INTRODUCTION

1.1 COMPARATIVE SETTLEMENT ANALYSIS

Although studies of ancient landscapes have a long established tradition in Mediterranean archaeology, one may observe in recent decades a definite break-through, encouraged in particular by the development of intensive field survey techniques. One of the merits of this trend is that it has allowed us to question traditional generalisations emphasizing uniformity in Graeco-Roman culture throughout the Mediterranean basin. By stressing internal, and regionally specific, factors of change, the projects involved create the possibility of identifying variability in the dynamics of regional cultures and landscapes. However, the disadvantage of this approach is perhaps an overemphasis on regionally specific explanations. Whereas many regional data sets have become available in the last decade, few attempts have yet been made to formulate new questions and syntheses on a supra-regional level (see notably Alcock 1994, Bintliff 1997). This is especially the case in Italy, notwithstanding the fact that the number of surveys here is comparatively large. To confront this issue, in 1997 three longstanding Dutch regional fieldwork projects joined forces to establish a new project aiming at a comparative analysis of centralization and early urbanization processes in three regional landscapes in Central and Southern Italy. This umbrella project was named Regional Pathways to Complexity, Landscape and Settlement Dynamics in Early Italy - RPC project for short. It is carried out by the Archaeological Institutes of the Vrije Universiteit at Amsterdam (AIVU) and Groningen University (GIA), and is subsidized by the Netherlands Organization for Scientific Research (NWO). The Italian regions investigated are, from south to north, the Sibaritide in Calabria on the Ionian sea, the Salento Isthmus in Apulia on the Adriatic, and the Pontine Region in Southern Lazio on the Tyrrenhan sea, south of Rome (see figure 1). The data proffered by the fieldwork projects carried out in these regions are analysed both within their specific internal social and environmental contexts, and in the context of the supraregional networks these regions were embedded in (see notably Attema et al. 1998a/b).

In order to fully understand variability within and between the regional contexts, we hold that it is imperative to investigate the total landscape of the regions concerned, i.e. all landscape units represented within them. Thus, in the context of the RPC project additional field surveys are carried out in those landscape units that have so far received little attention from archaeologists (see also Van Leusen 1998; Attema, van Joolen and van Leusen 2001). This report presents the results of one of these surveys, focused on the uplands of the Murge, the northern part of the Salento isthmus.

* This chapter will be published in Studi di Antichità, 2002. Introduction and Discussions by Gert-Jan Burgers; Methodology and Data Processing by Martijn van Leusen; Impasto quality study by Peter Attema.
1.2 AIMS OF DUTCH RESEARCH IN THE SALENTO ISTMUS

The ‘Salento Isthmus’ is the common denomination of the stretch of land between Taranto and Brindisi, connecting the Salento peninsula to the rest of Italy (figure 1). Apart from the limestone plateau of the Murge in the north, the major landscape units in the region are the Taranto plain in the southwest and the larger Brindisi plain, or piana messapica, to the southeast. Since 1981 the AIVU has carried out a series of excavations and surveys in various rural and urban units throughout this region, but focusing in particular on the Brindisi district (figure 1). This fieldwork aimed to define the 1st millennium BC occupational history of the region and to analyse it in the light of three major supra-regional processes:

1. Processes of centralisation of settlement during the late Bronze Age and early Iron Age (ca. 1400-600 BC)

2. Early urbanisation, which in Salento is attested notably during the late Archaic and early Hellenistic periods (550-250 BC)

3. Romanisation of the early urban landscape, which proceeded after the Roman conquest of Salento in the first half of the third century BC.

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1 See notably van Alberda et al. 1999; Boersma 1990; 1995; Boersma et al. 1991; Boersma/Yntema 1987; Burgers 1998; Yntema 1993-1/2. Preliminary reports have been published annually in Bulletin Antieke Beschaving and Taras, Notiziario delle attività di tutela.
Accordingly, the general aim of the Ostuni surveys was to evaluate the settlement dynamics of the Murge landscape unit in the context of these three processes.

### 1.3 THE OSTUNI SURVEY

The Murge plateau is part of the Apulian karst. The landscape is marked by rolling hills and ridges, alternating with dolines and other forms of enclosed depressions characteristic of karsts. The altitude of the Murge averages about 420 meters above sea level. The plateau extends from the Bari district in the northwest to the Salento peninsula in the southeast. At its eastern edge, it drops abruptly towards the coastal plain bordering the Adriatic, whereas in the south it slopes more gradually towards the Gulf of Taranto. In the west it gradually merges into the Appennine mountain chain.

Intensive surveys in the Murge area have been limited to its western edge, at the Bradano trench between Apulia and Basilicata (Vinson 1972; Small 1991, 1998). Little detailed knowledge is available on the archaeology of the Salento part of the plateau, some 100 km to the east. This situation contrasts with that in the adjacent Brindisi plain, which mainly consists of fertile light arable and clayey soils. Here, intensive surveys by the AIVU have resulted in the identification of a densely and hierarchically settled landscape at least in Hellenistic and Roman times (see note 2). A major question regarding the Murge was therefore, to what degree the lack of data in this area reflected a lack of intensive, problem oriented research, or a

Figure 2: Geomorphological map of the larger part of the Salento Murge, with locations of major sites mentioned in the text and of the Ostuni’99 survey areas.
marginal human exploitation.

To confront this question, a survey was carried out in 1999 by staff and students from the two universities participating in the RPC project in two landscape units typical of this part of the Murge, located in the territory of the modern town of Ostuni (province of Brindisi; figure 1). To deal with the possibility, discussed above, that these areas were only marginally exploited, the survey method was specifically designed to document the low density and low visibility artefact scatters characteristic of low intensity settlement and land use. However, as we shall describe below, although we did in fact detect very diffuse and low density ceramic scatters within a general ‘blanket’ of off-site material, it has also become clear that such scatters do not constitute the norm in either of the two investigated landscape units. Both contain large and dense sites dating to the middle Bronze Age, and settlements from the Hellenistic and Roman periods were also discovered, suggesting an intensive human exploitation in these phases.

1.4 METHODOLOGY

To investigate the possibility of differentiation in the human exploitation of the local landscape, 1.5 km² sample areas were located in two of the landscape units defined by the land evaluation (figure 2; see section 2). The first sample area (‘Area 100’) is situated near the cliff-like interface between the Murge and the coastal plain, just below the large Bronze Age site and cult cave at Masseria Risieddi; the second sample area (‘Area 200’) lies some six km inland, on the Murge plateau around the post-Medieval Masseria Cervarolo. Both areas were systematically surveyed in gridded units of 0.25 ha (50 by 50 m) at 10 m intervals (~20% coverage) by teams of student surveyors, and all non-recent objects were collected per unit. Further passes were employed in order to define, map, and sample any finds concentrations (‘sites’) encountered during the first pass. Samples from these further passes were generally taken in order to be able to quantify the density of material at various locations within a concentration, and in order to collect additional diagnostic material for dating. Both survey unit boundaries and finds density contours were mapped on 1:10,000 scale cadastral maps of the Comune of Ostuni for later digitisation. The finds collected during the survey were sorted, weighed and counted after washing and drying, then passed to lithic, protohistoric, and classical material specialists for more detailed classification; these data were then stored in a database system (MS-Access) attached to a GIS (GRASS) containing the digitised field maps.

POST-PROCESSING

The raw counts and weights resulting from the survey in themselves cannot easily be interpreted because the collection units themselves may vary in surface area, finds visibility, and surface percentage covered. The results are therefore presented here in the form of density distribution maps corrected for unit area and aggregate finds visibility (a correction for percent coverage was not needed in this case because this factor was kept invariant during the survey). Raw counts per unit were transformed into normalised densities (counts per hectare) by calculating the true surveyed area of each unit (excluding landscape features such as paths and verges, which can occupy a large part of the area of a unit) in the GIS, and dividing the raw counts by the recorded percent coverage and the true unit area in hectares. For example, if 6 impasto sherds were found in a unit of 0.25 hectares and 20% coverage, the normalised impasto density will become 6 / 0.25 / 0.2 = 120 per ha. Finally, the normalised finds densities were corrected for factors causing differences in finds visibility (and therefore biasing recovery rates). Although it is generally agreed that such a correction is necessary before the results of a survey can be properly interpreted, there is no such agreement on objective methods for recording visibility factors, nor for using these to correct uncorrected finds densities. A full discussion of these issues will be the subject of a separate publication (Van Leusen, in prep.); the method followed by us will be described here.

