TROWEL

VOLUME III
1992

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EDITORS' FOREWORD

Trowel last appeared in Spring 1989, therefore this volume marks the renewal of this annual publishing event by the U.C.D. Archaeological Society and it is particularly appropriate in this the Society's 50th year.

At present there are more students than ever studying archaeology at undergraduate level in U.C.D., however, it is disappointing that of the contributors to this volume only two are undergraduates. Hopefully, in the years to come, undergraduate participation will increase. It is our experience that there are certainly plenty of good ideas out there and hopefully students will take encouragement from the papers in this volume and come to use this forum to air their views amongst their peers. With the increasingly abundant computer facilities in College, editing and production can no longer be seen to be beyond the reach and capabilities of anybody with the interest and motivation.

Trowel is the only publication of its kind in Ireland at this time and it is hoped that it might provide the impetus for the development of a similar forum so that the contributors to Trowel might have an equivalent outlet for their work when they depart the cloistered environs of U.C.D. We view with encouragement the re-establishment of the Association of Young Irish Archaeologists in the last twelve months and the consequent renewal of inter-university links, long may they prosper.

Finally it remains for us to thank the contributors for putting up with our assaults on their privacy and demands on their time with such fortitude and good humour. We hope they agree that the end justified the means. Also, thanks are due to the Society for agreeing to support this caper with their good name. Dr Gabriel Cooney was, as always, generous with his encouragement and advice.

James Eogan,
Colm Jordan,
Conor McDermott.

Abbreviations:

B.A.R.	British Archaeological Reports.
J.R.S.A.I.	Journal of the Royal Society of Antiquaries of Ireland.
P.P.S.	Preceedings of the Prehistoric Society.
P.R.I.A.	Proceedings of the Royal Irish Academy.

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FIELDWALKING IN IRISH ARCHAEOLOGY
A CASE STUDY FROM NORTH COUNTY DUBLIN

BERNARD GUINAN

"Flint scatters are considered poor data unless a tent or a hut can be resurrected from amongthe chippings"
(C.Gamble, quoted in Schofield, 1991, 4)

Introduction

Fieldwalking or surface collection is an archaeological survey technique that can in its narrowest sense be defined as the systematic collection of artefacts from the surface of ploughed fields. Behind this deceptively simple definition lies an archaeological technique which, in recent years has taken a monumental methodological and theoretical leap forward, to become a serious branch of archaeological research. Fieldwalking, like its mother discipline archaeology, has its origins among the ponderings and leisure pursuits of amateurs. However, unlike many other aspects of archaeological methodology, most notably excavation, it did not grow and develop a scientific and theoretical base. This absence of a structured basis for collection and interpretation meant that fieldwalking data often simply accumulated in museum vaults and received little serious archaeological attention. Up until the mid 1970's this dismal picture had changed little. Glenn Foard as recently as 1978 described fieldwalking as a "method of archaeological research sadly neglected by all but a few dedicated amateurs, whose work only reached a small local audience.... One searches in vain through most texts on field work for a discussion of fieldwalking, and even the most recent work devotes little space to the subject" (Foard 1978, 357).

The situation has changed quite considerably since then. The emergence of tighter controls on collection coupled with new theoretical approaches to interpretation has helped make systematic surface collection a prominent and academically accepted area of archaeological enquiry. Terms such as "plough zone archaeology" (Schofield 1991) have become part of the archaeological nomenclature, defining the plough soil as an archaeological horizon in its own right. Large scale regional surveys particularly in North America and Britain have resulted in a number of detailed papers and monographs devoted to the subject (e.g. Foley 1981, Haselgrove et. al. 1985, Schofield 1991). These advances have created an archaeological technique which has much to offer in the grand pursuit of past human behaviour.

Fieldwalking in Irish Archaeology

The coming of age of systematic fieldwalking in Irish archaeology is an even more recent phenomenon. Although amateur involvement and the great tradition of the collector did not develop to the same extent in Irish archaeology as it did in Britain, the Irish plough soil has always attracted its share of enthusiasts. The products of these individualistic efforts range from isolated stray finds to enormous collections that represent years of dedicated activity. Because collection was unsystematic and selection was often based on the 'artefact preference' of the collector, the contextual and spatial value of this material is greatly reduced. Despite these limitations, however, lithic collections can yield valuable archaeological information (Dillon 1990), and should not be dismissed.

The methodological change over to a more systematic survey technique, which emphasises the totality of land use over a specific location, was painfully slow to' evolve. Traditionally Irish archaeology has tended to focus on the abundant monumentalremains of the past. However, the realisation that past human behaviour could be understood better in its landscape context, forced archaeologists to consider new methods of documenting the human activity that took place beyond the megalithic kerb and the boundary of the domestic settlement. Systematic surface collection offered a new way of addressing old questions of settlement and land use.

The 1980's can be isolated as the decade which saw the evolution of systematic fieldwalking as a serious research tool in Irish archaeology. Systematic fieldwalking surveys have been undertaken in a number of areas most notably in the Co. Waterford region (Green and Zvelebil, 1990). The Ballylough project is the largest of its kind undertaken to date in Ireland, combining surface collection with excavation to address the larger issue of the Mesolithic and agricultural transition in south east Ireland. Also in the south east, a fieldwalking programme centred on the Co. Cork coast and the Blackwater Valley has been initiated by Peter Woodman (Woodman, 1984). The early prehistory of Mt.Oriel in Co. Louth has also become the focus of a regional scale systematic fieldwalking program (Cooney 1990). In addition to these large scale projects, the early prehistoric settlement structure of smaller landscape areas have also come under investigation. The Fourknocks area of Co. Meath has been examined using systematic surface collection methods by Sarah Cross (Cross 1991). Other researchers investigating the potentials of plough-zone archaeology include Jon Marshall in North Antrim (Marshall 1989) and Don Hodgers working along the coast regions of Co. Louth (Hodgers 1979). Although much progress has been made we have only just begun to tap the potential of systematic fieldwalking in Ireland. The absence of ploughed land is the only factor which militates against a surface survey taking place in an area. In many parts of Ireland, due to the dominance of pastoral based agriculture, this commodity is often in short supply. However, where arable practices prevail the plough-zone contains valuable data that can greatly expand and strengthen the interpretative framework of Irish prehistory.

The North County Dublin Survey

During the autumn and spring seasons of 1990-91 the author, as part of an M.A. thesis, undertook a small scale systematic fieldwalking survey along part of the North County Dublin coastal region. This region has attracted a number of collectors in the past in particular Miss G.C. Stacpoole who amassed an enormous collection of material during the 1950's and 1960's. The focus of the present study was a small area centred on the townland of Barnageeragh. The survey area lies immediately north of Skerries along the coastal road to Balbriggan. The intensively ploughed landscape of this area was one of the main centres of Miss Stacpoole's activities. Throughout the 1970's a large body of material has also been collected non-systematically in the area by Mr Martin Walsh (pers. com.)

The present survey was the first systematic investigation in the area. Seven fields in all were sampled and walked as part of the research project. The fields in the area are small, and this made it possible for the author to individually walk all the fields chosen for survey. This approach effectively eliminates the well documented problems caused by the differential recovery rates encountered where numerous individuals with varying levels of experience and skill have been involved. Within each field a single sampling technique of a line walking method was used. This involved dividing each field into parallel transects 10 metres apart. Each transect was then subdivided into measured stints 25 metres in length. The method of collection was to walk each transect scanning the ground over an area 1 metre each side of

the line and collecting all material encountered. All material collected was recorded by field, transect and stint number. The methodology employed here is closely comparable with the systems used at Mt.Oriel and Fourknocks (Cooney 1990, Cross 1991). This will hopefully allow for useful archaeological comparison to be made between these regions in the future.

Although the data collected during the course of the survey is still at an early stage of analysis and interpretation, some preliminary results can be outlined. Because of the relatively small area sampled total collection of all humanly worked material was decided on from the start. The main body of data recovered consisted of lithic material, post medieval pottery, a number of clay pipe fragments, glass and iron. The lithic material recovered was composed of one dominant raw material, flint. Where figures are available flint was found to constitute over 99% of the raw material used. All visible flint, including unworked pebbles were collected in a attempt to access the actual quantity of available raw material in the area. The main sources of flint in the area seem to have been glacial nodules and beach pebble material.

Preliminary analysis of the lithic content of the scatters from all seven fields revealed an absence of diagnostic type fossils. This lack of diagnostic types was mirrored by a relatively low density of retouched pieces. This stands in contrast to the large quantity of debitage recovered including flakes showing various stages of reduction. Various types of cores and irregular lumps and chunks of rough waste formed the remaining body of the lithic data. Although few chronological controls exist, the collected material would appear to be a temporally mixed assemblage, representing human activity from the Mesolithic to the Bronze Age (see fig. 1).

