaeology and anthropology of landscape*, New York1994.

[32] B. Erdogu, 33-34, 2005.

cannot be drawn along the lines of natural, geographic divisions. Admittedly it is always possible to locate faint topographic barriers, often reinforced by anthropogenic alterations, such as marker stones or temples. However apart from the natural, physical barriers there are other constraining factors that determine the extent of settlement territories in regions lacking pronounced fragmentation into separate micro-regional units. It is these factors that are largely accounted for by concepts borrowed from the field of New Geography, the site-catchment analysis being amongst the most relevant for the present study[33]. The other significant consequence springing from the absence of clear topographic barriers (which appears to be irrelevant for the wider regional context of the first survey) is the high integrity of the settlement pattern in larger regional units. A change in the location of one major settlement will inevitably have effect on all other settlements sharing the same geographical unit. On the other hand in the well-defined, micro-regional entities along the Mid-Vardar Valley, it seems that the settlements' locations could shift within the limits of a settlement's chamber with no apparent effect on settlement location in the neighbouring chambers.

We'll return to these issues in the concluding chapter of this study. For the moment, it suffices to admit that largely unaware of the importance of some of the abovementioned concepts it was decided to situate the second survey area in a geographic context different from the one surrounding the first survey. Survey area number two was going to be a potential, but presently vacant settlement locus, situated on a larger Tertiary plain. In order to ensure comparability, it will be of a roughly equal size as the first survey area. The decision to conduct the second survey in a different geographic setting was instigated by two principle reasons. Firstly, these two small-scale survey projects introduced a new method of field survey for the regions along the Vardar Valley; hence inevitably one of the basic goals of the study was to explore their potential in geographic conditions different than those prevailing in the narrower Mediterranean belt. Knowing next to nothing about settlement patterns on a micro-regional scale in this part of the Balkan Peninsula, it seemed appropriate to focus the survey on areas featuring different environmental conditions. Secondly, we wanted to test the importance of micro-regional barriers in dictating the distribution of settlement, the significance of the concept of natural settlement chambers. For this purpose the first survey was going to cover a well-defined micro-region, while the second survey area, although coinciding with a separate micro-topographic entity will feature less accentuated topographic limits and consequently, a lesser degree of regional integrity.

The two survey areas are also supposed to differ in another respect. Study area number one is situated in an economically passive and administratively and politically, marginal region. The present day village of Sopot is situated in a region that lacked a major political, tribal or urban centre throughout known history. Even at present it stands on the very border of two, major administrative units, the territories of the cities of Skopje on the northwest and Veles on the south[34]. In contrast the second survey area is going to be chosen from the vacant settlement chambers situated in the immediate to medium vicinity of a known, major settlement and political centre, most likely near the Roman colony Scupi, in the Skopje Basin. The aim is to

[33] C. Vita-Finzi, E. Higgs, 1-37, 1970; K. Flannery, Empirical determination of Site Catchments in Oaxaca and Tehuacán, 103-116, ed. K. Flannery, 1976; J.L. Bintliff, Territorial behavior and the natural history of the Greek polis, 207-249, eds. E. Olshausen, H. Sonnabend, *Stuttgarter Kolloquium zur Historischen Geographie des Altertums*, Amsterdam1994.

[34] A close parallel is to be sought in the NemeaValley, on the Peloponnesus, J. Wright et al, The Nemea Valley Archaeological Project, a preliminary report, 579-659, *Hesperia* 59-3, 1990.

attempt an examination of the impact of the vicinity of major political and economic centres on settlement on the micro-regional level.

Among other topics, the impact of the changing political and socio-economic conditions on human settlement is surely one of the most challenging subjects of regional survey studies[35]. In essence it ought to be linked to the general problem of scale and reliability of intensive survey data. Over the past few decades it's been acknowledged that only through synthesis of data from several regions can intensive regional surveys hope to contribute to issues such as colonization, regional or trans-regional migration and deliberate demographic policies in general[36]. The last two decades have seen a growing concern of producing comparable, standardized data in intensive regional survey projects. A number of very successful attempts at synthesis of regional data confirmed the great potential of this approach, especially for addressing issues of wider socio-historical significance[37]. Does this automatically mean that by focusing on micro-regions, one is inevitably hampered in inferring conditions pertaining to the distant, socio-historical reality[38]? Surely the nameless local situations are not the best place to look for the agency of known historical factors and policies. It suffices to mention the problem of equifinality: observed changes in the extent and distribution of human habitation practices can equally be the result of deliberate and planned political acts or a consequence of some unknown global demographic tendencies or climatic changes or the initiative of the local community. (Needless to stress, ignorance on the subject of environmental history is again detrimental to the final analysis.) Focusing on certain micro-regions, it is impossible to reveal even a segment of the settlement hierarchy and the local dynamic can never be unambiguously related to external factors.

Evidently the questions of the effect of major socio-economic and demographic processes and events on micro-regional local trends are chiefly beyond the scope of this study. In the end however, it will be necessary to try and insert the local developments into a broader regional context. It has to be remembered that some of these issues have been studied by survey archaeologists working in this region. As explained in the previous section, much of the country's ancient topography has been illuminated. The major urban centres of Antiquity and the Middle Ages are located and many have been subjected to decades-long systematic excavations. This will allow us to position the survey areas in relation to known larger settlements, political and administrative boundaries and major communication lines. In many regions of the country, especially those along the Vardar Valley, major archaeological monuments (fortifications, prehistoric mounds) have long since been put on the archaeological map. Finally, during the last several decades, modern construction and mechanized ploughing has brought to light a large number of open settlements or necropoleis from various time-periods. Although only a very small segment of this archaeological evidence has received proper publication and analysis, it will hopefully help establish at least a vague connection between the local and regional

[35] C. Renfrew, M. Wagstaff, eds. *An Island Polity: The Archaeology of Exploitation on Melos*, Cambridge 1982; A. B. Knapp ed. 78-93, 1992; S.E. Alcock, *Graecia Capta: The Landscapes of Roman Greece*, Cambridge 1993; J.L. Bintliff, 1-38, 1997; J. Wiseman, K. Zachos ed, Landscape Archaeology in southern Epirus, Greece, vol. I, *Hesperia Supplements* 2003.

[36] P. Attema, Two challenges for Landscape Archaeology, 18-26, eds. P. Attema et al, *New developments in Italian Landscape Archaeology*, Oxford 2002; S.E. Alcock, J.F. Cherry eds. *Side-by-side survey: comparative regional studies in the Mediterranean World*, Oxford 2004.

[37] For example the Nemea Valley Survey, J. Wright et al. 579-675, 1990; S.E. Alcock, Archaeology and imperialism: Roman Expansion and the Greek City, 87-135, *Journal of Mediterranean Archaeology* 2, 1989; J.L. Bintliff, 1997.

[38] R.E. Blanton, 629, 2001.

developments. As pointed out, it is at the micro-region level where local archaeology is most deficient in systematically gathered evidence. At a certain point of time it will be necessary to shift the research focus on the lowest tier of settlement hierarchy. The present research is barely beginning to fill-in this gap in the archaeological atlas of the Republic of Macedonia.

In the end, studying developments on a local level is in itself a legitimate subject of research. This is especially true in a situation where literally nothing is known about the basic forms of human settlement in the countryside, the small village or hamlet. Even when observed in isolation from the broader regional context, the micro-location and the size of a settlement reflect strategies of adaptations to certain types of environments, whose relevance exceeds the micro-regional limits. Preference for certain topographic units, dispersion or nucleation and the settlement size are closely related to local economic and social organization. Not being limited to a specific time-period, the study will attempt to reveal the entire history of human settlement in the survey areas. Thus local processes of displacement, contraction and expansion can be observed in the long-run, hopefully underlying persistent tendencies and limitations or repetitive cycles of dispersion and nucleation, growth and decline[39]. In this perspective, local long-term trends are of no lesser significance than regional or supra-regional developments.