An aggregate visibility estimate on a 6-point ordinal scale, based on tillage, vegetation, weathering, and stoniness, was recorded by us in the field for each collection unit (figure 3). In order to quantify the effect of this visibility estimate, each of the points on the scale was assigned a percentage value based on our estimate of its relative significance (for example, high = 100%, normal = 90%, low = 50%, and very low = 25%). Following this, the algebraic correction for this recovery bias was applied in MS-Access by dividing the normalised finds densities by the aggregate surface visibility percentage. In the example used earlier, if
visibility had been ‘normal’, the corrected impasto density would be \(120 / 0.9 = 133\) per hectare. An unresolved problem with this approach, particularly when working with low raw counts and visibility percentages, is that the significance of random variations in finds density is exaggerated, while the diversity (in the statistical sense) of the finds assemblage is systematically underestimated. See, for example, the discussion in Orton (2000:172-6), and the discussion following Bintliff’s recent re-evaluation of Boeotia survey data (Bintliff et al. 1999, 2000).

Figure 3: Aggregate surface visibility in the Ostuni survey areas (aggregate of ploughing conditions, vegetation cover, dust/rain, stoniness).

LAND EVALUATION AND LAND USE HISTORY

In order to relate the findings of the archaeological surveys of the RPC project to the characteristics and dynamics of the contemporary landscape, physical geographical mappings are being carried out in conjunction with the surveys. Such fieldwork also took place in conjunction with the Ostuni '99 archaeological survey (figure 2), with the aim of creating a soil unit description according to the guidelines of the Food and Agriculture Organisation (1977). Such a description was needed in order to do a land evaluation for agriculture from the late Bronze Age until the Roman period. The method of land evaluation compares the soil requirements of land utilisation types (e.g., of Roman arable farming) with the land qualities and land characteristics of the physiographic units defined during the physical geographical fieldwork, in order to determine their agricultural suitability. The results, to be published in full elsewhere, are here summarized in section 2.

While the land evaluation is intended to reveal correlations between the archaeological record and the past agricultural suitability of the land, the more recent history of land use within the survey areas has a directly observable impact on that record. Surface artefact recovery rates are of course biased by a host of factors besides those directly relevant to the density calculations discussed above. Those factors considered most relevant in the study area were recorded during the survey - the presence or absence of features indicating ongoing surface erosion (figure 4), the amount of recent or subrecent material on the surface (figure 5), and the condition of protohistoric sherds (see below, figure 10). The significance of each for the interpretation of the results of our survey will be briefly discussed below.

The presence of erosive features in the study area, including slope wash, small gullies, and patches of bedrock, indicates the instability of soils under current tillage, and is therefore an indication that soils including archaeological material may have been eroded at some areas and redeposited elsewhere. Evidently geomorphic processes might be responsible for distorting the recovered pattern, especially of protohistoric finds, but because erosive features were not consistently recorded for all collection units the resulting map (figure 4) must be seen as indicative and no formal analysis along lines similar to the Cecina survey (Terrenato 1996, Terrenato and Ammerman 1995) could take place. However, this factor does enter into our discussion of the interpretation of the protohistoric ‘off-site’ material in section 3.
Recent or subrecent material (a category which is composed mainly of glazed or very hard baked white ceramics, but also contains glass, rubber, metal and other materials) occurs throughout the study area and, even in low densities, is likely to distract walkers from noticing archaeologically more significant find types (figure 5). Where it occurs at higher densities, this factor is likely to have a significantly dampening influence on recorded finds densities. Figure 6 shows that the largest recorded density of (sub-)recent material was present in the southeastern part of Area 100, nearest the modern town of Ostuni, and it seems likely that refuse from the town was dumped in these nearby fields. The possibility that archaeological material, especially from the classical periods, might have been overlooked by the walkers in these fields led to a targeted resurvey, the results of which will be discussed in the appropriate section below.

![Figure 4: Presence of erosive features in the Ostuni survey areas.](image)

![Figure 5: Corrected density distribution maps of recent finds in areas 100 and 200.](image)

Some months after the original field work at Ostuni, the protohistoric impasto ceramics forming the bulk of the finds were studied in more detail by one of us. The aim of this study was to identify whether post-depositional disturbance had occurred among finds groups recorded as ‘sites’ in the field or, in other words, whether such find complexes were likely to have been found in situ or not. Sherd fragmentation and wear were taken as an indicator of land use intensity and sherd displacement, reflecting the degree to which the impasto has been affected by fluvial movement, frequent tilling and weathering. The main outcome of this study, discussed in more detail in section 3.2, is that there is no simple correlation between the density and the quality of the protohistoric material, casting doubt on the validity of site/off-site distinctions made in the field.
2 LANDSCAPE, SETTLEMENT AND AGRICULTURE

2.1 EVALUATION OF THE PHYSICAL LANDSCAPE

From the Adriatic coast to the interior, the three major physiographic units identified during the land evaluation are the coastal plain, concavely sloping land, and rolling land on the Murge plateau (figure 2). The coastal plain is separated from the sea by a narrow line of dunes. The plain rises very gradually from 2 m asl behind the dunes to 70 m asl some 2-3 km inland, at which point it gives way to the concavely sloping land unit. At intervals of 1 to 2 km the coastal plain is incised by deep, canyon-like river valleys (lame) which originate in the Murge upland. The soils of the plain reach a thickness of 50 cm on average. Along the coast, the upper calcareous horizons are more coarsely textured than in the remainder of the unit, where they consist of sandy loam or sand. Most other soils consist of an upper horizon of brownish-red loam, with a second more fine-grained horizon underneath. The main crop cultivated in the plain is wheat, interspersed with olives on the higher parts.

The second landscape unit consists of a very wide concave slope at the base of the cliff-like edges that separate the lowland from the Murge plateau. The soils of this unit vary in thickness between 10 and 160 cm, consisting mostly of sandy to silty loams. Most commonly, an upper calcareous red A-horizon is followed by an even brighter red non-calcareous B-horizon. In thinner soils the B-horizon is absent and the A-horizon lies directly on top of the bedrock. Stoniness is rather high in this unit, and occasionally the bedrock even comes to the surface. Although wheat growing does occur in this unit in conjunction with olive culture, the latter dominates to such an extent that natural vegetation has almost completely disappeared.

Our third unit, the rolling land of the Murge plateau, largely consists of hills alternating with depressions, dry valleys and valley floors. The upper parts of the hills generally have thin soils, consisting of loamy clay, silty loam or loam. These soils all lie directly on the limestone bedrock, which here, too, frequently comes to the surface. The degree of erosion is high on these hills, which are planted mostly with almonds and occasionally with olive trees, plants that need only thin soils to survive. Accumulation takes place on the lower parts of the slopes and in the depressions and valleys. In the latter, soils are at least 150 cm thick and consist of clayey loam or loam. In contrast to the other units, drainage in these lower areas is relatively poor and they are mainly used for viticulture and horticulture.