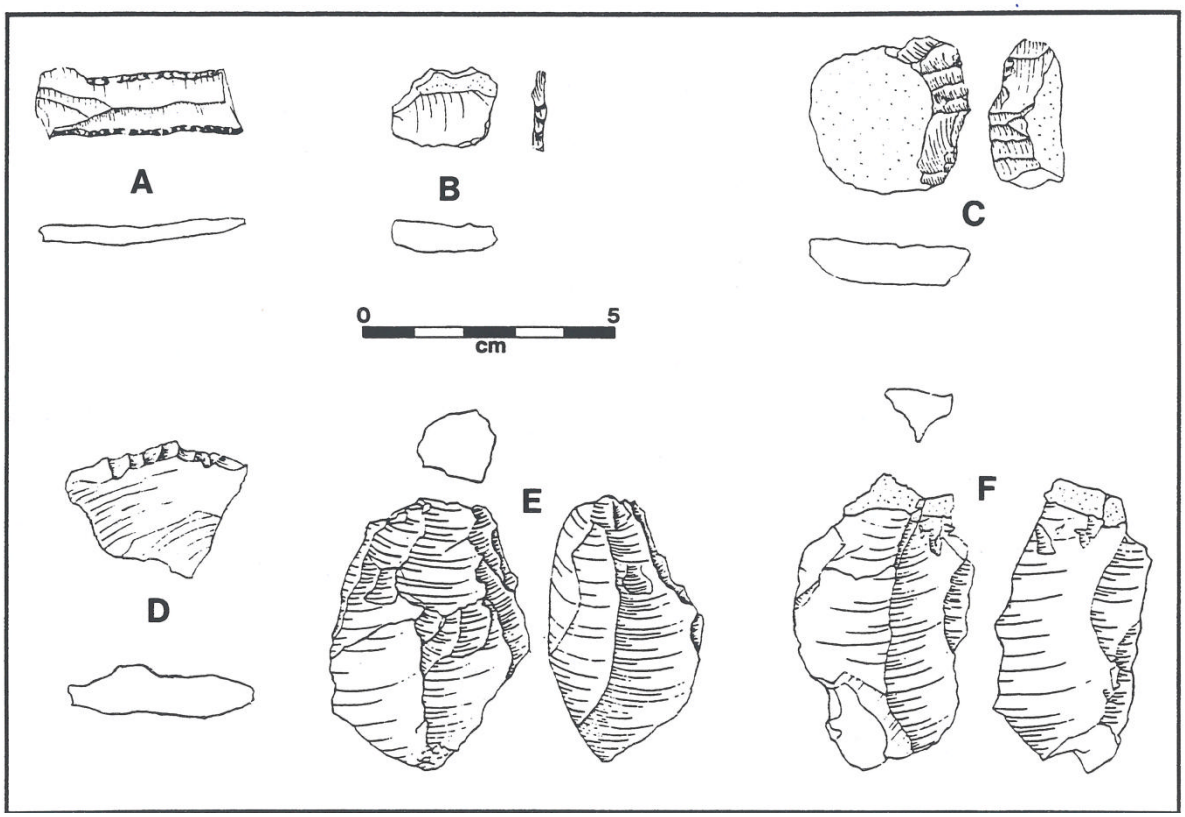

fig. 1: A. retouched blade; B. scraper; C scraper; D. misc. retouched piece; E. and F. single platformed cores.

One of the most striking results of the survey to date was the enormously high density of lithic material recovered. While the quantity of material varied from field to field, the over all pattern was very dense. The interpretation of this material has just commenced, but it is worth noting that high densities of material do not necessarily point to kites' in the traditional sense of the term. Valid interpretation of surface data must be based on an analysis of the lithic content of scatters as well as their overall densities. In addition to the artefactual data recovered, the survey also identified the remains of a fualachtfiadh on a small rise in one of the fields walked.

Fieldwalking as Rescue Archaeology: The Situation in North County Dublin

Plough-zone archaeology has emerged, grown, and matured within the cloistered environment of research archaeology. The advent of rescue archaeology removed excavation from the preserve of purely research purposes, and remoulded it into a necessary salvage tool in response to modern development and land use changes. During the course of the author's fieldwalking program, it became increasingly obvious that surface collection must also be adapted as a rescue tool. At the most fundamental level it can be argued that fieldwalking by its very nature contains an inherent 'rescue element'. It is one of the ironies of fieldwalking that the very process of ploughing which makes the technique possible is in effect archaeologically destructive. The plough acts as an agent of destruction by disturbing subsoil features where they exist and causing spatial displacement of cultural debris. Because surface collection is in effect an archaeological adaptation to the reality of the plough it always contains a basic salvage character. However, most decisions concerning the initiation, extent, and location of a proposed fieldwalking project are made on research grounds, rather than as a response to the destruction of archaeological material. Indeed, the present survey was also initiated as a research project. In the area encompassed by the survey, ploughed land is available in abundance. In this area the real threat is posed not by the plough but by the expansion of adjacent urban areas, which is eating into the arable land of the region. During the course of field work, tracts of previously ploughed land were being lost to archaeology as earth moving machinery took over in advance of building construction. At its simplest this means that an important range of archaeological data together with an extensive and available archaeological landscape is being slowly depleted and destroyed.

This is not a problem that will simply go away. Economic pressures are making agriculture unprofitable, to the extent that many farmers in the area have and are continuing to give way to the land requirement of developers. These observations are not confined to the area of present research. Even a cursory glance at the extent and range of lithic material collected non-systematically along the North County Dublin coast over the past forty years is enough to indicate the enormous archaeological potential of this entire region. If the appropriate structures were in place the prehistoric land use patterning preserved in the plough-soil could be salvaged by a series of rapid and inexpensive fieldwalking programs in advance of proposed construction work. Even the systematic survey of individual and isolated fields under threat would salvage archaeological data that could be incorporated into broader regional land use models as research advances. The continued loss of irreplaceable prehistoric data is archaeologically unacceptable. Systematic field walking must adapt itself to combat the depletion of the plough zone and the settlement and land use patterning it contains.

Conclusion.

Systematic fieldwalking is now an accepted and valuable research tool with its own methodological and theoretical structure. It's potential to tackle archaeological issues on a regional scale with speed and cost-effectiveness makes the technique essential to the advancement of early prehistoric studies on this island. If we are to reap the archaeological rewards of systematic collection, complacency and armchair attitudes must be replaced by a positive desire to tap this potentially valuable resource. Primarily, however, the on-going and relentless destruction of the plough zone, in areas such as North County Dublin must be addressed with the same sense of urgency that has characterised approaches to threatened visible sites in recent years. Plough soil data deserves our attention and respect as an archaeological resource in its own right. Above all else lithic scatters must not be dismissed it they fail to produce the 'tent' or 'hut' so dear to the archaeological heart.

Acknowledgements.

I would like to thank Dr Gabriel Cooney and Sarah Cross who took the time to read and comment on an earlier draft of this paper. Their insights and suggestions for improvements were greatly appreciated. I would also like to thank Martin Walsh for giving up his Sunday to discuss his work and show me his lithic collection.

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A SADDLE QUERN OR GRINDING STONE FROM RATHDOWNLOWER, CO.WICKLOW

PATRICK NEARY

This object was found by the author on the north beach in Greystones on August 15th 1991. The tide was extremely low at the time and the authors attention was drawn to the spot a long line of stones had been exposed which were larger than those normally seen on the beach. The stone was lying face up at the water's edge, and when found had a small amount of green seaweed attached to its surface.

The findspot is in Rathdown Lower townland (map ref. O.S. 6", sheet 8, Co.Wicklow; N.G.R. O 2915 1322). To get there you go from Greystones harbour along the road which runs northwards above the beach to the far end of the car park. It is approximately 30 meters further north from there.

The presence of such a large quantity of stones, some of which had obviously been worked, from this section of beach which stretches a further 500m. north, as far as the site of Rathdown Castle and village, may possibly be explained by the fact that in 1929 a row of fishermen's cottages was washed away by the sea, and that the original railway bridge was blown up by the army in the 40's or 50's (French 1964,16-17). Since the railway was constructed in the mid-1850's the line has been moved inland twice, due to coastal erosion and the first replacement bridge, locally known as "the Gap Bridge" still stands. The stones used for building all these structures probably came from the remains of Rathdown Castle which was already in complete ruins when O'Donovan surveyed it in the mid 1830's (O'Flanagan 1928).

The quern or grinding stone was fashioned from an ovoid granite boulder with a convex underside and a concave upper surface. It measures approximately 35 x 19 x 8 cm. and weighs 10.93kg.(see fig.l). Although this stone is relatively small compared to some other examples, for instance the saddle quern from Ballinderry II (Herity&Eogan, 1977, 188) is approximately 1.5 times larger, it is bigger than others, such as two of the saddle querns excavated by Hencken at Cahercommaun stone fort in Co.Clare (Hencken, 1938). These measure only 27 x 12.5 x 6 cm. and 38.4 x 16 x 8 cm. respectively, and are made from fine grained grey sandstone. Another example from Errisbeg West in Co.Galway measures only 27 x 24 x 6.3 cm. (N.M.I. Card Index).