These broad theoretical positions have set the basic course of the study. In their greater part, they are borrowed from the predominant theoretical strand in Mediterranean Landscape Archaeology and ultimately, from other related disciplines. It is now time to turn to the methodology of field work. Naturally the study presented here strives to follow, at least in their basic principles, the current regional surveys in the Mediterranean area. But even here one can predict a number of inevitable modifications, not simply because of the small-scale of the present project, but because of the specific conditions in the land of the Mid-Vardar. There are a number of difficult problems associated either with the planning and execution of the survey or with the delicate analysis of the results. It is on this point that the richness and complexity of the survey data become truly apparent. This is the realm where survey archaeology has a plenty of room to experiment, suggest its own interpretative models and build a genuine theory. Conversely it is also the stage where this method and approach reveals its deepest weaknesses and is at risk of producing mistaken, incongruent data and of giving misleading, essentially incorrect interpretations.

[39] J.L. Bintliff, ed.1992; A.B. Knapp, 83-98, ed. A.B. Knapp, 1993; G. Barker, 1-16, ed. G. Barker, 1995.

I.2 Method of fieldwork

I.2.1 Division of the study areas into field walking blocks, the factor of the field block's size

As in all modern surveys, one of the basic goals of the present study is to measure the quantity of surface material in the study areas and to suggest thresholds in the density of surface finds for the site and the off-site. It was to be done regardless of the known archaeological sites in the areas, of all pre-knowledge about the archaeology of the micro-regions studied. Since nothing is known about the quantity and distribution of surface material on the various categories of archaeological sites in the country, the areas of the known forts, of the Late Ottoman-Early Modern villages were surveyed with equal intensity as the open fields. The imperative was to achieve a maximum coverage, as far as ground conditions allowed. Considering the smallness of the overall study area, there was a natural strive to increase the survey intensity.

The surveyed territories were divided into unequal field walking units or field blocks, using the existing divisions of the terrain into arable parcels, stretches defined by the micro-relief or the local vegetation patterns[40]. These divisions are easy to observe and identify on 1: 2500 horizontal geodetic maps and especially on rectified aerial or satellite photographs. It was thus very easy to navigate through the field blocks and the survey process went relatively swiftly: a team of four covered up to 20 field blocks daily, each measuring about 2500 square meters on average. In the field the block was identified, numerated and field walkers were set at roughly equal distances of about 10 meters. Only when the parcel was wider than 50 meters and more than 70-80 meters long (larger than 4 000 square meters) was it divided either along the short or the long axis[41].

Using the ready divisions of the terrains greatly accelerated the course of fieldwork, but complicated matters in the immediate analysis of the quantification results. In the second survey featuring much gentler relief, the size of the field walking unit was a lesser problem. But in the hilly or extremely fragmented landscape of the first survey area the disproportion in the size of the various field blocks was so great, it was thought it will severely bias the computer estimates. Narrow valley floors or small isolated terraces often measured less than 1000 square meters and stood isolated, not bordering on any other field block of a similar or average size (map I_4). It was thus impossible to join them with neighboring field blocks, without sacrificing their integrity as separate depositional units. When field blocks were compared on the basis of absolute counts of pottery fragments, the smaller field blocks, even when featuring large amounts of pottery on the surface, ranked average or even lower than average. On the other hand when field blocks were compared on the basis of artifact density, the same units ranked far ahead of the field blocks with average size and quantity of surface material. The principle problem was to determine the blocks' area as a factor in the distribution of surface finds. But this is almost

[40] Cf. J.F. Cherry, et al, 22-23, 1991.

[41] For comparison, the average size of large field blocks or transects in the regional survey projects of the Mediterranean vary from 0.2 hectares, to as much as one or two square kilometers; D. Keller, D.W. Rupp, eds. 1983; J.L. Bintliff, A.M. Snodgrass, 128-136, 1985; M.H. Jameson et al, *A Greek Countryside: The Argolide from Prehistory to the Present Day*, Stanford 1994; C. Mee, H. Forbes, Survey Methodology, 33-41, eds C. Mee, H. Forbes, *A rough and rocky place: The landscape and settlement history of the Methana Peninsula, Greece*, Liverpool 1997; W.R. Caraher, D. Nakassis, D.K. Pettegrew, Siteless Survey and Intensive Data Collection in an Artifact-rich Environment: Case Studies from the Eastern Corinthia, Greece, 7-43, *Journal of Mediterranean Archaeology* 19-1, 2006.

impossible as there is always a number of other factors, (visibility, variations in the intensity of survey, taphonomic processes and others) simultaneously affecting the distribution of surface finds. Some of these factors could in fact weigh far more than the size of the field blocks' areas.

Map I_4: 1: 2 500 vertical map of the first survey area with the field walking units

The experience of this survey project showed that substantial modifications of the survey results in attempting to eliminate certain biases are actually more likely to confuse than to clarify the picture. In the case of the field blocks' unequal size, radical adjustments in the initial divisions of the study area will only blur the actual distribution of surface finds, particularly in fragmented landscapes, such as the first survey area. This is because each of the parceled units of land surrounding the village has existed independently for decades.It had a specific history of usage and its own, discrete history of deposition and clearance. Imposing arbitrary divisions over the pre-existing ones will not only make field walking awkward and on many places impossible, but it will greatly distort the original distribution pattern of the surface finds.

Because of the nature of the fieldwork method, one often forgets that a certain landscape is never a bare and compact area. The present natural or artificial divisions are more than arbitrary and in a number of cases, they are not so recent to simply see them as an obstacle hiding the original exploitation pattern. These are the constitutive components of the landscape;

they make up its real anthropo-geography and model the map of surface material distribution[42]. An old or presently cultivated vineyard for example, is more than an arbitrarily enclosed surface.It's become an integral entity by means of repetitive, long-term usage, deposition and clearance practices. Analogous to the way in which the specific parts of the settlement chamber are transformed into various anthropo-topographic elements: a hilltop becomes a citadel, old terraces are repaired and the ancient field network revived or transformed into a settlement and so forth. One looks in vain for an ideal, blank territory underneath. The landscape is essentially discontinuous and this is inevitably reflected in the distribution of the surface finds. Consequently the patterns revealed usually appear irregular and unpredictable, provoking the researcher to believe that the presently existing divisions or the variable size of the parcels in particular, mask a regular and continuous distribution of surface artifacts. Modifications in the shape or the size of the field walking units are therefore warranted only for a few extreme instances, where it is obvious that the size of the field block's area greatly affects the number of surface finds. But insisting on field blocks of equal size in the conditions of the first survey area, disregarding the actual fragmentation of the terrain is technically difficult and methodically wrong.

I.2.2 The field block and the individual transect, problems of varying survey intensity

The field block was obviously going to be the basic quantitative unit of the study. Conditions regarding vegetation, soils and exploitation varied greatly, even between neighboring field blocks and this was yet another reason why the given division of the area were followed. These conditions were in fact barely equal within the limits of a single field. Each field block was surveyed by between one and four field walkers, depending on its width. The distance between neighboring field walkers was decided to vary between 7 and 12 meters. The lower limit is slightly above the maximum sight range of the field walker in optimal conditions. On ground with good surface visibility and low artifact density, the surveyors reported finds up to five meters on both sides of their trajectories! On fields with lower visibility or greater quantity of surface finds, the sight range was narrowed to the standard 1-2 meters on both sides of the surveyors' trajectories[43]. Thus in principle, each field block was longitudinally subdivided into two, three or four sections, called individual transects. The individual transects were labeled with the surveyor's personal name and the number of the field walking unit and the artifact counts and other recorded parameters for each individual transect were kept separate (map I_5).

[42] J. Benesh, M. Zvelebil, 73-78, eds. P. Ucko, R. Layton, 1994; J.L. Bintliff et al, Deconstructing "the sense of place"? Settlement systems, field survey and the historic record: a case study from Central Greece, 123-149, *Proceedings of the Prehistoric Society* 66, 2000.

[43] J.L. Bintliff, A.M. Snodgrass, 130, 1985; C. Mee, H. Forbes, 36, eds. C. Mee, H. Forbes, 1997.