For each of these units, the suitability for specific (pre-) historic land use types was determined on the basis of an evaluation of a range of land characteristics (Kamermans 1993; Foeken & Gietema 2000). According to this classification, the lowland units can both be defined as suitable for wheat growing, even without the use of ards. This also holds good for the lower parts of the slopes and the river valley floors on the Murge plateau. The major factors of influence here are the relative flatness, ample nutrient availability and workability. The agricultural potential of the river valley floors, with their relatively clayey texture, is likely to have improved with the introduction of a drainage system and of ploughing. Of all units in the study area, these valleys are least suited for olive growing and best suited for horticulture and viticulture, for which ample foothold is a major requirement. Because of their steepness, stoniness, thin soils and excessive drainage, the Murge hills were less attractive for wheat cultivation. However, they can be defined as (marginally) suitable for grape and olive growing, although the climate factor should not be underestimated (see above). Indeed, from the point of view of climate, the lowland units have much more to offer olive culture, and olive trees are nowadays found even on the lower slopes of the otherwise bare Murge cliff facing the coastal plain.

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2 This summary is largely based on the preliminary physical geographical fieldwork conducted in parallel with our survey, and reported in Foeken and Gietema 2000.
2.2 SETTLEMENT AND LAND USE

A brief review of settlement hypotheses for the Salento part of the Murge must start with the work of Prof. Coppola at Rome and Lecce University, whose interest in cave, lithic and early ceramic sites provides us with a scatter of such sites (Coppola 1977; 1983; 1985). Coppola has dedicated most of his research to the archaeology of the caves, which were formed by two different processes in the limestone geology of the area. Percolation of rain water along angled bedding planes on the one hand has resulted in caves with entrances where such bedding planes intersect with the land surface; other caves were opened up by wave action along successive coastlines as the land was lifted up and the sea subsided in stages. Many of these caves were inhabited from the early Palaeolithic onwards – perhaps even by hominids. Lithic sites were also found along lame (fossil river valleys) in the coastal plain.

In contrast to the relative abundance of known prehistoric sites in the Murge, information on occupation in protohistoric and historic phases was virtually lacking before the start of our survey. A few larger settlements dating to the Bronze and Iron Age were known to occur on the edges of the Murge, some 6 or 7 km from the present coastline, and another handful of Roman ‘villa’ sites were known for the entire area under consideration. This led to the hypothesis that the high Murge was, at most, marginally used before the Middle Ages. In the Middle Ages themselves, and for most of its more recent documented past, the Murge plateau was never intensively exploited or settled, being defined as selva (or forest - as opposed to the coastal plain, known as marina). Peasants of nearby villages enjoyed rights to put animals to pasture in the selva, to spend the night, cut wood, and to draw water from catchment basins (Galt 1991:69). From the 19th century onwards, these forests have gradually been reduced by large scale deforestation projects, and today only 5% of the region is still covered with woods or macchia, notably on the cliff-like edges mentioned earlier.

The 19th century saw a remarkable rural infill of the Salento Murge, with isolated farms (trulli) and hamlets (jazzèlere) appearing all over the plateau. This reclamation of previously marginally exploited lands, with roots in the later 18th century, can be intimately linked with the rise of viticulture at a time of increasing international demand for wine. Vine growing became a major occupation of the peasants colonising the plateau. External markets also played an important role in the flourishing of olive culture in the coastal lowland, which has long been dominated by olive growing. As early as the 16th century the area was described as ‘a forest of olives’ (Galt 1991:71-72). By contrast, olive culture is a marginal phenomenon in the Murge because of its abundant winter precipitation and even the occasional snow storm. Frost damage is therefore an ever present danger making olive culture a risky business.

3 RESULTS OF THE ARCHAEOLOGICAL SURVEY

3.1 GENERAL OBSERVATIONS

Nearly 850 blocks (collection units), for a total area of 243 hectares, were surveyed during the Ostuni’99 campaign. Figure 6 shows the locations and approximate sizes of the 36 sites recorded in this area. Our survey method aimed explicitly at recovering marginal occupation, and its success is demonstrated by the fact that we did indeed identify even very small and diffuse scatters. After processing, 238 kg of ceramics remained, about evenly divided among three categories – impastos, depurated wares, and other pottery. Apart from a general thin lithic scatter, to be published in detail elsewhere, ceramic material datable to the Neolithic was found in only one spot, while nearly all of the landscape was found to be blanketed in

3 Concurrently with the Ostuni survey an excavation was carried out at a newly discovered cave at Ceglie Messapico by a team led by Prof. Coppola and Dr. Biagio Giaccio. If the geological ante quem date of 560,000 BP is correct, this cave was inhabited by Homo Erectus.

4 The anthropologist Galt (1991) has dedicated a detailed ethno-historical account to this process, focusing on the interaction between landlord and peasant strategies in the territory of Locorotondo, some 25 km northwest of Ostuni.
Bronze Age coarse impasto ware. Equally as remarkable as the amount of Bronze Age ceramics found, is the almost absolute lack of Iron Age to Classical material: only a handful of (possibly) Iron Age sherds, and no Archaic or Classical material at all, were found. While sites from this period might in theory go unrecognized because of a lack of diagnostic fine wares and roof tiles, one would expect to find at least thick walled (impasto) storage wares.

Some of the most evident scatters of artefacts found during the Ostuni survey can be dated to the Hellenistic and Roman periods; their visibility is high because of the relatively large amounts of tiles and brightly coloured wares (e.g., orange coarse ware, black gloss and ARS). Interpretable as farmstead and graveyard sites, in area 100 they occur on lightly sloping terrain not far from the edge of the Murge; while in area 200 they are situated fairly high up the slopes overlooking the larger valleys.

**Figure 6: The gridded survey transects of the Ostuni’99 survey, with site areas shaded.**

### 3.2 THE PROTOHISTORIC PERIOD

Figures 7 and 8 show the raw and corrected densities of protohistoric materials (almost exclusively coarse Bronze Age impasto ceramics) recorded during the first pass of the Ostuni survey. It may be observed that this material occurs over most of both areas, in densities varying from 1 to 570 per hectare (median density: 13). In Area 100 the relative absence of protohistoric material in the northeastern half may be partly related to the local topography, with a reduced use of the less accessible terrain directly below the Risieddi terrace, but it also seems likely that recovery rates were substantially lower here because of the presence of much recent material (above, figure 5). In Area 200, zones of low finds density appear not to be systematically correlated with land form, but we do suspect that high recent erosion and deposition rates may be involved. The large number of very small (diam 20 m) to small (diam 50 m) impasto sites is remarkable, and they seem to occur in all types of terrain including, on occasion, hilltops; however, the larger impasto sites tend to be situated on lower slopes and valley bottoms, in area 200 even clustering together in one valley.

The macroscopic fabric of the impasto pottery group, very homogenous in area 200 but less so in area 100, is red firing and the paste contains quartz and/or flint and iron; no shiny minerals were noted in the clay, nor does it appear to be very sandy. The pottery has not been subjected to microscopic analysis yet. A shiny layer caused by burnishing of the clay body was noted on a fairly large number of sherds from area 200, and appears as a separate layer onto an often friable core. The sherd surface is unevenly burnt and colours typically vary between red 2.5YR 5/8 and strong brown 7.5YR 5/6 to black. Sherd cores

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5 Given the occurrence of iron ore and slag we may have to presume that such sites are exceptional.

6 Clay layers containing FeMn nodules are present in area 200.
consist of red and black layers or are totally black, indicating firing at a low temperature in an open fire. Many sherds do not have any surface treatment, though this may be partly due to post-depositional processes. This ‘standard’ impasto fabric is dated to the early part of the second millennium BC (proto-Apenninico B), implying that the settlement system producing it may have been in use for as brief a period as 100 to 150 years only (personal communication dott.ssa A. Cinquepalmi). Although diagnostic forms were barely present, and the general pattern of finds was more diffuse in area 100, reflecting its higher intensity of agricultural land use, the larger part of the impasto fabrics resemble those of area 200, and all may be assigned to the proto-Apennine B facies.

Figure 7: Raw density distribution maps of impasto finds in areas 100 and 200.

Figure 8: Corrected density distribution maps of impasto finds in areas 100 and 200.
Area 100 seems not to have been quite abandoned in the preceding and following periods, however, because two sherds of a possibly Neolithic light brown burnished ware were found just below the Zaccaria cave site\(^7\), while sherds of a harder fired impasto with crushed limestone inclusions, indicative of Iron Age fabrics, were found in two other locations (figure 9)\(^8\).