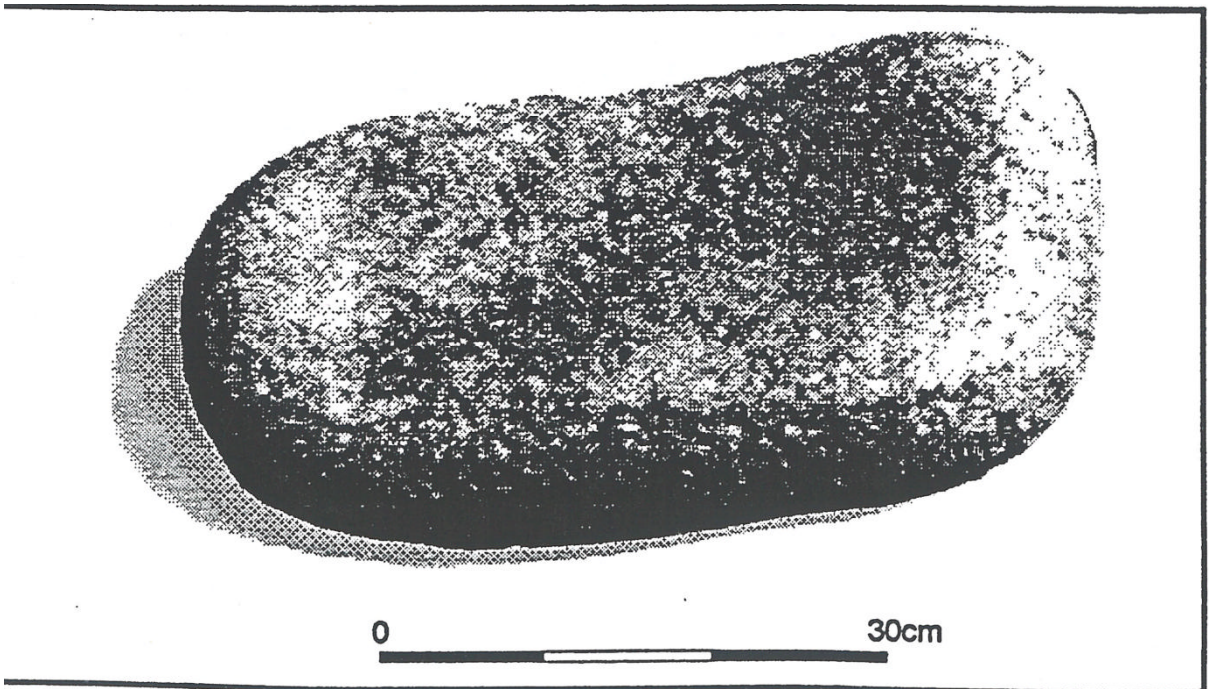

Fig. 1

Dr Eoin Grogan, U.C.D., who examined the stone is of the opinion that it is a possible saddle quern, but, suggested that because of its relatively small size, it may have been used instead in polished stone axe manufacturing. He also observed that the hand held grinding stone used with it would have been of a cylindrical rather than spherical shape because of the positioning of the smooth well-worn areas on its surface. The diverse range of rock types used in the production of Irish polished stone axes includes, igneous rocks: felsite, andesite, porphyry, trachyte, basalt and gabbro; metamorphic rocks: quartzite, porcellanite, micaschist and metadolerite; sedimentary rocks: conglomerate, sandstone, arkosic sandstone, greywacke, siltstone, bedded black chert and flint; and pyroclastic rocks: fine and coarse volcanic ash (tuff and agglomerate) (Jackson 1991). The fact that drift flint is found in the vicinity, both in the plough soil and on the beach, and the wide variety of rock types available in the Wicklow Mountains would support the theory that it may have been used as a grinding or polishing stone in axe production.

Saddle querns were used to grind cereal grains in the prehistoric period until replaced by the rotary quern, which incorporated the more advanced mechanical principle of continuous rotary action, in the second half of the first millennium B.C. This meant that grain could be ground more quickly and efficiently than by the backwards and forwards motion employed with the saddle quern (Caulfield 1977, 104 and Cooney 1981, 102).

Although cereals were grown in Ireland since the Early Neolithic period, there is very limited evidence for saddle querns dating to this time (Herity&Eogan 1977,99). None were found from excavations at Glenulra, Ballyglass or Lough Gur, all of which are Neolithic settlement sites. An example from Belderg, Co.Mayo dates from the Middle Bronze Age but it isn't until the Late Bronze Age that they begin to appear in numbers, at sites such as Knocknalappa, Lough Eskragh, Ballinderry II and Rathgall (Harbison 1988,150 and Herity&Eogan 1977,187,191,192, 216). This can be interpreted as a change in culinary practices which meant that instead of just eating the cereal grains boiled, people now preferred to eat baked bread which necessitated the grinding of the grain.

Archaeological evidence for the effect on the human body of prolonged work at the saddle quern was illustrated in the B.B.C. series "The Birth of Europe". A programme in the series showed "the bones of a young woman aged 18-24 who had arthritic toes, with large masses of bone growth where none should be, probably caused by repeated and excessive pressure. The knees are arthritic too and in life these deformed and calloused joints must have caused the woman unbearable pain. The vertebrae from her lower back are crushed and bent. For most of this young woman's life, such as it was, it seems she did practically nothing but grind corn into flour. She must have spent as much as 5 hours a day on her knees at the grindstone...As the Bible says: 'We were indeed cursed to eat bread in the sweat of our own faces' (B.B.C.2,1991)

Rathdown was an important settlement at the time of the Norman conquest and gives its name to the barony which extends as far as Merrion Gates in Dublin. The deserted medieval remains have been surveyed by Leo Swan (Swan 1990) using aerial photography, revealing house plots and a street system, as well as the remains of part of the castle which survived the construction of the sewage treatment plant in the early 1980's on the site. He also noted 10 references to Rathdown in the early Annals one of which states that in Anno Mundi 3501 (1699 B.C.) (Warner 1990, 30) Heremon the first Milesian king of all Ireland constructed his kingly rath there (Scott 1913, 37). While this claim would not be seriously considered by most academics it is nevertheless true that large amounts of flint waste can be picked up in a nearby field on which part of the medieval settlement was located, indicating prehistoric human activity in this area.

In March 1991, after a period of prolonged rainfall a large section of cliff collapsed just north of the Gap Bridge revealing a midden site, which has yet to be examined. This would need to be done soon as the cliff could collapse further and the site disappear after the next prolonged period of rainfall. Neolithic flint artefacts are thought to have come from the midden as they were found among the debris at the bottom of the cliff, but so also were pieces of medieval pottery. The Office of Public Works has indicated that they would have no difficulty in granting a licence to any suitably qualified person who wished to excavate the midden.

If the stone is a saddle quern it indicates agricultural activity, including cereal production, in the vicinity, most probably in the period spanning the late Bronze Age and the early Iron Age and supports the argument for settlement in the area during this period. If, on the other hand, the stone was used in stone axe manufacture it indicates light industrial activity, possibly at an even earlier date, in the locality.

Acknowledgements

The stone has been deposited in the National Museum of Ireland and I would like to acknowledge the courtesy and assistance given by the museum staff, in particular Nessa O'Connor and Mary Cahiil. I would also like to thank Dr Eoin Grogan and Dr Gabriel Cooney for their helpful suggestions and encouragement towards the preparation of this article.

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MAN CANNOT LIVE ON FISH ALONE
THE BEGINNINGS OF AGRICULTURE IN IRELAND

JAMES EOGAN

When Stuart Piggott wrote his treatise on the Neolithic Cultures of the British Isles he felt confident disposing with the Mesolithic background to the appearance of agriculture in a bare three pages in the introductory chapter, which dealt mainly with the natural history of these islands in that period. Since then approaches to this period have changed dramatically. No longer is agriculture seen as being synonymous with the Neolithic and it is certainly not the case anymore that the early farmers are seen as having "social relationships with one another, while hunter-gatherers have ecological relationships with hazelnuts" (Bradley 1984, 11). The reason for the traditional view seems to be that the "transition from the Mesolithic to the Neolithic coincides with the point at which two different and opposed approaches to prehistory and its teaching meet... Mesolithic studies concerned with human behaviour in terms of adaptive responses to environmental pressures.... Neolithic studies more likely to consider human beings as purposive subjects in pursuit of socially defined goals" (Thomas 1988,59). There is now more plausibility attached to the idea of internal social and economic trajectories and changes in Mesolithic contexts. Allied to the theoretical developments there have been the developments in palynology and the refinement of the radiocarbon dating method.

Probably the greatest influence on conceptions of hunter-gatherers has been the work done on the Mesolithic of Southern Scandinavia. A theoretical model of this transition has been propounded which fits the archaeological evidence quite well (Zvelebil& Rowley-Conway 1984), in which hunter-gatherers play the predominant role in the transition to agriculture. However this model cannot be applied on a more global level, and therefore seems of little use to us in the study of the appearance of agriculture in Ireland. This model owes much to the new understanding of the Mesolithic reached over the last twenty years. It is now clear that the subsistence strategies of Mesolithic societies were far from haphazard, being strategies "involving decision and choice, usually designed to play safe, to operate in in such a way as to be sure to get through bad seasons or bad years" (Whittle, 1990b, 210), a different perspective from the antiquarian view of hunter-gatherers barely surviving. Once foraging is seen as being planned or organised why shouldn't we see Mesolithic communities making a conscious decision to adopt or reject agriculture as either a subsistence strategy (Zvelebil& Rowley-Conway, 1984) or the Neolithic as an ideology (Thomas, 1988)?

