One World Archaeology

John H. Jameson
James Eogan *Editors*

Training and Practice for Modern Day Archaeologists

Springer

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Introduction

Entering the second decade of the new millennium, archaeologists and other cultural heritage specialists are adjusting to new and changing dynamics in practice and training. In an era of rapidly expanding globalization, archaeologists worldwide are increasingly engaged in international debates on evolving professional standards for formal education and teaching, employee training, public interpretation, and civic engagement. These activities are concurrent with increasing challenges in the management of archaeology in the context of development and the assimilation and interpretation of large volumes of new data. The most successful models for carrying out programs, projects, and publications place emphasis on interdisciplinary collaborative partnerships.

Trends in Training and Interdisciplinary Collaboration

In recent years, an important and encouraging development has been the markedly increased number of collaborations among archaeologists, educators, preservation planners, and government managers to explore new approaches to archaeological and heritage education and training to accommodate globalization and the realities of the twenty-first century. From site tours to television programs, archaeologists work cooperatively with historic preservationists, museum curators, educators, and personal services interpreters.

At a number of universities, archaeologists have gone a step further with faculty and students partnering with community members in designing and implementing programs. In government, initiatives such as the US National Park Service's Interpretive Development Program (IDP), through employee training and certificate programs, provide opportunities for employee training on effective approaches and techniques to achieve enhanced resource protection and promote public stewardship.

Public archaeologists are increasingly employing collaborative approaches in devising effective strategies for communicating archaeological information and

significance in both academic and public arenas. In the developed world, program success is measured by its capacity to empower and motivate members of nonspecialist audiences to more active involvement. These people may be stimulated by a general interest in archaeology, or they may be engaged by existing sites or museums in their locality. Sometimes their interest may be kindled by exciting new discoveries.

Many archaeologists and cultural heritage specialists are moving beyond the concept of the public as recipients or "customers" of interpretation to focus on active public participation in archaeological and interpretation processes. In these more inter- and transdisciplinary approaches, this conceptual shift facilitates analyses of public participation in the production of knowledge. Increasing examples of this new focus: how nonacademics or lay persons create, use, and react to this new knowledge, with public operating alongside either professionals or students, or on their own, in variable relationships, are emerging (Jameson and Mytum 2011, 2012).

In the developing world (also termed the "emerging economies"), particularly in situations where archaeologists are working to mitigate the impact of development projects, engagement with local and indigenous people who have little or no formal archaeological knowledge can be fraught with ethical dilemmas. Much of this work takes place within the context of international development aid, yet there has been limited research into, or discussion of, the practical and ethical considerations of such work within the profession (Breen and Rhodes 2010).

At the 2003 Fifth World Archaeological Congress (WAC 5) in Washington, DC, a symposium entitled "Archaeology and Globalization: Challenges in Education and Training for the 21st Century" highlighted improved international interdisciplinary collaborations. At WAC 6, held in Dublin, Ireland, in 2008, we expanded this theme in three interconnected sessions that included case study examples come from Western and Eastern Europe, the USA, Canada, former Soviet Republics, Africa, Asia, the Mediterranean, and Australia. Many of the chapters in this volume were derived from presentations at WAC 5 and WAC 6.

An Increasingly Globalized Archaeology

We use the term "globalized archaeology" to convey the sense of archaeology being practiced in an increasingly networked and interconnected world. The twenty-first century is marked by the ease with which information flows around the world. This is resulting in the rapid transmission of ideas, concepts, and knowledge within the archaeological profession. While on the face of it this is a positive development which should allow for the transfer of successful methodological and epistemological strategies from one country to another, it is also possible that governments and corporations who fund many archaeological projects will use the same tools to economize and streamline in ways that will effectively lower archaeological recording standards.

In many developing countries, social and economic factors are affecting the nature and ethical practice of archaeology. Professional training of archaeologists in these areas is undergoing fundamental revision driven by a recognized need for integration into standardized global education systems.

Employment Opportunities and Access to Training

One of the principal objectives of the European Union (EU) is to allow the free movement of labor. With increasing numbers of archaeologists and other cultural heritage specialists seeking to take advantage of opportunities in countries other than their own, how has this mobility of individual workers affected archaeological practice?

What are the opportunities and access to training, and how have they affected archaeological practice in Europe and throughout the world?

In response to these questions, and to follow up on similar issues raised at WAC 5 and at many meetings of the European Association of Archaeologists (EAA), the Discovering the Archaeologists of Europe research project was formed. Partly funded by the European Commission, the project examined archaeological employment in 12 European states. With archaeological practice organized in very different ways in the participating states, the project identified differing structures that have led to obstacles that limit opportunities for individual archaeologists. It examined what globalization really means to archaeologists in terms of both competition and cooperation. It paid particular attention to identifying obstacles to transnational mobility and to offering recommendations to minimize those obstacles.

Archaeology and Development

Historically, archaeology has been perceived either as an amateur discipline that anyone can contribute to or as an "ivory tower" academic pursuit with the attendant connotations of dilettantism and exclusivity. In developed countries for much of the twentieth century, archaeologists found employment in academia, in museums, and in government conservation and land management agencies.

Since the earliest days of antiquarianism, archaeological remains have been discovered during development projects such as agricultural activities, extractive industries (e.g., quarrying and peat extraction), infrastructural developments (e.g., canals, railways, and roads), and urban development. Over the course of the nineteenth and twentieth centuries, museums around the world filled up with such chance finds, which contributed to the development of archaeology as an academic discipline. In the first six decades of the twentieth century, the increasing mechanization of construction led to large-scale development projects, particularly the construction of industrial plants, dams, highways, and airfields. Following the Second World

War, significant urban reconstruction projects were undertaken in many European countries. Such developments sometimes led to the discovery of significant archaeological remains, and, depending on the local circumstances, archaeologists took the opportunity to investigate these discoveries. The emerging awareness among those interested in archaeology (whether or not they were employed as archaeologists) that development projects could be agencies of archaeological discovery, allied to a wider movement toward the regulation of development by state authorities, led to greater consideration of the archaeological impact of development projects. These conditions form the background to the employment of an increasing number of archaeologists outside the traditional employment areas, which in some countries stimulated the emergence of archaeology as a professional service.

The most significant stimulus for professional services archaeology have been the development and consolidation of governmental and transnational policies and legislative provisions, particularly those involving the control and mitigation of development projects. In particular, the inclusion of archaeological heritage under the broad rubric of cultural heritage in the United States' National Environmental Policy Act (1969), The Canadian Environmental Assessment Act (1995), Australia's Environment Protection and Biodiversity Conservation Act (1999), and the transnational European Union's Directive 85/337/EEC (1985) on the assessment of the effects of certain public and private projects on the environment has established the concept of environmental impact assessment (EIA). These legislative innovations brought many Western archaeologists into a process of structured assessment of the immediate-, medium-, and long-term archaeological and environmental impacts of development proposals within a framework of interdisciplinary collaboration (Carver 2009).

In these countries, the inclusive public processes that are part of the EIA have also exposed archaeology to public scrutiny while at the same time allowing advocates for archaeology to raise their voices in circumstances where they believe that EIAs are flawed. These developments have taken place in parallel with the development of a body of international, transnational, national, and regional policies relating to archaeology. At a global level, UNESCO has adopted the World Heritage Convention (1972). The Council of Europe has been active in promoting a number of different conventions directly relevant to archaeology including the Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985), Convention for the Protection of the Archaeological Heritage of Europe (revised) (Valetta, 1992), and the European Landscape Convention (Florance, 2000).

In countries with robust, enforced regulation of development activities, a secondary stimulus for the emergence of archaeology as a professional service has been the drive in construction management to minimize and transfer risk. From the perspective of a construction applicant or permittee promoting a development, the principal archaeological risk is the unanticipated discovery of archaeological remains requiring mitigation during construction. The professionals best placed to manage this risk on behalf of a developer are archaeologists, and in many countries a range of methodologies have been developed to do this (Carver 2009).

Compliance as a Driver of Archaeological Knowledge

In the USA, heritage protection mandates at the federal level in the 1960s and 1970s produced an avalanche of information and collected materials, resulting in great challenges for information and collections management in the late twentieth century that are still with us today (Jameson 2004). As similar approaches were adopted in other countries, analogous issues have arisen.

The predominant instrument of archaeological knowledge creation at the beginning of the twenty-first century continues to be the archaeological inventory, evaluation, and mitigation undertaken in response to development proposals. These developments are public and private, urban and rural, and can vary greatly in scale from single-dwelling houses, to extensive linear projects such as roads, railways, and pipelines, to large area developments such as mines, dams, retail parks, and airports.

Regardless of the scale of the individual projects, they pose many of the same archaeological problems and present many archaeological opportunities. These developments can provide an opportunity to carry out high-quality archaeological excavation and research in areas and regions that often have not been comprehensively researched previously. However, it should be noted that such successful outcomes are predicated on the existence of a body of appropriately trained heritage professionals, the existence of a structured approach to development consent, and the apportionment of responsibility for funding. The presence of public support for the mitigation of the impact of such projects is also important in ensuring a successful outcome, particularly where administrative or legislative structures are poorly developed or under-resourced.

Collective International Experiences

One of the principal aims of the sessions at WAC 6 was to provide an overview of current practice around the globe in both developed and developing countries. Particular issues it hoped to address were:

1. The impact of national and international public policy on the scale and scope of archaeological work carried out on development projects.
2. A review of archaeological responses to the evaluation of large-scale developments.
3. Source criticism—the effect of evaluation and excavation and post-excavation strategies on the creation of the record.
4. Assimilating the so-called “gray literature” into existing archaeological narratives and the creation and maintenance of effective and accessible archives.
5. The changing roles of excavator, specialist, and synthesist in the creation of archaeological knowledge.

Unsurprisingly, many of the papers at WAC 6 focussed on Ireland. At the time of WAC 6 (2008), Irish archaeology was experiencing an historically unprecedented economic boom colloquially known as the Celtic Tiger. Archaeology was not immune from the effects of this economic growth. On the one hand the economic growth stimulated widespread and in many cases large-scale development projects by the private and public sector which directly threatened nonrenewable archaeological heritage. On the other hand these projects provided opportunities for the employment of professional archaeologists and led directly to the discovery and excavation of many previously undocumented archaeological sites which added enormously to our knowledge of the past. While the experiences of archaeologists who worked in Ireland in this period are particular to the specific conditions and structures that were present, they do have a wider relevance.

In Ireland, the following factors helped ensure that the archaeological response to the unprecedented development pressure was reasonably coherent and comprehensive:

1. The existence of relatively well-developed legislative protection for archaeological remains
2. Oversight by professional archaeological staff employed by statutory bodies
3. Knowledge and awareness within the archaeological profession of regulatory and administrative structures in comparable countries
4. An independent representative body for professional archaeologists
5. A young and well-educated archaeological workforce

Based on the experience in Ireland and other countries, in examining the place of archaeology vis-á-vis development, the following questions arise:

1. Are legislative, regulatory, and administrative structures in place at a national or regional level to adequately implement the principles of existing international agreements?
2. Can archaeologists engage effectively with development agencies/corporations and statutory bodies responsible for development control to ensure that the archaeological impacts of construction projects are properly assessed and mitigated?
3. Do effective organizational structures exist to ensure that archaeologists are able to respond to the archaeological impact of development projects?
4. Are there adequate resources (labor, funding, and time) available to meet the needs of such projects?
5. How is the archaeological data curated and how is knowledge gained through such projects effectively communicated within the profession and to the general public?

The responses to these questions are conditioned by the particular circumstances and structures obtaining in particular jurisdictions. In those countries where adequate structures exist, and where there is an explicit commitment to curate the data and communicate it widely, archaeology and society benefit, stimulating public support for archaeology.

Contributions of This Volume

The last three decades of the twentieth century saw the formulation and adoption of a number of significant policy and legislative initiatives as well as the creation of international conservation and professionally oriented structures and organizations, including the World Archaeological Congress (WAC), that are now beginning to have a global impact. In our modern, interconnected world, it is becoming increasingly possible for archaeologists working in a particular country to be cognizant of collaborative approaches and supranational contexts and in which they are practicing their profession. Equally, those communities and stakeholders who are not archaeologists, but whose material and intangible heritage comes into the orbit of archaeological interest, are also becoming increasingly aware of archaeology's global contexts. Moreover, forces of globalization have created a need for contextualizing knowledge in order to address complex issues. This has led to enhanced collaboration across and beyond academic disciplines, using more integrated methodologies that include nonacademics and increased stakeholder participation. In these contexts, a conceptual shift is taking place that facilitates integrative and transdisciplinary approaches that foster public participation in the production of knowledge (Jameson and Mytum 2012).

We pose two central questions: What is the collective experience of archaeologists and cultural heritage specialists in these arenas? Should we be encouraged, or discouraged, by national and international trends? In an attempt to answer these questions, we have assembled selected articles that examine and give representative examples of the respective approaches and roles of government, universities, and the private sector in meeting the educational and training needs and challenges of practicing archaeologists today.

This volume brings together the collective experiences of archaeologists, educators, preservation planners, and government managers to explore new approaches to archaeological heritage management, professional training, and heritage education and interpretation. It offers critique and new insights into these areas of endeavor at the beginning of the twenty-first century, particularly in the context of globalization. In these contexts, globalization should be seen not just in its economic guise (the increasingly integrated global economy marked especially by market liberalization and free trade, free flow of capital, and the tapping of cheaper foreign labor markets), but in the socio-cultural context of providing opportunities for both archaeologists and those interested in archaeology, to increase their knowledge of the practice and contributions of archaeology. This contextual discussion of globalization enables both archaeologists as well as the interested public to compare differing aspects of local as well as international archaeological practice and approaches.

Although this volume does not pretend to be a comprehensive overview of the issues surrounding the training and interdisciplinary collaboration of archaeologists, it does get to the heart of a number of relevant issues: the international mobility of archaeologists and heritage managers; the problems of sustaining employment in a volatile market; employment of archaeologists in managing the archaeological

impact of development projects; and the generation and interpretation of archaeological data and knowledge that results from such projects.

In the twenty-first century, it seems likely that an increasing proportion of archaeological survey, excavation, and conservation work will be undertaken to mitigate the impact of developments. To derive the maximum benefits (academic, societal, and professional) from this work, our archaeological practices need to evolve. The papers in this volume contribute to the development of a greater understanding of the need for these new forms of practice. These problems are of paramount concern to European archaeologists as well as archaeologists in Australasia, Asia, the Americas, the Pacific, and Africa. We hope that this book contributes not only to raising of the awareness of these issues but also to ongoing subject matter debates. In our interconnected world, communication and interdisciplinary approaches hold the key to the advancement of archaeological training and practice.

Tallahassee, FL, USA — John H. Jameson
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Sherene Baugher is an Associate Professor in both Cornell University's Department of Landscape Architecture and Cornell's Archaeology Program. From 1980 to 1990, she was the first official archaeologist for New York City. For over 30 years, she has been involved in heritage projects to bring archaeology to the public. These outreach efforts involved partnerships with Native American leaders, community groups, and staff in government agencies and museums. She has published numerous articles including coediting two archaeology books for Springer.

Niall Brady, a graduate of UCD and Cornell University, is a specialist in agrarian technology with research interests in landscape and underwater archaeology. He directed the Discovery Programme's Medieval Rural Settlement Project, 2002–2010, and is founding director of the Archaeological Diving Company Ltd, Ireland's premier marine and underwater archaeological consultancy.

Aaron Brummitt is originally from eastern Tennessee and earned his baccalaureate degree at the University of Tennessee in Knoxville. Since completing his graduate studies at the University of South Carolina in 2007, he has worked in both public and private sectors assisting agencies and applicants comply with cultural resource and environmental protection requirements. In his current position at S&ME, Inc. in Charleston, South Carolina, he serves as the Senior Archaeologist and Principal

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Malcolm A. Cooper was Chief Inspector at Historic Scotland from 2005 to 2010, having held a number of senior positions at English Heritage previously. He has written and lectured widely on heritage and management and is currently undertaking research on Gerard Baldwin Brown at Edinburgh University where he is an honorary research fellow. He is a Fellow of the Society of Antiquaries and the Society of Antiquaries of Scotland and an Honorary Fellow of the Royal Incorporation of Architects in Scotland. He is also a Member of the Institute of Historic Building Conservation, the Institute for Archaeologists, and the Chartered Management Institute.

Cameo Dalley is an Australian-based anthropologist whose work is predominately focused in Aboriginal communities. She has previously published on intercultural engagements in the early twentieth century, on the concept of indigeneity in both Australia and internationally, and on traditional hunting by Aboriginal people. Her PhD research on identity construction was set in the remote Aboriginal community of Mornington Island in northern Australia, where she undertook over 18 months of ethnographic fieldwork. She is the current Secretary of the Australian Anthropological Society.

James Eogan is Senior Archaeologist with the National Roads Authority (Ireland). He studied archaeology at University College Dublin and the Freie Universität Berlin. He has contributed papers on the results of excavations he has directed, methodological issues, and the impact of the recent economic boom and recession on archaeology in Ireland to various publications; he has also coedited a number of books. He is former Vice-Chairperson of the Institute of Archaeologists of Ireland and is presently a member of the Institute's board.

Kate Geary worked in curatorial archaeology in North Wales for 10 years after graduation. Following a brief spell on the historic environment team at Devon County Council, she moved to the Institute for Archaeologists in 2005 as Training & Standards Coordinator, taking up her current role in 2010. She is responsible for the development of standards and best practice guidance and has a particular interest in training and skills initiatives.

Margaret Gowen is an archaeologist who has worked in the commercial sector and development-led archaeology for over 20 years. The early years of her career involved a particular focus on the development of her company as a leading consultancy and project management practice and the general professional development of archaeology and archaeologists working in the commercial sector. She is a former Chairperson of the Institute of Archaeologist of Ireland and President of ICOMOS Ireland and served two terms as Vice-President of the European Association of Archaeologists.

John H. Jameson is Senior Archaeologist and Public Interpretation/Outreach Lead, Southeast Archaeological Center, National Park Service, U.S. Department of the Interior. He has long worked to improve the quality of programs in the public interpretation of archaeological and cultural heritage. He has organized interdisciplinary training classes within the U.S. and internationally. In 2005, he was awarded the Sequoia Award for long-term contributions to education and interpretation by the U.S. National Park Service. He serves as Vice President of the International Committee on Interpretation and Presentation of Cultural Heritage Sites (ICIP), International Council on Monuments and Sites (ICOMOS).

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Patrizia La Piscopia is undertaking her PhD in archaeology and cultural heritage management in conflict zones. She completed a Master's degree in Science and Conservation of Materials in Bologna with the CNR. She then moved to University College Dublin, to pursue an MA in Landscape Archaeology, where she is now conducting her research. Patrizia has many years of experience as an archaeologist and worked in both commercial and research excavations in Europe and further afield.

John P. McCarthy, RPA, has been a practicing archaeologist and architectural historian working in cultural resources management and historic preservation for over 30 years. He is interested in the problems of ethical professional praxis and self-reflexive approaches to research. He also has a strong belief in the importance of the physical record of the past as a source of insight into events and social processes not only of the past but in the present as well.

Conor McDermott is a graduate of University College Dublin. He joined the Irish Archaeological Wetland Unit in 1990 and was subsequently appointed Acting Director from 1996 and Director from 1998 to 2005. Since 2005 he has been Laboratory and Field Officer at the School of Archaeology, University College

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E. Eoin Sullivan was the Development Officer in the Institute of Archaeologists from 2008 to 2010. He is the owner of Gort Archaeology (est. 2005), an archaeological and heritage consultancy, based in Co. Laois, Ireland. His research interests are landscape archaeology, landowners' perception of the value of cultural features, the continuum of education for qualified professionals, and the effective evaluation of training courses. He is an occasional lecturer in Dorset College (Dublin) where he teaches accredited Professional Development training courses.

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František Žák Matyasowszky is professional archaeologist and lecturer with more than 12 years postgraduate experience. He studied in Slovakia at the University of Constantine the Philosopher and at the Archaeological Institute, Nitra; he is holder of two doctorates. Between 2004 and 2011 he worked in Ireland as an archaeologist in various private consultancies but mostly for the National Roads Authority. Within that time he became a licensed archaeologist in Slovakia and Ireland. In 2012, with colleagues from Ireland, he established an archaeological consultancy *Archaeological Agency* in his native Slovakia and became its managing director.

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Part I
Twenty-First Century Archaeological Practice and Training: The New Realities

Chapter 1
Archaeologists at the Table: From Community to Global

John H. Jameson

Introduction

Well into the second decade of the millennium, archaeologists worldwide are prime movers in national and international movements in recognizing the importance of public access, inclusiveness, and sustainability as fundamental elements in promoting public understanding and appreciation of cultural heritage sites. Archaeologists provide some of the most outspoken and articulate voices on matters of heritage identification and forces of change, as well as its preservation and protection. In the age of twenty-first-century globalization, archaeologists worldwide are increasingly engaged in global, albeit less traditional, topics ranging from formal education and teaching standards to employee training, public interpretation, outreach, heritage tourism, and interpretive art.

A simplified definition of the concept of "heritage" is something that has been, or is, inherited from one's predecessors. Evolving notions of "heritage" are defined within historical contexts that have been created by various influences that reached their zenith in Western societies with the increasing professionalization of cultural heritage practice in the late twentieth century. Heritage conservation professionals are increasingly engaged with new forms of diasporic and transnational communities, with mass mobility and modern relationships of cyber cohesion that transcend place. Archaeologists are essential players in maintaining and negotiating these new forms of community. Perhaps, paradoxically, but increasingly widely accepted as a

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truism, heritage is no longer about the past but is more about the power of the past to produce the present and shape the future (Fairclough et al. 2008).