Map I_5: Field blocks and pottery counts per individual transects.

Although complicating the data base, this practice was found useful for a number of reasons. First, it became quickly obvious that there were going to be differences in the distribution of surface finds within every field block and particularly on those with lower artifact densities[44]. Keeping the records for the individual transects separate revealed the structure of the distribution of surface finds on an individual field block level. Other variations concerning visibility conditions and usage were also recorded for every individual transect. It enabled integration of the visibility factor on a level of individual transect, which proved far more accurate than summing up the counts for the entire field block and then correcting for the visibility factor. Later, during the phase of surface material collection, individual transects were used as collection units, especially on field blocks with low densities of surface finds. Finally, the individual transects counts demonstrated the abilities of each field walker in detecting and recognizing surface material. This source of bias was checked at the beginning of each survey campaign, by the means of a little experiment: the same field walking unit was surveyed repeatedly, each time changing the field walkers' trajectories. Maintaining the same team over the course of the survey campaign, it was possible to determine the variable ability of each team member of detecting surface artifacts.

The same set of parameters was recorded for both the individual transects and the field walking blocks, the latter being merely cumulative of the individual transects' records: number of ceramic fragments, building material, bones and metal or glass artifacts, the presence/absence of building remains or modern debris and finally, the ground visibility conditions[45]. In principle

[44] M.B. Schiffer, A.P. Sullivan, T.C. Klinger, 4-6, 1978.

[45] Usually a number of other parameters are recorded in the large regional survey project in the Mediterranean, J.F. Cherry, et al, 162-163, 1988; C. Mee, H. Forbes, 34-5, eds. C. Mee, H. Forbes, 1997; W. Caraher et al, 10-13, 2006.

the field walking block is but a spatial frame for the individual transects. The sum of surface finds per field walking block is the sum of the counts on individual transects; its ground visibility is the average of the ground visibility values for the individual transects etc. But by means of individual transects one is never covering 100% of the field block area. Each field walker covers only a sample of his/her transects and thus the sum of the counts per individual transects are always showing only a portion of the total amount of surface finds per field unit (roughly between 25 and 30%)[46]. This is the coverage parameter.Ina way it is an index of the degree of survey intensity. Again it all depends on the ground conditions, visibility and the actual amount of material on the surface. The more surface finds and higher the visibility, the smaller the portion counted by individual field walkers. Thus even if surveyors were equally spaced on all field blocks, the intensity of survey would not have been equal over the various sections of the study areas. This is why it was of a great imperative to impose a fixed limit on the sight-range of individual field walkers, regardless of the surface conditions. Failing to do so in the first survey area created a certain number of problems in analyzing the large block survey results and as a consequence, in deciding the focus of the regular grid survey. Most typically, on field units where the large block survey recorded higher artifact densities, the total collection by grid units revealed only average amounts of surface material and vice versa; on field units featuring artifact densities below the survey's average, the collection by regular grid units revealed some of the highest artifact concentrations in the survey area. As discussed further in the text, other factors can also contribute to these discrepancies. It is nevertheless clear that on some field blocks in the first survey area, where the large block or the transect survey recorded artifact densities higher than the survey's average, the results were biased due to the fluctuating sight-range of the individual surveyor. More precisely, the large block survey underestimated the real quantity of surface material on field units characterized by higher artifact density and lower visibility (including vineyards, which inevitably limited the sight-range to the more usual 1.5-2 meters on both sides of the surveyor's trajectory).

Luckily the relatively small number of field walking units and the close familiarity with the local conditions allowed us to compensate against this source of bias in the first survey. The entire area was essentially resurveyed during the collections of the surface material the following year and during the process, we managed to correct some of the results of the quantification campaign. It was realized that the greatest overestimates (widest sight-range) were made on field units with average amounts of surface finds and good visibility conditions, mostly fields with larger amount of off-site debris situated near the modern village or by the local roads. At the other extreme, the most underestimated field units (where the sight range was normal) were fields with larger concentrations of freshly unearthed material and vineyards in particular. In the second survey the sight-range of the individual field walker was always limited to 1.5-2 meters on both sides of the trajectory. Although inevitably there were minor discrepancies between the transect and the grid surveys, the quantification results were in general much more accurate.

I.2.3 The factor of ground visibility

The most obvious source of bias in intensive surveys is the ground visibility condition. In reality ground visibility is affected by a number of factors (type and density of the vegetation

[46] J.L. Bintliff, A.M. Snodgrass, 133, 1985; C. Mee, H. Forbes, 36, eds. C. Mee, H. Forbes, 1997.

cover, modern rubbish disposal, depth of ploughing and so forth), but normally this factor is related to the vegetation cover[47]. In most regions the type and the density of vegetation varies through different parts of the landscape and through the yearly seasons. In some instances the vegetation cover can greatly reduce the amount of finds visible on the surface and in others it completely covers the surface making systematic surveying completely pointless. The extreme fragmentation of the landscape, particularly in the first study area featuring a pastiche of cultivated and abandoned, overgrown fields, required a close control over the vegetation type and density on every individual transect. The scale of one to ten applied in most survey projects in Greece to express the ground visibility factor was found too wide for the limited varieties of ground encountered during the two survey campaigns. Initially a narrower scale was applied, ranking ground visibility from 1 (standing for best visibility, plowed or cleared fields) to 4 (worst visibility where survey was feasible, abandoned fields with tall grasses and scrubs, with occasional bare spots). It was soon discovered that it is going to be very difficult to standardize the criteria for grading ground visibility on the field walking forms. The agreed grading scheme was often misapplied (e.g. fields with rare scrubs and 50% bare surface were sometimes graded 3 or 4) and more importantly, the surveyors had difficulties in agreeing on a unified perception of this parameter. Participants in the survey were therefore asked to give a descriptive record of the ground visibility conditions for every field walking unit. These were later translated into numeric variables by the author. These records were also found useful for inferring current land use and vegetation, though the very small size of the survey area and the personal involvement in field walking ensured that current conditions on each field were well remembered.

Following the usual method of correcting for the ground visibility factor[48], the number of counted surface finds was simply multiplied with an integer expressing the visibility factor value. The results however were not always satisfactory. On field blocks with high or average number of surface finds and covered with sparse, short grasses, (ground visibility factor of 2) doubling the artifact counts often produced over-inflated figures. The reason was apparent: the difference in ground visibility conditions between these and recently plowed and cleared fields (ground visibility factor of 1) was surely less than 100%, although such is the assumption behind this simple formula. At the other end of the scale on fallow or abandoned fields covered with dense and tall vegetation, the number of surface finds was regularly so low that even when multiplied by a visibility factor of 8, the corrected figures still remained far below the counts for the neighbouring fields with better ground conditions. As with the problem of the unequal size of the field walking units, it proved very difficult to isolate the impact of the visibility factor. And the greater danger lurked not in underestimating ground visibility conditions, but in overestimating them, in confusing the visibility conditions and the actual incidence of surface finds[49]. As with the field blocks' varying size, ground visibility must not become a determinant of the incidence of surface finds.

Correcting for the factor of ground visibility is indeed necessary and useful, but only as long as it strictly addresses the objective conditions of ground visibility. The simple scale of integral numbers, ranging from one to four didn't express adequately the finely nuanced differences in ground visibility conditions between the different categories of cultivated fields. On the other extreme, its range proved too limited to express the ground visibility factor on

[47] M.B. Schiffer et al, 7-8, 1978; D. R. Keller, D.W. Rupp eds, 59-72, 1983; T.W. Gallant, "Background noise" and site definition: A contribution to survey methodology, 403-418,*Journal of Field Archaeology* 13-4, 1986.

[48] J.L. Bintliff, A.M. Snodgrass, 131 1985.