In the Irish and British cases it has been argued on the basis of the palynological evidence for late Mesolithic clearances and the occurrence of pre-elm decline cereal pollen that there was "manipulation of vegetation by mid-Holocene hunter-gatherers" (Williams, 1990, 519). The argument is that by burning these woodlands there would be a huge growth of browse plants and therefore Mesolithic hunters would be able to predict with more certainty the locations of their prey. In Ireland the evidence is slight, at Newlands Cross, Co.Dublin (Preece et al 1986) mollusc evidence and the presence of charcoal suggests such manipulation around 5650bc, however, the pollen evidence doesn't back this up. At Cashelkeelty, Co.Kerry Lynch (1981) identified a 24% drop in total tree pollen with the appearance of cereal-type pollen c.3895bc. A clearance episode in the early 4th millennium has also been identified in Co.Antrim at Newferry (Edwards 1985) on the basis of a drop in total tree pollen and a corresponding rise in grass pollen. However, there is no definite proof that the forest clearances were anthropogenic and anyhow this argument is irrelevant as the mega-fauna seems to have

played such an unimportant part in Late Mesolithic subsistence strategies in Ireland. With the examples of pre-elm decline

cereal pollen Williams sees Mesolithic cereal farming. However, in view of O'Connell's recent work (1987), the accuracy of cereal pollen identification is now in doubt. In a pollen sample from the Connemara National Park he identified pollen "indistinguishable from cereal pollen", but occurring at a date of 4965bc. At another site in this region, Lough Namackanbeg, cereal-type pollen was recorded at 5520bc. These records, as O'Connell rightly points out "cannot fall within a West European Neolithic context". He therefore suggests that this early occurrence of "cereal-type" pollen may be due to a "spontaneous short lived polyploidy of native grass species" rather than being an indicator of arable farming at such an early date. This research throws a huge amount of doubt on all identifications of cereal pollen regardless of their date (if we dismiss an identification of cereal-type pollen at 4965bc why should we accept one at 3895bc, as at Cashelkeelty?), and needs much more work. It seems that palynology is of more limited help than we might have hoped especially in regard to identifying cereal, the only anthropogenic indicator of agriculture. We must be very wary of identifications of small amounts of cereal pollen and while there seem to be definite clearance episodes in the late Mesolithic it is extremely difficult to prove that they are anthropogenic in nature and therefore, their significance is still a matter for debate.

No Late Mesolithic site or Early Neolithic site has produced a good faunal assemblage, therefore, arguments concerning the economic basis of either group operate in some what of a vacuum. The only Late Mesolithic sites in Ireland with evidence for domesticated animals, apart from the dog, are Dalkey Island (Liversage, 1968) and Sutton (Mitchell, 1972). At both sites a few bones of *Bos longifrons* (domesticated cattle) were found. However, as neither site produced a good faunal assemblage the significance of these isolated occurrences cannot be fully assessed. On the other side of the coin, just as our knowledge about the diversity of Mesolithic subsistence strategies has broadened in the last few decades, so we have come to a realisation that the first farmers used wild food resources more widely (Hillman, 1981; Grigson, 1981). Therefore, the presence of wild plant remains on Early Neolithic sites is not an argument for continuity of population or culture per se, as is argued by Green &Zvelebil (1990) and Peterson (1990).

Radiocarbon dating should throw some light on this question of transition versus introduction of agriculture. If we find that all the dated Late Mesolithic sites fall in a discrete temporal bracket and do not overlap with dated sites that are culturally and economically Neolithic we could argue that agriculture was introduced by people coming from a Neolithic cultural background. On the other hand if we found a considerable overlapping of C14 dates we could argue for transition brought about by Mesolithic hunter-gatherers. Williams' recent study (1989) has brought some order to the great number of C14 determinations from Late Mesolithic and Early Neolithic sites in Ireland and Britain. By applying an ordered approach to these dates she has elucidated an overlap, between Late Mesolithic dates and Early Neolithic dates, of 300 years in Britain and 800 years in Ireland (calendar years). However, in Ireland the dates quoted only come from a total of six sites (4 Mesolithic and 2 Neolithic). More importantly in relation to the Irish situation it must be borne in mind that the overlap of 800 years is largely due to the series of dates from Ballynagilly, Co.Tyrone. While the dates from this site "do form a coherent series" (Whittle 1990b, 221), Thomas (1988, 61) has pointed out that the pottery associated with the very earliest date: 3795±90bc (UB-305) (Ap Simon 1976) is "clearly of continental ancestry" and is without parallel in Europe before 3200bc in some of the Dutch assemblages. Therefore, we must treat the dates from

Ballynagilly with extreme suspicion. If we do leave the dates from Ballynagilly aside there is, according to the dates presented by Williams, a very slight overlap between the earliest date for the Neolithic of 3290±80bc (LU-1441) from Carrowmore and the latest date for the Mesolithic of 3251±90bc (BM-2227) from Site 1 at Ferriter's Cove. However, if the evidence for the latter site (Woodman 1989, 121; Woodman et al 1984, 4-9) is examined in detail it is clear that it's dating to the later Mesolithic is by no means certain. The most diagnostic find is a planoconvex knife, found adjacent to Site 1, typical of the Neolithic. Therefore, the latest datethat Williams quotes for the Late Mesolithic may be an Early Neolithic date. It therefore seems that the evidence of radiocarbon dating on its own is insufficient, as it is neither precise nor sensitive enough to show the method of the first appearance of agriculture.

If there is a transitional process between the Mesolithic and the Neolithic we would expect to see some continuity in the material assemblage, especially in lithics as we have such a large sample to work from. However, in the Irish context it is, as Woodman (1976, 301) has pointed out, "difficult to see any evidence for a positive contribution by the Mesolithic peoples to the range of material found in Neolithic contexts". Although, it must be borne in mind that contacts between the latest Mesolithic and the earliest Neolithic populations would have been of a complex nature and not always recognisable in the archaeological record, not only are the forms different, the large leaf shaped, multi-purpose tools, known as Bann Flakes being replaced by the typical narrow blade assemblages of the Neolithic, but also the technology used to produce them changes, from direct percussion on uniplane cores in the Late Mesolithic, producing the large leaf shaped flakes with wide striking platforms and prominent bulbs of percussion, to controlled, indirect percussion on multi-platformed and scalar cores and "a generally more ad hoc approach to the use of lithic resources" (Woodman 1987, 144) in the Neolithic. However, recent work in Munster (Green &Zvelebil 1990; Peterson 1990), has shown that when faced with constraints on the availability of good quality raw material Late Mesolithic knappers seem to have resorted to more varied manufacturing techniques. It is essential that more work be done on lithic assemblages outside the flint-rich North-east and its adjacent areas. There is no pottery from any Late Mesolithic context in Ireland, presumably these hunter-gatherer communities used containers made from some organic material now lost to us. The pottery that comes from the earliest Neolithic contexts belongs to the established 'Western Neolithic' tradition with its ultimate ancestry on the continent. These pottery assemblages show no attempt at indigenous developments rather it seems that the pottery arrived with the first farmers as part of their established material culture.

The developments in the theoretical background have been of great importance. No longer is monumental architecture or formal disposal of the dead seen as being essential to infer social processes at work in a prehistoric community, this has been particularly revolutionary for Mesolithic studies as there is so little burial evidence. For instance, the recurrence of ground stone axes in Mesolithic contexts in Ireland and Scandinavia must show complexity in the society in these areas, being able to devote a considerable amount of time to production of such artefacts. Undoubtedly the appearance of cemeteries in the Late Mesolithic of Scandinavia (Larsson 1989) is proof of the complex nature of some hunter-gatherer societies in Europe. It is now also clear that a simple invasion of Neolithic people, as Piggott had it, cannot account for the arrival of farming. For instance, Whittle's identification of similar patterning between the distribution of pottery styles of the Early Neolithic in Southern England and the social territories of the Late Mesolithic in the same area,as identified through the distribution of distinctive artefact types (Whittle 1977, Fig.1.1), would seem to suggest continuity between the Mesolithic and Neolithic communities in this area. However, recent

work by the same author in the Kennet Valley (Whittle 1990a) has noted a change in the focus of settlement in the Upper Kennet Valley between the Late Mesolithic and the Early Neolithic and he suggests that the arrival of the Neolithic saw a "gradual agricultural colonization" (Whittle 1990a, 108) of a previously under-exploited area. This same pattern might be seen to apply to Ireland with the notable concentration of Mesolithic activity on the coasts and in the river valleys, while in the Neolithic there seems to be an expansion into the interior. It seems that in Co.Antrim the focus of activity shifted from the coastal lowlands in the Mesolithic onto the morainic sands and gravels on the edge of the the higher ground in the Neolithic (Woodman 1985, 261).

So what can be said in conclusion? It is clear that the picture is still very confused in relation to the end of the Mesolithic and the beginning of the Neolithic, both in economic terms and cultural terms and it is by no means certain that the change in the economy and the change in the culture were coeval. However, in spite of its inadequacies the radiocarbon dating evidence seems to point to a late fourth millenniumbe date for this change over. It seems unlikely that the impetus for this change came from within Ireland and its Late Mesolithic population. Even though in theory (Kinnes 1984) the possibility of long distance nautical contacts was available to the Late Mesolithic communities, they don't seem to have availed of that opportunity. In view of the general unity of the material record and its similarity to the contemporary Neolithic contexts on the continent it makes most sense to see an in-migration onto this island. However, not of the sort that led to the introduction of farming onto the island of Crete (Broodbank and Strasser 1991), as in that case there appears to have been no indigenous population already in place. I propose a two stage model: Stage One is the in-migration of Neolithic populations as part of the general Neolithic expansion taking place on the continent at this stage, as instanced by the northward expansion off the loess zones and onto the North European plain. As these communities grew in size, wealth and security they came in increasing contact and conflict with Mesolithic communities. The paucity of evidence for Mesolithic/Neolithic exchange in Ireland can be explained by the fact that the Mesolithic communities were so well adapted to their lifestyle they had little need for the new tools brought by the first farmers. Stage Two sees an expansion or internal colonization by Neolithic communities. They were now in the ascendant and the economic pressure: especially with the enclosing of tracts of land; and the environmental pressure: the possibility that the Late Mesolithic population succumbed to diseases, to which they had no resistance, brought in by the first farmers; may have sent the Late Mesolithic into a rapid and terminal decline. Probably the comparative wealth of the Neolithic communities, not only economically but, as Thomas (1988) conjectures, also ideationally and ideologically, had a great effect on the success of the Neolithic while the preceding Mesolithic declined. I appreciate that this is a very rough and ready model but at least it lets us conceptualise the processes that might have been at work in Ireland at the fourth millennium be. Whether or not this particular model works, it seems probable that agriculture was introduced frim abroad without the initial participation of the indigenous, Mesolithic, population.