Moreover, archaeologists are playing key roles in shaping the cultural heritage field by contributing to changing definitions of heritage through the mediums of collective memory and landscape, and contributing to international initiatives and intercultural dialogues, helping to form new approaches to heritage management and public interpretation. Archaeologists have made notable success in developing creative ways to integrate archaeology and the archaeological with the nonarchaeological world. What we refer to as "public archaeology" is often seen by professional archaeologists as separate from traditional research-oriented archaeology practiced by archaeologists with a particular knack for public communication and interface. But the notion that public archaeology can be separated from research is, in my opinion, a fallacy. How can any archaeological project today not be seen as a public endeavor with divergent and multiple stakeholders who care about what and how it is recorded, preserved, and ultimately interpreted?

Certainly, in today's heritage management arena, we are witnessing a trend toward more direct involvement in formal education and historic site interpretation, with vastly expanded collaboration between archaeologists and their education and communication partners. In addition, greater emphasis is being placed on the importance of local community connection, interaction, and immersion in the planning and implementation phases of projects. To be successful, models for implementing successful programs, projects, and publications place emphasis on interdisciplinary collaborative partnerships. This chapter explores and gives examples of successful collaborations, initiatives, and strategies. It will describe effective models of collaboration that have enabled archaeologists to engage effectively in wide-ranging educational and interpretive spheres.

Collaborations and Partnerships

Since the 1990s, we have witnessed numerous international applications and an increased interest in establishing partnerships between professional practitioners in public interpretation and educational institutions such as museums and schools. These developments have occurred in the context of a realization that community-based partnerships are the most effective mechanism for long-term success.

Australasian archaeologists were among the first to reflect seriously on the public context of archaeology (Marshall 2002). In 1979, the Australia National Committee of the International Council on Monuments and Sites (ICOMOS) adopted the "Charter for the Conservation of Places of Cultural Significance" (Burra Charter), a supplement to the Venice Charter more in line with heritage conservation issues and practice in Australia. The Burra Charter has proved to be a globally significant document affecting evolving philosophies for heritage conservation in other parts of the world. In Europe, institutions such as the Ename [Belgium] Center

for Public Archaeology and Heritage Presentation are working to show how heritage, and the knowledge and stories connected with it, links people and communities with the past and how this influences modern daily life. In North America, a number of long-standing programs are achieving notoriety, having managed to be recognized beyond gray literature through publications with far reaching academic and international audiences and applications. In both the USA and Canada, public archaeologists are setting high standards for interdisciplinary collaboration and community engagement within government-sponsored training programs, museums, and universities (Jameson and Baugher 2007). Canadian archaeologists are experimenting with a more community-oriented archaeology, in the Arctic and other regions, where indigenous stakeholders have forced researchers to reappraise conventional approaches (Lea and Smardz 2000; Rowley 2002).

New Models of Engagement

In many regions of the world, programs are attempting to transcend the didactic and somewhat detached postcolonial model of engagement to one that incorporates communication with local organizations aimed at (1) collaboration in the interpretation of regional history, with an emphasis on open interaction and plain language reports; (2) the interviewing of elders to recover local oral history; (3) the employment and training of local people with the aim of developing full-time positions; (4) public presentation of research findings locally, including creation of an accessible photographic and video archive and development of educational resources, especially for young audiences; and (5) community control of heritage merchandising.

For example, as Pope and Mills (2007) point out in a case study from Newfoundland, Canada, archaeologists are giving increased attention to the social context of their research, often in a self-conscious effort to involve nonspecialists in their work. The situation can be very complex, with some key issues revolving around "ownership" of archaeological heritage. Archaeological researchers and community groups have distinguishable interests: the former oriented to the pursuit of knowledge within the framework of the historical sciences, the latter oriented to economic diversification and social development. These interests overlap in the domain we have come to call "heritage" (Lowenthal 1998). To the extent that researchers remain interested in history, and not simply in heritage, archaeologists should, they say, remain interested in the plausibility of claims about the past, whether or not they will be directly useful for heritage interpretation and whether or not they indirectly promote economic and social development. Archaeologists should recognize the cultural and spiritual links between Aboriginal peoples and the archaeological record, including in particular human remains, special places, and landscape features. They also point out, however, that archaeologists and community organizations have different agendas and only the naive will suppose that pious support for the principles of community archaeology will somehow reconcile these in every case.

An increasing number of university programs are listing public involvement as a basic ingredient in teaching program success (Mytum 2012). Sherene Baugher at Cornell University in New York State has defined (2007) an "Archaeological Model for Service-Learning and Community Outreach" that rejects the traditional top-down hierarchical model of archaeology project management where nonarchaeologists are kept out of the research planning process in order to preserve power and control. Some archaeologists may fear that sharing "control" would make the archaeologist a technician working for the client, a.k.a. the community. However, Baugher points out, partnership implies that both groups bring ideas and perspectives to the table, and there is the belief (shared by the partners) that the joint endeavor is better because of the multiple voices, providing the potential for these projects to be richer and more detailed than a solely academic-focused effort. Community members have an opportunity to be actively engaged in the research rather than just being the subject of the research, as well as an opportunity to suggest research that was not the initial priority of the social scientist/archaeologist. Another positive benefit of this service-learning model is that community members contribute to local social development by becoming involved in their own community history and oral history projects. They also become grass root supporters of archaeology and historic preservation.

In another example, from the Baltimore public schools in the state of Maryland, Patricia Jeppson (2007) describes a program that attempts to combat the trend in primary and secondary education where innovation and creative teaching are becoming more difficult with state mandated tests and curriculum changing to simply "teach for the test." In the public schools arena, without a thorough knowledge of social studies curriculum and new state mandated requirements, archaeologists are simply working in the dark. Archaeologists are not trained in educational philosophy or child development. But, in Baltimore, archaeology has survived as a subject and has been integrated into the public school curriculum. One of the key ingredients here has been partnering archaeologists with educators. The partnership with educators is required to ensure age-appropriate programming, and teaching occurs both inside and outside the formal classroom setting.

In both academic and public arenas, many archaeologists and cultural heritage specialists are increasingly employing collaborative approaches in devising effective strategies for conveying archaeological information and significance. These practitioners are moving beyond the concept of the public as recipients or "customers" of interpretation to focus on active public participation in archaeological and interpretation processes. Using more interdisciplinary and transdisciplinary approaches, this conceptual shift facilitates analyses of public participation in the production of knowledge. Increasing examples of this new focus—how nonacademics or lay persons create, use, and react to this new knowledge, with public operating alongside either professionals or students, or on their own, in variable relationships—are emerging. In these cases, program success is measured by its capacity to empower and motivate lay persons to more active and imbedded involvement in all phases of project planning, research, and information dissemination (Jameson and Mytum 2012).

Fig. 1.1 Training classes coordinated by the US National Park Service emphasize interdisciplinary collaboration in creating effective and inclusive public interpretation programs. Photo courtesy, National Park Service

Public Interpretation and Presentation Initiatives

The last two decades have also witnessed a dynamic period of evolving standards and philosophy in public archaeology and cultural heritage interpretation (Jameson 1997). Philosophical approaches and techniques guided by the US National Park Service's Interpretive Development Program (IDP) have formed a basis for the development of international definitions, standards, and approaches that have led to more effective strategies for site protection and conservation through enhanced public stewardship. Discussions on issues such as authenticity and inclusiveness continue to dominate international debates about the significance and proper use of heritage sites and monuments. The National Association for Interpretation (NAI) and Interpret Europe have adopted similar guidelines and definitions.

The goal of more inclusive interpretations will require an acceptance of divergent definitions of authenticity that depend on a level of tolerance of multiple definitions of significance with concomitant, objectively derived, assigned, and ascribed heritage values. We believe that these efforts can lead to the recognition of humanistic values that are reflected in heritage tourism practices as well as site commemoration and protection decisions by controlling authorities and decision makers. In the US National Park Service, standards and programs have evolved since the 1990s to facilitate connections between students and the public at large with resource meanings, providing more holistic interpretations that embrace inclusiveness and ethnic sensitivity (Fig. 1.1).

The NPS IDP, conceived by NPS in the mid-1990s, and still evolving, encourages the stewardship of park resources by facilitating meaningful, memorable visitor experiences. Before the 1990s, training for NPS interpreters included a detailed introduction to significant names, dates, and references to important books. Often this introduction was coupled with an exercise in writing a personal definition of interpretation. The IDP approach incorporates many important aspects of these methods but with a strengthened sense of individual responsibility: professional interpreters are trained to search for understanding the process of interpretation in fostering resource stewardship. NPS interpreters are expected to be able to articulate the outcomes of interpretation to make personal choices in approach and establish the relevance of interpretation for resource decision makers (NPS IDP 2012). The NPS "Interpreting Archeological Resources" training module, through an interdisciplinary and interagency task group led by agency archaeologists, cites cardinal principles of interdisciplinary teamwork, sensitivity to multiethnic perspectives, and multiple voices in local communities. In the NPS model, interpretation establishes the value of preserving park resources by helping audiences discover the meanings and significance associated with those resources. Interpretation directly supports the preservation and education missions of the agency. The interpretation philosophy is to encourage audiences to care about heritage resources and values so they might support and participate in the NPS caretaker mission.

The ICOMOS Charter

Internationally, archaeologists have assumed leadership roles in developing the ICOMOS Charter on Interpretation and Presentation of Cultural Heritage Sites (the Charter) (ICOMOS 2008). The charter sets international definitions and principles that seek to establish the importance of interpretation and presentation as essential tools to facilitate understanding and appreciation of the significance and range of meanings of cultural heritage sites, while fostering public awareness of the need for their protection and conservation. As a complement to other international efforts and initiatives in Canada, the USA, Australia, Great Britain, and continental Europe, the Charter represents a major contribution to international efforts for establishing standards for interpretation and presentation that transcend national and cultural boundaries. It also stands for an investment in the practicality and application of key concepts and principles such as "authenticity" and "inclusiveness" in heritage management and interpretation.

Within the ICOMOS Charter, "interpretation" refers to the totality or full range of potential activities and messages intended to heighten public awareness and enhance understanding of a cultural heritage site or landscape. These can include print and electronic publications, public lectures, on-site and directly related off-site installations, educational programs, community activities, and ongoing research, training, and evaluation of the interpretation process itself. Interpretation denotes the totality of activity, reflection, research, and creativity stimulated by a cultural heritage site. In other words, "interpretation" is seen as an ongoing process—both a personal and collective activity that could and should be carried out by everyone, layperson and expert, child or adult, local resident and outside tourist alike. Although professionals and scholars continue to

play important roles in the process of interpretation, the input and engagement of visitors, local and associated community groups, and other stakeholders of various ages and educational backgrounds is seen as essential to transforming cultural heritage sites from static monuments into sources of learning and reflection about the past, as well as valuable resources for sustainable community development (Silberman 2009).

The Charter text does not deal with specific content issues, nor does it impose a "uniform" pattern on how a particular monument, site, or cultural landscape should be explained to the public. It simply provides some guiding principles on central issues such as "Access," "Information Sources," "Context and Setting," and "Sustainability" that will be of obvious relevance for consideration by heritage scholars and administrators who are dealing with the general public in every region of the world. The Charter encourages the creation of community structures where the "experts" are not just dishing out information, but are partners in a shared process of caring about, and reflection on, the past. Additionally, the Charter sees the work of interpretation and presentation as more than simply an aspect of heritage tourism; it is equally relevant for local communities, individuals, and local educational systems, and how they can be more effectively informed about, and involved in, the ongoing conservation and appreciation of cultural heritage. The Charter sets the stage to go beyond education to be an instrument for understanding the complex social context of collective memory. The challenges for international relevance and application posed by the ICOMOS Charter initiative are expected to provoke and encourage future debates and deliberations (Silberman 2009; Jameson 2011).

Underwater Archaeology and Maritime Heritage

A special challenge to heritage conservation professionals pertains to maritime and underwater resources that are particularly susceptible to sensationalism and exploitation by those whose primary motive is profit. Maritime cultural heritage encompasses sites and associations of human actions, both within and bordering on, navigable waterways. In many cases, sites are in close proximity to urban areas or can easily be reached by boat, although their visibility may be low or limited. This leads to special challenges for site management regarding conservation, protection, and enforcement of legal mandates for public education, outreach, and interpretation. Underwater and maritime resources provide special challenges for management and interpretation, but increasing numbers of archaeologists are working with government authorities worldwide to set high standards despite the bureaucratic and legal obstacles (Jameson and Scott-Ireton 2007).

The Challenges of Heritage Tourism

The rapidly advancing juggernaut of tourism challenges professional practitioners and site managers to ensure that high standards of skill and competency in heritage management are accepted, welcomed, and valued at local and community levels. By

Fig. 1.2 The "Unlocking the Past" interpretive oil painting is a metaphor for the relationship between archaeological research and public interpretation and the diversity of subject matter. It was created through collaboration between a committee of archaeologists and the artist. Painting by Martin Pate. Image courtesy, National Park Service

definition, heritage tourism is collaboration between conservationists and commercial promoters. In heritage tourism, the goal is to harness people's fascination and sense of connection to the past and turn it into a commodity. It is often an uneasy association because the motives of these respective groups are not always compatible. While there is general recognition that heritage tourism can work to promote preservation of communities' historic and cultural resources, and also educate tourists and local residents about the resources, the resulting effects are not always

Fig. 1.3 Daivid Middlebrook's *Step in Stone* public sculpture. The artist was strongly influenced by his exposure to European Paleolithic cave art and Megaliths such as Stonehenge. Used by permission

viewed as beneficial, especially from those on the conservationist side of the fence. Nevertheless, despite recessionary economic trends, heritage tourism is a growth industry in almost every part of the world and will have to be dealt with head on (Jameson 2007) (Fig. 1.2).

Collaboration with Artists and Writers

As an interdisciplinary field of study that investigates the past by finding and analyzing evidence from material culture, with a focus on predicting human behavior, archaeology has long encompassed recognition and definition of "artistic"

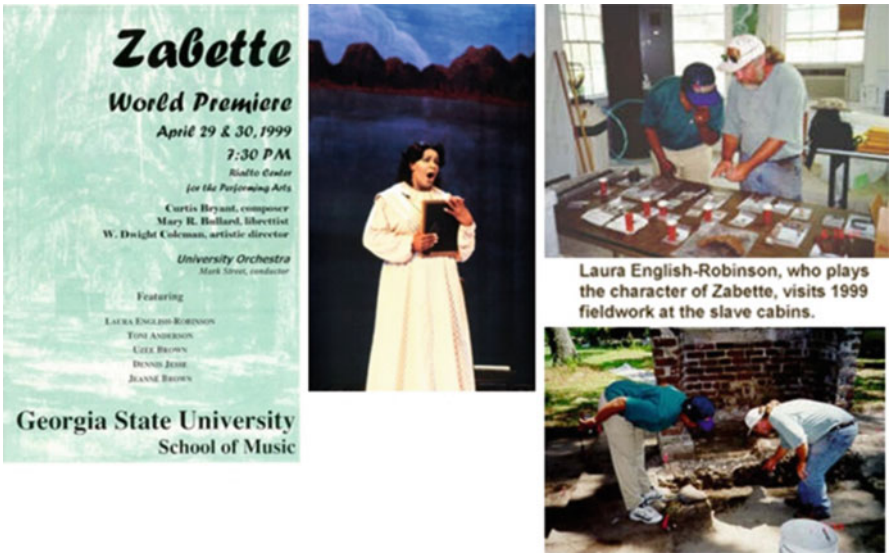

Fig. 1.4 The opera "Zabette" was inspired by research carried out by the NPS Southeast Archeological Center at the Robert Stafford Plantation Site, Cumberland Island National seashore, Georgia. *Right* two photos: Laura English-Robinson, who played the main character of Zabette, visits the archaeological site during excavation work. Image courtesy, National Park Service

objects and their associated values. In partnership with professional interpreters and educators, archaeologists have often led the way in using the power of artistic expression to convey archaeological information and insights to the public. These archaeologists have been at the center of movements that go beyond utilitarian explanations toward explorations of the interpretive potential of cognitive imagery that archaeological information and objects can inspire. What we have termed "interpretive art" has been used successfully in paintings, drawings, posters, public sculpture, teaching guides, reports, popular histories, and web presentations as ways of engaging, informing, and inspiring the public about the value of archaeology. Conversely, artists are inspired by engagements with archaeologists and archaeological objects and settings (Jameson et al. 2003) (Figs. 1.3 and 1.4).

Exhibits and popular history writing are two proven techniques for effective public interpretation of archaeology. To be successful, both techniques must not only inform but entertain. The goals are to connect, engage, inform, and inspire, resulting in a lasting and improved appreciation of the resource. Working in conjunction with archaeologists and other heritage specialists, the popular writer's task is to take the results of academically oriented research, strip it to the essentials, and reclothe it, providing access to information for the general reader without losing the fundamental integrity of the original material (Jameson 2003; Kane and Keeton 2003).

Challenges in Cultural Heritage Management

Notwithstanding collaboration and leadership roles, problems remain for archaeologists and heritage conservation professionals, perhaps especially in the cultural heritage consultant role (see chapters in Part II). In the USA, despite the passage of over 30 years of CHM practices in the USA, there remains a significant disconnect between the requirements of the professional practice of archaeology in a consulting context and the formal training that aspiring archaeologists receive. While training has been available for some archaeologists in the public interpretation, outreach, and heritage tourism spheres, it is, however, generally lacking for positions in cultural heritage management (Chapter 10, this volume).

Conclusions

Today, most public archaeologists and heritage conservation professionals realize that both quality research and the public interpretation of research findings are indispensable outcomes of their work. They understand that the ultimate value of archaeological and cultural heritage studies is not only to inform but also ultimately to improve the public's appreciation of the nature and relevance of cultural history. This improved appreciation results in an improved quality of life for all persons.

To be successful, models for implementing successful programs, projects, and publications should place emphasis on interdisciplinary collaborative partnerships. This chapter has explored and given examples of successful collaborations, initiatives, and strategies. It has described effective models of collaboration that have enabled archaeologists to engage effectively in wide-ranging educational and interpretive spheres. Examples demonstrate that when archaeologists are willing to reach out to people in other professions and collaborate with and learn from variant communities of stakeholders, sustainable success can be achieved.

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Chapter 2
Discovering the Archaeologists of Europe

Kenneth Aitchison

Introduction

One of the principal objectives of the European Union (EU) is to allow the free movement of labour. In the early years of the twenty-first century, increasing numbers of archaeologists sought to take advantage of opportunities in countries other than their own, and the *Discovering the Archaeologists of Europe* project sought to examine how this mobility of individual workers was affecting archaeological practice in Europe.

Discovering the Archaeologists of Europe examined the archaeological labour market across 12 EU states between 2006 and 2008. With archaeological practice organised in very different ways in the participating states, differing structures might have been leading to obstacles that limited opportunities for individual archaeologists.

As well as looking at obstacles and opportunities, this project also established the numbers of archaeologists working in each of these states and examined other labour market information and trends, such as the age, gender and qualifications of these archaeologists and explored training investment by archaeological employers.

The project was primarily funded by the European Union through the European Commission (EC)'s Leonardo da Vinci II funding stream. The EC contributed 225,469 € (47%) of a total budget of 482,504 €, with project partners identifying their own national sources of funding that covered the remaining 257,035 € (53%). Much of the data presented in this chapter first appeared (in slightly different form) in Aitchison (2009a) and the analysis in Aitchison (2010).

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Overview

The project, as originally planned, involved participation by organisations in the United Kingdom, Ireland, the Netherlands, Belgium, Germany, the Czech Republic, Slovenia, Greece and Cyprus. At the project development stage, and when an application for funding was made to the European Commission, it was also hoped that a Maltese partner would be able to participate, but unfortunately they had to withdraw. However, the budget that had originally been assigned to work in Malta was reallocated to allow a partner from Slovakia to join the project at an early stage.

A range of different kinds of organisations were represented in this partnership—two professional associations (the Institute for Archaeologists in the UK and the Institute of Archaeologists of Ireland), a trade association (Syllogos Ellinon Archaiologon in Greece), two universities (the Catholic University of Leuven in Belgium and the University of Ljubljana in Slovenia), the state Department of Antiquities in Cyprus, the archaeological components of the national Academies of Science in the Czech and Slovak Republics, the German association of regional state archaeologists and a private company (Vestigia in the Netherlands).

Subsequently, after the project had started work, the professional association for archaeologists in Hungary and a forum for Austrian archaeologists asked if they could join and contribute to the project's work. They were able to do so, although they could not receive any funding from the European Commission and so had to completely self-fund their research.

Activity

Each partner led a national survey and produced a detailed report on archaeological employment in their country, in their national language(s) and English. All of these are hosted on the project's website, http://www.discovering-archaeologists.eu. In addition to these, two transnational reports were produced—one comparing the results across the 12 states (Aitchison 2009a) and one comparing qualifications (Collis 2009).