[49] J.F. Cherry, 384, eds. D.R. Keller, D.W. Rupp, 1983.

fallow and abandoned fields. In other words, the sharp discontinuum of ground visibility conditions in the study area couldn't be adequately expressed through a continuous scale of integers. Fearing that the ground visibility conditions were becoming overemphasized, it was decided to apply a slightly different method. Instead of categorizing ground visibility conditions into discrete classes, based on impressions or vegetation types and expressed through integers, it was decided to roughly grade the percentage of the surveyed surfaces covered with vegetation. Thus a field block with best ground visibility (e.g. cleared field) had 0% vegetation cover, those featuring slightly worse visibility (cultivated fields with turf and sparse grasses or vineyards) had 25% vegetation cover, fields with medium visibility (fields with stubbles or meadows with short grasses) featured 50% vegetation cover and fields with low ground visibility (not cultivated stretches, fields dotted with sparse scrubs or trees) had 75% of the surface covered with vegetation. Fields with lowest ground visibility (completely overgrown, abandoned parcels) had 100% vegetation cover and the number of counted artifacts in these instances was doubled.In all other conditions the number of counted artifacts was increased by 25, 50 or 75 percents, respectively[50].

In effect this model neatly expressed the fine differences between the various types of cultivated surfaces, but failed to express the seemingly vast difference between the categories of cultivated and abandoned fields. As has been suggested, in conditions of very low ground visibility it is impossible to arrive at a realistic estimate of the true amount of surface material using this or similar methods[51]. Understandably the final aim of these corrections is to produce relative figures for the amounts of surface material on fields with variable visibility conditions rather than to predict absolute quantities.

I.2.4 The impact of modern human activities

Unlike the factors discussed previously, the effects of modern human agency can hardly be translated into a simple numeric variable. Naturally these effects vary across different study areas and they can merely be observed and described in their specifics. For now it suffices to mention the most common effects of modern human agency and roughly assess their potential impact on the distribution of surface finds[52].

When discussing ground visibility conditions, it was noted how vegetation cover is not the only determinant of ground visibility. Returning to fields featuring high densities of surface finds for the purpose of artifact collection, on a number of occasions it was noted that even though the field was recently ploughed, there were hardly any artifacts visible on the surface. Despite the fact that a higher than average amount of artifacts was registered on the surface in the quantification campaign, immediately after the ploughing, the greater portion of the surface material was deeply embedded in large, heavy soil lumps. Thus although there was no vegetation cover on these fields, the visibility of surface artifacts was almost completely minimized after deep ploughing. Luckily the quantification of surface material took place in an agriculturally inactive season, when most fields have been ploughed for at least a month or crops were harvested and the stubble cleared. This finding warns us against surveying fields in different

[50]Cf. B. Erdogu,10, 2005, though the author has retained the scale of integers ranging from one to ten.

[51] J.L. Bintliff, 204, eds. M. Pasquinucci, F. Trément, 2000.

[52] D.R. Keller, D.W. Rupp, eds. 59-62, 1983; B. Slapšak, The 1982-1986 Ager Pharensis survey. Potentials and limitations of "wall survey" in karstic environments, 145-149, eds. J.C. Chapman, et al. *Recent developments in Yugoslav archaeology*, Oxford 1988; M.H. Jameson et al, 222-223, 1994.

stages of cultivation or surveying over a period of more than one agricultural season. To be more precise, it is not advisable to put together on the same density map the counts made over different agricultural seasons.

Closely related and equally disturbing was the factor of the varying depth of the topsoil. Its significance didn't become absolutely clear until the second stage of the survey was underway or the collection of the surface material by regular grids. On a number of occasions, while closely surveying locations with high quantities of surface finds, it was discovered that it is impossible to follow the extent of the suspected sites in their entirety. Crossing over to a neighbouring parcel, the material suddenly disappeared from the surface, although it was found in great quantities only a few meters away. There were no doubts that the cluster of surface finds continued to spread over the neighbouring parcel but there was simply no evidence on the surface, not a single artifact from the related time-period; as if the entire surface was cemented or covered by a modern building. The cause behind the problem was fairly trivial, though its implications can be quite disconcerting. We quickly realized that the surface on which artifacts were registered stood twenty centimeters to half a meter lower than the neighbouring, "sterile" surface. There was also a difference in land-use: the former was a deeply ploughed field, while the latter featured a house with gardens and animal huts. The problem recurred on all locations where there was a sudden breach in land-uses; essentially, whenever surfaces exposed at different depths meet. Field blocks used as house-yards or gardens, not cultivated or ploughed with hand tools or light machines tended to feature more Late Ottoman and Early Modern artifacts, while most artifacts dating to earlier human activities appeared on deeply ploughed fields or on vineyards. While the vegetation cover, unless extremely dense and impassible could not completely mask all traces of surface material, the different land use leaves absolutely no base to roughly project the amount of surface material in normal visibility conditions.

To complicate matters further, the usually observed correlation between the occurrence of surface finds and ground visibility is not simply technical. Normally fields with best ground visibility are the presently cultivated ones and the great number of artifacts usually encountered on cultivated field blocks is not simply a result of the good ground visibility conditions, but is simply related to the fact that the local peasants tend to bring unsorted manure on the most intensively cultivated surfaces.[53]However there wasn't a strict rule and in neither of the two survey areas could we observe a clear relation between the presence of debris from the recent centuries. It wasn't rare to discover cultivated fields that were nearly sterile. More to the point, fields with low visibility, usually those abandoned or left fallow, lacked the obtrusive carpet of Late Ottoman-Early Modern finds not because of the unfavourable ground conditions, but because manure was applied less frequently.

On certain locations, especially along local roads and in small ravines or valleys, the amount of modern trash on the surface was such that it completely covered traces of older activities or heavily distorted the survey record[54]. Particularly inconvenient was the case of modern brick and tile, easily blending with the ceramic material from earlier periods and

[53] I could find only a few, sporadic accounts on Early Modern fertilizing practices in the region, although it was confirmed by local farmers, S. Tomić, Skopska Crna Gora, 409-509, *Srpski Etnografski Zbornik* III 1905. On manuring and its significance for landscape archaeology see, J.L. Bintliff, A.M. Snodgrass, 506-510, 1988; T. J. Wilkinson, 31-46, 1989; S.E. Alcock et al, 137-170,ed. I. Morris, 1994; C. Mee, H, Forbes, 40, eds. C. Mee, H, Forbes, 1997; see also H. Forbes, Lost souls: Ethnographic observations on manuring practices in a Mediterranean community, 159-172, ed. R. Jones, *Manure Matters: Historical, Archaeological and Ethnographic Perspectives*, Ashgate 2012.

[54] Cf. H. Forbes, 162, ed. R. Jones, 2012.

consequently, inflating the survey counts. The large, modern brick breaks into hundreds of tiny pieces that are difficult to recognize unless picked up and examined. Therefore a graph asking the surveyor to indicate the presence or absence of modern rubbish and building material was added in the field walking forms.

Another group of modern human activities that can distort the distribution of surface finds are modifications in the relief, whether for the purpose of securing new arable land or for building modern constructions. The most typical, especially for hilly regions prone to soil erosion is the terracing for agricultural purposes. Roads carved in the gentle slopes produce an almost identical effect. Roads and agricultural terraces act as little barriers, retaining all surface material washed by erosion. The result became evident during the large block survey: the amount of surface material suddenly rose by several times on individual transects that were nearest to the terrace edge. Unless these anthropogenic features date to earlier periods, the original distribution of surface material is irretrievably lost on these locations.

Modern development affects the original distribution of surface material in a number of other ways. Whenever surveying terrains in the close vicinity of modern settlements one is inevitably faced with the problem of the rapidly changing micro-relief. The use of heavy ploughing machinery levels the cultivated terrain, erasing traces of past human activities along with the features of the original micro-relief: low ridges and hillocks are literarily wiped out, while ravines and small valleys are completely filled with sediments torn from elsewhere. Entire sites of minor size can easily be removed by bulldozers and the material used to prepare terraces for new buildings or roads. Recently on large farming estates, owners insist on removing all inorganic waste from the fields and one often finds large quantities of archaeological material thrown along the edges of the fields, along with stones and other waste[55].