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HEADS WILL ROLL A DIACHRONIC LOOK AT CRANIAL DEPOSITION

CARA MURRAY

It is possible, from the literary evidence, to suggest that the deposition of some skulls, particularly in funerary contexts, may have acted as a protective talisman. This paper looks at the deposition of skulls, particularity funerary deposition, in certain Iron Age, Late Bronze Age and Neolithic contexts.

The Celtic belief that the soul of an individual was contained in the head, and the Celtic 'cult of the head'are well known and documented. Early Irish tales refer to a three semi-divine heroes, born at a single birth, with the same name but bearing individual epithets, although in some cases this tale has been mixed with tales of the Roman god Janus. Two examples of tricephalic stone heads are known from Ireland, one from Corleck, Co. Cavan, which also has a hole in its base suggesting that it was originally mounted possibly for veneration or ceremony, and a second from near Raphoe in Co. Donegal. We are told that heads of prized enemies were taken, impaled on spears or fastened to saddles, or around the neck of the horse and borne in triumph (DiodorusSiculus V, 29). They were impaled on stakes and displayed in the forts of Celtic chiefs and in the temples (ibid. XIV, 115). Livy also refers to the use of skulls by the Celts for libations. (Livy XXIII, 24). However, although we know a great deal about this cult from both the archaeological record and the Classical sources there are possibly further ideas to be gleaned from mythological lore.

In a tale, derived from a Medieval Welsh source, the hero is a mythological figure Bran, known as *Bendigeidfran*, (Blessed Raven), which may possibly be a derivative or corruption of an earlier term of Pen, meaning 'head'. After a fearsome battle between the Welsh and the Irish, Bran is fatally wounded. Before his death he prophesises what will happen to the Welsh and asks his companions to cut off his head and carry it with them on their travels and then bury it in London, which they do. The myth claims that "no plague would ever cross the sea so long as the head was in concealment" (Ross 1967,119).

This myth is also preserved in Scottish Templar lore where it acts as an even greater talisman: the severed head of Bran the blessed was buried as a protective talisman outside London with the face turned towards France. Its function, according to their tradition, was not only to protect the city from attack but also to ensure the fertility of the surrounding countryside and ward off plague from England as a whole (Baignet& Leigh 1989,118).

The Knights Templar had their own'cult of the head'. Among charges brought up by the Inquisition against the Templars, to which they pleaded guilty, on the 12th August 1308, were:

> "Item, that in each province they had idols, namely heads....
> Item, that they adored these idols…
> Item, that they said the heads could save them.
> Item, that [it could] make riches....
> Item, that it made the trees flower.
> Item, that [it made] the land germinate..." (Barbar 1974, 249)

The extent to which the myth of Bran the Blessed and Templars own belief in the 'cult of the head' have been intermixed is unclear. Robert Bruce, as king of

Scotland 1306-1329, sought to re-establish Scotland as a Celtic Kingdom, with traditions extending back to the Dalriada. As part of these efforts he welcomed the Knights Templar who, in 1309, were fleeing persecution in Europe. The Knights Templar in their beliefs and practices retain a strong Celtic element, and the use of their documentary evidence may perhaps provide us with a greater insight as to why these skulls were used in such a way.

Within the archaeological record the specific treatment of skulls can be seen at the Iron Age site of the King's Stables. This site was excavated in 1975 by Chris Lynn. It lies a mile ENE of Haughey's Fort and a ¼ mile WNW of Navan Fort. Excavation showed it was an artificially constructed flat bottomed basin, rather like the site of Loughnashade - the 'ceremonial' lake associated with Haughey's Fort. In the sedimentary mud at the bottom of this basin a large number of animal bones and part of a human skull were found. No articulated human bones were found in association. Analysis showed the skull to be the partial cranial remains of a young adult male. In comparison with the animal bones found at this level the skull was in a very different state of preservation as it appeared to have been affected by an acid medium, which indicates that the skull was redeposited in the King's Stables, and fractures in the frontal bone probably occurred before this redeposition. There is also a suggestion from the sphenoid bone that the facial portion may have been deliberately cut from the rest of the skull (Lynn 1977)

Cooney and Grogan have recently discussed the deposition of skulls from Late Bronze Age contexts at Ballinderry, lake side settlement Co.Offaly, and at the crannogs of Lagore and Moynagh Lough as well as the Iron Age ritual deposits at Loughnashade and the King's Stables (Cooney & Grogan 1991, 40). They argue that evidence for this Celtic practice, of veneration of the head can also be found in Late Bronze Age contexts. However it is possible that this specific treatment of skulls may predate the Iron Age and Late Bronze Age.

There is some evidence to suggest that skulls have been singled out to play a special role at ritual sites long before the this time. At the passage grave of Fourknocks, Co.Meath excavation showedthat although the majority of the skeletal remains found were cremated (approximately 80%) in some instances the skulls and long bones were inhumed. In total 16 children and 18 adults were inhumed. The inhumed long bones and skulls in the passage were set in spreads of cremation. The remainder of inhumed bones in the tomb were the skulls of children (Hartnett 1956-7, 269). Amongst the cremation deposits at the entrance to the passage were the skulls and long bones of two adults placed side by side and "facing outwards". Associated with each skull was a large water rolled pebble (ibid., 206).

At the site of Ballynahatty, overlooking the River Lagan in Belfast, as recorded by Robert Mac Adam in 1855, there seems to be a similar emphasis on the use of skulls. Inhumed bones were found in only one compartment of the tomb, the remainder containing cremation only. Of these at least five skulls were preset, "at least three of which were placed upright in a layer of sand resting on some earlier burnt bone and facing across the centre of the tomb to the entrance" (Hartwell 1991,12). In reference to the myths discussed above, it is interesting to note that at both these sites the skulls were placed facing the entrance.

In Britain also there has been suggestion of the specialised treatment of skulls in ritual deposits. Smith has argued for the use of causewayed camps as ritual mortuary enclosures because of the frequency of human remains and other deposits found in their ditches. She also

suggests that the skulls, rather than representing acts of cannibalism or the slaying of commoners, may represent selective redeposition from barrows (Smith 1965,137). In Fussels Lodge long barrow, for example, the skulls and long bones of four individuals were separated and stacked individually (Ashbee 1970, 67).

Using mythology as a means of explanation or interpretation can prove a hazardous and somewhat dubious exercise. However this information must be seen not as an article of faith but as a speculative suggestion of a hidden meaning. It may be possible to suggest, however, that the skulls from the tombs of Ballynahatty and Fourknocks acted as a talisman protecting the sites in the same way as the head of Bran the Blessed did for Londoa

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ANIMALS AND RITUAL IN THE BEAKER PERIOD AT NEWGRANGE

CHARLES MOUNT

The faunal assemblage at Newgrange is one of the few assemblages known from the Late Neolithic/Beaker period in Ireland or elsewhere in Europe (see Milisauskas 1978) and is therefore of importance for assessing the economy and the ceremonial activities of the people at the site. Combined with the associated material remains it is central to the debate over the nature of the Beaker complex in Ireland. The bone material has been analysed by Van Wijngaarden-Bakker (1974 & 1986) who believed it was the waste from a domestic habitation. However, this view is at odds with the overtly ceremonial nature of the site, the exceptional aspects of the material assemblage and its deposition and the spatial variation within the faunal material across the site.

The area around the front of the monument was excavated by M.J.O'Kelly 1962-75 and later by Sweetman 1982-83 (see O'Kelly 1983 and Sweetman 1985) (see fig. 1). O'Kelly uncovered a series of hut structures, some defined by bedding trenches and others by post holes with well-built internal hearths. These were ranged around the front of the monument, near the entrance to the tomb and to the east of it. O'Kelly also uncovered part of the north-western portion of the multiple post and pit circle. This monument was over 100m in total diameter and enclosed satellite tomb Z. While the structures appear to have had a domestic use their proximity to the tomb and pit circle indicate that this may not have been their only function and their occupants may have been involved in a range of ceremonial activities at the site. Sweetman excavated portions of the western and south-western part of the circle in 1982. The outer pits had a clay lining, and evidence for prolonged burning and appear to have been used for the cremations of animal remains. The inner three rows of pits at Newgrange showed no evidence of having held posts and Sweetman felt that they had been dug to accept deliberate artefact deposits and the burial of cremated animal remains. At Stonehenge, Maumbury Rings, Llandegai, Meldon Bridge and Dorchester there is also evidence of pits, some in circular arrangements, although they were used solely for deposition rather than burning (Sweetman 1985). Also within the circle a habitation area was noted consisting of post and stake holes associated with an area of stone cobbling, charcoal spreads, Beaker pottery and dense flint concentrations.

The pottery remains at Newgrange are composed of four main varieties: fine and coarse domestic Beaker, Irish Grooved Ware, Late Neolithic and Food Vessel (O'Kelly 1983:58-117), apparently all representative of separate pottery traditions. These sherds were arranged in five main concentrations, or middens, four of which were situated in the central excavation area near the tomb entrance: one in a hollow above a hut foundation; opposite the tomb entrance in and around hearth 7; east of the tomb entrance associated with a foundation trench and to the east of this associated with hearth 5. In the northern part of the eastern excavation area was the largest midden, apparently unassociated with any features. Each midden was composed of sherds partially representing a range of pot types and about 210 vessels were represented.