Encircled densities in figures 7 and 8 indicate the areas of higher relative finds density (‘sites’) mapped in the field, details of which are listed in Table 1 (site reference numbers can be found in figure 6). While the site/off-site distinction could be maintained fairly easily for the classical periods, and the material was generally in good condition with no reason to suspect the presence of extensive manuring or plough scatters (see below), the variation in density and quality of the protohistoric material made us question the validity of our site/off-site distinction. An impasto quality study was therefore conducted, the results of which confirmed our suspicions: on the one hand, some ‘protohistoric’ sites (eg, site 4) turned out to consist partly or wholly of a (probably post-antique) very hard sandy impasto-like fabric, or to be contaminated by off-site plain coarse wares dating to the Hellenistic and/or Roman periods; on the other hand, groups of high quality protohistoric impasto sherds had gone unrecognised in the field.

The impasto quality study was carried out in order to determine whether post-depositional disturbance had occurred among the impasto finds groups. Focusing on variability in sherd fragmentation and wear, four classes were defined: 1) completely rolled, 2) worn and with rounded edges, 3) worn, but still recognizable as (body) sherds, and 4) sherds with surface treatment and form characteristics preserved.

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\(^7\) The Zaccaria and S. Maria d’Agnano caves were both occupied from the paleolithic onwards; among the finds reported in Coppola (1983:24, 251-2) are sherds of various types of Neolithic impasto.

\(^8\) Coppola (1983:252) suggests that a few Iron Age sherds found at the entrance of the S. Maria d’Agnano cave are derived from the Masseria Risieddi site located at the top of the Murge cliff.
Table 1: Protohistoric sites (for locations, see figure 6)

| Area 100 |
|---|---|
| **ID** | **Description** |
| 2 | Small (diam 5 m) and dense scatter  
This scatter consists of both impasto pottery and flint. However, the impasto is not of site quality. |
| 3 | Small (diam 5 m) and diffuse scatter; halo (radius 100 m)  
This scatter contains 15 thin-walled impasto-like sherds of some 7mm thick, and 6 sherds of medium-walled impasto, some rather hard fired. However it also contains some late coarse ware (date uncertain). The scatter contains 10 certain pre/protohistoric impasto sherds (probably BA), which in itself does not warrant a site, but in conjunction with other finds from the surrounding area (‘halo’; blocks 109-14 to 17) there is enough standard impasto of site quality. Diagnostic forms are hardly present: Block 109-14 contains a.o. a large knob? and rim of tazza; 109-15 contains several large fragments and also a thin-walled impasto tazza. |
| 8 | Elongated scatter of impasto pottery; dense core 150 by 10 m, periphery 150 by 50 m  
The impasto within this scatter, of standard type, is very worn and not of site quality; it contains only a few clear body sherds. Some sherds appear to be fired harder than usual. |
| 9 | Dense scatter, at least 250 m wide but could be larger toward S and W; top 10 m on Agnano terrace and continues another 50 m down terraced slope  
This scatter contains much impasto material of standard type, but some 10% is in fact coarse ware or fabric X (see following sections). The impasto is generally very worn, but a small percentage is not worn and will have been ploughed up more or less in situ (e.g. in block 115-01). The scatter may have originally extended further to the south and west, on and along the edge of the Agnano terrace, but dense vegetation precluded survey. Site status is beyond doubt. |
| 10 | Diffuse scatter, core diam 80 m, halo over 100 m wide  
Much of the impasto in this scatter is very worn, except for blocks 118-15 and 118-A-DS-1 which have clearly site quality material. |
| 11 | Diffuse scatter, diam 25 m  
This impasto scatter was characterized in the field as ‘not convincing’ because many sherds were lying on the surface rather than in it. The quality of the material is good, but the density appears sufficiently low to regard this as off-site. The scatter is dissected by wide dry stone field boundaries. |
| 12 | Diffuse scatter, 10 by 100 m  
The elongated shape of this impasto scatter, and its location alongside a recently dug leat and field boundaries, indicates that the material may have been recently dug up. This might explain the material has site quality, but the number of finds is not impressive. |
| 16 | Diffuse scatter, 15 by 25 m  
This impasto scatter is located on both sides of a dry ditch, which may mean that the material was deposited when the ditch was dug. Since the material is very worn, it appears that this cannot have happened recently. |
Area 200

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<th>Description</th>
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<td>18</td>
<td>small diffuse scatter</td>
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<td></td>
<td>Contains only 7 fragments.</td>
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<td>19</td>
<td>Very large (500 by 200 m) diffuse scatter, with core area 100 by 100 m</td>
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<td>This impasto scatter, of standard type, has a very complicated shape, with</td>
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<td>many internal variations in density. The highest quality material occupies</td>
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<td>both sides of a dry valley, with lower quality material extending in lobes</td>
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<td>along low ridges. However, the difference may be due to current building</td>
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<td>and landscaping activities going on in the former; ‘nests’ of high quality</td>
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<td>impasto in blocks 202-10 and -11 indicate that fresh material is still</td>
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<td>being ploughed up. The larger part of the material (95% or more) is between</td>
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<td>ca. 1 and 2 cm thick. The forms are jar- and bowl-like (olle and scodelle,</td>
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<td>ciotole); most of the simple band handles present among the material belong</td>
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<td>to this category of large pottery forms. No complex handles such as are</td>
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<td>known from the middle and later Bronze age were present. Only a few sherds</td>
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<td>of a black burnished thin-walled impasto were recorded that must have</td>
</tr>
<tr>
<td></td>
<td>belonged to cups (tazze). Additional finds within this scatter include some</td>
</tr>
<tr>
<td></td>
<td>Neolithic pottery and fragments of naturally occurring iron ore, possibly</td>
</tr>
<tr>
<td></td>
<td>related to the iron slag found mainly in neighbouring field 211.</td>
</tr>
<tr>
<td>20</td>
<td>Diffuse elongated scatter, 120 by 20 m</td>
</tr>
<tr>
<td></td>
<td>This scatter does not contain any diagnostic forms, and all sherds are</td>
</tr>
<tr>
<td></td>
<td>medium-walled except for one tazza fragment in block 203-12. It is very</td>
</tr>
<tr>
<td></td>
<td>similar in type and density of material to site 19.</td>
</tr>
<tr>
<td>23</td>
<td>Diffuse scatter, diam 20 m</td>
</tr>
<tr>
<td></td>
<td>Located on a hill top.</td>
</tr>
<tr>
<td>25</td>
<td>Diffuse scatter, diam 20 m, with 30 m radius halo to its N</td>
</tr>
<tr>
<td></td>
<td>This scatter initially contained only 7 impasto fragments, but a later</td>
</tr>
<tr>
<td></td>
<td>revisit turned up an additional 21.</td>
</tr>
<tr>
<td>26</td>
<td>Diffuse elongated scatter, 100 by 40 m</td>
</tr>
<tr>
<td></td>
<td>Blocks 13 and 16 to the east of this scatter were disturbed and therefore</td>
</tr>
<tr>
<td></td>
<td>not surveyed.</td>
</tr>
<tr>
<td>27</td>
<td>Diffuse scatter, diam 40 m</td>
</tr>
<tr>
<td>28</td>
<td>Scatter with dense (2-5 sherds/m²) core of 30 m diam, and diffuse halo</td>
</tr>
<tr>
<td></td>
<td>Almost all the material in this scatter is medium-walled, with 10 diagnostic</td>
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<tr>
<td></td>
<td>sherds. However, the quality of preservation of material in neighbouring</td>
</tr>
<tr>
<td></td>
<td>block 215-25 is higher.</td>
</tr>
<tr>
<td>30</td>
<td>Dense scatter, diam at least 40 m</td>
</tr>
<tr>
<td></td>
<td>Located on hill top; the scatter may have continued toward the north into</td>
</tr>
<tr>
<td></td>
<td>an unsurveyed field. Some thick-walled impasto bases were recorded, but no</td>
</tr>
<tr>
<td></td>
<td>thin-walled impasto.</td>
</tr>
<tr>
<td>35</td>
<td>Diffuse scatter, diam 50 m</td>
</tr>
<tr>
<td></td>
<td>Although the total number of sherds in this impasto scatter is only 11, it</td>
</tr>
<tr>
<td></td>
<td>includes rather substantial sherds of thick walled impasto; more-over, it</td>
</tr>
<tr>
<td></td>
<td>may have been partially masked by Hellenistic site 22.</td>
</tr>
<tr>
<td>36</td>
<td>Diffuse scatter 100 by 100 m, with small core 25 by 50 m at southern end</td>
</tr>
<tr>
<td></td>
<td>The core of this scatter seems to be located in blocks 112-14 and 112-13,</td>
</tr>
<tr>
<td></td>
<td>and contains some very large lumps of impasto, one teglia lug, and one thick</td>
</tr>
<tr>
<td></td>
<td>base fragment. Probably the scatter originally extended further toward the</td>
</tr>
<tr>
<td></td>
<td>south, but a recent walled garden and buildings prevented further survey in</td>
</tr>
<tr>
<td></td>
<td>this area.</td>
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</tbody>
</table>