Ultimately intensive modern development results in a complete destruction of all traces of earlier human activity or at best, leaves the archaeological record in a badly truncated condition, dislocated from its original context and location. Needless to say it is very difficult if not impossible to survey in such conditions. Thankfully both study areas have so far escaped the spread of modern constructions; the largest anthropogenic feature of the studied landscapes is the modern highway in the first study area, covering not more than a 25 meters wide tract. Heavy agricultural machinery and building of modern houses is also very limited. In fact the opposite was the case, at least for the first survey area. The lack of extensive agricultural exploitation, the large areas occupied by overgrown, abandoned fields presented a greater problem for the survey than the excesses of modern development. In this respect the second survey area featured much more favorable ground visibility conditions.

It's impossible to translate the impact of modern human activities into a simple numeric variable as was the case with the parameters discussed in the preceding sections. The range of modern day human activities is wide and varied and their impact is specific not merely to certain landscapes, but to various parts of the same landscape. This group of factors operates simultaneously with the natural conditions and the specifics of fieldwork, sometimes reinforcing, sometimes counterbalancing their effects. It is therefore very difficult to clearly distinguish the work of each of the relevant conditions and predict its impact on the distribution of the surface material. But unlike the ground visibility conditions or the degree of coverage, present-day human activities are not merely distorting the surface archaeological record, they are utterly destroying it. Because of their specificity and uniqueness, the impact of present day human activities can only be assessed idiosyncratically, case by case.

[55] B. Slapšak, 46, eds. J. Chapman, et al, 1988. M.H. Jameson, et al, 218, 1994.

I.2.5 Categories of counted material, other types of field documentation

The principle study subject of intensive field surveys is the surface material. This is a rather broad category and technically it includes all traces of past (and recent) human activities visible on the surface. The results of all survey projects are to a certain degree shaped by the way in which various categories of surface material are defined. It was therefore deemed important to briefly present the categories of surface material used in this survey. As with the estimation of the visibility factor or the degree of intensity, a couple of modifications were made in the survey's course. The way in which one defines categories of surface material also affects the type of field documentation.

In principle there are always two broad categories of surface material: quantifiable and non-quantifiable types of finds.Our primary aim for this study was the first component, but we also tried to make field records of the architectural remains and earthworks. Although seemingly complementary and compatible, the studies of these two components are not always easy to combine[56]. Particularly in projects with limited funds and expertise, compromises are often inevitable.

At the beginning of the survey in the first study area, four categories of quantifiable surface finds were listed: ceramic vessel fragments, ceramic building material, bone fragments and a composite category of metal/glass/flint artifacts (table I_1). After only a few days of fieldwork the first modification was made: tile and brick, along with other types of building material (mud-brick, hewn stone) were moved to the non-quantifiable category of finds. Participants in the survey were asked to simply indicate the presence of building material, as it became clear that most had difficulties in distinguishing tile or even brick fragments from coarse pottery. Similarly hewn stone blocks were often confused with natural rock. Counting this category of material would have naturally produced nothing but confusion. In this respect the small size of the survey team turned to be advantageous, because it was possible to individually inspect all finds collected by the survey team.

TableI_1: The field walking forms

Field block no.	Pottery fragments	Build. Material y/n.	Build. Remains y/n	one	etal	lass	Modern rubbish y/n	Vegetation and land use

No major problems were observed in the quantification of bone and metal or glass artifacts. On a number of occasions field walkers were confused by the occurrence of both metal and glass artifacts and bones amidst the piles of modern debris, but this was a purely terminological problem.These were mostly modern artifacts and belonged to the non-quantifiable

[56] In this respect exemplary are the surveys of the towns of Phlius, by S.E. Alcock, Urban survey and the city of Phlius, 421-463, *Hesperia* 60-4 1991; and the cities surveyed in the Boeotia survey, J.L. Bintliff, A.M. Snodgrass, Mediterranean survey and the city, 57-71, *Antiquity* 62, 1988; J.L. Bintliff, B. Slapšak, The Leiden-Ljubljana Ancient Cities of Boeotia Project: season 2006, 15-27, *Pharos* 14, 2007.

category of modern debris. A source of greater concern at least in the early phase of fieldwork, was the conspicuous absence of this type of finds in the individual transects records. It was feared that focused on the most prevalent category of surface finds, the pottery fragments, field walkers would unwillingly miss the more isolated and often more concealed metal or glass artifacts. However in the later phase of fieldwork, when total collection of surface material was carried out, the almost complete absence of these categories of finds was confirmed. Isolated bone fragments, mostly sheep were slightly more numerous. The sub-category of flint was quickly dropped from the list, as we lacked the expertise to recognize it[57].

Pottery fragments are usually the predominant category of surface finds in all surveys in the Mediterranean world. It is by far the most numerous type of surface material and most often, it is the most characteristic one. It is therefore reasonable to expect that this category of finds will be overemphasized at the expense of other categories, though during the later phase of fieldwork, it turned out that the effects of this bias were not as detrimental as was initially thought. Far more problematic was the uneven detection of the various classes of pottery fragments[58]. The color and the texture of the fragments appear to be the decisive factors. Participants in the field survey were able to spot and recognize red and especially glazed pottery with great ease, even in unfavorable visibility conditions. Grey or brownish ware, fired on lower temperatures was on the other hand often missed, particularly on freshly ploughed surfaces. This created considerable difficulties, the significance of which was realized only in the later phase of fieldwork. On a certain number of sites in both survey areas, only after total systematic collection of surface material did the full extent of brownish and grayish ware become truly apparent.

The non-quantifiable category of surface finds included, besides building material, *in situ* traces of building remains (houses, sepulchral objects, terraces and fortification walls) and modern debris. Prior to the first survey campaign there was a doubt as to whether we should attempt to quantify individual building remains, but it quickly became clear that this would achieve little in terms of enriching the data gathered, but even more importantly in practice, it often proved very difficult to count building traces as separate, individual units. For instance, it was impossible to confidently say how many tumuli were still visible on the ground in the large necropolis, stretching along the eastern border of the first study area without actually clearing the top layer and even the loose stones in-between the tumuli. The mounds were often built one against another and in most instances oak trees were growing out of the tumular mass. Similar problems were encountered during the survey of the area occupied by the modern village houses and its cemetery. It was almost impossible to count all individual tombs in the village cemetery because the cemetery area was not expanded, but there were either multiple interments in single constructions or new tombs were dug in the narrow space between the existing tombs. Most building remains in the study areas had undergone radical transformations or were almost completely obliterated. A good, traditional documentation with precise ground-plan sketches and photographs would've consumed a large amount of time. Instead their presence was simply indicated on the field walking forms, alongside a general identification (e.g. a tomb, a building). Later in the campaign, the related field blocks were re-visited and either individual architectural

[57] In the Boeotia Survey Project a flint specialist was employed and assigned to count only stone artifacts, walking transects parallel to the main team; J. Bintliff, P. Howard, A. Snodgrass, 139-168, 1999. In the Nicopolis survey, a separate team carried out the survey on areas suspected to have Paleolithic remains on the surface; C. N. Runnels, T.H. van Andel, The Early Stone Age of the nomos of Preveza: Landscape and Settlement, 47-133; eds. J. Wiseman, K. Zachos, 2003.

[58] J.B. Rutter, Some thoughts on the analysis of ceramic data generated by site surveys, 137-142, eds. D. Rupp and D. Keller, 1983.

units were mapped or, when a larger construction or a cluster of numerous units were encountered, the ground-plan and the contours were roughly sketched. A basic set of data was thus hopefully secured; that is the location, the extent, the form and/or the spatial organization of the discovered architectural remains.

It is interesting to note at this point that some of these earthworks and architectural remains wouldn't have been discovered when walking in straight lines, holding strictly to the field block divisions. Many of these sites occupied inaccessible locations, such as narrow terraces, isolated outcrops or, as was the case with the mentioned mound necropolis, overgrown tracts in-between the cultivated parcels. These types of location, either because of access difficulties, low visibility or contracted space are often omitted from the field block divisions. On the contrary, in traditional topographic surveys precisely these types of locations are searched with a particular attention.