Similar pottery concentrations have been noted at broadly contemporary sites. Ó Ríordáin (1951:73-74) believed that the variety of broken pottery sherds and their proximity to the stone uprights within the Grange stone circle indicated a ritual breaking. Similar activities have been noted in the stone circle at Drombeg, Co.Cork (Fahy 1959: 12-18), as well as at

Durrington Walls (Wainwright 1971), and on other sites such as the Court Tomb at Audleystown, Co.Down (Collins 1954:17) and in the ditches of causewayed enclosures. The presence of Grooved Ware at Newgrange and Grange and its association with ceremonial henge monuments in Britain emphasises the similarity offunction of the Newgrange site to other great ceremonial centres such as Durrington Walls, where that pot type forms an important part of the material assemblage.

For the purpose of excavation recording at Newgrange was divided into three areas, a Western, Eastern and Central unit. The bones from the old ground level and the Beaker post and pit circle in the Eastern excavation unit were analysed together and found to be composed of a minimum of 58 animals, these broke down as 25 cattle (43%) and 18 pig (31%) (see graph A, fig.l). Sheep/goat, dog and horse made up the remainder. Some of this material, as noted above, had been deliberately placed into the pits of the circle and backfilled. These remains consisted of 214 cattle fragments, 88 of pig and 30 of dog, but only 2 of sheep/goat, almost the smallest occurrence on the site. There was a complete lack of horse bone. This would appear to be a positive selection of some animal types over others for deposition within the ceremonial area of the circle, a pattern which was repeated in other parts of the site. Van Wijngaarden-Bakker (1986:100) noted that horse bone was completely absent from the pits of the post and pit circle, but suggested that these were the oldest features of the complex and pre-dated the introduction of horse to the site. But the absence of horse from the area under the yellow clay bank and its abundance, percentagewise, in the central area, close to the tomb entrance, indicates a more deliberate deposition of the horse remains.

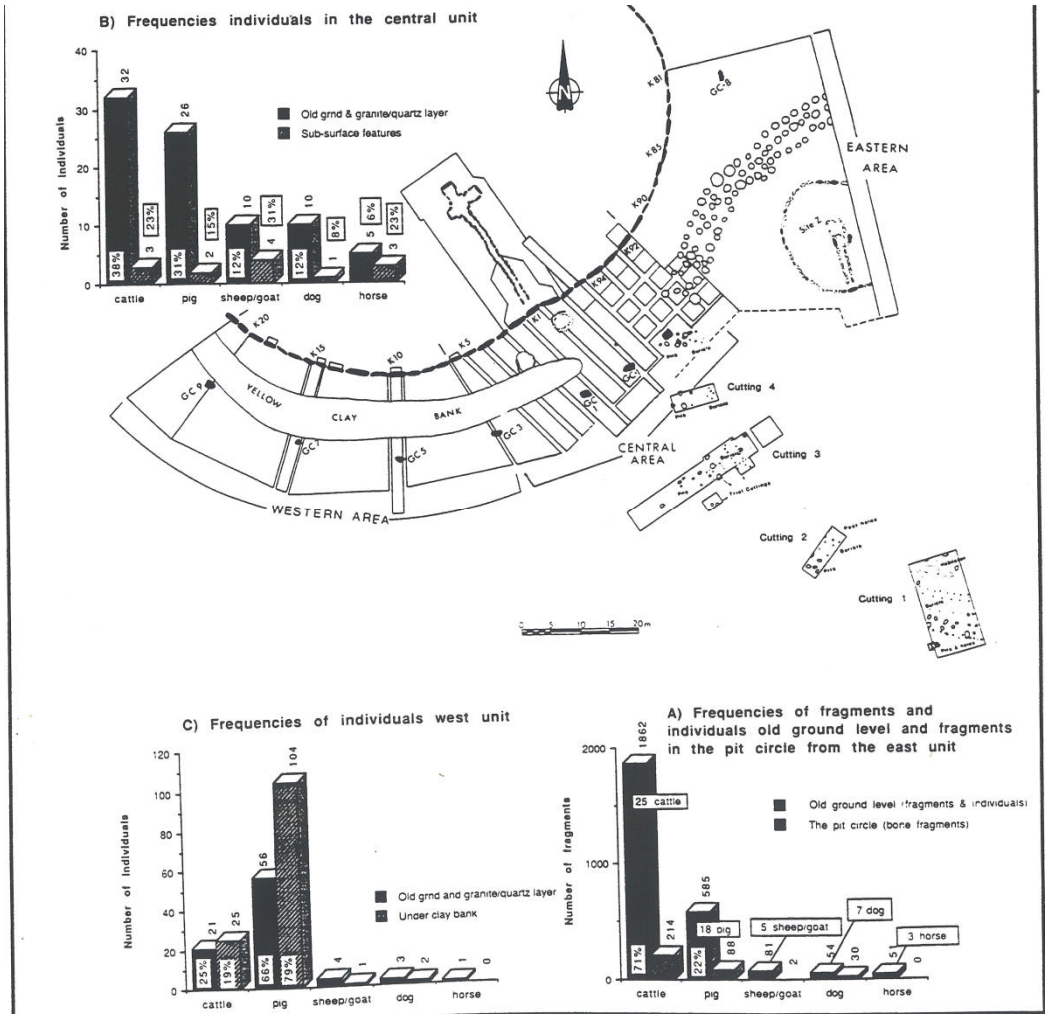

Fig. 1

The bone from the central excavation unit was divided into two groups: that from the old ground surface, the granite/quartz layer contiguous to the kerb of the monument and the layer of earth and stone above this (A), and that from the sub-surface features (B). The former level (A) comprised 32 cattle (38%), 26 pigs (31%) and 12% sheep/goat, 12% dog and 6% horse respectively (see graph B, fig.l). The bone from the sub-surface features (B) is in contrast to this. It included only 3 cattle (23%), 2 pig (15%), 4 sheep/goat (15%) and only 1 fragment of dog bone, which is relatively plentiful in all other areas. Significantly the highest percentage of horse from the site (23%), representing 3 individuals, occurred in these features. It is tempting to see these horse remains as the foundation deposits of the huts in this area. There is no reason to assume that these subsurface features, as a whole, are significantly later than the eastern post and pit circle and it would appear that there is a contrast between the types of animals used and deposited on different parts of the site. Van Wijngaarden-Bakker (1986:87, 98) argued that the horse was utilised as a draught animal and as a highly valued part of a prestige goods exchange network. In this context the presence of the horse remains before the tomb entrance in such high relative percentages combined with the lowest frequency and percentages of cattle, pig and dog on the site emphasise the possibility that these remains were specially chosen for deposition on this part of the site. Not all of these remains can be explained as deliberate inclusions. Much of the bone may have become included in the soil matrix as a result of discarding waste from meals. However, Cooney (1987:115) has argued that the bones from a number of pits in this area were deliberate deposits, notably those from a pit beside hearth 3 and the three pits dug into the base of the great oval pit. Indeed, the variability within the bone assemblage across the whole site shows that this process of discard may have been deliberately patterned.

In contrast to the Eastern and Central excavation units the central area of the Western unit, beneath the clay bank, was dominated by pig bone, representing about 104 individuals (79%), the vast majority of the total animals represented, compared with 25 cattle (19%) (see graph C, fig.l). Conforming to the pattern seen on the rest of the site this area also had the lowest percentages of sheep/goat seen on the site and a complete lack of horse as well as low values for dog. The special nature of this part of the site is emphasised by the construction of a bank of stoneless yellow boulder clay which sealed it. This method of construction contrasts with the turf construction which was used elsewhere on the site. Van Wijngaarden-Bakker recognised that specialised activities must have been carried out on this part of the site and suggested that this was a butchering area in which pig vertebrae were discarded, some in an articulated state, and the meat joints probably smoked and subsequently “used to tide the inhabitants over the annual period of scarcity of food resources in early spring”. Alternately animals could have been prepared in this area for feasting and a significant portion of these remains may have been deposited in the pits of the post and pit circle, as a complete excavation could demonstrate. When the post and pit circle went out of use and the butchering area became redundant it was sealed under a bank.

To summarise the situation, areas of the site saw emphasis upon different animals, cattle to the east of the entrance, horse in front of it and pig to the west of it. In the latter two cases the emphasis upon one animal is further underlined by the very low occurrence of other animals.

Wainwright (1971:190) and more recently Richards & Thomas (1984:207) and Bradley (1984:51) have suggested that the large amount of pork represented at Durrington Walls represents the deliberately deposited remains from ceremonial feasting. This would also appear to be the case at Newgrange. If we total the amount of usable meat at Durrington

Walls (see Table 2) it amounts to over 37,000kg. In comparison the total weight of usable meat represented at Newgrange amounts to more than 46,000kg, (Table 1) a significantly higher quantity. It should also be borne in mind that the area excavated at Newgrange is somewhat smaller than that at Durrington Walls, and there is

evidence of contemporary activity extending to the back of the tumulus as well Therefore this figure may represent only a fraction of the total quantity of meat consumed at the site. This demonstrates that there was as much if not more meat being consumed at Newgrange than within a contemporary ceremonial henge monument in Wessex.