Results

Structures

Archaeological practice in the participating states was organised on different models, with varying levels of commercial activity balanced against state agency engagement. Different states define who can be considered to be an archaeologist in different ways; in some states, the definition of "an archaeologist" can be a

Table 2.1 Professional archaeologists by country

Country	Number of archaeologists	Number of support staff	Total
Austria	743	222	965
Belgium	765	467	1,232
Cyprus	52	437	491
Czech Republic	425	352	777
Germany	2,500	8,049	10,549
Greece	1,856	Unknown	1,856
Hungary	620	Unknown	620
Ireland	1,709	102	1,811
Netherlands	761	275	1,036
Slovak Republic	186	121	307
Slovenia	175	Unknown	175
United Kingdom	6,865	866	7,731
Total	16,657	10,891	27,550

protected title, legally only available to individual with particular qualifications or credentials, while in others (such as the United Kingdom) there are no formal restrictions upon who can be called an archaeologist. This project tried to take as broad a view as reasonably possible, in order to include data on all the individuals who work on gathering, interpreting or presenting archaeological material.

Employment

Across the 12 participating states, an estimated 16,657 people worked as archaeologists at the time of the surveys, representing 0.02% of the combined total workforces of those states. The highest proportion of the total workforce that were archaeologists was in Ireland, where archaeologists made up 0.10% of the total workforce. In the states where archaeology is primarily a private-sector activity, relatively far more jobs are available than in the countries where archaeological work is primarily undertaken by state agencies (Tables 2.1 and 2.2).

Nature of the Workforce

Of the archaeologists for whom data were available about their genders, 54% were male and 46% female. This closely matched the proportions in the total EU workforce of 53:47 (Romans and Preclin 2008). Only in Greece and Cyprus were the relative numbers of female archaeologists significantly higher (Table 2.3).

Table 2.2 Percentage of workers that are professional archaeologists

Country	Number of archaeologists	Total number of all workers (from Romans and Preclin 2008)	% that are archaeologists
Austria	743	3,450,000	0.02
Belgium	765	3,731,000	0.02
Cyprus	52	301,000	0.02
Czech Republic	425	4,125,000	0.01
Germany	2,500	33,649,000	0.01
Greece	1,856	2,899,000	0.06
Hungary	620	3,440,000	0.02
Ireland	1,709	1,749,000	0.10
Netherlands	761	7,349,000	0.01
Slovak Republic	186	2,044,000	0.01
Slovenia	175	829,000	0.02
United Kingdom	6,865	24,561,000	0.03
Total	16,657	88,127,000	0.02

Table 2.3 Archaeologists' genders

Country	Female		Male	
Austria	233	51%	221	49%
Belgium	357	47%	408	53%
Cyprus	36	69%	16	31%
Czech Republic	134	32%	291	68%
Germany	717	37%	1,220	63%
Greece	872	76%	272	24%
Hungary	244	48%	264	52%
Ireland	359	45%	438	55%
Netherlands	130	37%	218	63%
Slovak Republic	66	36%	119	64%
Slovenia	22	45%	27	55%
United Kingdom	1,013	41%	1,432	59%
Total	4,183	46%	4,926	54%

On average, European archaeologists were 39 years old. Very few European archaeologists were disabled—1.5% of the total number of workers for whom data were available. Only in Germany was there significant variation from the low average figure, as 6.0% of German archaeologists were considered to be disabled.

Nature of the Work

Across the 12 participating states, 86% of the archaeologists for whom data were available worked full-time and 14% part-time. This is comparable to the overall EU ratio for all workers of 82:18, but few states actually reported proportions

Table 2.4 Archaeologists' average earnings by state

Country	Average salary for archaeologists	Average archaeological salary compared with national average (%)	National average salary for all workers	Gross total archaeological salaries (workers × average salary)
Austria	31,518 €	122	25,797 €	23.4 m €
Belgium	28,819 €	104	27,780 €	22.0 m €
Cyprus	40,656 €	175	23,122 €	2.1 m €
Czech Republic	10,145 €	108	9,455 €	4.3 m €
Germany	31,071 €	108	29,016 €	77.7 m €
Greece	28,925 €	108	26,987 €	53.7 m €
Hungary	11,432 €	119	9,619 €	7.1 m €
Ireland	37,680 €	97	38,745 €	64.4 m €
Netherlands	Unknown	Unknown	30,000 €	Unknown
Slovak Republic	6,030 €	83	7,248 €	1.1 m €
Slovenia	16,827 €	111	15,116 €	2.9 m €
United Kingdom	34,392 €	78	44,261 €	236.1 m €
All states (nb all workers: 2005 figure)	31,134 €	107	28,992 €	518.6 m €

close to this figure, as on a state-by-state basis it was either normal for there to be nearly no part-time archaeologists or for approximately one in four archaeologists to work part-time.

Salaries

Typically, in the 11 participating states for which salary data were available, archaeologists were paid slightly more than the national average, and the calculated average salary for all archaeologists studied was slightly higher (107%) than the EU average for all workers. Where archaeological practice was principally undertaken by state agencies, archaeologists' salaries tended to be higher than where archaeology was largely undertaken as a commercial activity, but far fewer individuals work in the profession. This is best demonstrated by the data from Cyprus, which simultaneously has the smallest working population of archaeologists of any country that participated in the project and the highest average salaries. By contrast, in the UK, where there were far more archaeologists working than in any other participant country—almost entirely because of the size of the private sector in UK archaeology—average archaeological salaries were only 78% of the average for all workers, lower than in any other participating country (Table 2.4).

Table 2.5 Organisations reporting growth (of staff numbers)—numbers represent percentage of organisations reporting growth minus percentage of organisations reporting shrinkage

Country	Growth over previous 5 years (since 2002–03) (%)	Growth over previous 3 years (since 2004–05) (%)	Growth over previous year (since 2006–07) (%)
Austria	−18	−22	−14
Belgium	+24	+15	+6
Cyprus	+23	+29	+29
Czech Republic	+30	+23	+6
Germany	+8	0	−2
Greece	+11	+2	−10
Hungary	Unknown		
Ireland	+39	+32	+21
Netherlands	+61	+54	+36
Slovak Republic	+20	+11	+2
Slovenia	+45	+4	−4
United Kingdom	+18	+17	+10

Table 2.6 Organisations anticipating growth (of staff numbers)

Country	Growth in the next year (2008–09) (%)	Growth in the next 3 years (to 2010–11) (%)
Austria	+4	−3
Belgium	+3	+12
Cyprus	+33	+33
Czech Republic	+11	+21
Germany	−2	−12
Greece	+2	+39
Hungary	Unknown	
Ireland	+26	+42
Netherlands	+27	+38
Slovak Republic	+9	+3
Slovenia	+13	+32
United Kingdom	+14	+26

Growth of the Sector

In almost all participating states, in terms of the number of people employed, archaeology had expanded over the 5 years prior to the survey and (at the time data were collected, typically in 2007) further growth was anticipated. Since then, the global economic crisis has adversely affected archaeology in many of the participating states (Aitchison 2009b), and the confident perspectives of 2007–08 have to be seen as a snapshot of those times. Interestingly, archaeologists in the two Germanophone states were those with the least optimistic future outlook (Tables 2.5 and 2.6).

Table 2.7 Highest level of qualifications gained

Country	School level		Undergraduate degree		Postgraduate (masters) degree		Doctorate		Post-doctorate (habilitation)	
Austria	235	48%	5	1%	113	23%	108	22%	29	6%
Belgium	0	0%	0	0%	108	87%	16	13%	0	0%
Cyprus	0	0%	4	8%	23	44%	25	48%	0	0%
Czech Republic	5	2%	13	4%	219	70%	50	16%	26	8%
Germany	412	45%	47	5%	232	25%	184	20%	48	5%
Greece	0	0%	704	53%	401	29%	234	17%	2	1%
Hungary	0	0%	0	0%	415	82%	76	15%	17	3%
Ireland	165	20%	315	39%	298	37%	25	3%	4	<1%
Netherlands	17	6%	2	1%	141	50%	122	43%	0	0%
Slovak Republic	0	0%	1	1%	103	62%	37	22%	24	15%
Slovenia	6	12%	27	54%	7	14%	9	18%	1	2%
United Kingdom	97	4%	1,266	55%	672	29%	263	11%	9	<1%
Total	937	13%	2,384	32%	2,732	37%	1,149	16%	160	2%

Corrected and updated from Aitchison (2009a, 18) using information from Karl (2008, 68) and Krausse and Nübold (2008, 44–46), treating German and Austrian *Fachhochschule* vocational degrees as the equivalent of undergraduate degrees elsewhere and *Magister* awards from universities as the academic equivalent of postgraduate degrees awarded elsewhere

Qualifications

In every participating state, it was normal for people working as archaeologists to hold a degree.

In eight of the participating countries less than 2% of practitioners were not graduates. The only exceptions to this were Slovenia, where a relatively small dataset may have skewed the results, Ireland, where 20% of workers do not hold degrees, and both Austria and Germany. In the two German-speaking countries, it is normal for labourers to be employed in archaeological fieldwork projects (often including participants drawn from AMS-Maßnahmen, 1-Euro Worker or Arbeitsbeschaffungsmaßnahmen) whereas in all of the other partner countries almost all fieldwork is undertaken by graduate level workers.

Five percent of archaeologists had gained their highest qualification in a European Union state other than the state in which they now work (Table 2.7).

Countries of Origin

Ninety-two percent of archaeologists in the 12 countries studied worked in the state of their own origin. A further 6% were from other EU states, with 1% of workers coming from outside the European Union. This demonstrates that archaeologists are more transnationally mobile than the European Union average [2.2% of the European workforce live in another EU member state and non-EU nationals

Table 2.8 Countries of origin

Country	Total number of individuals for whom data are available	Number working in home state		Number from elsewhere in European Union		Number from elsewhere in world	
Austria	479	90%	433	8%	37	2%	9
Belgium	124	98%	121	2%	3	0%	0
Cyprus	52	79%	41	15%	9	4%	2
Czech Republic	313	98%	306	2%	7	0%	0
Germany	1,858	95%	1,773	3%	56	2%	29
Greece	1,570	99%	1,560	1%	8	<1%	2
Hungary	508	93%	473	5%	25	2%	10
Ireland	485	55%	269	42%	202	3%	14
Netherlands	499	95%	476	3%	16	1%	7
Slovak Republic	174	98%	171	1%	2	1%	1
Slovenia	126	95%	120	5%	6	0%	0
United Kingdom	2,611	93%	2,342	5%	130	2%	49
Total	8,799	92%	8,085	6%	501	1%	123

comprise 3.8% of the EU workforce (EC 2008)], although there are obstacles relating to qualifications, licensing and language competencies preventing full transnationality in some states.

The most remarkable figures relating to countries of origin were from Ireland, where 45% of archaeologists working in that country in 2007 were not from the island of Ireland. This was in response to a boom in archaeological employment related to an period of major road-building projects; following this survey, the end of those projects, combined with the effects of the global economic crisis, mean that the numbers of people working in Irish archaeology declined rapidly (Eogan and Sullivan 2009) and it is considered that many of those non-Irish archaeologists may have either left the sector or the country (Table 2.8).

Barriers to Mobility

The aim of this project was to improve understanding of the requirements for, and capacity to provide, transparent qualifications for archaeologists across Europe. By permitting qualifications obtained in one country to be recognised in another would better facilitate transnational mobility.

The project has shown that there are opportunities for archaeologists to move from one state to another to work, and it has successfully identified that in order to find employment in the 12 participant EU member states, archaeologists need to be qualified, normally at least at graduate level.

While some archaeologists are able to work outside their own countries, this does not mean that the qualifications that archaeologists hold are universally accepted in all states other than their own. Often, this is compounded by different traditions of licensing systems (to obtain permits to undertake intrusive investigations). While these are frequently based, at least in part, upon academic qualifications, restrictive licensing requirements can block free movement of archaeological practitioners from one state to another.

Collis' analysis of the qualification results (2009, 16) considers that there was an obstacle to free movement here, as there was not yet a system of qualifications in the European Union which would allow correlation of degrees between countries, with the major problems for archaeology specifically being:

1. The lack of a first degree in archaeology in some countries
2. The differences in the legal definition of an archaeologist (or the lack of such a legal status)
3. The different aims of university degrees in the content of courses and the way in which they are examined, leading to variation in the acceptability of diplomas in other countries or institutions (e.g., to change courses)
4. The differing structures in the way in which field archaeology, especially excavations, are organised, and the personnel taking part
5. Differences in the nature of the Doctorate and Habilitation

However, he does recognise that the adoption of the Bologna declaration (EHA 1999) will potentially make movement easier for individual students.

The project also found that archaeologists will need language skills (which are sometimes an absolute requirement in order to be able to practice) to be able to work in states other than their own.

Training Needs

Issues relating to specific training needs were assessed in each participating country, but because of the variety of ways in which these questions were asked by the project partners (in order to accommodate the differing structures and approaches to archaeological work in each participating member state), the information obtained cannot be usefully compared from state to state.

Further Outcomes

The project's results for Austria were potentially the most controversial, with serious issues being raised regarding the relationships of particular employer organisations, alluded to in Karl (2008) and discussed in further detail in Karl (2011).

Conclusions and Future Plans

Discovering the Archaeologists of Europe found that over 500 million € was being spent on archaeologists' salaries in 12 European states in 2007–08. With staff costs typically representing 70% of the expenditure involved in archaeological practice, this suggests that around 740 million € was spent on archaeology in those countries at that time, with over 16,500 professional archaeological workers delivering this service.

This was data collection and analysis on a previously unprecedented scale, quantifying and documenting the roles, responsibilities and rewards of archaeologists around Europe, with subsequent analysis and comparison of the political structures that these people are working within, comparing and contrasting state and non-state models of delivery and management.

Some broadly comparable work has been done in other parts of the world, with research in Australia (Ulm et al. 2012) being deliberately modelled on the *Discovering the Archaeologists of Europe* model and producing an estimate that there were between 500 and 600 professional archaeologists working in Australia in 2010. Lawler (2010) directly applied the methodology of the project in Bosnia-Herzegovina and produced an estimate of between 25 and 35 individual archaeologists working in that country.

Giraud (2010, 161) estimated there were 3,500 archaeologists working in France in 2008, the majority of whom (c. 55%) work for the quasi-autonomous non-governmental agency INRAP, which had a budget of 137 million € in 2008 (ibid., 158) and Parga-Dans (2010, 48) presented a detailed analysis of commercial archaeology in Spain in 2008, which included an estimate of 2,358 archaeologists working for commercial companies in that country.

The number of people working in Japanese archaeology, which is largely delivered through a non-competitive system but which has been having to cope with ongoing national economic difficulties since the 1990s, declined from a peak in 2000 of 7,111 individuals to 6,255 in 2008 (Agency for Cultural Affairs 2009).

Previous estimates of the numbers working in US archaeology (Zeder 1998) have focussed on those engaged in academic archaeology, but Altschul and Patterson (2010) presented an estimate of 11,350 people working as professional archaeologists in all sectors across the USA in 2008, with expenditure on cultural resource management being estimated at between US$600 million and US$1 billion (433–721 million €) (Table 2.9).

The only previously published estimate of the total number of archaeologists working in the whole world has been presented by Flatman (2011, 10), who produced a figure of c. 40,000 archaeologists working in global archaeology; this figure is fair, but, considering the figures brought together here (a total of at least 40,000 working in the *Discovering the Archaeologists of Europe* countries, plus Bosnia, France, Spain, Australia, Japan and the USA—which certainly includes the countries with the largest working populations in the sector, but does not include much of Europe, parts of north America, parts of Asia and all of Africa

Table 2.9 Published estimates of the numbers of working archaeologists (2008–10)

Country	Number of archaeologists
Austria	743
Belgium	765
Cyprus	52
Czech Republic	425
Germany	2,500
Greece	1,856
Hungary	620
Ireland	1,709
Netherlands	761
Slovak Republic	186
Slovenia	175
United Kingdom	6,865
Bosnia-Herzegovina	30
Australia	550
France	3,500
Spain	2,358
Japan	6,255
USA	11,350
Total	40,700

and South America), Flatman is perhaps slightly conservative and there may be closer to 50,000 people earning a living from professional archaeology in the world in 2011.

Individual archaeologists, employers and policy makers are now able to compare the nature of archaeological work in 12 European states. As well as providing this labour market intelligence, the aim of this project was to improve understanding of the requirements for, and capacity to provide, transparent qualifications for archaeologists across Europe, so making it easier for individuals to live and work in states other than their own.

The European Commission's feedback on the completion of the project was overwhelmingly positive and can be read as being potentially supportive of any future iteration of the project. Previously, such workforce data had been collected in only the United Kingdom (on two previous occasions) and in Ireland (once before). In those countries, the data has been able to feed into longitudinal analyses of change over time, and it is hoped that if the survey could be repeated again in the future then opportunities to identify trends would be enhanced. As well as expanding the time range, the spread of the research could also be expanded. Firm interest in participation in any future project has already having been received from potential partners in Spain, Romania, Portugal and Poland and colleagues in several other countries have also indicated that they would potentially like to take part, and there are plans to reform and expand the partnership to repeat this exercise, potentially gathering data between 2012 and 2014. This could even feed into a broader set of projects to collect comparable data worldwide.

Since 2007, the global economic situation has changed in ways that the project participants were not able to imagine, with considerable adverse effects upon archaeological practice—much of which is documented in Aitchison (2009b) and Schlanger and Aitchison (2010). The European Commission's priorities now focus on consolidating and rejuvenating the labour market in the altered economic climate, but making sure individuals and employers are as well informed as possible remains a priority. The project partners will learn from the drawbacks that the project encountered, build upon our successes and address the realities of the changes that have taken place since the previous survey, with the shared aim of producing an even more comprehensive and useful account of the working lives of archaeologists in Europe.

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Chapter 3
Australian Archaeology in Profile: A Survey of Working Archaeologists

Sean Ulm, Stephen Nichols, and Cameo Dalley

Introduction

Professional archaeology in Australia has changed profoundly over the last four decades. A dramatic expansion of the cultural heritage management sector has occurred at the same time as significant restructuring of the university and museum sectors. Despite these changes, there are very few data documenting the basic profile of the discipline in Australia. The usefulness of previous surveys is often limited by small sample sizes, limited geographic scope or limited employment sector focus (see Colley 2003; Feary 1994; Frankel 1980; Smith and Burke 2006; Truscott and Smith 1993). Several studies sourcing data from membership records of major associations (e.g. Australian Archaeological Association) also present problems owing to the high levels of avocational membership and the difficulty of assessing the representativeness of the records (e.g. Beck and Head 1990) while others have employed generic data for the higher education sector which are not archaeology specific (e.g. Beck 1994). Many of the most useful datasets were assembled to examine aspects of gender participation rates and were published in the proceedings of the Australian "Women in Archaeology" conference series (Balme and Beck 1995;

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Casey et al. 1998; du Cros and Smith 1993). Smith and Burke (2006) and Bowman and Ulm (2009) recently reviewed participation rates in academic archaeology and national competitive grant rounds, respectively. All of these data were gathered to create specific indices rather than to characterise the broader discipline. Lydon's (2002) detailed study of archaeology in the workplace is an exception, although the broad application of its results is limited by its focus on the cultural heritage management sector, low response rate and concentration on Victoria. Similarly, Colley's (2004) and Gibbs et al.'s (2005) analyses of written responses to questions posed at conferences and workshops were limited by sample size and the unstructured nature of the collection instruments.

Limitations of available data were discussed at length at the 2003 Redfern National Archaeology Teaching and Learning Workshop. This very successful workshop provided the direction and framework for a coordinated approach to archaeology teaching and learning and the origins of the Australian National Committee for Archaeology Teaching and Learning (ANCATL) which is now the peak body in this area. The need for baseline data about the discipline was acknowledged at the Workshop as a basic requirement for informed decision making on archaeology teaching and learning issues. This concern was represented in one of the five key resolutions of the Workshop (the Redfern Archaeology Teaching Charter) (Colley 2004: 201) as a commitment to gathering reliable data for benchmarking of a variety of archaeology activities similar to UK survey instrument (cf. Aitchison and Edwards 2003).

The "Australian Archaeology in Profile: A Survey of Working Archaeologists 2004/2005" project described here was an attempt to contribute to this goal, with the aims of (1) building a basic profile of professional archaeology in Australia and (2) defining key archaeology learning and training issues.

Methods

The survey was carried out under the auspices of the Australian Joint Interim Standing Committee on Archaeology Teaching and Learning (JISCATL, now the Australian National Committee for Archaeology Teaching and Learning or ANCATL), which includes representatives from Australian universities teaching archaeology, professional associations, Indigenous groups, industry groups and public sector employers. Although it was originally intended to base the survey instrument on those employed in similar exercises in the United Kingdom (Aitchison and Edwards 2003) and USA (Association Research Inc. 2005; Zeder 1997), a review demonstrated that these studies had only limited relevance to the Australian context and to the investigation of teaching and learning issues. For example, owing to the very different structure and scale of the archaeology profession in the United Kingdom, the quinquennial "Archaeology Labour Market Intelligence" survey was directed at organisations employing archaeologists, rather than individual archaeologists, and focused on employment conditions, training,

standards, union membership, leave, overtime, etc. (Aitchison 1999; Aitchison and Edwards 2003, 2008). Similarly, the 1994 Society for American Archaeology Census (Zeder 1997) had a strong focus on demographic information and workplace roles rather than on archaeology teaching and learning issues.

A survey questionnaire was therefore developed modelled loosely on the more generic questions included in UK and USA surveys and a survey of Native Title practitioners conducted by the Australian Anthropological Association (Martin 2004). The survey instrument was developed for individuals to complete, rather than organisations, overcoming some of the limitations of organisational-level approaches (Aitchison and Edwards 2008: 25, 162) and providing opportunities to collect fine-grained data. The final questionnaire contained 38 questions in four sections: demographic profile, employment information, professional activities and learning and training issues.