Figure 10 summarizes the results of this study by giving the highest class occurring within each recording unit; it can be seen that higher quality generally occurs on the high Murge whereas in area 100 much post-depositional wear and tear has occurred. That the latter play an important role in both areas is confirmed by the fragmentation of this material, due to frequent turning of the soil and long exposure to sun and rain: although some scatters still contain fragments measuring 6 by 6 cm or larger, 90% of the material was fragmented to 4 by 4 cm or smaller. No recent fresh fractures were noted in the material from area 200, all sherds having been exposed at the surface for several cycles of tillage. No sherds were classified as class 1 (severely rolled), the bulk of the sherds being of class 2 (worn and fragmented by tilling and exposure). The quality of some of the finds, classified as class 3 (recognizable fragments) and 4 (sherds with surface treatment and form characteristics), indicates that new material is still being taken up into the ploughzone. The quality of the impasto sherds from area 100 was generally lower than that of area 200, and (parts of) many find groups were classified in class 1, meaning that the sherds have been severely affected by post-depositional processes. This is probably also reflected in the fact that many of the impasto sherds no longer seem to be related to clear scatters and were recorded as off-site material. Impasto finds classified in class 2 and 3, in contrast, are indicative of actual sites ploughed to the surface within the units where they were collected.

The protohistoric pattern emerging from the Ostuni99 survey poses interpretative problems relevant to
the ongoing general debate regarding the definition and practical implementation of site/non-site/off-site concepts. Following the tenets of distributional archaeology (Ebert 1992), we might have only recorded distributions of archaeological materials at the chosen spatial resolution of 50 by 50 m and coverage of 20%; in practice we recognised, and therefore wanted to record, patterning at higher resolutions - ‘sites’. Typically, the observation of ADAB (abnormal density above background) for any of the materials occurring in the area would lead to the definition of a ‘site’ in the field, and a more detailed investigation would follow in order to define the distribution of materials within it and to recover diagnostic materials. Of course, some density fluctuations (sites) might not be observed or defined in the field, whereas others, defined in the field, might subsequently lose their site status during finds processing and analysis.

In the light of this definition, the pattern of protohistoric material revealed by our survey presents us with considerable interpretative difficulties. Inasmuch as one would expect sites being ploughed up to exhibit both greater quantity and higher quality of material, it is noteworthy that areas of high quality impasto (figure 10) in many cases do not coincide with impasto scatters observed during the survey (figures 11 and 12). Two possible explanations for this phenomenon suggest themselves:

a) areas of high quality impasto occur where they do because sites are present in the subsoil only there, and are being brought to the surface through general tillage. This is a weak explanation because it relies on the absence of evidence;

b) areas of high quality impasto are indicative of underlying archaeological sites having been ploughed up recently; conversely, areas of medium or low quality impasto represent similar sites that were ploughed up earlier or more often. One example of this is site 2, recorded as a recognizable scatter in the field, but consisting of material ‘not of site quality’. This explanation would imply that areas of high quality impasto vary from year to year depending on burial and tillage, and leads to the possibility that most of the landscape qualifies as a ‘site’.

Neither manuring nor plough scatter can be invoked as an explanation for the occurrence of off-site material in this period, the former because it presupposes high-intensity land use, the latter because experimental work indicates that ploughing cannot disperse sherds very widely. Whilst material classified in class 1 (severely worn) may conceivably be redeposited by natural and man-made causes, in most cases the observed severe fragmentation and wear will be due to the long and intensive cultivation of the olive groves where the survey took place, and cannot be taken to indicate ‘off-site’ use. Thus we are forced back to the position that the generally occurring low densities of worn protohistoric finds must represent a palimpsest of occasional but recurrent, low intensity, social activities.

The ‘aging’ of surface archaeological material through repeated tillage presents us with a problem: should high quality material be treated any differently from lower quality material that shows no evidence for rolling? The issue is further complicated by the occurrence of localised soil disturbance and movement in the course of building work and agricultural improvement, of which there was much evidence in the region. The occurrence of high quality archaeological material may signal that such work has recently taken place. If we have evidence that a scatter resulted from ditch-digging nearby or from variations in the tillage of a deep valley soil, what does that say about the size/shape of the underlying site? Thus, while concepts of site and off-site are practical in field situations, and are needed in order to compare our results with those of other surveys in the region and elsewhere in Italy, the two approaches are not well integrated from a methodological perspective. It is unlikely that these issues can be resolved without further fieldwork, especially a programme of test excavations directed at understanding the range of relations between subsoil and ploughsoil archaeology.

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9 Conversely, the term ‘off-site’ was applied to the occurrence of materials in ‘background’ densities (the B in ADAB).

10 As examples of the former, doubts were recorded in the field about the originality of a number of sites (nos. 11, 12, 16, 21). In addition, Coppola (pers. comm.) suggests that much of the material currently present on the Agnano terrace may be secondarily deposited from the cave sanctuary area of S. Maria d’Agnano itself.
3.3 THE HELLENISTIC AND ROMAN PERIODS

The raw and corrected density distribution maps of Hellenistic material recovered by our survey (figures 11 and 12) are similar to those presenting the protohistoric material in one sense: the material in area 100 appears to be much more scattered and fragmented than it is in area 200, where two clearly separate scatters (nos. 22 and 24) were identified in the field. In area 100 a targeted re-survey of units which had yielded some scraps of classical fine wares was needed in order to turn up a sufficient amount of additional material to allow us to define scatter cores. The resulting pattern may still be somewhat biased by the preponderance of recent and subrecent material in parts of area 100 (see figure 5), which would have prevented the relatively inexperienced student walkers from reliably recording similar-looking classical material. Sites 14 and 15 are within 200 m of each other, and may be parts of the same settlement; the similarity in the location of the three Murge sites, all on the upper part of slopes with a commanding view of the valley beneath, is remarkable.

Comparison of figures 11/12 and 13/14 shows that there is a large measure of continuity in the pattern of settlement from the Hellenistic to the Roman Imperial period, although the density of finds from the Roman period is higher. In this phase, in area 100, sites 14 and 15 are still paired and 14 is now more clearly part of the halo surrounding 15; the small site 5 now appears to belong with a similar partner site.
32, which is situated in a sheltered location just beneath the Agnano terrace and the Zaccaria cave site. Unfortunately the terrain directly to its south-east was quarried for limestone. Table 2 provides descriptions of the Hellenistic and Roman sites.