Table 1. Frequency of Animals and Estimated Amount of Meat at Newgrange

	Kilos ofUsable Meat	No. ofAnimals	% of TotalAnimals	Total Est.Kilo	% of Totalest. Weight	Kgs. of UsableMeat FromTotal est. Kgs.
Cattle (400)	235	106	27%	42,400	58%	24,910
Pig (100)	80	206	53%	20,600	28%	16,480
Sheep/Goat (25)*	12.5	24	6%	600	0.82%	300
Dog (10)*	5	23	6%	230	0.31%	115
Horse (600)*	300	12	3%	7,200	10%	3,600
Red Deer (190)*	95	10	3%	1,900	2.6%	950
Wild Boar (107)*	53	1	0.25%	107	0.14%	53
Other Wild Fauna	—	9	1.5%			
TOTAL		391		73.037		46.408

Numbers in brackets refer to estimated weight in kilos
* = average weight from Milsauskas 1978
(After Van Wijngaarden-Bakker, 1986)

Table 2. Frequency of Animals and Estimated Amount of Meat at Durrington Walls

	Kilos of Usable Meat	No. of Animals	% of Total Animals	Total Est. Kilo	% of Total est. Weight	Kilos of Usable Meat From Total est. Kgs.
Cattle (400)	235	85	27%	34,000	60%	19,975
Pig (100)	80	198	63%	19,800	35%	15,840
Sheep/Goat (25)*	12.5	6	—	150	0.26%	75
Dog (10)*	5	5	4.5%	50	0.08%	25
Horse (600)*	300					
Red Deer (190)*	95	14	4%	2,660	4.7%	1,330
Other Wild Fauna	—	5	1.6%			
TOTAL	313			56,702		37,245

Numbers in brackets refer to estimated weight in kilos
* = average weight from Milsauskas 1978

(Data from Wainwright, 1971)

If one accepts that this was a habitation site, in the ordinary domestic sense, then one must conclude that the inhabitants were primarily using animals for their meat rather than their secondary products. Van Wijngaarden-Bakker (1986:48) concluded from her examination of the metapodials that castration probably had not been practiced on the Newgrange cattle and that consequently they probably had not been used as draught animals. This conclusion incidentally has a major impact on the minimum number of hours required to build the Boyne tumuli. The absence of elderly cattle would also suggest that they were not specifically kept for milking. However, if one considers the high probability that the activities on the site were of a ceremonial rather than a domestic nature, then it is conceivable that the animals introduced to the site, and the cattle in particular, were selected from a larger population which is not represented at the site. In this scenario the cattle at Newgrange might represent the prime beef animals available from a number of herds in the Boyne Valley, rather than a single representative population. This explanation would also tend to account for the lack of animals between 2.5 and 3 years of age. Van Wijngaarden-Bakker suggested that a system of transhumance was in operation in the Boyne Valley and animals in this age group were kept on seasonal pasture away from the site. Cooney (1991:134-35) has more recently suggested that the division of the Boyne Valley by land boundaries and the high quality of the pasture would have precluded the need to move cattle seasonally. Therefore only the best beef cattle may have been selected and brought to the site, and the milking cattle and oxen left in their pastures.

In the final analysis it must be said that the last word on the faunal and material remains from Newgrange has yet to be written. Some of the factors that contradict a domestic interpretation of the site have been outlined and an alternative explanation suggested. It seems likely that the animal bones represent a series of deliberate deposits connected with episodes of ceremonial use of the monument. This being the case it is by no means certain that this faunal assemblage is representative of the nature of the pastoral economy of the Late Neolithic peoples of the Boyne Valley.

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FROM SPACE TO PLACE
LANDSCAPE ARCHAEOLOGY IN IRELAND

SARAH CROSS

What is landscape archaeology in Ireland? It is an approach that is becoming increasingly popular, but has yet to be properly defined. In order to do so, in this paper I will present a summary explanation of the term, examine how the term has come to be used by different archaeologists, discuss how it fits into other approaches and theoretical models, and consider briefly what analytical and data recovery techniques are appropriate to its study. While I am presenting a definition, I don't hope for the paper to be definitive, rather a point from which further discussion can proceed.

A sense of landscape has been present in Irish archaeological research for some time. Early antiquarian research such as Smith's The Ancient and Present State of the County and City of Cork (1760) saw archaeological monuments as one of a set of features in the present landscape worthy of description. By the 1930's people such as Estyn Evans realised that the landscape in which a human group existed affected the way that they developed. Since that point, an increasing concern with the landscape of the past, how it was formed, perceived and lived in has been a growing concern of Irish archaeologists. In the last decade, the concept of landscape archaeology has changed considerably and confidence in our ability to use landscape to make references about the past has increased.

While some archaeological approaches are championed by one prominent archaeologist, such as Ian Hodder's contextual archaeology, landscape archaeology draws from a variety of inspirations so much of its developments have come from discussions between various different archaeologists and, more rarely, from conferences. While this produces a vibrant approach, much of the thought which goes into such important projects as the county by county archaeological surveys remains unavailable to the majority of people. Because of this I will try to include some of the thoughts which have come out of two of the most recent conferences relevant to landscape archaeology in this paper.

In my view, landscape is more than the environment in which cultures exist, it is more accurately the context in which they exist. More than the physical context, it also provides the social and the chronological context. People's perceptions of themselves and their past are moulded by the landscape they live in and similarly such perceptions mould the landscape in return. Just as on an archaeological site, the culture forms part of the context in which it is found. To continue the analogy an archaeological context cannot be understood as a series of points, landscape is a continuum in both space and time. Finally, and in today's intellectual climate of relativism perhaps most importantly, landscape is itself a cultural concept and it requires a point of view. So one physical space can encompass many landscapes.Understanding that our point of view of the landscape is, often literally, different from that of the people that we are studying is one way that archaeologists have of understanding our subjectivity.

One of the best ways of finding out what people think about a concept is to look at indices of major studies and follow up what they tell you. Looking at the index of Trigger's recent A History of Archaeological Thought (1989), landscape does not appear at all. While the study of landscape is as old as the study of archaeology the integration of the two is quite recent. In Mitchell's seminal work The Shell Guide to Reading the Irish Landscape, there are four

entries, “Bareness of; ‘Old’; Units; ‘Young’” (1986, 223). Although this book is an early synthesis of environment and culture, his time frame leads him tothink of landscape as something separate from culture. Morrison’s Landscape With Lake Dwellings shows this synthesis more clearly and in his index landscape is broken down under: “Topography and Physical Evolution; cultural relations, organisation” (1985, 116). It is the implications of these two things being studied together that have given rise to landscape archaeology as a distinct archaeological approach.

Landscape Archaeology in Ireland

One of the earliest and best known publications of this approach in Ireland is Landscape Archaeology in Ireland (Reeves-Smith & Hammond, 1983). It is based on the proceedings of a conference held in Cork in 1981 and as such contains many different people’s views. It presents a good starting place for looking at how the term has been used. The volume has been criticised for not clearly defining the concept and for being too eclectic. It seems to me, however, that the definition of the concept is contained within the wide ranging papers, mixed in with the presentation of results. The entire volume is a definition and lays foundations for later work.

On the first page Hamond and Reeves-Smyth do put forward a statement which draws the rest of the papers together:

> “In its natural state, the landscape is a product of geology, climate, soils, and vegetation. However, over much of the earth, it has been subjected to many millennia of human interference; as Barker (1974, 28) has remarked, ‘it is a manuscript on which man has written his history’. Landscape Archaeology provides a unique temporal perspective on this interaction, with its focus on the changing behaviour of people in relation to their environment, their adaptation to it, utilization of its resources, and impact upon it” (1983,1)

This statement sums up the approach of many of the papers in the volume quite well. Its major emphasis is on an integration of environmental evidence with cultural evidence. The separation between ‘man’ and ‘nature’ seen here changes in years to come. Already present is the notion of landscape as text, this concept becomes more important in some circles and causes much consternation in others. Interesting here also is the emphasis on change over time, a diachronic perspective.

The rest of the papers in the volume vary in their distinction between environmental archaeology and landscape archaeology. Many of the papers, particularly in Part 1: Techniques of Landscape Archaeology, focus on the environment almost completely, such as Groenman-van Waateringe’s paper on the elm decline (217-232). This is also connected to the fact the landscape archaeology is by its nature an interdisciplinary study holding much common ground with geography. Others see landscape as a more heavily cultural concept, concerned with the transformation of the environment by human groups. In his concluding paper Aalen writes, “It has generally been concluded that Mesolithic man did not undertake significant environmental transformations, the evolution of the cultural landscape commencing with Neolithic influences and extensive forest clearances in the early 4th millennium be.” Because the integration of environment and culture in the concept of landscape archaeology is now more complete, the notion of what is meant by cultural landscape has become broader.

The problem in many of the papers seems to focus around “successful reconstructions of past landscapes” (Aalen 1983, 371). As reconstruction is a difficult if not impossible task, even for a single site, a certain air of pessimism is connected to this. Woodman bemoans the lack of “a representative series of monuments and obvious settlement sites except in most instances, on marginal areas” (1983,27). He therefore sees his aim as “to find as many prehistoric sites as possible in one small well-defined area”. Although this approach, where archaeological material is seen as points set in the area which is formed by the landscape, has been criticised by Foley (1981), Isaac (1981) and more recently Gaffney et al (1985), this aim remains current with many major survey projects such as the Stonehenge Environs Project (Richards 1990,4)

Another important feature of landscape archaeology that can be seen from this volume is the integration of ritual and secular sites. Both Cooney’s (1983) paper on megalithic tombs and Swan’s (1983) discussion of ecclesiastical sites illustrate this well. This continues to be a major concern of landscape archaeologists.

Finally, both Ó Corráin’s (1983) paper and more closely Caulfield’s (1983), show the interest of landscape archaeology in field systems and land enclosure. In the case of Caulfield’s work this natural association is connected to the preservation of an intact Neolithic landscape beneath blanket peat. On a more general level the fact that field systems are in themselves areas means that their study as landscapes flows more smoothly than sites, such as tombs, which have traditionally been conceived of as points.