I.2.6 The regular grid survey and collection of surface material

The survey projects basically consisted of two general phases, roughly corresponding to the concepts of site-less or off-site and intra-site surveys[59]. In most parts of Greece and in many other regions of the wider Mediterranean, the land is covered with a more or less continuous carpet of fragmented artifacts, mostly broken pottery and dislocated building material[60]. Even when appearing focally, surface archaeological material usually appears over substantial areas, in relatively large quantities. In most cases it is impossible to collect material from all quantitative units in a study area, even if the strictest collection criteria were applied. Highly controlled counting and total collection would have to be limited to certain locations and for concrete purposes. The most immediate goal of the first phase of the survey, the quantification of surface material by large unequal blocks was to reveal locations with higher densities of surface finds, assuming that they indicate sites of past human activities, most commonly some form of permanent or seasonal settlement, but also the overall distribution and profile of the archaeological surface material. The underlying logic is fairly straightforward: a prolonged and/or intensive human presence would leave a many times greater amount of surface material than normally encountered on uninhabited parts of the landscape. But this is only the ideal case; in most instances the surface material in a certain area was produced over a longer period of time. Traces from periods of less intense human presence are hidden amidst a mass of material from other periods and a chronologically homogenous material displays differences regarding function, formal and technical qualities etc[61]. Crucial to the understanding of human habitation practices in the long term is the systematic and controlled collection of representative samples of surface material. The large block or the off-site survey essentially serves to reveal the overall distribution pattern and point to the various thresholds of surface material density. It is the more intensive, site-centered survey that draws the extent and the location of sites and determines their chronological profile.

[59] J.L. Bintliff, A. Snodgrass, 130-137, 1985; J.F. Cherry et al, 162-163, 1988.

[60] J.L. Bintliff, A. Snodgrass, 506, 1988; T.J. Wilkinson, 31-32, 1989.

[61] J.F. Cherry et al, 159-160, 159-160, 1988; E. Neustupný, 51-53, ed. E. Neustupný, 1998; J. Bintliff, P. Howard, A. Snodgrass, 141-145, 1999.

A great number of surface material collection techniques have been tried over the past couple of decades in various parts of the Mediterranean[62]. Experiments were made with systematic random samples, the so called, grab samples and total collections. Naturally it all depends on the concrete conditions regarding quantity and quality of the surface finds, but also the actual extent of knowledge about the chronological development of the various categories of finds. The most efficient and most commonly used is the collection of the so called featureshards, but in conditions of low density or poor quality of the material this tactic would hardly work[63]. For instance a collection of feature shards in the first study area would barely yield 20% of the counted surface finds and probably less than 15% in the second survey. Moreover so little is known or published on pottery production from certain periods in the country and especially on local, rural production, that it seems that only total collection (with the exception of very small, amorphous or badly damaged fragments) will secure a record of less intensive, local settlement activities. It must be stressed however that total collections were only made possible by the relatively low artifact density in the survey areas (and probably, in the general region). When confronted with the mass of surface material typically found in many regions of Greece or the Near East, some form of sampling is inevitable.

In the survey projects presented here, material was gathered from three various types of collection units. As total collection was performed on most field blocks in the survey areas, the collection units are at the same time quantitative units. This circumstance revealed a very important regularity concerning the method of field survey in general. The number of material counted on field blocks with high quantities of finds is sometimes several times lower than the actual number of artifacts on the surface.Even on average ranking field blocks, the actual amount of surface finds is usually two or three times the counted. Consequently the two basic components of the field surveys, the counting and gathering of the surface finds, although complementary shouldn't be used alternately nor are the results of the two directly comparable. Participants in the survey searched the surface with a far greater scrutiny when material was collected; similarly, much more attention was paid on phenomena that were counted than on those requiring simple indication in the field walking forms. It can be thus claimed that the degree of survey intensity relates not only to the parameters of sight range, obtrusiveness of the finds and the distance between field walkers, but also depends on the documentation techniques for the various categories of surface finds.

This creates a problem when trying to interpret the overall distribution of the surface material. Because of the variable degree of survey intensity, it is necessary to correct the records to account for this factor, before combining the results of the transect and the grid survey on the same map. Comparing solely the raw data will inevitably result in higher artifact densities on gridded areas or field units subjected to more intensive transect collection, drawing artificial site limits. For the purposes of this study, the solution adopted was to multiply the transect survey records by a factor of 2.5[64]. Obviously depending on the class of ceramic material in question, this figure sometimes proved too high, sometimes too low, but it does give a fairer image of the

[62] The evolution of these techniques in the Boeotia Survey is given in J.L. Bintliff, A.M. Snodgrass, 130-137, 1985. For earlier surface collection techniques exploited in the Near East, R. Whallon, Methods of Controlled Surface Collections in Archaeological Surveys, 73-83, D. Rupp, D. Keller, eds. 1983. Most other survey projects used combination of various random sampling techniques and collection of diagnostic shards: the Nemea Valley project, the Pylos Regional Project, the Methana Survey.

[63] For an alternative method of collecting samples of surface finds, W. Caraher et al, 12-13, 2006.

[64] J. Bintliff, P. Howard, A. Snodgrass, et al. *Testing the hinterland: the work of the Boeotia survey (1989-1991) in the southern approaches to the city of Thespiai*, Cambridge 2007.

overall surface record. In both survey areas in certain instances it proved equally revealing to focus solely on the transect survey results when determining the limits of the surface clusters. In these cases however there emerged a closely related problem, because the collection of surface artifacts by individual transects weren't equal on all field blocks.

Following the analysis of the large block survey results, three basic thresholds of surface material quantity/density were identified: lower than average, higher than average and very high. These simple, relative categories worked well in a survey area with an equal distribution of surface material over its entire territory, but in conditions of sharp differences in the quantities of finds, it may be necessary to divide the surveyed area into several sectors, enclosing field blocks with comparable densities of surface finds and ground visibility conditions. Such was the case with the first study area, subdivided into 11 sectors, most of which corresponded to certain topographic entities in the micro-relief, but primarily featured comparable conditions regarding ground visibility, exploitation and density of surface finds. It was a necessary step, for otherwise locations that were obviously exhibiting traces of past human activities ranked average or even below the average when all field blocks were compared. On the contrary the gentle, continuous relief of the second survey area and the relatively even surface conditions required an integral interpretation.

On field blocks with very high densities of surface material, regular grids were laid out and all surface material was gathered by equal grid units, measuring between 5x8 and 10x15 meters; the size depending on the location and the density of finds. The grids had the same orientation as the field blocks, so as to cover the maximum of a field block's area. They were in other words inscribed into the field blocks' irregular perimeters. The grid was expanded as far as the respective material appeared on the surface. Once the quantity of surface finds dropped to an average level or visibility conditions drastically worsened, we stopped expanding the grid and continued the survey using the individual field walking transects as collection units. It became clear at least for the first study area that more than a dozen and a half locations would have had to be surveyed by imposing regular grids, if the initially adopted criteria were to be consistently followed. This meant that relatively large quantities of surface material had to be collected and processed. Fearing that this would be too great a burden, at the beginning of the on-site collections in the first survey, it was decided to collect only diagnostic material. In addition a regular grid was imposed over the selected field blocks, but artifacts were gathered from every second row of units (map I_6). Though relieving the mass of gathered finds, adopting this technique inevitably sacrificed the advantages offered by the quantification of surface material over a continuous surface. Even if we continued to count surface finds on all units and collect from every second row of units, the results would hardly be representative because of the explained difference in survey intensity when quantifying and collecting surface finds. Finally, the little experience earned during the previous survey campaigns taught us that the distribution of surface finds is focal rather than continuous, especially in the case of clusters of minor size and density. Collection by alternately spaced units will therefore always carry the risk of missing a number of artifact concentrations[65]. After a few trial attempts it was decided to carry out total surface collection by continuous grid units[66].

[65] M.B. Schiffer, A. Sullivan, T. Klinger, 4-5, 1978.