As the aim of the survey was to build a profile of professional archaeology in Australia, eligibility to complete the survey was limited to anyone who:

- Used archaeological skills in *paid* employment during 2004, and
- Works in Australia, or is based in Australia and works overseas

With the cooperation of the major archaeological associations in Australia, the questionnaire was mailed to the individual memberships (i.e. not institutional) of the Australian Archaeological Association (AAA), Australasian Society for Historical Archaeology (ASHA), Australasian Institute for Maritime Archaeology (AIMA) and Australian Association of Consulting Archaeologists Inc. (AACAI). In total, 1,152 surveys were distributed to these associations. The survey was also made available for download from the internet and advertised widely on archaeology-related listservers and in the electronic newsletters of the major associations. A reply paid envelope was provided for anonymous return of completed surveys and to maximise return rates.

Classical archaeology is likely to be underrepresented in the respondent dataset. We attempted to circumvent this by direct mailing classics and ancient history academics and contacting major associations, including the Australian Archaeological Institute at Athens. We also note that the memberships of AAA, ASHA and AIMA contain a large proportion of avocational and student members who may not be working in the discipline and therefore ineligible to complete the survey. Some respondents also suggested that recent graduates and international archaeologists employed as casuals may be underrepresented. We agree with the latter, but the high proportion of student membership of AAA (36% in 2005, see Stevens 2006) suggests that this pattern of membership would be similar for early career graduates.

Results

By the 1 July 2005 deadline, 301 valid responses had been received, including over 10,000 words of qualitative comments, most focused on teaching and learning issues. A small number of completed surveys were excluded where respondents

had not earned income from archaeology during 2004. Survey response rates are difficult to assess as it is unclear what proportion of those who received surveys were eligible to complete the survey and also how many were downloaded from the website or otherwise obtained (e.g. as a photocopy or email attachment). As a simple proportion of those physically mailed, the completed surveys indicate a return rate of around 25%. Although the survey covers many facets of the profession, the sections below focus on data of core relevance to teaching and learning issues, including access and participation rates, the archaeological workplace, qualifications and experience, skill sets and skill gaps, responsibility for teaching and learning and accreditation and benchmarking. Where available, results are compared with findings of previous Australian studies and some overseas comparisons are drawn.

Access and Participation

Various estimates have been proposed for the size of the professional archaeological community in Australia. du Cros (2002: 5), for example, estimated 470 full-time archaeologists while Hope (1992, cited in Lydon 2002: 131) estimated a maximum paid community of 355. The current survey demonstrates that there is a minimum of 301 people working as paid archaeologists.

Although undertaken 15 months after the census period for this Australian Archaeology in Profile survey, results of Smith and Burke's (2006) survey of Australian academic archaeology in April 2006 are instructive for assessing response rates. Smith and Burke (2006: 14–15) report 95 archaeologists with full-time employment in Australian universities; only 45 (47%) are represented in the survey results presented here. These differences can be primarily attributed to the data collection methods. Smith and Burke (2006) confirmed staff information directly with academic managers and individual staff members whereas the Australian Archaeology in Profile survey relied on individuals completing the questionnaire. No comparable data are available for nonacademic sectors. However, if the 53% under-reportage of full-time university staff is applied across all sectors the estimated total number of people working as paid archaeologists in and from Australia is estimated to be around 600.

Overall gender participation rates appear to be equitable with 52% male respondents and 48% female (Fig. 3.1). These rates have changed little since the early 1990s, which suggests a stabilisation of the trends towards increasing participation of women noted in previous studies (see Beck 1994: 211; Hope 1993: 187). These gender participation rates demonstrate that, compared with the USA (64% male:36% female) (Zeder 1997: 9) and UK (59% male:41% female) (Aitchison and Edwards 2008: 47) nearly as many women as men are employed in archaeology in Australia. Women are over-represented in the youngest age cohort and men in the oldest. The high representation of women in younger age cohorts has been noted in international studies (cf. Aitchison and Edwards 2008: 49; Zeder 1997: 11–12).

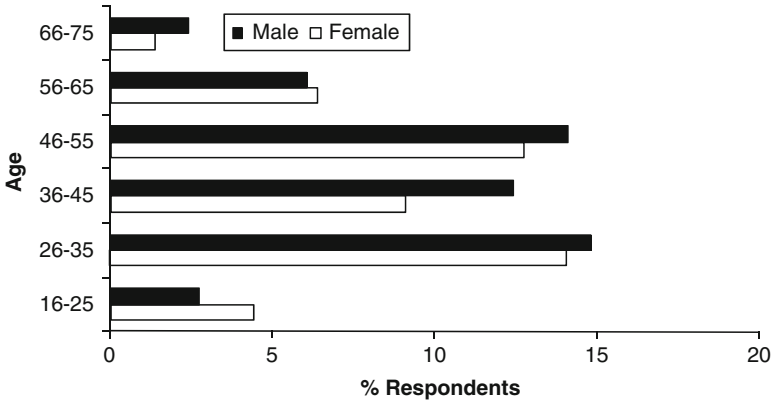

Fig. 3.1 Respondents by age and gender ($n = 299$). Note that the number of respondents indicated on graphs does not always equal the maximum number of respondents to the survey ($n = 301$) where some questions were left unanswered or where a subset of data is employed

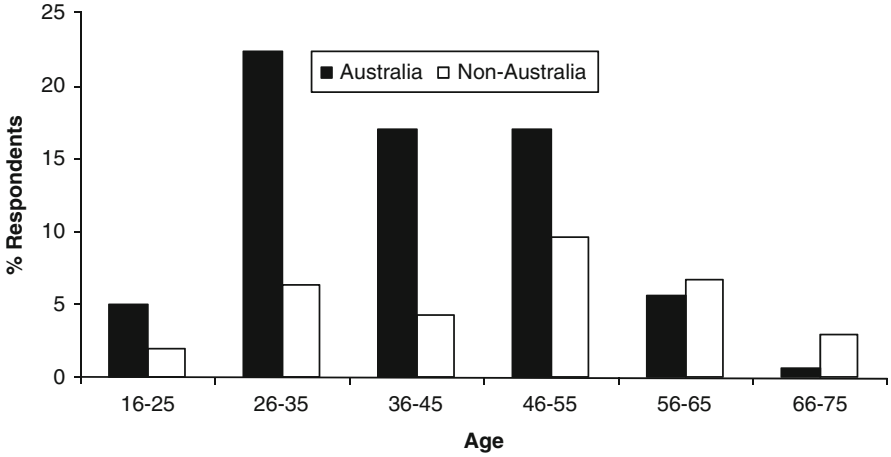

Fig. 3.2 Australian-born vs non-Australian-born respondents ($n = 299$)

Results indicate a relatively young age profile, with 57.2% of respondents younger than 45 years old. Beck (1994: 211) has linked the relatively high proportion of young people in the discipline with its "newness". This argument is supported by the somewhat surprising results that nearly one-third (32%) of respondents were born overseas (compared to around 24% in 2006 of the general Australian population—Australian Bureau of Statistics 2008: 209) and that the overseas-born dominate the workforce for those aged over 55 years of age (Fig. 3.2). Hope (1993: 179) has commented on very similar figures from a small sample of archaeological staff working for the New South Wales National Parks and Wildlife Service in 1991 and linked it to the limited availability of undergraduate

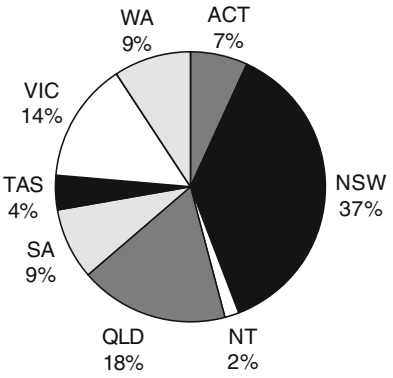

Fig. 3.3 Respondents based in Australia by state ($n = 292$)

training in archaeology before the mid-1970s (see also Colley 2002: 3–4). In comparison, in the UK only 7% of archaeologists were from outside the UK (Aitchison and Edwards 2008: 53).

The participation rates of Indigenous Australians in professional archaeology in Australia (2.3%) are high compared to the USA, where Native Americans comprised fewer than 1% of respondents to the 1994 Society for American Archaeology Census (Zeder 1997: 13). The participation rate of 2.3% is close to the proportion of Aboriginal and Torres Strait Islander people in the broader Australian population which was 2.5% in 2006 (Australian Bureau of Statistics 2008: 196).

The Archaeological Workplace

Three-quarters of Australian archaeologists are based in the eastern mainland Australian states (Queensland, New South Wales, Australian Capital Territory and Victoria) (Fig. 3.3), with 75% of respondents based in capital cities, 17% in regional centres, 5% in rural areas and 3% in remote areas.

Figure 3.4 shows the distribution of respondents by primary subject focus and gender. The Australian archaeological workplace is conventionally divided into three main foci: Indigenous, historical and maritime. Specialisations such as industrial archaeology are often viewed as a subset of one or more of these areas (Colley 2002: 16). The "other" category includes people who identified their primary subject focus as all of the above (particularly academics teaching across a broad range of fields), cultural heritage management, contact archaeology, classical archaeology, prehistoric archaeology and occasional other fields, such as Egyptology and European Iron Age archaeology.

Respondents primarily engaged in Indigenous archaeology dominate (52.2%), followed by historical archaeology (27.8%). The balance of respondents nominated maritime archaeology (6.6%) and "other" (13.4%) as their primary subject

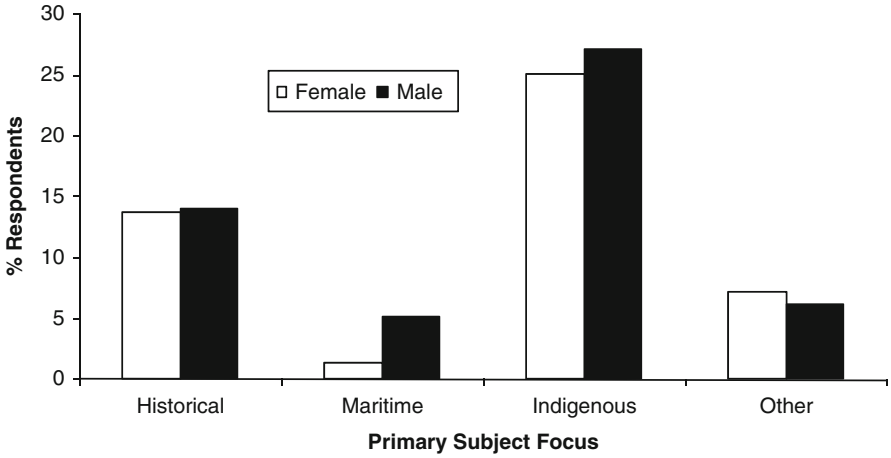

Fig. 3.4 Distribution of respondents by primary subject focus and gender ($n = 291$)

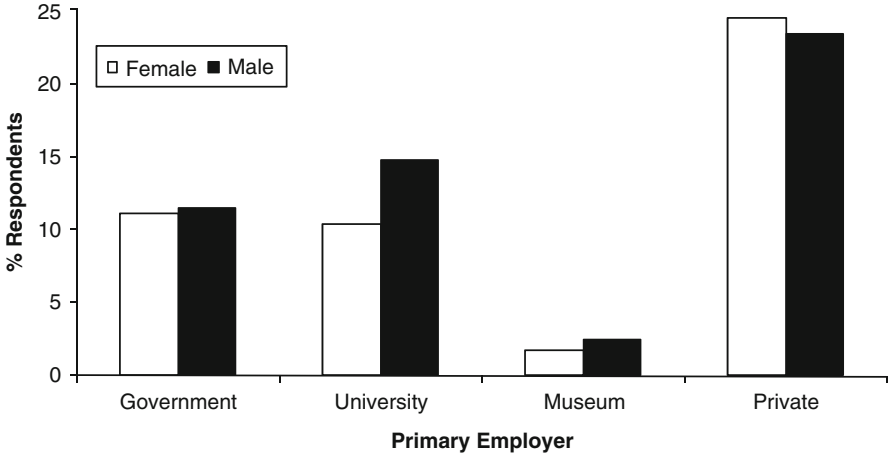

Fig. 3.5 Distribution of respondents by primary employer and gender ($n = 278$)

focus. Over 35% of historical archaeologists nominated Indigenous archaeology as a secondary subject focus, while over 49% of professionals engaged in Indigenous archaeology nominated historical archaeology as a secondary subject focus, indicating a high level of fluidity across the two fields. Women are represented relatively equally across both historical (49.4%) and Indigenous (48%) fields but make up only about one-fifth (21.1%) of maritime archaeologists.

Burke and Smith (2004: xvii), among others, have noted that the main employment opportunities for archaeologists in Australia "come from universities, museums, government departments and consulting". Figure 3.5 shows almost the exact reverse of this order, with 47.9% employed in the private sector, 25.1% in

universities, 22.7% in government agencies and only 4.3% in museums. These data document the trend over the last decade towards growth of the private sector and reduction or stasis in the university sector when compared with Truscott and Smith's 1993 finding that 36.9% of archaeologists in permanent positions were in academic roles. There is also a common view expressed in the literature that the cultural heritage management sector is dominated by women. For example, Beck (1994: 213) noted that "the overall picture in Australian archaeology is one where there may be concentrations ("ghettos") of women in CRM and consulting and a few women obtaining the Ph.D. degrees necessary for careers in universities". Beck and Head (1990) estimated that 17–28% of academic archaeologists are women. A marked over-representation of men in the academic sector and of women in the cultural resource management sector is not borne out by the survey results. There are only slightly more men (4.3%) in university positions and slightly more women (1.1%) in the private sector, with the gender participation rates in the other sector primarily concerned with cultural heritage management—government—virtually even (11.5% male:11.2% female).

Only 11.7% of respondents indicated that the primary geographical focus of their work was outside Australia. This finding is at odds with the focus of university courses which are evenly distributed between Australian and non-Australian archaeology (see Colley 2004: 191). Although this figure is probably depressed by the low representation of classical archaeologists in the survey, the small size of the classical archaeology sector in Australia would not dramatically change the result. This outcome is also reflected in other data such as the low ratio of fieldwork days conducted annually by all respondents overseas compared to that undertaken in Australia (1:5.2). These findings support the mismatch identified by Colley (2004: 191) between university archaeology curricula and the realities of the Australian archaeological workplace, with as many courses focusing on overseas archaeology as Australian. Many respondents also commented on the apparent reduction of teaching capacity in the area of Indigenous archaeology, particularly on the east coast.

Some other features of the workplace are worth brief mention. Over 85% of respondents were employed in workplaces with fewer than ten archaeologists, 55% with fewer than five, emphasising the small scale of work units in the discipline. Almost 72% were employed full-time, with less than one-third (28%) employed on a part-time or casual basis. This trend is supported by other data showing that 65% of respondents worked 5 days or more a week. These findings are at odds with anecdotal statements about the highly casualised nature of the Australian archaeological workforce. Average gross incomes for full-time archaeologists are well above the national average (see Barber and Kopras 2004), with over 87% earning more than $40,000 in 2004, 56% earning more than $60,000 and 23.5% above $80,000 (Fig. 3.6). This situation contrasts with the UK where the average archaeologist earns less than the UK average (Aitchison and Edwards 2008: 71). There are slight but significant disparities in the distribution of income by gender, with women earning 54% of incomes below $60,000 and men earning 60% of incomes over $60,000.

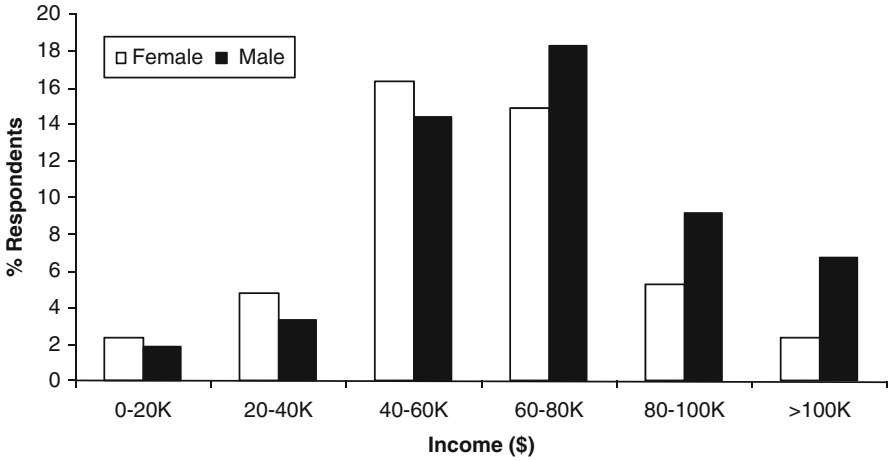

Fig. 3.6 Full-time gross income from archaeologically related employment during 2004 by gender ($n = 208$)

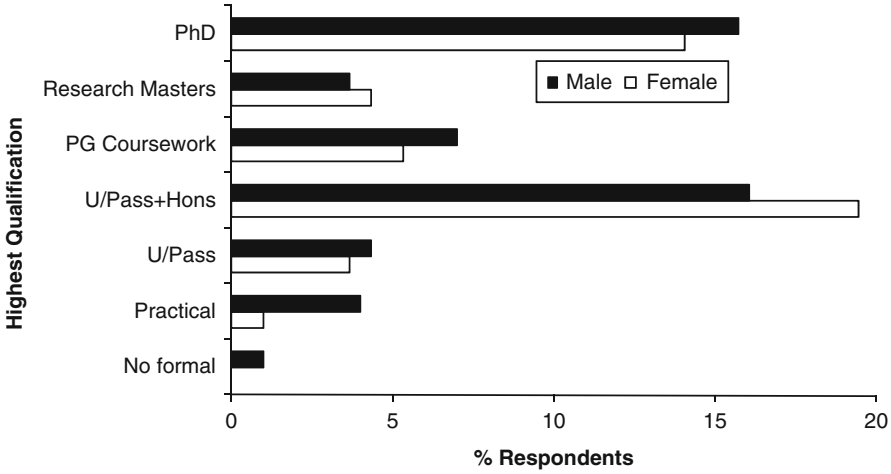

Fig. 3.7 Highest qualification by gender ($n = 298$)

Qualifications and Experience

An honours (4-year) degree is often cited as the "minimum industry standard" for professional archaeologists in Australia (e.g. Beck 2008; Beck and Balme 2005; Colley 2004: 198), yet nearly 15% of respondents worked in archaeology with only an undergraduate pass degree, practical experience or no academic qualifications (Fig. 3.7). This pattern is the most pronounced in historical and maritime archaeology, where over 10% of professionals have no formal qualifications in archaeology,

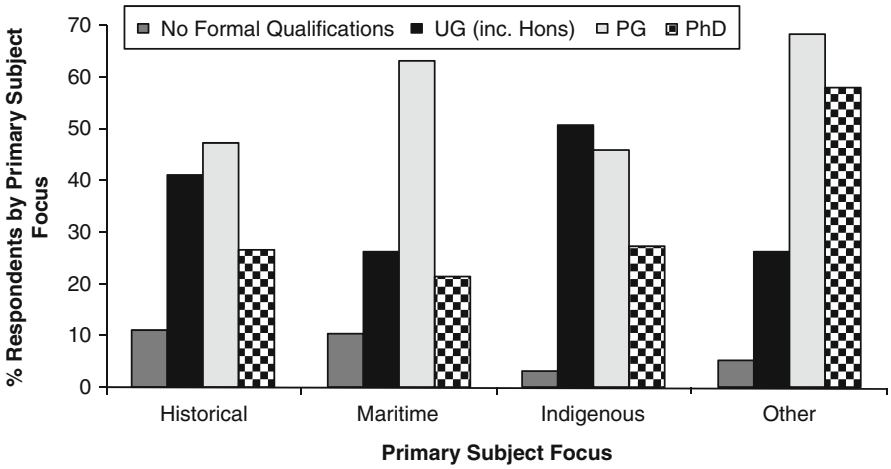

Fig. 3.8 Highest qualification by primary subject focus. PhD degrees are shown to indicate proportion of PG degrees which are PhDs ($n=289$)

compared to 3% in Indigenous archaeology (Fig. 3.8), although some of these respondents held an academic qualification in another discipline. Overall, the vast majority of professional archaeologists held a higher degree (50.5%) or honours degree (35.6%) (Fig. 3.7). Maritime archaeology exhibits the highest proportion of professionals holding higher degrees (63%) although with the lowest proportion of PhDs (21%), reflecting the importance of masters-level programmes in this field (Fig. 3.8).

Ninety-three percent of respondents had a minimum of an undergraduate pass degree with archaeology as a major area of study (Fig. 3.7). This result is similar to figures available from the United Kingdom (91%), indicating that archaeology is a graduate profession (Aitchison and Edwards 2003: xiii, 2008: 55). Australian archaeologists compare favourably with archaeologists in the United Kingdom in terms of advanced degrees, with 30% of respondents holding PhDs compared with only 11% in the UK study (Aitchison and Edwards 2008: 55).

Not surprisingly, most archaeologists working in the university sector hold PhDs (70%), with the distribution of qualification levels in the government and private sectors being almost identical (Fig. 3.9). Data shown in Fig. 3.9 for the museum sector may not be representative owing to the small number of respondents ($n=12$), although the distribution suggests a division between technical staff with few formal qualifications and research or curatorial staff holding advanced degrees.