![Figure 13: Raw density distribution maps of Roman Imperial finds in areas 100 and 200.](image)

![Figure 14: Corrected density distribution maps of Roman Imperial finds in areas 100 and 200.](image)

### 3.4 POST-ANTIQUE TO RECENT

Although recent and subrecent material was only recorded by us because it is a significant factor in biasing the recovery rate of other material groups, we did hope to identify Byzantine and Medieval material despite not having an appropriate specialist on our team. As it turned out, the only probably post-antique material we could identify turned up as a result of the impasto quality study; as yet unidentified, it was termed ‘fabric X’. The fabric is sandy, and is fired very hard; it appears to be used for both tiles (typically between 1.8 – 2.0 cm thick) and pots; its predominant colour is reddish yellow 7.5YR 7/8-6/8. Figure 15 and Table 3 provide an overview of the distribution of this material. Clearly, most of the material forms two scatters, located on opposing edges of the Agnano terrace; a few sherds in the northern part of the surveyed area indicate that a third site may be nearby. Further work is needed to identify and date this
fabric.

![Figure 15: Corrected density distribution map of impasto sherds with fabric 'X' (per ha) in area 100.]

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diffuse scatter of Hellenistic pottery, diam 50 m&lt;br&gt;Scatter consists of fine wares (Apulian Black Gloss, late Republican Grey Ware), coarse and plain wares and amphora (Corinthian A). Amount of tiles very low. Near to the core of the site a Gnathia sherd was found, indicative of an early Hellenistic burial.</td>
</tr>
<tr>
<td>5</td>
<td>Small and diffuse scatter of Hellenistic and Roman Imperial tile and pottery, diam 10 m&lt;br&gt;Located on terraced slope, this scatter contains mostly tiles, and only one fine ware sherd (Italian sigillata).</td>
</tr>
<tr>
<td>14</td>
<td>Dense scatter of Hellenistic and Roman Imperial tile and pottery, core 50 x 30 m&lt;br&gt;This scatter has a considerable halo and contains large amounts of diagnostic ceramics. The pottery consists notably of fine slip wares (Apulian Black Gloss, Italian Sigillata, Red Slip wares), amphoras and coarse – kitchen wares. The major phases are the early Hellenistic and the Roman Imperial periods (to well within the 6th century AD; witness the presence of Byzantine/Palestine amphoras). The presence of Apulian Red Figured sherds is indicative of an early Hellenistic graveyard.</td>
</tr>
<tr>
<td>17</td>
<td>Dense scatter of tile and pottery, 50 x 15 m; overall density not known&lt;br&gt;The long axis of this scatter is located along a field boundary; it probably represents a Hellenistic farmstead since multiple Apulian Black Gloss were found.</td>
</tr>
<tr>
<td>32</td>
<td>Diffuse scatter of Roman pottery and tile, diam 25 m&lt;br&gt;Few diagnostic ceramics, datable to the 2nd/3rd century AD (African Red Slip and San Foca).</td>
</tr>
</tbody>
</table>
Area 200

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
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</table>
| 22 | Dense scatter of Hellenistic and Roman pottery and roof tiles; core diam 75 m, with 50 m halo (up to 100 m downslope)  
Fine wares include Apulian Black Gloss, late Republican Grey Ware, Italian sigillata and early African Red Slip wares; probable Roman building blocks were re-used in terraces. Same material possibly re-used during recent soil additions higher up on same spur (Block 9). The scatter can be interpreted as the nucleus of a hilltop farm that was continuously occupied from the early Hellenistic period to within the 2nd century AD. |
| 24 | Diffuse scatter of ancient pottery and tile, 50 by 50 m  
The scatter is located along a field boundary. In 1999 only undiagnostic material was found here. In 2000, a revisit to the surrounding area revealed the existence of an extensive and dense Hellenistic-Roman site in the fields bordering the scatter to the north. In view of this, the scatter can be argued to constitute the periphery or halo of that site. The material still has to be analysed in detail. |
| 29 | Dense scatter of ancient tiles and pottery, diam 20 m  
The material is not very diagnostic and has, as yet, not been analysed. |

Table 3: Post-antique sites (for locations, see figure 6)

Area 100

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
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</table>
| 4  | Dense scatter of fabric ‘X’, 25 by 10 m  
A large percentage of the sherds from this scatter belong to tiles of which in some cases the rims were preserved, but thinner potsherds were also recorded. The quality of the sherds is high (class 3) and the scatter appears to be homogeneous. We probably deal here with a post-antique structure in local fabric, although the siting on a steep terraced hillside is strange. Provenance of finds unclear; could be from site on edge of Agnano terrace. |
| 9  | Dense scatter, at least 250 m wide but could be larger toward S and W  
The top 10 m of this scatter, containing some 10% coarse ware or fabric X, are located on the edge of the Agnano terrace; it continues another 50 m down the terraced slope |
| 31 | Diffuse scatter, diam 10 m  
Turns out to be all post-antique material. |

4 DISCUSSION

As stated in section 1, the primary survey data presented in the previous section are analysed in the context of the three major ( supra-) regional developments – centralisation, early urbanisation, and Roman colonisation – introduced in section 1.2. Below, the outcome of this analysis will be presented chronologically.

4.1 CENTRALISATION OF SETTLEMENT IN THE LATE BRONZE AGE AND EARLY IRON AGE

The detail of the survey method used in the Murge proved successful in locating even small, low density and low visibility middle Bronze Age (18th – 15th centuries BC) artefact scatters. In both survey areas a large number of such ephemeral scatters was found alongside a series of larger and more dense concentrations, suggestive of an extensive human exploitation of both up- and lowland areas in this phase of the Bronze Age (figure 12). With regard to locational preferences, one may observe that the major Bronze Age scatters in area 200 cluster on the lower terraces at the interface between hill slopes and valley floors. A similar pattern is attested near the contemporaneous large Bronze Age site of Masseria Carestia, some 3 km to the east in the same landscape unit (personal communication d.ssa A. Cinquepalmi). This preference can be explained in reference to the classification of the lower parts of the slopes and the valley floors as suitable to palaeotechnic wheat farming, due to their relative flatness, nutrient availability and workability. The same holds true for the concavely sloping land and the lowland plain proper, where middle Bronze Age sites abound as well. Whereas the sheer abundance of middle Bronze Age material in
all areas makes it likely that the settlements were not all permanently occupied contemporaneously (explanations should be sought in the context of group mobility related to the practice of shifting cultivation, necessitated by the short term fallowing system practised in the Bronze Age), the homogeneity of the material argues for a relatively short period of use. Unfortunately, due to the undiagnostic nature of the finds we cannot assign this settlement period to any particular phase within the MBA.

The highly dispersed middle Bronze Age pattern established by our survey contrasts with that of the late Bronze Age (LBA; 14th - 12th centuries BC). In the survey areas no definite LBA material was found. However, this does not mean that the Murge area was abandoned in this phase. Whereas in the Salento region as a whole, LBA sites are mainly concentrated along the coast line, in the Murge they are also found at the top of the steep slopes at the interface of the coastal area and the upland. A good example is offered by the site of Rissieddi, which stretches out on one of the promontories along this edge, immediately north of area 100 (see figure 2). Now largely built over, until recently sections of a stone fortification circuit could be observed to enclose a densely occupied area of some 2-3 ha (Coppola 1983:208-213). The Rissieddi promontory visually dominates the surrounding landscape, as do similar LBA sites in the Murge. On the basis of the available data one can conclude that, by the LBA, a strongly centralized settlement pattern had emerged, contrasting with the highly diffused one of the MBA.