[66] This on-site collection procedure allows for a much greater spatial control, J. Bintliff, A. Snodgrass, 58-59, *Antiquity* 62, 1988; J. Cherry et al, 163, 1988; J.L. Bintliff, P. Howard, A. Snodgrass, et al. 9-13, 2007.

Map I_6: Regular grids one and two over field blocks in the first survey

As mentioned in the preceding paragraphs, the most commonly used technique of gathering surface material is the so called diagnostic sample or the collection of feature fragments (rims, bases, handles, decorated fragments, plus coarse ware examples) from the quantification units. Experience has shown that this tactic secures a good amount of diagnostic material, while greatly reducing the total amount of gathered finds[67]. In essence the global tendency is to collect less and document more on the field[68]. This is surely a growing tendency, but in conditions where so little is publicly known about local, rural pottery production, it was feared that much will be missed if we attempted sample collections. When grab collections were attempted at the beginning of the campaign, the results were at best disappointing. Most of the survey participants lacked sufficient fieldwork experience and had difficulties in recognizing certain types of ware. Early Modern and Late Antique red ware, as well as glazed fragments prevailed in the collections, although on the surface these categories were clearly the minority[69].

[67] J.L. Bintliff, A. Snodgrass, 131-132, 1985; W. Caraher et al, 12-13, 2006; the latter approach clearly presupposes a solid prior knowledge of the material.

[68] T.E. Gregory, Less is better: the quality of ceramic evidence from archaeological survey and practical proposals for low-impact survey in a Mediterranean context, 15-35, eds. E.F. Athanassopoulos, L-A. Wandsnider, *Mediterranean Archaeological Landscapes: current issues*, Philadelphia 2004; see however, J. Bintliff, Contemporary issues in surveying complex urban sites in the Mediterranean region: the example of the city of Thespiai (Boeotia, Central Greece), 44-52, eds. F. Vermeulen et al. *Urban Landscape Survey in Italy and the Mediterranean*, Oxford 2012.

[69] J.B. Rutter, 137-139, eds. D.R. Keller, D.W. Rupp, 1983; this is the so called obtrusiveness of the surface record, M.B. Schiffer, A.P. Sullivan, T.C. Klinger, 6, 1978; L. Wandsnider, E.L. Camilli, The character of surface archaeological deposits and its influence on survey accuracy, 169-188, *Journal of Field Archaeology* 19-2, 1992.

Brown or grey fired shards were more difficult to spot, particularly on freshly ploughed fields.They remained unnoticed even when displaying diagnostic features.

Eventually it was decided to continue with the initially proposed technique of total surface material collection. Given the present state of knowledge of local pottery production, the prospect of sampling still appears distant and insecure. It can only be hoped that the slow accumulation of data on local ceramic production will eventually allow the application of sampling techniques, enabling quicker, more efficient and less damaging survey campaigns. Actually as the survey progressed, we were beginning to recognize certain categories of finds with a greater confidence (particularly, modern and ancient tile), allowing us to count the total number on the field and take only samples. The relatively low artifact density in both survey areas meant that the basic processing of the total collections wouldn't present an insurmountable challenge. More importantly it was quickly realized that about the same amount of time was spent on counting and collecting surface artifacts per grid unit. Counting total surface records and conducting sample collections separately would have consumed more time and energy and the records would have certainly been less accurate than the records obtained by total collections. In effect total collection became an instrument of measuring on-site densities. It should be repeated that this approach is only possible thanks to the relatively small amounts of surface material in the survey areas[70].

The imposition of regular grids is an arduous and time-consuming task, especially on rugged and fragmented terrains. Although it ensures very close control over the spatial distribution of surface finds, it's clearly impossible to cover even a representative sample of the study area in this manner, unless aided by very accurate GPS receivers. On field blocks featuring average or lower than average quantity of surface finds for their respective sectors, it was decided to use the basic field walking units for the purpose of material collections. Thus on field blocks with average or lower than average quantities of surface finds, artifacts were gathered by individual transects, while field blocks with very low densities of finds were searched unsystematically and all finds were collected. On the majority of the field blocks with low or very low artifact density, the disproportion between the counted and the gathered artifacts was minimal and in some cases, we actually retrieved the same number of artifacts as recorded during the large block survey. In conditions of low artifact density, it was also possible to roughly map individual and smaller clusters of finds. In a number of other instances however, when fields were revisited for the purpose of transect collections we encountered a very different situation on the surface than that indicated by the field block survey. We either discovered larger concentrations of material that went completely unnoticed or we could locate only a small fraction of the material counted during the quantification campaign. As will be shown this creates considerable problems during the analysis of the transect survey results and particularly when trying to estimate artifact density on the basis of the collections by individual transects.

It would be obviously misleading to compare artifact densities inferred from transect collections representing 15 and 65% of the material counted during the quantification campaign. Yet because of data loss or a deliberate decision to save the surface record for the more detailed regular grid survey, in some cases the transect collections represented only a very small fraction of the artifact counts. At the same time, whether because of difficult ground conditions or inadvertently, on certain field blocks the transect collections were far more intensive. The problem was particularly pronounced in the first survey area where we often collected a greater

[70] These amounts are small in relation to the artifact density encountered in the Aegean or the Near East, but in reality the total collections from both survey areas produced over 20000 potshards.

number of artifacts than indicated by the individual transect counts. Clearly in order to make use of these data, it will be necessary to standardize the transect collections across the survey area. For the purposes of this study, we decided to adjust the number of finds collected per individual transect unit to 100% of the material counted and predict the artifact density per period on the basis of the number of finds included in the transect collections[71]. The procedure is open to criticism on the grounds that not all of the ceramic categories have an equal chance of entering the transect collections. Indeed in small collections the presence of a few highly obtrusive classes of ceramic artifacts could result in very high theoretical densities for a given period, while the deliberate exclusion of certain categories will inevitably underestimate their true share in the total surface record[72]. This is none the less a better alternative to simply using the data of the unadjusted transect collections.

While collection by individual field walking units can offer a rough preview of the location and the extent of the distinct surface clusters, it can never reveal the exact size, density and the inner on-site distribution. As will be shown in the chapters dealing with the analysis of the survey results by period, even the total grid coverage doesn't always succeed in recording the full extent of the surface cluster. A number of factors are involved, among the most prominent being that the presence of certain chronological classes of material is not necessarily reflected in the distribution of the overall surface record;[73] and (if they do affect the total surface record) they are not necessarily forming continuous zones of higher artifact density[74]. Blindly following the results of the large block survey and limiting the total grid collections to field units featuring higher overall artifact densities, we often ended up spending precious time in conducting total grid collections on fields covered exclusively with Early Modern off-site debris, while genuine archaeological scatters were lurking on the neighbouring field units. In order to avoid this problem in the second survey it was decided to collect feature shards during the quantification of surface material by individual transects. This decision saved us a great deal of time and effort, although it only cured a smaller part of the problem[75]. At the same time it created another unperceived difficulty. Due to the low quantities of surface material on certain categories of sites, there was the danger of depleting the surface clusters through transect collections, prior to the total grid survey. However the collection of diagnostic material during the quantification campaign was seen as a more convenient method of probing the chronological profile of the total surface record than returning to the fields after the overall distribution is established. It not only saved us much time and energy, offering a better guidance for the total collections by regular grids, but it also produced less discrepancy between the number of counted and collected finds.

Despite all of the deficiencies, the transect survey records are the only source of information for the segments of the survey area that we excluded from the regular grid survey. It is therefore of utmost importance to have them carried out as systematically and consistently as possible. Even so, a certain number of adjustments are necessary during the analysis of the material distribution by periods. These were much easier to implement on the transect survey record from the second survey area, because there the collections by individual transects were

[71] Cf. J. Bintliff, P. Howard, A. Snodgrass, et al. 18-19, 2007.

[72] T.E. Gregory, 15-35, eds. E.F. Athanassopoulos, L-A. Wandsnider, 2004.

[73] This is in essence the "hidden landscape" phenomenon, J.L. Bintliff, P. Howard, A. Snodgrass, 145, 1999.