The level of highest qualification of respondents is strongly correlated with income levels, with archaeologists holding postgraduate degrees dominating the highest income brackets (Fig. 3.10). Although many factors impact on income, this relationship might be taken as an indicator that university education is valued in the workplace, at least in terms of remuneration. The point is reinforced by the number of archaeologists undertaking study. Just over 22.7% of respondents working in archaeology during 2004 were also studying, 47.1% of these at PhD level.

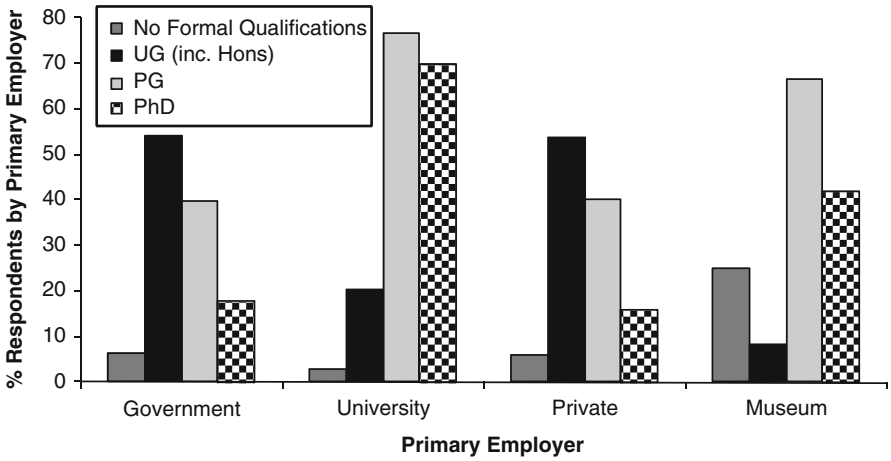

Fig. 3.9 Highest qualification by primary employer. PhD degrees are shown to indicate proportion of PG degrees which are PhDs ($n=276$)

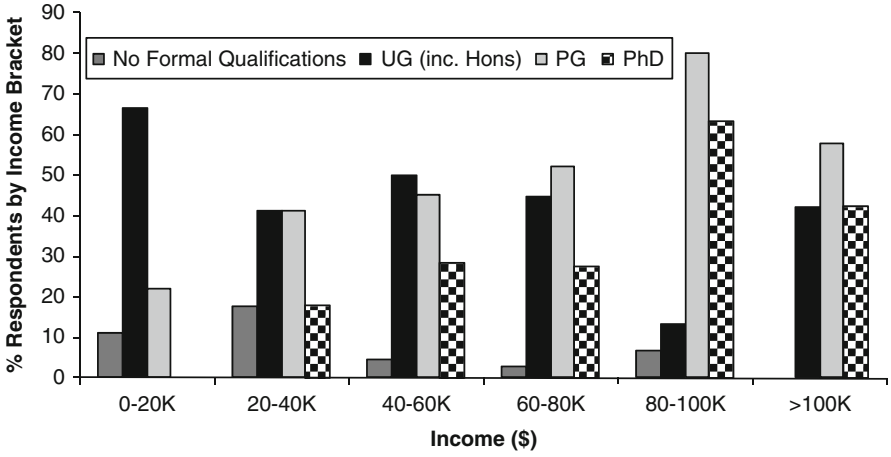

Fig. 3.10 Relationship between highest qualification and income, full-time only. PhD degrees are shown to indicate proportion of PG degrees which are PhDs ($n=208$)

Nearly a quarter of respondents (23.2%) had completed formal academic training in archaeology outside Australia, over half of these (55.1%) at research masters or PhD level, indicating the important role international institutions have in training archaeologists working in and from Australia at senior levels. This point has not previously been raised in discussions of Australian archaeology teaching and learning issues (e.g. Colley 2004).

A final key issue in the area of qualifications and experience is the role of volunteer work. Over 93% of respondents indicated that they had undertaken voluntary

archaeological work. Nearly three-quarters (73.2%) of these had undertaken more than 3 months of voluntary work, and nearly half (42.8%) more than 6 months in total over the course of their careers. These figures suggest that voluntary activity plays a key role in archaeology training and learning in Australia.

Skill Sets and Skills Gaps

Over the last decade, government and private sector employers have been increasingly vocal about a perceived lack or diminution of graduates' archaeological knowledge and skills (see Colley 2004; Gibbs et al. 2005; Lydon 2002). These concerns are reflected in the survey results. Nearly 85% (84.1%) of respondents agreed that more emphasis should be placed on developing practical consulting skills in undergraduate degrees, while 87.4% agreed that more emphasis should be placed on developing broad critical thinking skills in undergraduate degrees. Virtually all respondents also agreed (16.3%) or strongly agreed (81.7%) that practical, field-based archaeological experience should be an important part of undergraduate training in archaeology, with 86.2% agreeing that there is a need for a vocationally oriented option for graduates as well as the traditional research oriented honours year.

Previous commentary on archaeological skills and skill gaps has been based on anecdotal evidence or largely unstructured qualitative data collected as part of teaching and learning conference and workshop sessions (e.g. Colley 2003; Gibbs et al. 2005; cf. Lydon 2002). In an attempt to explicitly address this issue, respondents were asked to rate both their *personal* level of experience in a range of skill areas and then to rate how valuable these skills were for *archaeologists* in their workplace. The 38 skill areas were divided into overlapping categories of "Non-Archaeology Specific Skills" and "Archaeology Specific Skills" (Table 3.1) and are loosely based on those identified by delegates at the Redfern National Archaeology Teaching and Learning Workshop as what students should learn through studying archaeology at university in Australia (Colley 2004: 194). The skill areas range from the specific (e.g. ceramic analysis) to the generic (e.g. critical thinking).

The top-10 skills identified by respondents as most valuable for archaeologists in their workplace accord well with issues identified by others (Table 3.2), with report writing ranked as the most valuable skill, followed by interpersonal communication and field survey techniques. Only three of the ten most valued skills are considered to be archaeology specific skills, with the others representing more generic skills.

Skill gaps were determined by calculating an index for each respondent for each question (i.e. the gap between how valuable they ranked the skill in their workplace versus their personal level of experience). The most significant finding of this analysis was that there is no overlap between the ten most valuable skills and the top-10 skill gaps (Tables 3.2–3.3). For example, library/archival research was ranked fifth in the list of most valuable skills, but was ranked last out of the 38 skill gaps, indicating no perceived skill gap in this area. In contrast to the ten most valuable skills

Table 3.1 Skill areas used to define gaps in training (after Colley 2004)

Non-archaeology specific skills	Archaeology specific skills
General business	Field survey techniques
Interpersonal communication	Excavation techniques
Leadership	Stone artefact identification and analysis
Human resource management	Faunal analysis
Occupational health/safety	Residue and use-wear analysis
Sales/marketing	Archaeological theory
Advocacy/public relations	Rock art recording and analysis
Report writing	Ceramic analysis
Library/archival research	Human skeletal identification and analysis
Computer literacy	Knowledge of legislation
Geographical Information Systems (GIS)	Significance assessment
Statistical analysis	Heritage management planning
Cross-cultural communication	Conservation of artefacts
Knowledge of intellectual property issues	Policy development
Photography	Understanding of research ethics
Critical thinking	Drawing/illustration
Time management	
Project management	
Negotiation/mediation	
Diving	
Four-wheel driving	
Teaching/training	

Table 3.2 Top-10 most valuable skills (all respondents)

Skill
Report writing
Interpersonal communication
Field survey techniques
Computer literacy
Library/archival research
Time management
Project management
Critical thinking
Knowledge of legislation
Significance assessment

which tended towards more generic skill categories, the top-10 skill gaps tend to focus on specific skill sets such as GIS, faunal analysis, etc.

In general terms, when the distribution of skill gaps is considered by primary subject focus (Table 3.4) some clear trends are evident. For example, diving is not in the top-10 skill gaps for maritime archaeologists, presumably because most professionals already have this skill. Similarly, cross-cultural communication features in the top-10 gaps for historical and maritime archaeologists, but not for specialists

Table 3.3 Top-10 skill gaps (all respondents). Note that two skills were ranked equal tenth place

Skill
Geographical Information Systems (GIS)
Human skeletal identification and analysis
Advocacy/public relations
Faunal analysis
Residue and use-wear analysis
Statistical analysis
Rock art recording and analysis
Human resource management
Occupational health/safety
Conservation of artefacts/policy development

Table 3.4 Top-10 skill gaps by primary subject focus. Shaded cells indicate skill gaps common across all primary subject focus areas. "Other" includes contact and classical archaeology

Indigenous	Historical	Maritime	Other
Human skeletal identification and analysis	Advocacy/public relations	Human skeletal identification and analysis	Human skeletal identification and analysis
Residue and use-wear analysis	Geographical Information Systems (GIS)	Ceramic analysis	Residue and use-wear analysis
Geographical Information Systems (GIS)	Human skeletal identification and analysis	Geographical Information Systems (GIS)	Geographical Information Systems (GIS)
Faunal analysis	Human resource management	Faunal analysis	Faunal analysis
Advocacy/public relations	Faunal analysis	Advocacy/public relations	Advocacy/public relations
Statistical analysis	Statistical analysis	Statistical analysis	Policy development
Rock art recording and analysis	Cross-cultural communication	Residue and use-wear analysis	Statistical analysis
Human resource management	Occupational health/safety	Cross-cultural communication	Rock art recording and analysis
Occupational health/safety	Sales/marketing	Sales/marketing	Heritage management planning
Ceramic analysis	Residue and use-wear analysis	Stone artefact identification and analysis	Conservation of artefacts

in Indigenous archaeology. Other findings are counter-intuitive at first glance, such as ceramic analysis identified as a major skill gap for Indigenous archaeology, however, many Indigenous archaeology professionals identified historical archaeology as a secondary area of professional practice and vice versa.

Identified skill gaps show remarkable consistency across primary subject focus and primary employer (compare Tables 3.4 and 3.5). Faunal analysis, GIS, human skeletal identification and analysis and advocacy/public relations are gaps

Table 3.5 Top-10 skill gaps by primary employer/sector. Shaded cells indicate skill gaps common across all sectors

Private	University	Government	Museum
Faunal analysis	Residue and use-wear analysis	Advocacy/public relations	Geographical Information Systems (GIS)
Geographical Information Systems (GIS)	Human skeletal identification and analysis	Geographical Information Systems (GIS)	Human skeletal identification and analysis
Human skeletal identification and analysis	Geographical Information Systems (GIS)	Human skeletal identification and analysis	Heritage management planning
Residue and use-wear analysis	Faunal analysis	Statistical analysis	Residue and use-wear analysis
Advocacy/public relations	Advocacy/public relations	Faunal analysis	Faunal analysis
Human resource management	Statistical analysis	Cross-cultural communication	Advocacy/public relations
Rock art recording and analysis	Rock art recording and analysis	Negotiation/mediation	Ceramic analysis
Statistical analysis	Conservation of artefacts	Human resource management	Policy development
Occupational health/safety	Ceramic analysis	Occupational health/safety	Sales/marketing
Policy development	Stone artefact identification and analysis	Rock art recording and analysis	Human resource management

for professionals working in Indigenous, historical and maritime archaeology across the private, university, government and museum sectors. Statistical analysis is also identified as a gap across all primary subject focus areas and all sectors except museums. Similarly, residue and use-wear analysis is a gap across all primary subject focus areas and all sectors except government. The commonality of the valued skills and the skill gaps identified across sectors and primary subject focus areas suggest there are core skills essential to much of the professional workforce (cf. Lydon 2002: 131). These findings can inform curriculum development in universities and continuing professional education.

Discussions in the profession on the preparedness of graduates for the archaeological workforce have typically focused on specific skill sets (see Colley 2003, 2004) such as basic survey and excavation methods. These concerns are generally reflected in the survey data, but the gap analysis shows that other generic and business skills such as advocacy/public relations, statistical analysis and human resource management are also seen as critical across all professional sectors and primary subject focus areas (see Gibbs et al. 2005). These findings echo those of Lydon (2002), who argued that both technical and broad conceptual skills were vital to meet current demands of the workplace as part of a broader curriculum (see also McBryde 1980). Lydon's (2002: 134, original emphasis) respondents "identified practical skills as those which

they find useful in their work but which they acquired *outside* their formal university courses, and they nominated these skills as priorities for further training". As Gibbs et al. (2005) have argued, these skill areas are precisely those that have suffered the most with changes in university funding and pressure on resources.

Our results contrast with the potential skill gaps identified in Aitchison and Edwards' (2008: 153–155) recent study in the United Kingdom where information technology, project management, desk-based research and artefact research were identified as priorities for training. Computer literacy, project management and library/archival research all ranked outside the top-25 skill gaps identified here. These results point to the different character of contemporary professional archaeological workplaces in Australia and the United Kingdom.

Responsibility for Teaching and Learning

Respondents clearly emphasised responsibility for archaeology teaching and learning as a joint responsibility of individual universities, associations and professional bodies and government agencies (cf. Colley 2004: 195). Respondents also overwhelmingly agreed (93.9%) that there must be greater collaboration between universities, government and industry in teaching and learning archaeology in Australia. These findings are supported by responses to other statements in the survey. While slightly less than half of respondents (47.5%) agreed that nonacademic professional archaeologists have a responsibility to train undergraduate students, most (68.5%) agreed that nonacademic professional archaeologists have a responsibility to train graduates. Some respondents pointed out that "training … rarely fits into consulting work—consultants have responsibilities to heritage clients and stakeholders and must usually pick already trained assistants" and that "consultants cannot afford either the time or the money to teach on the job—and why should developers pay for it?" However, the overall attitude of respondents is given further support by respondents with 85% agreeing that they would be willing to place students and early career graduates in their workplace to gain vocational experience and 97% agreeing that there is a need to better coordinate opportunities for students and early career graduates to gain vocational experience in the workplace.

A clear role for continuing professional development emerged, with 95% of respondents agreeing that there should be more short (e.g. 2–5 days) professional development courses on offer for archaeologists. The receptiveness of the professional community to professional development opportunities is also evident in participation rates. Nearly half of respondents (48.7%) indicated that they had attended an archaeological professional development workshop or short course in Australia or overseas during 2004.

Taken together, these results suggest that archaeologists are generally happy for universities to be largely responsible for undergraduate teaching and learning, with input from the sector more generally, but that the nonacademic sector has a clear role to play in graduate training and continuing professional education.

Accreditation and Benchmarking

Colley (2004: 198) notes that although honours is traditionally considered the "minimum industry standard" to work as an archaeologist, the degree itself is "insufficient for such purposes". Colley (2004: 200) highlights the fact there is no formal accreditation or regulation of professional standards, except that provided for part of the sector by the Australian Association of Consulting Archaeologists Inc. and heritage agencies who monitor research standards and issue permits under legislation, but points out that "accreditation raises a whole set of other challenges and implies a nationally recognised body representing all relevant stakeholders, which does not yet exist in Australia". Gibbs et al. (2005) also raise concerns about the possible use of formal accreditation "against the survival of university departments" and suggest the accreditation of particular courses rather than programmes as a whole.

Despite these concerns, respondents clearly identified accreditation and benchmarking as key issues in archaeology teaching and learning, with 86.9% agreeing that there is a need for national accreditation of all professional archaeologists, and 85.7% agreeing that Australian undergraduate and honours degrees in archaeology should be benchmarked nationally to ensure that graduates have common basic skills (see Beck and Balme 2005).

The positive endorsement of the professional community for accreditation and benchmarking coupled with the existence of a common skill set indicated earlier by congruence of valued skills and identified skill gaps may provide a way forward for those grappling with these issues.

Discussion

Results of the Australian Archaeology in Profile survey demonstrate that there is a young, well-qualified and enthusiastic professional archaeological workforce in Australia. Most archaeologists in Australia work in the private sector, with the high confidence expressed for expansion of this sector emphasising the key role it needs to play in archaeology teaching and learning. Support for this position is found in the view that more vocationally oriented learning options should be available and the consensus that all sectors have a role to play in archaeology teaching and learning.

Several commentators have noted that the low staffing levels and resource constraints in Australian university archaeology departments limit their ability to offer a large range of courses (e.g. Colley 2004: 190; Lydon 2002). In response to changes in the discipline, Beck and Balme (2005: 33) note that universities "have changed their courses to include units in heritage, public archaeology and so on, but within the current degree structure there is simply no room to provide the kinds of specific training that the profession expects". At the undergraduate level, some of the kinds of specialist skills identified here as skill gaps might require new appointments in archaeology departments where staff expertise does not exist

(e.g. physical anthropology) or investment in teaching facilities (e.g. computer laboratories for GIS). Additionally, only the small numbers of students who will enter the profession are likely to undertake such specialist courses, further undermining their viability in the current university funding and policy environment. However, respondents do provide practical directions for resolving this dilemma. Many agree or strongly agree on the need for a vocationally oriented option for graduates as well as the traditional research-oriented honours (fourth) year. Many also agree on the need to coordinate opportunities for students and early career graduates to gain vocational experience in the workplace and, at least in principle, support the idea of placing students and early career graduates in their workplace to gain vocational experience. Many also see a clear need for more short professional development courses to address the ongoing training needs of those already in the workforce.

In the short term, some of the skill gaps that were identified can be addressed by providing more structured guidance to undergraduate students to undertake specific courses in faculties beyond the humanities and social sciences (see also Gibbs et al. 2005; Lydon 2002: 134). For example, GIS can be studied in geography and planning departments, human skeletal identification and analysis in anatomy, statistical analysis in mathematics, etc. Although it might be more desirable to design specifically archaeological course content in these areas in the long term, using existing courses would allow resources to be redirected to other more pressing areas. Basic expertise in specialised archaeological skills, such as faunal analysis, residue and use-wear analysis, rock art recording and analysis and conservation of artefacts might be usefully addressed outside the university context by short courses run by professional bodies such as the Australian Association of Consulting Archaeologists Inc. and Museums Australia, which already offer some courses in these areas.

Several authors have recently noted that the changing demands of the broader teaching and learning environment have a direct impact on students' study options and preferences (e.g. Fredericksen 2005). There is clearly a need to balance the more traditional framework of obtaining practical skills while studying through volunteer laboratory and fieldwork with changes in students' economic environments, in which many work either part-time or full-time and have a range of competing responsibilities beyond university. As Frankel (1998: 25) notes, the "multiple skills required in the field can only be learnt by practice … [and] [s]erious archaeology students often sacrifice much in order to participate in excavations, and much research is dependent on their voluntary contributions in the field and laboratory".

Another major theme emerging from the survey is an urgent need to facilitate greater involvement of private, government and museum sectors and Indigenous groups as part of an integrated approach to the archaeology teaching and learning design and management process. To be effective, a national body with a charter to represent all sectors of the industry needs to be established and resourced. The Australian National Committee for Archaeology Teaching and Learning (ANCATL) has partly addressed this issue, but its effectiveness is hampered by a lack of

resources to ensure engagement with all sectors. Unlike professional bodies in the USA and United Kingdom, Australian professional bodies and associations are entirely voluntary and have limited resources.

In the past, cooperation across sectors has been limited by perceived differences in agenda between private and university stakeholders. However, the often-cited schism between applied and academic archaeology appears to be overstated, as the dramatic growth of this sector over the last three decades has meant that most junior academics have spent at least some time in the private and/or government sectors (see also Lydon 2002: 131). The boundaries between the sectors are much more porous than might be imagined too, with universities actively encouraging academics to undertake consultancies as revenue-raising activities. This fluidity is also reflected in the numbers of applied archaeologists holding adjunct or honorary academic positions in archaeology departments, undertaking advanced degrees while working and convening specialist workshops, like those in the AACAI Professional Development Workshop Series. These trends, supported by strong support from all sectors for greater engagement, suggest that the time is right for taking advantage of the climate to establish and resource effective mechanisms for contributing to the debate.

Conclusion

This chapter briefly touches on some of the major themes emerging from the Australian Archaeology in Profile survey that are relevant to archaeology teaching and learning in Australia. However, the full value of the exercise will only be realised when comparable longitudinal data are available to chart the changing face of the Australian archaeological workplace, as has been undertaken in the United Kingdom (see Aitchison and Edwards 2008).

While by no means definitive, the data presented here are important for improving archaeology teaching and learning and for investigating the connections between graduate skills and those skills needed in the workplace. In particular, the skills and skill gaps identified by practising professionals provide useful grist for debates about benchmarking undergraduate (Gibbs et al. 2005) and honours degrees (Beck 2008; Beck and Balme 2005) in archaeology.

The major theme emerging from this study is an urgent need to facilitate greater involvement of industry groups, the private, government and museum sectors and Indigenous groups in the archaeology teaching and learning design and management process. Solutions will need to be based on innovation, collaboration and genuine goodwill to maximise limited resources and create a sustainable dialogue across all sectors of the archaeological profession in Australia.

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Chapter 4
No Going Back: Remembering When British Archaeology Changed Forever

Kenneth Aitchison

In 1990, the UK government introduced guidance relating to spatial planning that transferred responsibility for the funding of preventative or "rescue" archaeological work from the state to the developers that were threatening archaeological remains. The publication of this document—*Planning Policy Guidance note 16: Archaeology and Planning*, known as PPG16—led to the single most radical change there has ever been in British archaeology, with the rapid and unprecedented expansion of commercial archaeological practice.