Much less is known about the final Bronze Age and initial Iron Age (11th - 9th centuries BC; the ‘Dark Ages’). For the Salento peninsula as a whole, the known sites are still situated predominantly on the coast. After the collapse of the Mycenaean world no imports from that region reach Salento, suggesting that overseas, and perhaps even interregional, networks had collapsed. Coastal communities were probably autarchic, while the interior may only have been exploited for extensive pastoralism, if at all (Burgers 1998:173-174). This pattern was gradually transformed in the course of the 8th century BC. In the study area one may observe a shift in locational preferences in this phase, the Rissieddi plateau being abandoned in favour of a new settlement on the more accessible hilltop at Ostuni (see figure 2). Iron Age occupation at Ostuni is attested from the 8th century BC onwards (Coppola 1983:235-254). This is congruent with recent theories on settlement expansion and shifts in site locations in 8th century BC Salento in general (D’Andria 1991:405; Yntema 1993-1:161; Burgers 1998:186-191). The early Iron Age Salento is characterized by a gradual increase in site density, an expansion of already existing sites, and an occupation shift from coastal promontories to inland plains and hills, suggestive of an internal colonisation movement. In addition to Ostuni itself, a whole series of Murge sites illustrate this phenomenon, such as Locorotondo (figure 1; De Michele 1986), S. Pietro di Ceglie Messapico (figure 2; Fusco 1964; Coppola 1977:304), and Castello di S. Vito dei Normanni (figure 2; Cocchiaro 1998; Semeraro 1998). Still, judging by the relatively large distances between these sites and by the absence of Iron Age artefacts in rural survey areas such as ours, most of the Murge is likely to have been exploited only marginally.

4.2 EARLY URBANISATION AND RURAL INFILL

No direct evidence for the emergence of urban sites could of course be obtained from our rural surveys at Ostuni, so we must turn to previous research in order to put our results into perspective. Artefact scatters dating to the Archaic/Classical period (600 – 325 BC) were absent in the survey areas, suggesting that most of the high Murge was still not used intensively in these phases, and that settlement continued to concentrate in the same areas as in the previous Iron Age. Indeed, it may be hypothesized that the nucleated settlement pattern that emerged in the Salento Murge in the early Iron Age was consolidated in the Archaic/Classical period. Unfortunately, due to the scarcity of systematic investigations at major Murge sites such as Ostuni, Ceglie Messapico, and Martina Franca (see figure 1), no proto-urban intra-site studies are as yet available that would allow us to evaluate if these sites underwent changes similar to those detected at the southern lowland sites of Cavallino, Oria and Valesio (see figure 1)11. At Cavallino, excavations point to a trend towards the replacement of dispersed early Iron Age hut compounds by aggregate blocks of (partly) stone built houses with tile covered roofs, and traces of such houses have also

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been found at Valesio. At Cavallino, this reorganization of settlement space was shown to have been accentuated by, amongst others, the arrangement of clearly defined paved roads and public spaces, as well as by the construction of monumental stone defensive circuits surrounding the inhabited areas. Similar defenses have been traced at Oria and Mass. Fani (figure 1; Andreassi 1981; Descoëttes/Robinson 1993).

The emergence of early urban features at these sites can be shown to coincide with a reorganization of religious space. This becomes particularly evident when the wider landscape is taken into consideration as well; whereas early Iron Age religious activities remain largely invisible in the archaeological record, for the Archaic/Classical phases one may observe a process of formalization of cult activities, notably in caves in the territories of the major settlements. Evidence for the occurrence of this process in our study area is provided by the cave sanctuary of the Grotta di S. Maria d’Agnano, just a little distance uphill from survey area 100 (see figure 2). The cave is located some four km north of Ostuni, and opens out onto a natural terrace overlooking the coastal plain, just below the cliff top harbouring the site of Rissieddi. Investigations carried out under the direction of Coppola have demonstrated that the cave became the scene of a formal cult dedicated to a female divinity from the 6th century onwards (Coppola 1983:249-252). Following the arguments we have put forward elsewhere regarding such sanctuaries (Burgers, forthcoming), we believe that this reorganisation not only involved a transformation in the perception of the landscape, but also a formalisation of territorial claims.

In view of the above, it is all the more remarkable that the results of our survey show that it was only in the early Hellenistic period (325 – 200 BC) that these territories attracted any substantial rural settlement. In area 100, following a pattern observed earlier at Oria (Yntema 1993-1), these sites appear to be located along a line running just beneath and parallel to the Murge edge, suggesting the existence of a pedemontana road (see figure 11). Unlike similar farms in the Oria and Valesio survey areas, some of these sites lack identifiable tile, which suggests that a much simpler construction method was used for farm buildings. In both survey areas these early Hellenistic sites are surrounded by low density ‘halos’ indicative of manuring, while in area 200 they occur on slopes that were largely avoided in the Bronze Age. It may be proposed that with fertilisation (and possibly irrigation), these slopes had been made suitable for agriculture. Considering the observed emphasis on polyculture in other parts of Salento from this time onwards, it is tempting to suggest that the slopes may have been taken into use for arboriculture in a manner analogous to the 19th century situation referred to in section 2.\[12\]

Although the latter hypothesis can not be proven as yet, these results may be called highly significant. The Salento Murge was thought to be an archaeologically marginal landscape even in the Hellenistic period until the sites and off-site material detected by our survey showed that the Murge in fact participated in the regional trend of agricultural expansion and intensification, established on the basis of the spread of early Hellenistic farmsteads in urban catchment survey areas on the Salento Isthmus (Burgers 1998:226-263). Considering that in the Murge the rural infill is also attested in the upland survey area 200, at 7-8 km from the nearest urban centers at Ceglie Messapico and Ostuni, one may suggest that this regional trend extended to the cultivation of even the most outlying, previously untilled, lands outside the urban catchment areas.

The agricultural transformation indicated by these results is linked to other major contemporaneous early Hellenistic developments. It can be argued to have supported a demographic increase and urban rearrangement of the larger settlements, which reached their maximum expansion in this period. Since we have only cemetery evidence from Murge sites, a parallel must be drawn with other Salento sites where systematic urban surveys point to a considerably expansion (Yntema 1993-2; Burgers 1998). Excavations at several of these sites likewise show the emergence of large nucleated insular with a relatively regular layout (figure 1; Monte San Nace: Scarfì 1961; 1962; Vaste: D’Andria 1991; Muro Tenente: van Alberda et al. 1999). Besides these domestic quarters, specific urban spaces were arranged for public buildings, cult places, cemeteries, warehouses and for intensive horticulture. Fortification circuits were built to enclose

\[12\] On the development of a polyculture system, see Burgers 1998:255-259.
entire settlement areas - as was the case at Ostuni and Ceglie Messapico in the Murge (D'Andria 1991:445; Coppola 1983:269-275). These urban transformations can be shown to have occurred simultaneously at sites throughout the Salento peninsula. Relating them to the rural infill of the landscape surrounding these major sites, one may observe the parallel emergence of pronounced local settlement hierarchies throughout the region (as discussed in more detail in Burgers 1998:226-263). On the basis of our survey, the Murge area can be considered one such micro-region, with isolated farmsteads even appearing on the rolling land of the high plateau.

It can be concluded that, with the rearrangement of the wider landscape, the Murge towns became central places serving extensive rural hinterlands in the early Hellenistic period. Indicative of this development is the variability in the ceramic repertoires of the rural sites detected in both survey areas - besides tiles and local coarse kitchen and plain wares, these include fine wares such as Apulian Black Gloss, Gnathia ware and Apulian Red Figure, suggesting articulation with a market system.

4.3 THE ROMAN LANDSCAPE

Neither survey area in the Ostuni transect shows significant changes in the number or location of sites of the late Republican and Imperial periods, as compared to the early Hellenistic period. A basic continuity seems to exist for these phases, suggesting that the Murge landscape was not much affected when the centre of power in the region shifted towards the Brindisi plain as the direct hinterland of the Latin colony of Brundisium (see figure 1).

Brundisium was founded around the middle of the 3rd century BC as Rome's satellite in the newly conquered Salento peninsula. In the late Republican period it grew into one of the major Italian harbours for communication with the eastern Mediterranean, as well as into a regional centre for the overseas export of agricultural products, notably wine and olive oil. With the emergence of an export oriented market economy, there is evidence to suggest the formation of a regional landscape which was differentiated in various zones of profitability (Burgers 1998:265-292). Market oriented wine and olive oil production can be argued to have concentrated in the immediate hinterland of Brindisi, as well as along the major new transport axis of the Via Appia. As a consequence, the role of the former Hellenistic towns as central places in these areas lost much of its significance, which may be one of the major reasons for their decline.