[74] Perhaps reflecting certain taphonomic processes or the various components of the *settlement areas*, S.E. Alcock, et al, 137-141, ed. I. Morris, 1994; E. Nesutupný, 48, ed. E. Nesutupný, 1998.

[75] For example, vestigial prehistoric remains would in most instances pass unnoticed unless a total grid collection is carried out, J.L. Bintliff, P. Howard, A. Snodgrass, 145-146, 1999.

carried out more consistently and simultaneously with the quantification campaign. In the first survey area when using the transect collections for estimating artifact density by periods, the specific conditions on each field block had to be considered, both at the time of the counting and the gathering of surface finds.

I.2.7 Conclusions

One must remember that the adopted method of field survey is still in a relatively early phase of development. Most of the problems discussed in this chapter are actually typical for many survey projects in the Mediterranean. Despite the great number of very interesting and revealing studies, there still lack definite cures for problems such as the rapidly changing conditions of fieldwork or the idiosyncratic differences between the surfaces that comprise the survey area. On certain methodological points, and especially in the inferences and conclusions based on data from this type of surveys, there will probably follow further improvements and experiments. Indeed in many archaeological communities even today, the methods presented are treated with a great deal of suspicion or a complete distrust. In its greatest part the method of fieldwork applied for the purpose of the present study was borrowed from the experience of the large regional survey projects in the eastern Mediterranean. It was deemed fair to present the application of this method in some detail, so that the reader can judge which shortcomings are intrinsic to the method of intensive field surveys in general and which were born from the faults of this particular survey project. The survey experience in both study areas brought many methodological challenges and more significantly, it revealed a number of interesting regularities that should apply across a wide range of survey conditions. Hopefully the fruits of this effort were of some general methodological value.

Four principle sources of bias generally typical for this method of field work were suggested: the unequal size of the field blocks, the variable ground visibility, the unequal degree of coverage and the extremely variable forms of ground usage or the unequal surface depths. All of these except the last one can be recorded as numeric variables affecting the artifacts counts in some definite way. In other words, their impact as a factor can be approximated. In the preceding sections it was demonstrated how these factors were dealt with during the survey result analysis and why those particular tactics were adopted. It was also pointed to the intricate connectedness between these various groups of factors and the fundamental difficulty of weighing their separate impacts. Here lies the danger of overestimating the reach of these technical factors and of leaving a much narrower space for interpreting the distribution of the surface material in archaeological terms. It seems most reasonable to believe that, unless large scale human alteration is in question or major episodes of erosion and sedimentation, the surface record can provide important information about habitation practices and land-use in the past. Certain corrections in the initial field records were nonetheless necessary to obtain a clearer picture of the surface material distribution. It is hardly surprising that they often appear grossly imperfect. One is attempting to deal with very local and specific conditions using simple formulae.

One of the greatest problems of intensive surveys and this has often been stressed by critics among archaeologists working in the region are the extreme ground conditions and the seemingly whimsical appearances and disappearances of the surface finds[76]. Surfaces exposed at

[76] J.F. Cherry, 398-399, eds. D.R. Keller, D.W. Rupp, 1983; citing J. Lloyd, G. Barker, Rural settlement in ancient Molise: problems of archaeological survey, 289-304, eds. G.W. Barker, R.A. Hodges, *Archaeology and Italian society: Prehistoric, Roman and Medieval studies*, Oxford 1981.

different depths thwarted our efforts to follow continuously the dispersal of the surface finds clusters, offering not a trace of evidence to the possible situation "underneath". Moreover while resurveying parts of the study areas in a different season, it was noticed that not only were conditions drastically changed, but also the amount of material visible on the surface. It was changed to such an extent, that it displayed a substantially different distribution pattern. Understandably these processes will bear a lesser effect on larger sites featuring high artifact density, than on small rural sites, especially if dating to prehistory[77].

Because of the different ground conditions, both survey areas posed specific set of challenges, which will be discussed in more details in the separate appendices. The first survey area was a pastiche of fields with various land uses, displaying not only contrasting visibility conditions, but frequent and abrupt interruptions in the distribution of surface material. In effect it wasn't always possible to exactly determine the extent and size of the sites, but this disadvantage couldn't undermine the survey's achievements. Even in relatively complicated conditions it was possible to make a fairly accurate record of the surface material encountered and systematically collect sufficient amounts of surface artifacts. The second survey area, although characterized by a gentler relief, with cultivated fields representing nearly 90% of the surveyed terrain generated a different type of problem. While in the first survey the great majority of surface clusters clearly stood apart from their surrounding by the sheer quantity of material, in the second survey, the dense off-site carpet accumulated during the last two centuries effectively obscured most of the unearthed clusters. Consequently we were often misguided in the decision of where to focus the total collections. Nonetheless as in the first survey, it was possible to map the distribution of the surface material by periods and define areas of concentrated human activity in the past. The sources of bias related to the technical short-comings of the surveys or to external, environmental factors weren't completely detrimental to the principle aims of the survey, although they inevitably created problems of interpretation. But as pointed out almost three decades ago, analogous problems of interpretation are inherent to all types of archaeological studies, including excavations.[78]

Another serious weakness of the surface material in general, also often emphasized by most archaeologists working in the region is the low or complete lack of chronological sensitivity of the collected finds[79]. Indeed some archaeologists are in principle reluctant to discuss the chronology of non-stratified material. Admittedly the chronological framework of the survey data is often very raw. Even in regions where the study of local pottery production has a long tradition, based on material from stratified contexts, surface finds are often dated only to very broad chronological periods[80]. As might be expected, this circumstance prevents finer historical interpretation: it is mostly impossible to relate observed changes in the surface record to known historical events or decide whether certain sites were truly contemporary or existed successively within the same, broad time-period. In this respect the criticism is well-grounded, but to argue that surface material has no chronological value what so ever is clearly an exaggeration. Even in cases when it is impossible to roughly date certain categories of ceramic material, they can still be associated with other more recognizable categories on the basis of their spatial distribution. The material from the first survey is a particularly good example, because

[77] J.L.Bintliff, P. Howard, A. Snodgrass, 157, 1999.
[78] J.F. Cherry, 383-384, eds. D.R. Keller, D.W. Rupp, 1983.
[79] J.F. Cherry, 379, 383-384, eds. D.R. Keller, D.W. Rupp, 1983; J.L. Bintliff, A.M. Snodgrass, 127, 1985.
[80] W. Caraher et al, 12-13, 2006.

here the great variety of fabric groups were distributed into groups of several different categories, mostly limited to one or a few locations. Thus they formed discrete ceramic assemblages, only certain categories of coarse ceramics appearing alongside different assemblages. These assemblages defined on the basis of fabrics, form and decoration and spatial distribution can be dated through parallels with material known from stratified contexts. In this way survey archaeology can actually contribute to the study of local pottery production, without making presumptions about the chronology of the collected finds[81]. Although omitted from the list of basic research goals, the classification of the collected tile and pottery into separate fabric categories and assemblages could be one of the major achievements of this study.

All in all the method of intensive and systematic survey is giving results, even when applied in more continental areas and carried out in circumstances of relatively limited research potential and experience. A couple of dozen new sites dating to various time-periods were discovered, definitely justifying the suspicions concerning the accuracy of the data presently available on the extent and distribution of human settlement in local archaeology. For the first time in this region the overall distribution of surface material was studied, revealing important facts about its quantity and composition. It is a crucial step towards understanding past habitation practices on a micro-regional level and from an alternative theoretical perspective. Though somewhat truncated and lacking the fines attributed to excavation data, the findings of these micro-regional surveys can hardly be achieved by the methods of traditional extensive survey or excavations. Nor can they be denied their full significance, solely on the grounds of an a priori mistrust in the adopted method of fieldwork. At this point it seems appropriate to let the results of the surveys speak for themselves, even if the reader disagrees with some of the suggested interpretations.

[81]Cf. J. Vroom, *After Antiquity. Ceramics and Society in the Aegean from the 7th to the 20th centuries A.C. A Case Study from Boeotia, Central Greece*, Leiden, 2003.