This document established that if developers wanted to get permission for their work to go ahead and that if their work would impact on archaeological remains, then they would be responsible for mitigating against that impact. This could be through excavation leading to preservation by record, or alternatively by redesigning the scheme to avoid impact altogether (preservation in situ). While commercial archaeology had previously existed in the UK, it existed on a precarious basis which relied heavily on voluntary contributions and state support. With the embedding of the polluter-pays principle, archaeological practice found itself to be in demand and potentially on a more secure footing.

This chapter is the report of an oral history project, where interviews were carried out with key individuals—archaeologists in the state service and local government who influenced the civil servants and policymakers of the time—who were the creators of PPG16 and who directly experienced its introduction. It explores memories, anticipations of and reactions to the creation of the document that changed the nature of archaeology in the UK more than any other and which has had impact on policy-making across Europe and beyond.

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What was the thinking behind the creation of this seemingly innocuous policy? Who shaped it, archaeologists or politicians? To what ends? Did they realise the impact that it would have, the way that it would change the very nature of archaeological practice across the country? Did they anticipate the enormous growth of the professional archaeology? Were those changes welcomed by archaeologists, by the then government or by society as a whole in 1990? And are they welcomed by these same stakeholders two decades later?

Part I: Collecting Memories

Introduction

Planning and Archaeology is a Planning Policy Guidance Note (number 16). It was published by the UK government in 1990 (DoE 1990b).

Planning Policy Guidance Notes (PPG) were statements of the government's national policy and principles towards certain aspects of the spatial planning framework in England (similar documents presented policy in Scotland, Northern Ireland and Wales). They were introduced by the *Town and Country Planning Act 1990* and have been progressively replaced by Planning Policy Statements (PPS) under the provisions of the *Planning and Compulsory Purchase Act 2004*.

PPGs were guidance to local authorities (which had to be followed) in the preparation of their Local Development Framework (previously Structure Plans and Local Plans) which set out the rules by which applications for planning permission—applications to build on land or change the use of land or buildings—must be decided.

PPG16's great significance for archaeological practice was that, following its publication, the government's "rules" established that the presence of archaeological remains had become a material consideration in planning decisions, and that this would have to be taken on board by all local planning authorities—and that if a site was not to be preserved in situ, the developer would have to arrange for the site to be excavated and recorded.

> Para 25—Where planning authorities decide that the **physical preservation** in situ **of archaeological remains is not justified** in the circumstances of the case and that **development resulting in the destruction of the archaeological remains should proceed**, it would be entirely reasonable for the planning authority to satisfy itself before granting planning permission, that **the developer has made appropriate and satisfactory provision for the excavation and recording** of the remains. Such excavation and recording should be carried out before development commences, working to a project brief prepared by the planning authority and taking advice from archaeological consultants.
>
> (DoE 1990b, author's emphasis)

The implementation of PPG16 then led to a massive and unprecedented expansion of commercial archaeology, initially in England and then across the rest of the UK when comparable planning guidance was subsequently introduced.

Its introduction came at time when there had just been a drop in the number of people working in archaeology in the late 1980s and early 1990s. This was partly the result of the end of the Manpower Services Commission (MSC)'s Community Programme in 1988 (McAdam 1995, 98). The MSC Community Programme was a governmental unemployment relief scheme which had provided a source of funding for archaeological research projects and increased individual participation. The drop in archaeological employment was also partly the consequence of an economic downturn in 1990 which led to a reduction in the amount of construction work being undertaken and a consequent drop in associated archaeological fieldwork (CBA 1991, 1).

Furthermore, the contents and potential impact of PPG16 directly influenced the contents of the Valetta Convention (Willems 2006).

Methodology

There has been relatively little published about the genesis of such an important document—Geoffrey Wainwright discussed it in his valedictory article "Time Please" (Wainwright 2000), but not the whole process of its creation. At the time that this research was carried out (in 2008), the document was reaching the end of its working life and those that contributed to its preparation were themselves imminently becoming part of the archaeological record! As well as secondary sources, this work has primarily relied upon interviews with Mike Parker-Pearson, Paul Chadwick, Graham Fairclough and Geoff Wainwright. The author also would like to thank Dai Morgan-Evans, who was also interviewed but who has not been quoted as extensively below.

Interview with Mike Parker-Pearson: Claims of Authorship

This author's first awareness of PPG16 was as a Masters student at the University of Sheffield in 1996. Teaching the Heritage Management course, Mike Parker-Pearson proudly told the class that he had written this document.

Mike Parker-Pearson had started work for English Heritage in 1984, as an Inspector of Ancient Monuments. At that time English Heritage were moving away from core funding organisations to supporting fieldwork on a project-by-project basis. In the 1980s, there was no high-level guidance, but English Heritage were trying to get local authorities to adopt appropriate local policies—and some progressive authorities, in the south of England, were beginning to do this.

A number of people at English Heritage were involved in thinking about policy, and a key player was Paul Gosling, formerly of English Heritage and now retired. Paul Gosling actively sought to engage with local authorities in doing this, and in particular he worked closely with Paul Chadwick, the then Berkshire County Archaeologist, looking to get clauses into the Berkshire structure and local plans.

Paul Gosling was the first person to talk cogently about planning guidance and archaeology, but was unlikely to ever write this down, and so Mike Parker-Pearson recognised that it needed to be formulated and set in context. There was a certain level of tension at English Heritage over the lack of central control as this process was going on, and one of Mike Parker-Pearson's closest colleagues was Graham Fairclough.

Interview with Graham Fairclough: Drafting and Shaping

In January 1987, Graham Fairclough was starting to write a "planning circular", and by June 1987 there was the first mention of planning guidance to be published by English Heritage. It is important to recognise that planners see guidance as being a way to ensure that the planning process is correctly followed, not as a significant economic or environmental political tool.

Graham Fairclough and Mike Parker-Pearson worked together, drafting an outline on Graham Fairclough's kitchen table in St Albans in May 1987. By June 1987, there was a 25-page document, with a third draft by August 1987. Mike Parker-Pearson had written most of the text, but an IT failure meant that this first full draft of the document was lost.

A second copy was produced, brought to the English Heritage office—and Geoff Wainwright, the Chief Inspector of Ancient Monuments (the most senior archaeologist) thought it was not yet the time to make this public, but that the problem should be tackled "by stealth".

Drafts were then bounced back and forward between English Heritage and civil servants at the Department of the Environment, Paul Gosling noted to Graham Fairclough that progress was "slow but satisfactory" and by July 1988, Geoff Wainwright had recorded "Archaeology and Planning" as its title. By January 1989, the preferred title had changed to "Ancient Monuments and Planning".

Following debates in the House of Commons on 15 May and 15 June 1989 (Hansard 1989b, c), the Minister announced that new guidance would be issued that summer. By September 1989, it was being rewritten again by the civil servants; English Heritage was trying to make sure it stayed as strong as possible—emphasising preservation, as they recognised that the government would dislike the elements that related to financial provisions.

This draft was circulated for comment in October 1989 and a public consultation draft was issued in February 1990 (DoE 1990a). There were still concerns about the references to the funding of archaeological work at this time.

Interview with Paul Chadwick: Implementing Policies on the Ground

In the early 1980s, Michael Heseltine (the then Secretary of State for the Environment) actively sought development areas to the west of Heathrow Airport. This followed his 1980 endorsement a plan to build 8,000 houses in Central Berkshire and 4,000 in the Bracknell area (Short et al. 1986, 242). This area of Berkshire between Reading and Bracknell then became known as "Heseltown". Opposition from elected members of the local planning authority (Berkshire County Council) to further development coincided with a review of the Berkshire local, structure and minerals plans in about 1984–85. There had never been any archaeological policies, so the archaeological advisers to the planning authority were operating in a policy vacuum.

Paul Chadwick had taken up the post of County Archaeologist in 1983. At that time, another Paul, the English Heritage regional Inspector Paul Gosling was responsible for pump-priming the creation of such posts in local government, and this meant that Paul Chadwick was located in the planning department alongside sympathetic planners such as David Scott.

Previously, the case law of Hoveringham Gravels vs. Secretary of State in 1975 had established that local planning authorities could protect both Scheduled and unscheduled archaeological sites by refusing planning permission: that meant archaeology was a material consideration in planning decisions, but momentum to implement this decision in wider planning practice was then lost. However, this precedent meant that plans could be drafted on this basis.

In 1984–85, Tarmac, a major aggregates supplier, wanted to extract gravel at the site of Anslow's Cottages, Burghfield. There was no requirement from Berkshire County Council for any predetermination archaeological work (work before the Council granted permission), which then meant that the Council gave permission for the extraction to go ahead with a watching brief, which revealed a well-preserved Bronze Age site (Butterworth and Lobb 1992), which the local media picked up on. The Council then had to fund the investigation of the site, as in situ preservation wasn't an option in this instance because permission for the gravel extraction had already been granted. The consequence of this case was to make Berkshire County Council keener to see developers foot the bill for archaeological work which their actions required.

This then led to the introduction of draft plans, which included novel techniques such as desk-based assessments of archaeological potential. This approach was completely new, and possibly the first one in Berkshire was written by Tim Darvill (as Principal of Timothy Darvill Archaeological Consultants) for Woodcray Manor golf course near Wokingham (this was certainly in the first half dozen desk-based assessments to be written in England—Tim Darvill pers. comm.).

Such changes weren't happening in all of Berkshire's neighbouring counties—this was particularly the case in counties such as Oxfordshire or Buckinghamshire where the county archaeologist was placed with the county museum service, not with

planning service as in Berkshire. Paul Chadwick also received significant support from English Heritage Inspectors like Steve Trow and the aforementioned Paul Gosling.

Interview with Geoff Wainwright: In the Eye of the Storm

By the end of the 1980s, damage to archaeological sites was becoming a phenomenon in the public eye—very visibly with the Queen's Hotel site in York, where a significant depth of urban stratigraphy extending back through Viking to Roman deposits was destroyed unrecorded (or with the thinnest of watching briefs) from late 1988 into 1989 (Sheldon 1989). Here, English Heritage had offered a token £20,000 to fund recording, which was voluntarily matched by the developer, but there was no scope for any authority to insist on full and proper recording.

Also at this time there was controversy over the development of the Roman site of Huggin Hill Bath House in London (Carver 1993, 10), but then the biggest and grandest of protests arose around the site of The Rose Theatre, on Bankside in London.

Here, permission for development had been granted in 1988 without a full archaeological evaluation of the site having been undertaken beforehand. However, the developers had agreed to what was considered to be a routine 2-month archaeological investigation—and very near the end of the investigation period, in January 1989, the extensive remains of the sixteenth-century Rose Theatre were identified. This attracted a huge amount of international attention, primarily because this site was historically known to have been a place where William Shakespeare himself had worked and where several of his plays had their first performances.

While a lot of money and time was diverted into the excavation and recording of the site by English Heritage, protests and campaigns to preserve the site were joined by eminent thespians; these later escalated with actors keeping "an all-night vigil on the 12th May turning away the building contractors" (Carver 1993, 10).

As there was no legal way that planning permission could be rescinded on the basis of unexpected discoveries during development, the only way that the construction work could have been stopped would have been if the site had designated as a Scheduled Ancient Monument. But if that had been the case, the State would have been liable to compensate the owners, which would have potentially been addressed through crippling cuts to English Heritage's budget.

A question had been asked in the House of Commons on February 21st 1989 by Robert Maclennan MP about The Rose (Hansard 1989a) which was passed from civil servants to English Heritage, where it was picked up by Jane Sharman, Head of Conservation. She sought information from Geoff Wainwright, the Chief

Inspector and thus the most senior archaeologist within the organisation, who then asked Mike Parker-Pearson to show her his draft document. Jane Sharman then redrafted this considerably, and liaised with Harry Knottley, the lead civil servant at the Department of the Environment, who checked that it would fit with government policy.

The government was always unhappy with suggestions that the financial burden might fall on the public purse but also wanted to lighten the load on developers. The crisis of The Rose sped things up, rammed home the problems and accelerated the resolution of the wider situation. Meanwhile, on the ground, Geoff Wainwright had to stand up in a public meeting before a hostile crowd to defend English Heritage's position, whilst at the same time another Inspector, Dai Morgan-Evans, was deputed with a staple gun to put up the single notice of non-Scheduling on the hoarding surrounding the site. Excavation then continued and some of the site was preserved in situ following an expensive redesign of the building above (Davis et al. 2004).

The Day PPG16 Was Published

PPG 16 was published on 21st November 1990, the day that the main national news story in the UK was that Margaret Thatcher declared "I fight on, I fight to win" (White 1989). She announced her resignation as Prime Minister the next day, to mixed but strongly emotional responses across the country.

Ultimately, the document had matched up to the policies of her government—it took the financial burden away from the state, and simultaneously developers were allowed choice in who might undertake work on their behalf. These changes then led to the opportunity for privately provided, commercial archaeological practice to become embedded in the UK and then to flourish.

Postscript

A lull in the housing market in 1991 allowed PPG16 to become established without challenge from the development lobby, and it ultimately stayed in place long enough to become the oldest unrevised PPG. Ultimately, it was replaced by the new *Planning Policy Statement 5: Planning for the Historic Environment* (DCLG 2010) on 23rd March 2010, but the impact of PPG16 had been massive. In the 20 years of its existence, the demand for archaeological work initiated by the planning system increased exponentially—by 2007, 93% of all archaeological fieldwork in the UK stemmed from planning requirements (Aitchison 2009, 661), and the number of people employed in archaeological practice in the UK had more than tripled (Aitchison and Edwards 2008).

Part II: Personalities of PPG 16

As noted above, this chapter is the result of an oral history project. Part of this project involved a presentation to the Theoretical Archaeology Group conference in Southampton in December 2008, under the title "Personalities of PPG 16". This involved invited readers—not the original respondents—reading text (presented below) that had been transcribed from recorded interviews, and all of the words are original. While all of the interviews were just between the author and each of the individual respondents, it is presented here as a simulated composite, five-way conversation between Kenneth Aitchison, Mike Parker-Pearson [then an Inspector at English Heritage, a Professor at the University of Sheffield at the time of interviewing], Paul Chadwick [then County Archaeologist for Berkshire, Director of Archaeology at CgMs Consulting when interviewed], Graham Fairclough [then and now an Inspector at English Heritage] and Geoffrey Wainwright [then Chief Inspector of Ancient Monuments at English Heritage, now retired].

Mike Parker-Pearson (MPP): Ok, are we rolling?

KA: Yes. Right. Well. The idea is, my first knowledge of PPG16 was as a student in a class you gave downstairs here in 1996 at which I think you declared that you wrote the document which then led to me rushing out to Blackwell's as was across the road to buy myself a copy.

MPP: You did? Oh well, that will have made the Government some money.

KA: So we are here to find out about what you put into this and what went into writing it.

MPP: Sure. Ok, well, the real architect of the whole thing was Paul Gosling. He took early retirement. It really all was his idea and others have claimed the credit. You know Mike Griffith? When he was County Archaeologist for North Yorkshire he says he was already bringing in these kind of things.

It was really in the 1980s, Paul Gosling working with Paul Chadwick, now he's a planning consultant but then he was Country Archaeologist for Berkshire. And until they really got their teeth into this, we were fairly stymied in that either you could protect a site through Scheduling or otherwise, under the local planning rules and regs, you could only put on conditions and those conditions were limited in how severe they could be. You could only ever require that a certain amount of time was given. You could actually ask, for example, that there was an evaluation carried out beforehand and you couldn't ask the developer to make appropriate arrangements

Paul Chadwick (PC): I was appointed to the post of Berkshire County Archaeologist in 1983. The Berkshire Archaeological Unit had just been absorbed into Wessex and the County Council were setting up an SMR within the planning department.

Berkshire has lots of areas where there is potential for mineral extraction—in the Kennet Valley, for sand and gravel—and at this time Michael Heseltine was looking for development areas to the west of Heathrow—the area of Berkshire between Reading and Bracknell became known as "Heseltown". Opposition

from local elected Council members coincided with a review of the Berkshire local, structure and minerals plans in about 1984-85. There had never been any archaeological policies, so Berkshire was operating in a policy vacuum.

At this time Paul Gosling was the regional inspector responsible for pump-priming the creation of local government posts. He was very keen to see archaeology better protected through the planning system.

MPP: Yes, and there was an interesting relationship between Geoff Wainwright and Paul Gosling because it was, because in Paul's view, he saw this very much as empowering local authorities to make their own decisions, whereas I think Geoff was slightly nervous about seeing this loss of control from central government and yes, there was a certain tension about it all.

PC: I was lucky enough to be in the planning department alongside sympathetic and forward looking planners like David Scott, and we worked together to draft up archaeological policies that asked for informed decisions to be made on applications that would affect archaeological resources.The crucial site was at Anslow's Cottages, Burghfield in 1984-85, where Tarmac wanted to extract aggregates. There was no predetermination work, Council gave permission with a watching brief—and, serendipitously, the very first strip exposed the Bronze Age waterfront, with waterlogged timber, fish traps. A fantastic, high quality site. The media get hold of it, Council had to put in money to deal with the site—in situ preservation wasn't an option in this instance because permission had already been granted. This made the Council keener than ever to see developers foot the bill—the drive now was to pass the buck to make sure the polluter paid, rather than to prioritise conservation.

So we worked up policy wording in-house which was then passed to Paul Gosling for comment, we went through a variety of permutations and so by 85-86 we had draft policies in place.

Graham Fairclough (GF): The first person I remember talking cogently about this was Paul Gosling. He's the first person I remember saying that we need an AM—Ancient Monuments—planning circular, because he was keen on planning and how archaeology fits into planning. I doubt you will get to talk to Paul—he's been ill on and off for years. This Planning Circular is what Mike and I, and Paul, started out trying to write.

That's how it got started, a mixture of ideas about developer funding, archaeology in local plans and policies and putting the ideas into a circular.

MPP: What then happened was that I realised Paul Gosling was never going to write this down. It was good as a policy in its own right, and I reckoned this just had to be written down.

KA: So you start trying to write that in … 1987?

GF: January 87 was the first text that we got down, there was a day, Mike and I sat down at my kitchen table in St Albans in June 87 and drew up a contents page.

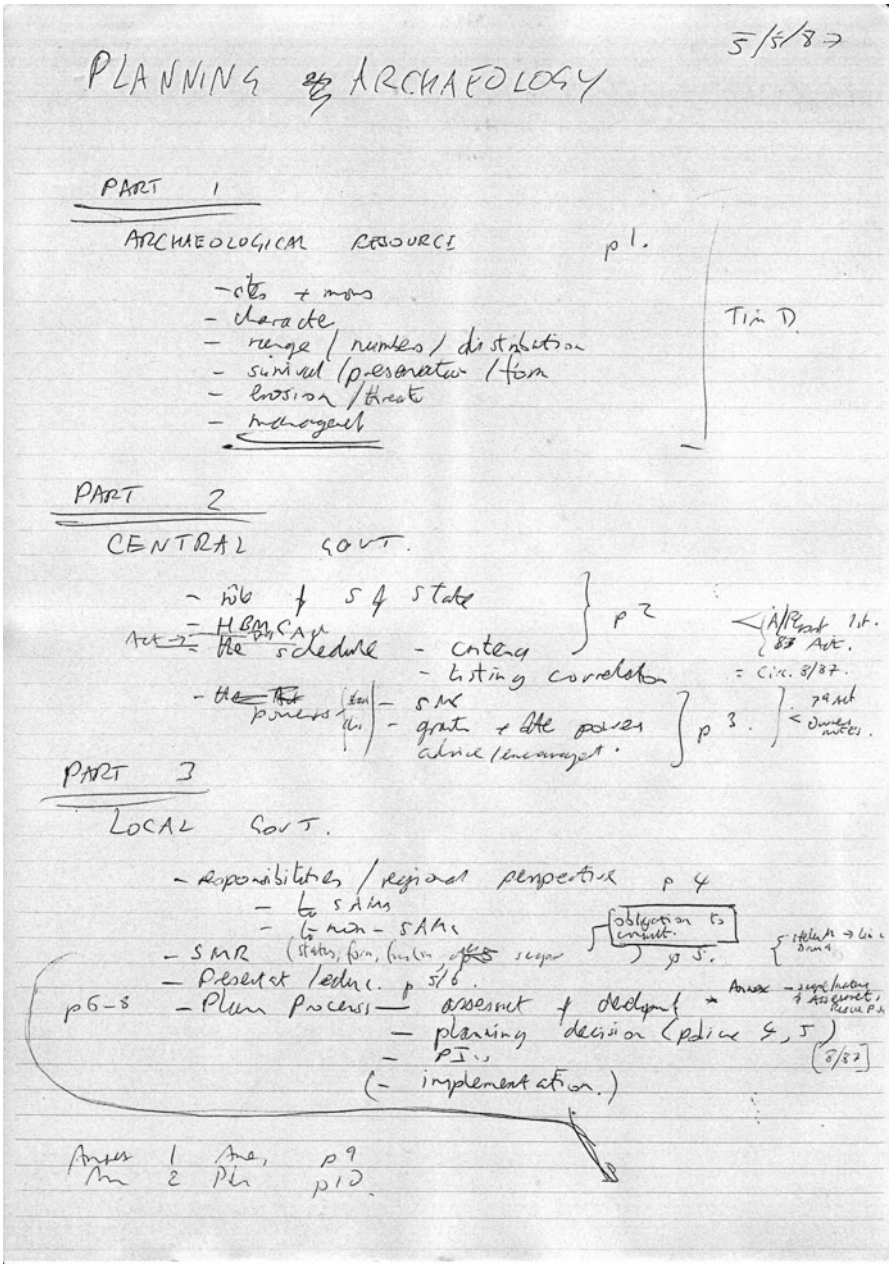

Fig. 4.1 Handwritten draft contents page of the proposed planning circular (1987). Copyright © Graham Fairclough / Mike Parker-Pearson

KA: I love things like that, surviving in that form.