Areas further removed from Brindisi and the Via Appia (including the Ostuni survey areas) must also have become economically peripheral, with subsistence farming likely to have prevailed in the late Republican period. The aforementioned lack of systematic research at towns in the Murge warns against drawing definite conclusions regarding their development in the Roman period. However, judging from the scarcity of Roman finds so far, they do seem to have contracted considerably. On the other hand, the rural landscape of neither the Murge upland nor the plain seems to have suffered similarly, as the Roman sites in the survey areas demonstrate, and the presence of considerable amounts of fine wares on these sites suggests that the area as a whole still had access to a wider market system.

This rural continuity also holds good for the Roman Imperial period, at least for the lowland survey area (area 100), for which African Red Slip wares are amply attested. There is even some evidence of site expansion - at site 15 Imperial Roman artefacts are distributed over a much wider area than the Hellenistic sherds. In comparison to the other Imperial scatters discovered here, this site clearly stands out not only in extent but also in the amounts of fine wares found. In view of this, it can be interpreted as the central part (with domestic unit) of a larger estate which also harboured a range of utilitarian outbuildings. A similar development has been observed in other Salento survey areas, where Roman Imperial sites also expand progressively (Boersma et al. 1991; Yntema 1993-1:215-226), and may be suggested to reflect a process of concentration of small, dispersed land holdings into larger, more centrally managed estates. If this was the case in the lowland around Ostuni, it is tempting to relate it to an expansion of olive culture in this area, which as we have seen above (section 2.2) is already described in historical documents of the 16th century as ‘a forest of olive trees’ and which remained so until the present day. Central estate management is a prerequisite for large scale olive culture. In this regard, one may also point to the
existence of the nearby Via Traiana, running all along the coast from the Bari district to Brindisi. Its course has been studied by Uggeri, who relates the ancient written sources mentioning the road to actual field observations (Uggeri 1983:228-264). The Via Traiana is likely to have considerably improved the accessibility of this part of the Murge, not least for the transport of agricultural products. In contrast, Imperial fine wares are less conspicuous in the upland Cervarolo zone. Other contemporary diagnostic wares lack as well, suggesting that the area was abandoned in the 2nd century AD and that the Murge upland now became peripheral to the wider region.

5 CONCLUDING DISCUSSION

From a methodological point of view, the Ostuni’99 survey has had some very interesting results. The three visibility bias factors discussed in section 1.4 indicate that the recent and subrecent land use history of the study area has had a significant influence on the results of our survey. The impasto sherd quality study reported in section 3 revealed a lacuna in our understanding of surface pottery distributions, relevant to the ongoing general site/off-site/non-site debate. While we may not be able to attach any secure interpretation to the occurrence of areas of higher sherd quality such as those mapped in figure 10, it is in our opinion a phenomenon worth looking into by means of a programme of test excavations. These concerns must be borne in mind when reading the analysis of the use of the landscape in each period.

Despite the unsolved problem of insecure dating of the Bronze Age impasto, the Ostuni survey conducted by the RPC project has considerably strengthened and widened the basis for generalisations on the occupational history of the Salento Murge. The sample areas investigated represent two of the major landscape units of this micro-region. Contrary to expectations, both have given up a relative abundance of surface material dating to the Bronze Age and the Hellenistic/Roman period. By applying a detailed survey method, focusing on the documentation of the density and distribution of artefacts rather than sites, it has become possible to assess accurately the variability in quality and quantity of this surface material in the light of both cultural and natural formation processes. Moreover, relating the results of the survey to those of the land evaluation, hypotheses on land use patterns could be more firmly grounded.

On the micro-regional scale of interpretation, one of the major conclusions that can be drawn on the basis of the surveys is that, in broad outline, both sample areas demonstrate parallel shifts in artefact densities and distributions from the Bronze Age to within the early Imperial period. Judging by the highly dispersed pattern of Middle Bronze Age scatters delineated in both survey areas, the Murge plateau and the lowland zone can be argued to have been extensively exploited during this phase. This rather mobile settlement system of the MBA contrasts strongly with that attested for the late Bronze Age, which is of the nucleated type. A similar nucleated pattern, now including the interior of the Murge, came into being in the course of the early Iron Age, when a number of large sites appeared on selected strategic positions. The latter pattern can be shown to have continued to well within the 4th century BC, a period in which, according to the survey results, the rural landscape surrounding the major Murge sites seems to have been exploited only marginally. Archaeological material dating to these centuries is restricted to the cave site of S. Maria d’Agnano, where the Archaic formalisation of cult activities can be argued to have supported territorial claims on the surrounding land.

Our survey indicates that it is only from the late 4th century BC that the rural landscape of both the coastal zone and the Murge plateau was actually claimed for settlement. In view of this, it can now be argued that the Salento Murge participated in the general south-Italian trend of agricultural expansion and intensification that accompanied ongoing urbanization. The recognition that this trend involved even areas on the high Murge, far from the immediate catchments of the major Murge towns, may illustrate the scale of the process.

For both survey areas, a basic continuity of occupation throughout the Roman Republican and Imperial periods can be deduced, with the possible exception of the late Imperial period in the upland area. This situation contrasts with that known from incidental discoveries at the major Murge sites, which seem to
have been largely abandoned in the late Republican period. If this may be taken to indicate that these sites lost their previous central market role, subsistence farming is likely to have come to prevail in the surrounding rural territories. As for the Imperial period, the expansion and intra-site differentiation of the largest site attested in the lowland survey area can be interpreted in the light of a concentration of land holdings in a more centrally managed estate focused on large scale olive growing.

In line with the central RPC project aim of comparative regional analysis, the settlement history outlined above is studied from a (supra-)regional perspective. The Salento region has most often been treated in the context of Hellenization studies, focusing on the demonstration of the diffusion of Greek culture among non-Greek populations in Southern Italy (cf. notably Whitehouse and Wilkins 1989). This diffusion is generally conceptualized as a unilinear process of increasing intensity, enhanced in particular by the installation of Greek colonies along the Ionic shores (notably Taras for the Salento Isthmus), and is thought sufficient proof of Greek cultural domination over their native neighbours. The recent upsurge of problem oriented fieldwork in southern Italy, and in the Salento peninsula in particular, allows us to qualify this strongly culture-historical, diffusionist paradigm. Cherishing a wide chronological and spatial scope, the fieldwork conducted by the RPC project offers the possibility of research into long-term, supra-regional settlement and landscape dynamics. From this perspective, the early Greek intrusions can be argued to have been not a dominant but rather a peripheral element in a region-wide process of internal colonisation, settlement expansion and corresponding shifts in territorial perspectives and claims (see above, section 4.1). This process, which can be shown to have started before the arrival of Greeks, is also attested in the Murge area, where a range of new sites emerged on strategic locations in the early Iron Age.

Similarly, it has now become possible to overcome the traditional emphasis on Greek polis formation for the subsequent centuries and to point to the existence of contemporary dynamic processes occurring in the native world, especially those of early urbanization and agricultural intensification. These processes involved, amongst others, the emergence of pronounced settlement hierarchies in micro-regions throughout the Salento Isthmus, and can be related to the formation of centralised socio-political power structures increasingly integrating previously segmented tribal units (Burgers 1998:195-263).

From the same diachronic and supraregional perspective the Roman landscape of the Murge must be interpreted in the context of the progressive incorporation of Salento into a developing state and market system dominated by Rome. This further enhanced political and economic centralisation, favouring notably the Latin colony of Brundisium and its immediate hinterland in the Brindisi plain. Although the Ostuni survey results indicate that neither the uplands nor the lowlands were abandoned until the later Imperial phases, the Salento Murge as a whole can be argued to have become increasingly peripheral from the late Republican period onwards.

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