While archaeologists continue to use the landscape approach there has not been another major publication which defines the approach. There have, however, been two significant conferences on the subject in the past two years. Firstly, “Decoding the Landscape” was held at UCG in November of 1990 and then there was a session at TAG90 (an annual conference of the Theoretical Archaeological Group) in Lampeter, Wales entitled “Archaeology in Ireland 1990: reading the Irish Landscape”. In addition to the papers from this session I will also discuss some of the thoughts coming out of other sessions where landscape archaeology was a very popular topic.

Decoding the Landscape

Tim Robinson s maps show an incredible variety or detail but they cannot reproduce the experience he had in creating them. His use of a white background

is intentional, emphasising the partial nature of the representation. (Robinson 1990, part 2) (l/2inch : 1 mile)

The major speaker at the Galway conference was Kristian Keller, from Norway and his paper was explicitly theoretical. The major points of his paper were: that the split between nature and culture is false, so that the distinction between natural landscape' and 'cultural landscape' is equally false; that landscape is, by its nature a diachronic concept, all landscapes are palimpsests of many millennia, which is what gives them their power; and that we can consider three types of landscape, 'physical', 'mental' and 'mythical' which interact together to form our overall vision of landscape. This last point brings out the concept that landscape involves perception as much as it does thephysical world. An example of a mythical landscape is that of the Irish myths and sagas, it never existed but it still moulds our conceptions of Ireland. Mental landscapes exist only in the mind- townland boundaries often form part of a mental landscape of ownership which has very real effects on the way that we live in the Irish environment. A physical landscape seems most straightforward but even that involves perception; an aerial photograph represents a different landscape than you perceive while walking.

Other speakers at this conference largely presented the results of research but they showed the same theoretical concerns, the formation of a landscape in the human sphere, the point of view embodied in any presentation of landscape and a shift from reconstruction to explanation. The cartographer, Tim Robinson, showed particularly well that while a map can never convey the same depth of meaning as experienced by anyone perceiving a landscape directly, the interpretation and translation involved in the creation of the map can lead to a greater understanding. While archaeologists are necessarily pessimistic when their work leads to reconstruction, a greater scope opens up when we work towards understanding from the wide variety of data which are open to us albeit in fragmentary form (see map above).

TAG90

Similar concerns and perspectives were viewed at the TAG conference. Once again, unfortunately it was not an Irish archaeologist who gave the most explicitly theoretical paper. MarekZvelibil from Sheffield, opened the session by trying to bring together the various strands of research which make up the modern landscape approach. His concern was with integration, this time an integration of different scales of research. Survey and excavation give us different views of the landscape and are both essential to its understanding. He also emphasised the fact that chronological systems are a construction of the archaeologist and that landscape is formed as a continuum, the landscapes of the past are one of the main determinants of the landscapes of the present.

The rest of the session again presented results of research stemming from the landscape approach. Some of the papers discussed the practical and theoretical ramifications of various techniques of data recovery and analysis, such as paper surveys (such as those conducted for the Sites and Monuments Record), field surveys of alluvium, and analysis using the computer environment of Geographic Information Systems (GIS). In an update on the Céide Fields project Séamas Caulfield took exception to the concept of reading the landscape, pointing out that a text is something which is created with the purpose of communicating something to someone other than the writer and we should not treat prehistoric landscapes in this respect.

The other sessions dealing with landscape at TAG were far more theoretically based. Much of the discussion showed how easily landscape archaeology fits in with the relativism of the

post-proccssualists, indeed of all the approaches taken up by that school of archaeologists, landscape archaeology seems to have undergone the least modifications in the process. Along with explicitly relativist sessions such as “Constructing the Landscape, Constructing the Subject”, there was, “Theoretical Approaches to Prehistoric Landscapes”, “Landscape Archaeology as a Social Issue”, and a connected session on “Using Geographical Information Systems in Archaeological Theory Building”. The relevance of the point of view was perhaps the strongest element in all of these sessions, with a certain emphasis also on the nature of interdisciplinary studies. If the theoretical ponderings of archaeology are confusing then a mixture of archaeology and geography can only make matters more complicated, but perhaps also more realistic. Sessions which included researchers from both disciplines were therefore very useful in identifying common problems and areas of strength.

Barbara Bender pointed out that a landscape which is moved through is different from one which is observed from above, by means of a map or an aerial photo. If we are to understand prehistoric landscapes and their significance to the societies who lived in them and formed them we need to be aware that some of our methods of study put distance between ourselves and that goal. John Barrett also touched on this theme when he pointed out that an archaeological plan (or a map) presents all of the availableinformation to the archaeologist at one time, when in reality a person living in a locality will know only part of the information which we present, will know other things which we cannot present, and learn aspects of a landscape through time. The archaeologist encapsulates the data both in a spatial sense and a temporal one (1990, 30). These concepts were illustrated by research which varied from a paper by Christopher Tilley on the meaning of Megaliths within the landscape, to the role of the suburban garden in the 19th century construction of gender, by Susan Ford.

Landscape Archaeology and Other Approaches

With all of this emphasis on integration, how does landscape archaeology fit into other archaeological approaches? I have already mentioned how easily landscape archaeology fits into the post-processual point of view but it is also employed by more traditional archaeologists. It relies on the framework built by the culture-historical approach, which orders the archaeological record both in terms of space and time, but differs from its goals significantly. Landscape archaeology focuses more on the regional than the national level and is far less concerned with classification than the culture-historical approach. The roots of the approach are found in the more functionalist settlement archaeology, typified by Willey’s work in the Viru Valley in the 1950’s. (Woodman 1983, 27; Trigger 1989, 282) The main theoretical shifts since that work have been a broader definition of what constitutes settlement data and a shift away from the functionalist perspective.

Landscape archaeology is related to both environmental and spatial archaeology, and incorporates aspects of both. While the former puts an emphasis on the environment to the detriment of the human sphere in the explanation of cultural change (Trigger 1989, 286), the latter often ignores the environment in its reconstruction of settlement systems (e.g.Groube 1981). Another shift from both of these approaches is the movement towards understanding landscapes over time, and away from constructing snapshots of the past. Contrasting Smith’s work in the Avebury region (1984) and Whittle’s more recent work in the same region (1990) a shift in focus, techniques and conclusions can be seen. The relationship between humans and the environment described by Smith is an adversarial one, while Whittle sees Neolithic settlement as less transformative. One of the reasons for this shift is Whittle’s emphasis on the construction of a more detailed picture both chronologically and spatially. The area

statements made by landscape archaeology require a close analysis of all the site evidence upon which it is based.

The Pattern of Research

This brings me to consider which data collection and analytical techniques are appropriate for landscape archaeology. As usual the two main data collection techniques are survey and excavation. In landscape archaeology survey takes on a larger role than is usually the case. This is both because it can cover larger areas than excavation and because it picks up a wider variety of data. Landscape projects regularly work with many levels of survey ranging from paper survey, through aerial photography, to intensive survey, either by field-walking (Cooney 1990, Guinan, this volume) or by probing for sub-peat features (Caulfield 1983). Once a wider picture of the landscape structure of the area can be postulated the investigation is often intensified by excavation of certain sites in order to answer specific questions (Green et al 1990). Thus the 'sites', which are the focus of many archaeological projects become the secondary level of research in a landscape project.

When working with data from sealed contexts, landscape archaeologists are concerned with a wider variety of environmental data than is often the case. Therefore techniques such as pollen analysis and more detailed analysis of palaeosoils become important, as was reflected in the Reeves-Smith and Hammond volume. Recently geomorphological studies, such as the alluvium study connected with the Ballylough project are also being seen as significant. Excavation within a landscape project is also aimed at answering the chronological questions which are more difficult to answer through survey. While it is unwise and unnecessary to try to break the landscape up into snapshots of different periods, understanding the chronological relationships of differentelements is obviously important (see Green et al 1990 and Whittle 1990).

Analytical techniques are perhaps less well developed, partially because the theoretical shifts regarding point of view necessitate more sensitive analytical tools. While the distribution map remains an important feature of most work it is often used in a more critical fashion. Connected to this is the growing use of GIS which allows for the accurate superimposition of many different types of data on one map. This facilitates the consideration of many different aspects of the landscape at once. This does not avoid the problems with a vertical and all-encompassing view mentioned above but it may make us more aware of what we actually are mapping. There is more acknowledgement that a map is as much a constructed mental landscape as it is an illustration of a physical one, in contrast to the view of maps is a primary data source presented by Reeves-Smyth (1983, 119).

Statistical techniques are less popular in landscape archaeology than they were with spatial archaeology, perhaps partially due to a recognition that the data that we work with are often not statistically valid. Nonetheless, basic statistical techniques are often used to delineate patterns in data which may not show the kind of clustering produced by less detailed coverage of the same areas (Wagstaff, 1990).

I see the greatest challenge for landscape archaeology as being in the same area as its strength-integration. Analytical tools which facilitate the integration of excavation data with survey data are as important as the construction of research questions which link the two in purpose. Furthermore landscape projects must be able to make use of existing data from both excavation and survey which was often collected with different criteria. The ability to both use the chronological framework provided by cultural historical research without being

bound by it also requires further work at many levels. That being said, landscape archaeology has already made significant contributions to archaeology both at the level of describing the archaeological record and at the level of understanding it. When analytical tools are refined to match the theoretical concerns of more recent research, landscape archaeology will offer an even more powerful approach into the understanding of past societies.

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