MPP: So we had just been issued with brand new Toshiba laptops. Looking back on them they were incredibly Stone Age. Tiny little screens. I think it was the summer of 1987 or 88. We had a big birthday party at my house in Bedfordshire and it was after that, after everyone had gone away, that I started to write it.

Vicky Fenner, who worked for English Heritage, had arrived with gastric flu and various people then went down like ninepins, vomiting copiously.

KA: Lovely thing to bring to a party.

MPP: And Karen was in bed, throwing up into a bucket, while I was in the next room typing it, the policy sentences—and then I lost the whole lot. Just finished it and I completely lost the file. Because computers in those days didn't have an automatic save—so I had to type it out all over again.

KA: The second half of "In Xanadu" is lost when the poet is disturbed …

MPP: So, second copy I did save and brought it into the office and showed it to Geoff Wainwright and said I think you'll be interested in this. And he looked at it and said "Oh good grief no"—the last thing we want to do is make these views public because then DNH—Department for National Heritage—will get upset and tell us we're not to do it. He saw this as something we should tackle by stealth. So it went back in the filing cabinet.

GF: I think of PPG 16 as having two sorts of prehistory—one outside English Heritage, in the slow realisation among some archaeologists that you can get money out of developers and that if you ask for it and make a good case, it was possible. It's difficult to imagine now, but in the early 80s it just wasn't thought of as possible. At the time, Brian Hobley came to London—he was a bit of a businessman, even a bit of a wide boy, and came to MoLAS *[Museum of London Archaeology Service]*, or whatever it was in those days

KA: DUA [Department of Urban Archaeology]

GF: DUA, yes—and succeeded in getting increasingly large sums of money, which, on the one hand showed it was possible, on the other hand people say, "Oh, that's London, it's different". And that was a common viewpoint through the early 80s.

From the other side, the two important things were the withdrawal in the early 80s of English Heritage core funding and the switch to project funding, because without that none of this could have happened.

KA: Before that there was a responsibility on English Heritage to be funding organisations. So what's the date on that change over?

Geoff Wainwright (GW): The place to start, for PPG 16, was about 1981, when I made the change, which was highly controversial at the time, of moving from funding organisations *per se* to project funding. And indeed a number of people didn't believe me when I said what we were going to do.

In 1986, I set out a policy statement which set out what were effectively the principles to be contained in PPG 16. I followed that up with a RESCUE conference in December 1986 in York where I set out what I saw as the responsibilities of English Heritage with regards to local authorities.

GF: Mike wrote the vast majority of the text, he did the main writing job of the draft. Nothing was then circulated more widely until January 88—it is remarkable how slowly things moved in the 1980s, no email, what computers we had were really slow, drafts took weeks rather than days and we had to wait for letters to come in.

The first mention of "preservation by record" is in a comment from Geoff Wainwright in January 1988, and by July '88, he notes "Archaeology and Planning" as a title.

GW: In July 1988 it was necessary for me to write a letter to Helen McLaggan, Chair of ACAO [Association of County Archaeology Officers], which must be the most quoted letter ever, setting out policy on rescue funding. This was followed up in March 1989 by a letter from Lord Montagu, who was then the Chair of English Heritage, to the Times, because by then our policy had begun to bite. That was—if the destruction of an archaeological site could have been prevented in the planning process then we wouldn't fund any excavation or post-excavation work. And boy, that was pretty tough.

During 1988 and 1989 there were a number of cases that came up as a result of that policy. Let me see now—Queen's Hotel in York, Huggin Hill, London, sites in Winchester, Worcester—you name it, because it was the time, I'm afraid, when the heart was being ripped out of a number of our historic towns.

Slowly but surely, archaeology was coming into the planning process, but archaeologists working in the planning process wanted a piece of paper to back them up. They would use my letter when going to their masters.

And then, lo and behold, the Rose Theatre came along. It could not have been better timed. An absolute classic case. Everyone knew the theatre was there.

KA: Well, it is on Rose Alley…

GW: Absolutely right! And no thought had been given to preserving it because the Museum of London Archaeological Service, not only did they do the digging but they also provided the advice to the planning authorities and that advice was rudimentary and it was always 'well, we think that site should be dug'.

It got so much publicity. Actors weeping into handkerchiefs and gangs of people outside shouting "don't doze the Rose!" Absolutely wonderful.

MPP: That's right, so you've got Dustin Hoffman and a whole variety of actors making a big fuss and because they are well-known individuals their case gets listened to in a way that of course archaeologists or any other pressure group of minority interests would never have been.

GW: And of course it got to Nick Ridley, the then Secretary of State, who called me in and said, "Look, what the hell's going on here?" So I explained the background to him and he said "For Christ's sake"—he was quite a forthright man—"go away and produce a document".

So we produced a document that was an expanded version of my letter to the ACAO and I published a paper in Conservation Bulletin which really was the draft paper.

GF: A full draft is out for preconsultation by local government archaeologists in October 89, who respond with concern about whether it is a circular or a

PPG—a circular would have lesser standing. David Baker wrote that "there would be value at this time of increasing 'greeningness' to establish a document of equal standing with nature conservation".

PC: There was a lot of lobbying from the CBI, British Property Federation and even from museums to get the document watered down.

GW: In February 1990 the consultation draft was then sent out and there were more than 200 responses to that. There were virtually no changes in the final document, which was released, in Lincoln, on the 21st November 1990 by Baroness Blatch.

KA: And we all remember the next day.

GW: Milk-snatcher's[1] demise!

KA: Thinking about the genesis, all the politicians, when they were looking at it—Thatcher government—what was their political thinking behind doing this? Was it very much about taking away the responsibility of the state to fund archaeology? Was that what was driving them?

GW: No. It was a response to a furore, and I think it was genuinely, on their part, a wish to embrace the polluter pays principle. I know it's hard to imagine, but that was definitely my impression. I think they saw it purely in excavation terms, I don't think they saw it as a means to protecting sites.

KA: That was my next question—was the objective to protect sites, rather than to create a market for commercial archaeology?

GW: The more extreme thinkers in EH at the time would have preferred to see no excavation at all. They couldn't care less about excavation recording, as long as many sites as possible were being protected. Paul Gosling was the Taliban of the Inspectors. He wanted to preserve archaeological sites

KA: So it was always very environmental, always about protecting the historic environment.

GW: It seems so simple now, so straightforward now. But at the time, it was quite revolutionary thinking.

PC: Nothing changed in Berkshire when the document was finally published—we were already doing everything that was in it, and it was hardly noticed in the midst of other changes. I then left Berkshire in 1991 to go to work for a company of development surveyors.

I am proud of my achievements. I was pleased to be able to work with David Scott, and had lots of support from Steve Trow and Paul Gosling. On my departure dinner from Berkshire in 1991, Steve Trow joked about the PPG being "Paul's Planning Guidance".

KA: John Walker told me a story from his days in Southampton in the 70s of having an unexpected letter land on his desk from Lord Montagu—your chair—his estate asking for a price for some archaeological work at Buckler's Hard, which was thought as being utterly unheard of—the orthodox history of competitive

[1] Nickname for Margaret Thatcher, who resigned from the position of Prime Minister on November 22, 1990.

tendering in archaeology begins in 1987 at Reading Business Park, and here is a suggestion going around ten years before, from Lord Montagu. How much influence did he have on the thinking about these issues?

GW: None.

KA: None at all?

GW: He was completely supportive, but it would be untrue to say that he had any input into the document. If he felt strongly about the entrepreneurial approach, he never said so.

In conclusion, there were a lot of big thinkers, big personalities who combined to produce PPG 16, and many of them quite rightly want to claim credit—proverbially, success has many fathers, and in the case of PPG 16 this was assisted by the contingency of the Rose 'event'. The work that Paul Chadwick was doing in Berkshire County Council was almost unprecedented, Paul Gosling's zealous thinking linked back to English Heritage where Mike Parker-Pearson, Graham Fairclough and others drafted up documents, always under Geoff Wainwright's careful reading of the political landscape. There are many more personalities who contributed—the politicians of the day, and the civil servants who worked on their behalf. This chapter has looked at the particular testimonies and contributions of four personalities—or five, if we consider the enormous input of the absent Paul Gosling.

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Chapter 5
From Feast to Famine? The Archaeological Profession in Ireland in the New Millennium

Patrizia La Piscopia, E. Eoin Sullivan, and Conor McDermott

Development of the Archaeological Profession

The development and recognition of archaeology as a profession in Ireland arose after the establishment of the subject and its earliest practitioners. In the early part of the twentieth century there were few full-time archaeologists in the country and these were mostly engaged in the museum, state and university education sectors. The introduction of the first National Monuments Act in 1930 at the birth of the new Irish Free State and expansions in the university departments in the 1940s saw these numbers increase (Cooney et al. 2006, 7) and by the 1970s most practitioners were still employed in the state and education areas. During this period, many of the great type sites of Irish archaeology were excavated with most of the "labour" provided under a Relief of Unemployment scheme which used archaeological research to alleviate rural unemployment. This distinction between the site director, perhaps assisted by a small number of student volunteers, and labourers continued on many sites up to the 1970s but declined as the funding became more focused on research and greater numbers of graduate archaeologists became engaged greatly increasing the professionalism of projects. State sponsorship of staff on some excavations continued into the 1980s with the use of FÁS (state training agency) schemes and later with the introduction of the Students' Summer Jobs Scheme (1993–2003) but this period is marked by an increasing prevalence of professional archaeologists.

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The early 1970s also saw the establishment of the *Irish Association of Professional Archaeology* (IAPA) as the first professional representative body. Most of the early membership was drawn from public sector professionals, many already represented by civil service or education unions, and the body initially focused on the development of the discipline rather than as an employee advocacy group. From an initial membership of *c*. 20 it grew to almost 60 by the end of the decade during which time the number of excavations remained consistently from 30 to 40 per annum indicating that field archaeology was not the main employment driver during this period.

Contract archaeology in the private and state sectors started to increase markedly during the 1980s driven in part by improved national regulatory frameworks such as the establishment of the Sites and Monuments record and by European Community environmental directives. The number of excavations increased annually from *c*. 40 at the start for the decade to exceeding 100 for the first time in 1989. In 1984 a new body called the *Organisation of Irish Archaeologists* (OIA) was established seeking to provide representation to a broader range of those engaged in the profession. The number of professional archaeologists, principally in the commercial sector, underwent significant growth from the early 1990s due inter alia to adoption of the "polluter pays" principle derived from the Valetta Convention as applied to archaeological mitigation coupled with the emerging Celtic Tiger economy (Table 5.1).

The New Millennium

During the late 1990s, concerns about the future of the profession found expression in two distinct ways: labour issues raised by the large number of young archaeologists employed mainly in field archaeology and strategic and policy issues raised by the existing professional bodies. The first of these saw the establishment of the Workers in Archaeology Action Group (WAAG) in 1999 which by the end of that year voted to join the national union SIPTU which formed the first dedicated Archaeological Section (Stanley 2001). Initially the union drew significant membership, however, set against a generally low level of union activity and recognition in archaeological contracting/consulting sector (McDermott and La Piscopia 2008, 60), it was effectively defunct by 2004 leaving no extant employee advocacy group during the employment crisis that followed.

The second issues were addressed by the membership of IAPA by voting in 2001 (the OIA being no longer active) to reconstitute the body as the Institute of Archaeologists of Ireland (IAI) with the aims of advancing "the profession of archaeology by seeking to promote development, education, contact, regulation, high standards and public dissemination of its work". With these objectives the IAI engaged in a programme to improve the status of the profession and to do so it was necessary to have a clear picture of the state of the archaeological practice in the country. The increasing pressure of the development sector was driving a parallel

Table 5.1 Some of the key drivers of the Archaeological profession in Ireland

- GAS Act 1976 and gas pipelines 1981, 1986, 1988 and 2004
- 1985 *Sites and Monuments Record (SMR)* established
- 1985; 1997; 2000 EC *Environmental Impact Assessment* directives
- 1986–1994 *Urban Renewal Scheme* developer tax incentives
- 1987 National Monuments Act
- 1989–1994 EU Structural and Cohesion Funds
- 1993 *National Roads Authority* established
- 1994–1997 *Urban Renewal Scheme* and extension to 1999 developer tax incentives
- 1994–1999 EU Structural and Cohesion Funds
- 1994 National Monuments Act including protection to all site in the *Record of Monuments and Places (RMP)* (revised SMR)
- 1994 Local Government (Planning and Development) Regulations
- 1995–2002 *Dúchas – The Heritage Service* centralised state agency for heritage
- 1997 Valetta Convention ratified (signed by Ireland 1992)
- 1998 *Urban Renewal Scheme* developer tax incentives
- 1999 National Monuments Act
- 1999 *Framework and Principles for the Protection of the Archaeological Heritage* Department of Arts, Heritage, Gaeltacht and the Islands
- 1999 Adoption of archaeological *Codes of Practice* with state, semi-state bodies and other bodies
- 2000 Planning and Development Act
- 2000 *Code of Practice Agreed Between The National Roads Authority and The Minister for Arts, Heritage, Gaeltacht and The Islands* (NRA & DAHGI 2010)
- 2000–2006 National Development Plan (NDP) representing 57 billion € of public, private and EU funds
- 2001 *Institute of Archaeologists of Ireland (IAI)* formed
- 2002–2020 National Spatial Strategy for Ireland
- 2002 Appointment of NRA Project Archaeologists
- 2002 Construction sector reaches 20% of Gross Domestic Product
- 2004 National Monuments Act
- 2006 *Archaeology 2020* published
- 2007–2013 National Development Plan
- 2008 *Irish National Strategic Archaeological Research (INSTAR)* programme established under the Heritage Council
- 2008 onward ministerial review leading to draft new National Monuments Act
- 2010 NRA cumulative expenditure on archaeology 250 million € (Wiggins 2010)
- 2010 announcement of National Museum of Ireland's *Archaeological Excavations Facility Collections Resource Centre* to house archaeological objects, samples and archives

and exponential growth in the archaeological sector. Therefore, a first series of studies were commissioned to profile the profession and to forecast the levels of demand of archaeologists for the following 5 years.

In collaboration with the Heritage Council, in 2002 the IAI appointed CHL Consulting to conduct two major surveys. These identified public sector investment and private development as main economic drivers of growth, recognising the fact the profession was facing a serious shortage of appropriately trained archaeological staff, mitigated only by the steady influx of professionals from overseas. The profile

presented in the CHL reports captured a key moment when the profession was facing a market explosion and all the issues related to the unexpected growth had repercussions on the immediate future of the profession (CHL 2002a, b). In addition to a shortfall in the number of archaeologists available to meet projected growth, one of the key issues identified was a deficit in professional skills within the profile of the profession (CHL 2002a).

In its *Five Year Plan, 2003–2008*, the IAI outlined its programme and among its objectives was a better understanding of the way in which the profession was changing to all a clear set of priorities to be developed. In this context, the Institute commissioned two additional reports from Option Consulting. The first of these, *Towards a Continuing Professional Development (CPD) Framework for Archaeologists in Ireland*, highlighted the strong demand for CPD programmes and examined the way in which other professions developed and implemented their CPD practice to provide comparisons to help better plan and enhance a new "integrated learning strategy for the archaeology profession" (Deane 2004).

The second study, *Developing a Learning Framework for the Archaeology Profession Training Needs in Irish Archaeology*, focussed on a more detailed analysis of specific skills shortages and training needs and highlighted that generic professional skills and not necessarily highly qualified specialists were of greatest priority (Aitchison 2005). These urgent issues prompted the IAI to develop a strategy to support continuing professional development (CPD) and vocational qualifications to widen the range of competencies available on the market.

Throughout this period a range of other issues arose as it was realised how profoundly the fast pace of economy was impacting on archaeological heritage and the profession. The number of excavation licences increased each year up to 2002 and ranged from 1800 to 2000 per annum thereafter generating a considerable mass of unprocessed and unpublished data (Cooney et al. 2006, 11). To address these and other emerging issues in 2006 the School of Archaeology, University College of Dublin, under the aegis of the Heritage Council, initiated a foresight study to assess the critical issues facing Irish archaeology (ibid.). This study addressed strategic questions about the current status of Irish archaeology and focussed on generating a set of recommendations for future practice. Key findings of the study were the need for centrally promoted standardisation in all aspects of the profession through the development and implementation of a strategy for standards in the professional practice and, in particular, in the management of data, materials and archives (ibid., 53).

A major transnational survey of the archaeological profession across Europe was launched in 2007 led by the Institute of Field Archaeologists in the UK (now the Institute for Archaeology) with 12 participating countries as well as the European Association of Archaeologists (EAA). The project was titled *Discovering the Archaeologists of Europe* (DISCO) with funding from the European Commission under the Leonardo Programme. In Ireland the national partner was the Institute of Archaeologists of Ireland and the survey was completed with national support from Heritage Council. The survey was undertaken 5 years after the initial CHL reports and represents a unique case study due to the particular social and economic circumstances that the country was facing (McDermott and La Piscopia 2008).

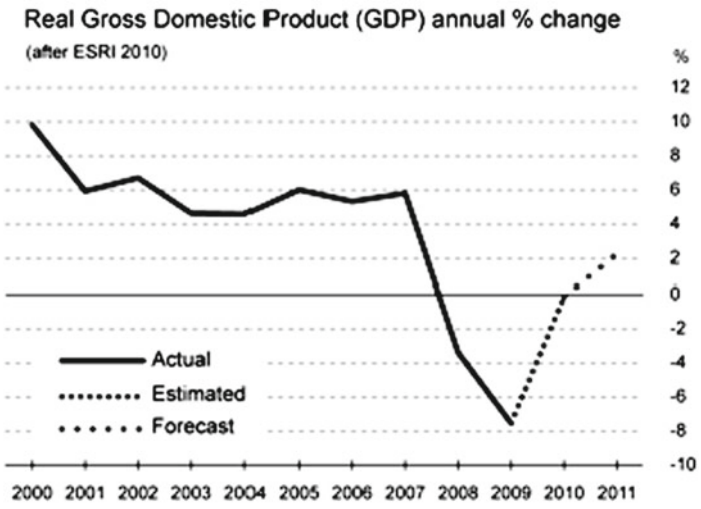

Fig. 5.1 Irish Gross Domestic Product (GDP) 2000–2011 (after ESRI 2010)

In the Irish context, the DISCO study addressed a wide range of issues relating to the profession and amongst the significant results was the way it captured aspects of archaeological practice in Ireland immediately preceding the collapse of the economic markets. The second half of 2007 saw a substantial national slow down (Fig. 5.1) that as a consequence of the wider collapse of global economy, had significant repercussions in the archaeological sector.

Comparing the DISCO survey results with the earlier CHL surveys it is very apparent that the archaeological sector in Ireland underwent unprecedented growth during the intervening period. For instance, the number of archaeologists employed in the Republic of Ireland increased by almost 300% during that period and by far the majority of these (89%) were employed in the commercial sector. This growth was boosted due to a number of interdependent factors, such as the implementation of favourable legislation, the increasing number of investments in the construction sector in addition to the number of infrastructure projects envisaged under the National Development Plan (NDP) (La Piscopia et al. 2008).

Consistent with broader national trends, this demand for workforce was one of the factors contributing to a significant modification to the population profile of the Republic of Ireland and led to a reversal of the trend of emigration towards immigration (Fig. 5.2). This was also apparent in the archaeological profession where demand was met by a significant inflow of non-national workers (Fig. 5.3). By 2007 citizens of other EU member states constituted 44% of the archaeological workforce, with a considerable predominance of Polish archaeologists (23.5%). It can now be seen from the DISCO report that prior to the economic collapse, archaeologists contributed professionally and numerically to the growth of the country, playing a significant role in a small but important niche of the market.

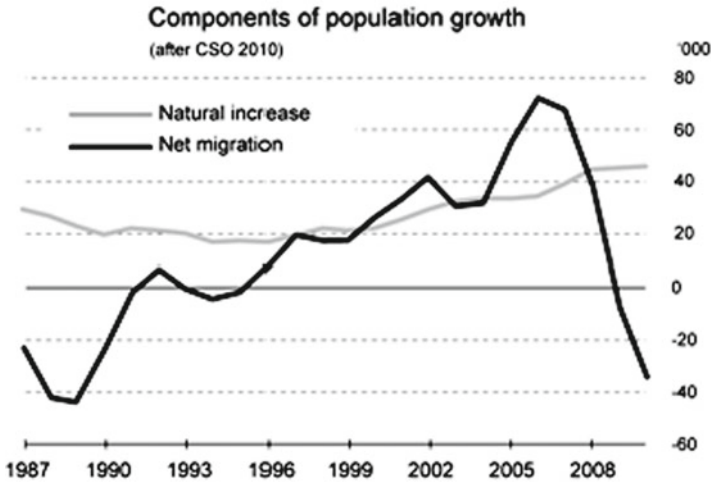

Fig 5.2 Components of population growth in Ireland 1987–2009 (after CSO 2010)

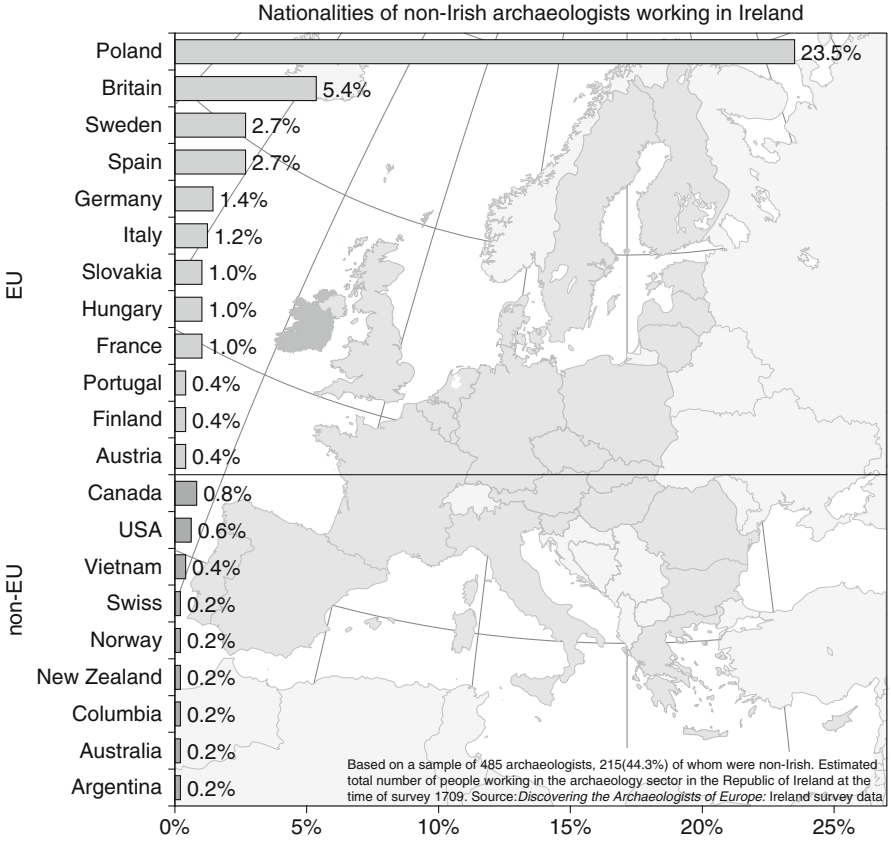

Fig. 5.3 Country of origin of people working in Irish archaeology at the time of the 2007 (DISCO survey)

Archaeology in the Republic of Ireland is characterised in the DISCO report as a "young and educated" profession where the majority of the workforce were aged between 20 and 39 years of age. Furthermore, although a specialised degree was often not required to start archaeological employment, 80% of the professionals held a primary degree and half of these also had a postgraduate qualification. These young and educated professionals earned one of the highest average gross salaries (37,680 € per year) when compared to EU standards (Aitchison 2009, 23). However, what may have appeared to outside observers as very good income was in reality 2.8% lower than the Irish national average, notwithstanding the high level of qualifications held by archaeologists working in Ireland. Moreover, between 2002 and 2008 the average gross salary for archaeologists increased by just 5.8%, a relatively insubstantial change if we consider that in the same period the Consumer Price Index (official measure of inflation in Ireland) increased by 28.8% (CSO 2009) and from 2002 to 2007 the average price of a new house increased by 65% (CSO 2008, 8). The survey also identified other notable patterns that, despite the high rate of employment, were not always positive for the profile of the profession. As already indicated, salaries were somewhat below the national average but a key characteristic was evident in the type of contracts rather than in remuneration. Although the implications of these were not always apparent at the time, in hindsight it can be seen that a lack of job security and stability as well as poorly defined rights and benefits were significant issues. This was certainly facilitated in part by the low level of union activity within the contractor/consulting sector in the Republic of Ireland resulting in trade unions playing very little role for staff in commercial organisations. While employment opportunities were plentiful, positions were characterised mainly by short-term contracts. This is illustrated by the fact that at the time of the survey only 19% of fixed-term staff had been employed without interruption for more than 24 months while for the majority mobility between employers, locations and projects was common place. This often meant that there was little continuity between contracts thus creating difficulties for planning career development and personal lives. Such flexible employment conditions require a mobile, adaptable and skilled workforce which can be seen in the young profile of the commercial archaeological sector during the period.

By July 2008 Irelands hosting of the sixth World Archaeological Congress had showcased some of the fruits of the labours of the Irish archaeological profession with its pan-European workforce as identified in the DISCO survey. Anecdotal evidence was going through the profession of the decline in demand for archaeologists in Ireland, but there was no mechanism to identify the scope of the situation, and thus address the issue in a meaningful manner. At this time the Institute of Archaeologist of Ireland had recently appointed a Development Officer, with the support of the Department of Environment, Heritage and Local Government and the Heritage Council. One of the aims of this appointment was the creation of a structured, quality assured programme of continuous professional development (CPD) for archaeologists in Ireland. As part of achieving the objective of an annual CPD programme, the Development Officer initiated an employment level questionnaire survey to capture a "snapshot" of the scale of the decline in the number of people employed in the archaeological profession in Ireland from July 2008 onwards.

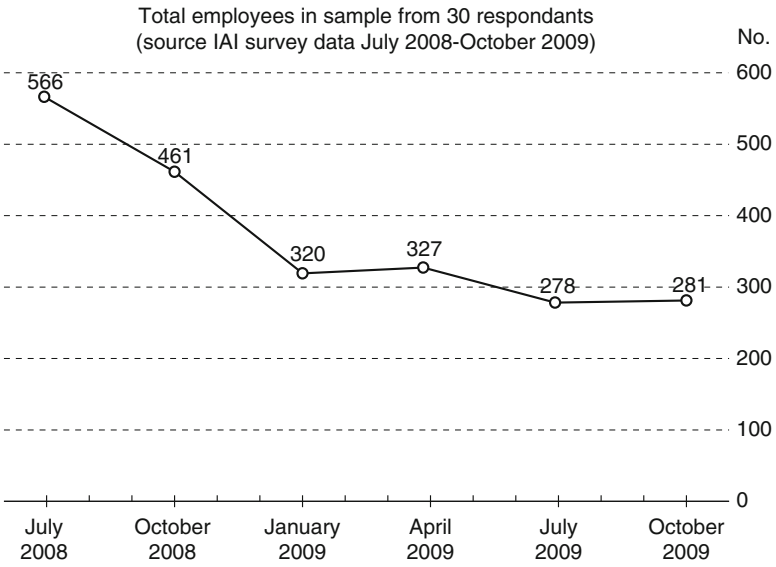

Fig. 5.4 The decline in the numbers of archaeologists employed in Ireland in a 15-month period following the economic downturn (IAI survey data)

The IAI employment level questionnaire was circulated to those canvassed during the DISCO survey and achieved 30 respondents representing 17 commercial archaeological companies and businesses, one teaching and research institutes, three government agencies, one museum and seven sole traders. The survey accounted for a total of 566 people employed in the archaeological profession in July 2008. Of these 566 individuals, 86% (487) were archaeologists with the remainder being non-archaeological staff, i.e. administrative/accounts/human resource personnel. Fifty-eight per cent of the archaeologists were full-time employees with 42% being employed on a contract basis. Fifteen months later, in October 2009, 50.4% of these individuals were no longer employed in their chosen profession due to the decline in demand for archaeologists associated with the economic downturn in the Irish economy (Fig. 5.4). Further analysis of the figures revealed a 37.5% reduction in the number of full-time employed archaeologists and a 72.5% decline in the number of contract-based archaeologists (Fig. 5.5). The survey was not repeated in 2010, but it is known that the persistent haemorrhage of archaeologists from the profession has continued.

The uncertainty of how many of the estimated 1,709 archaeologists had ceased employment in the profession prior to July 2008 makes it difficult to ascertain the exact relationship between the scale of the decline in the actual number of employees documented in the IAI survey and the estimated number of archaeologists identified in the DISCO survey. Despite this, the figures are alarming and capture the “free fall” in the demand for archaeologists in Ireland.

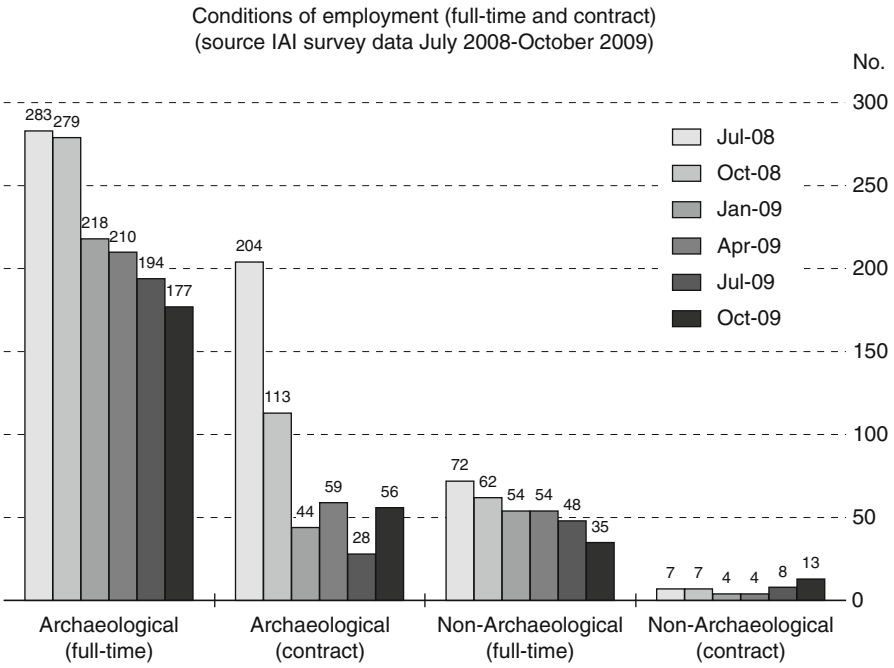

Fig. 5.5 Comparison between the declines in contract-based employment and full-time positions (IAI survey data)

There was always a disproportionate relationship between the numbers of archaeologists employed in the profession and their membership of IAI, despite it being the professional organisation. At the crest of employment within the profession, IAI membership numbers never exceeded 400 (inclusive of student members). As the dramatic reduction in employment levels of archaeologists unfolded, IAI initiated a jobs survey to highlight alterations to archaeologist's salaries and employment conditions throughout 2009. The questionnaire survey achieved 75 individual respondents from across the profession. The survey revealed that while 45% of the respondents earned between 40,000 and 60,000 €, 24% of respondents earned less that 20,000 € during 2009. In terms of employment conditions, 50% of respondents had reduced working hours during 2009 and of these, 73% were employed in the private sector.

Both surveys initiated by IAI captured glimpses of the difficulties of the archaeological profession in personal terms. Each statistic is a professional colleague and the surveys reveal something of the dramatic decline in employment levels for archaeologists in Ireland, coupled with reduced working hours that directly impact upon their salaries. The situation is probably worse than the figures suggest as only one tenth of the archaeologists who gave details about the salaries categorised themselves as excavation supervisors or assistants, among the most mobile of the profession who were working quite literally at the coalface.

Unlike other professions in Ireland, notably accountants and solicitors, membership for archaeologists of their professional organisation is voluntary. Similarly archaeologist's involvement in their CPD continues to be voluntary. IAI through its strategic CPD framework is committed to the introduction of mandatory participation in CPD for all its members within the coming years. In late 2008 IAI initiated its second pilot CPD programme that by March 2010 attracted the attendance of 16% of the membership. The events covered a range of professional training topics through the format of either training modules or workshops. The trainers were recognised experts in their field and several events were independently assessed. One third of attendees to the CPD events were non-IAI members, some of whom subsequently became members of the institute. An important strand in the IAI CPD framework is the need to develop inter-institutional professional training. IAI was a founding member of the award winning Landscape Character Assessment training module initiated by the Heritage Council in 2008.

The archaeologist's intrinsic desire to appraise and reappraise their actions gives the professional a natural interest in their ongoing professional development. For many years, archaeologists in Ireland have been practising and implementing CPD, albeit in an unstructured manner. A structured approach to CPD should ideally be part of each archaeologist's career path planner and would assist the individual to identify their core competencies and skills. The successful implementation of pilot CPD programmes by the IAI demonstrates the need that the profession has for ongoing training. Such programmes need to be maintained by the professional body with the assistance of third level teaching institutions and key stakeholders from across the profession. Now more than ever, there is a need for quality assured CPD that gives accredited training and permits an appropriate accumulation of credits for prior learning. These cost-effective programmes must address professional as well as generic training, so that accredited skills can facilitate career paths with and, where necessary, beyond the archaeological profession. There is evidence, albeit anecdotal, of an increase in the number of new business names of archaeologists offering professional services in Ireland. Some of these are former employees of larger companies, who were made redundant and have subsequently set up their own business. This phenomenon indicates the importance of the need for generic training to cover such topics as business and project management, communication and entrepreneurial skills.

IAI has implemented a series of professional codes of conduct over recent years, with their implementation being mandatory for all members. There is a need for the identification and production of relevant guidance documentation to cover a range of archaeological practices. A crucial aspect in this process must be training for practitioners, to explain the documentation and its effective implementation. Coupled with training is the need for appropriate regulation to identify any gaps in the application of the best practice principles.

The DISCO survey highlighted the pan-European workforce in the archaeological profession in Ireland. The nature of the workforce reflects the mobility of archaeologists to travel through the European Union to gainfully apply their acquired skills and competencies in the practice of archaeology. Archaeologists employed in

Ireland now find themselves, possibly for the first time, in a position of needing to travel to different jurisdictions to gain archaeological employment. It is imperative that archaeologists know how to articulate their acquired skills set, often tied in with accreditation frameworks that translate in other jurisdictions. Now more than ever, effective quality assured training is needed, both for those trying to gain employment in a much reduced labour market in Ireland and those, forced or otherwise, to seek employment outside of Ireland.

It is difficult to look to the future with any certainty, or indeed a sense of reluctant realism, regarding the future demands for professional archaeologists. It is reasonable to assume that, at best, the numbers of archaeologists employed in Ireland is in the similar region at those estimated at the start of the millennium and excavation licensing now seems to be stabilising at *c*. 650 per annum equivalent to the 1998 rate; (Eogan 2010, 20; Eogan and O'Sullivan 2009). A moratorium on public sector employment and current political debates about reducing the numbers of public sector employees will have an impact on the demand for archaeologists in Ireland over the next 4 years. But despite the fee fall in the decline in demand for archaeologists, most notably in the commercial development driven sector, the need for archaeologists is embedded in the implementation of legislative directives and conventions at a pan European scale. It is however worrying, in this context, that the new Agri-Environment Options Scheme (AEOS) (DAFF 2009b; cf. DAFF 2009a (REPS4)) has removed the prescriptive measure that dealt with the identification and protection of features of historical/archaeological interest previously included in the Rural Environmental Protection Scheme (REPS).

Archaeology in Ireland needs an effective cultural heritage lobby, one that is proactive and whose members cross the tradition sectoral divides within the profession. The profession needs to be strategically discussing the impacts of the decline in the demand for archaeologists in the immediate and medium term. We need to articulate our strengths and achievements to the public and other professions and we need creative initiatives to keep as many archaeologists employed in the profession as possible, so that we not only stop the haemorrhage but also stop the severing of excavating archaeologists from their site archive and their ultimate publication and dissemination of knowledge to society.

Postscript

In recent years government retrenchment across a wide front to tackle the economic crisis has had a considerable effect on the archaeological profession and the wider heritage and environment sectors. In the commercial archaeology sector this has seen significant reduction in the number and scale of infrastructure projects as existing schemes are completed and fewer new projects are commenced. The severity can also be seen in a 77% reduction of funding to Heritage Unit in the Department of the Environment, Heritage and Local Government in the 2011 Budget announced in December 2010. In addition, the Heritage Council which is one of the principal

agencies for heritage policy and practice saw its budget cut by 47%, compounding a reduction of 30% in the previous year (Heritage Council 2010). As a consequence those who submitted applications for the 2011 Heritage Grants Programme which incorporates archaeology and other heritage areas have been informed that it is very unlikely that grants will be awarded under the three categories of Heritage Research, Heritage Management and Heritage Education, Community and Outreach. In addition, the future and scope of the Heritage Council's Irish National Strategic Archaeological Research Programme (INSTAR) remains uncertain. This innovative, internationally significant "data to knowledge" programme is seen as one of the mechanisms to tackle the enormous task of processing and integrating the results of commercial excavations of the "boom" years to transform our understanding of Irish archaeology.

Of greater significance in the longer term is the status of the proposed new National Monuments Act for which the heads of bill were approved in early 2010. This legislation was formulated following a series of consultative stages reviewing policies, structures and procedures governing all aspects of archaeological management and practice in the Republic of Ireland, superseding a series of National Monuments Acts from 1930 to 2004. The bill addresses areas including a single coordinated register of all national and historic monuments, improved protection in the planning process, recognition and protection of historic landscapes, the identification and protection of new sites, improvements in licensing procedures and the regulation of archaeological works and also the ratification into Irish law of international conventions on underwater heritage and the protection of portable antiquities (DEHLG 2009). The early months of 2011 will see the formation of a new government and amid the pressing economic concerns it is not certain that this legislation will be a priority in the programme for government.

It can be argued that the value of the considerable expenditure on archaeological mitigation in recent years has not been fully realised and that this burden and opportunity rests with the much depleted ranks for the profession in the country. Some of the problems we face such as unpublished excavations, while greatly exacerbated during the boom years, have a much longer legacy in Irish archaeological practice (Doyle et al. 2001). For the foreseeable future the structure and regulation of the profession in Ireland will continue to be enacted at a national level. While drawing on international models for professional practice and cultural heritage protection ways need to be found to apply existing regulations more effectively and to develop strategies to tackle not just the problems of the past and the current critical period but also to anticipate future problems and potential.

There have been a number of notable examples in recent years in areas such as testing strategies, site recording, sample analysis, project management, publications, etc. However, these have often been achieved beyond the limits of current regulation leaving considerable room for lower standards in the current commercially competitive market. At present there is no formal process to adopt the best of current practice as the foundation on which to build new approaches. This may be achieved by a periodic review of standards and practice overseen by the statutory bodies with representation from the professional body and other

stakeholders. The resulting guidelines should set out credible minimum standards and best practice while also giving guidance as to emerging methods and research questions.

In Ireland, the UK and a number of other European countries, the archaeology sector has come to be dominated by its role as a service industry responding to the needs of development-led growth. This results from the choice of market driven strategies to respond to the obligations under the Valetta and other conventions. The Irish case demonstrates an extreme example of the application of the system where individual commercial responses are strictly coupled to the scale of immediate threats to the archaeological heritage. However, it can be seen how this has placed particular strain on national regulatory, infrastructural and administrative structures forced to react to, rather than planning for, such changes and without matching scaled resourcing. This is also reflected in three revisions or drafts of national legislation since 1994 as change has outstripped the vision and capacities of existing frameworks.

It is doubtful is any regulatory or professional models are sufficiently flexible to manage the rapid changes in scale seen in Ireland and the negative effects of this development-led growth on the economy as a whole is now more than apparent. Given the volume of archaeological mitigation work required during the period, the private sector archaeological service industry achieved a great deal that may not have been achievable if conducted by existing nationally based state agencies. One local authority (Mayo County Council) employed archaeologists directly to undertake projects on state-funded infrastructure schemes but this model was not extended to bodies in other regions. Among the great weakness of the system has been the loss of continuity on projects following the collapse where a number of the large archaeological consultancies have ceased to trade or sought financial protection and many site directors and supervisors have left the profession or the country. This has created a very significant problem for the curation of archives, objects and samples as well as broader issues of commercial sensitivity, intellectual copyright and access for researchers.

If the private sector service industry model is to be carried into the future it requires a significant revaluation of what "polluter pays" means in policy and in practice. This should include ensuring that the definition of publication should be unambiguously applied to mean publicly disseminated to a professional standard (in print or digital media) rather than the submission of typescript reports. Commercial projects often encounter difficulty with funding during the post-excavation stage of projects where the developer wishes to limit liability once site works have been completed and this has been recurrent problem over a number of decades. In such instances, the prospect of full analysis and final publication is unlikely and ultimately the burden may fall on the state. Where projects are successfully completed on behalf of a commercial development the cost model is framed around satisfying the minimum planning conditions rather than the protection of archaeological heritage through to the dissemination of results and the curation of objects and archives. It increasingly appears that the cost structures need be weighted to include the full impact on the archaeological heritage and agencies charged with its protection or that other funding models need to be explored (Ciuchini 2010).

At the macro-scale the profession underwent marked growing pains during the period of the economic boom as it expanded rapidly to meet commercial needs. Regrettably the dramatic contraction that followed was without precedent and lasting impacts remain. At the individual level the potential for maintaining and developing a career for new and for established professionals has been dramatically undermined. Many have left the profession while others are seeking to use their expertise in schools education, heritage tourism, project management and related areas highlighting transferable skills inherent in the profession.

There is considerable scope for the profession and the professional body to show leadership in the developments and changes that are taking place in a less certain future. All the analyses undertaken highlight the need for professional qualifications, continuing professional development and transferable skills. These need to be successfully combined into improved career structures and paths recognising that archaeologists increasingly work within broader frameworks of cultural and natural heritage expertise as well as developer driven roles.

The health of the archaeological profession should serve as an indicator of the security, value and appreciation of the archaeological heritage in the country but it can be argued that this is not currently the case in Ireland. During the last 15 years, the profession in general did not always effectively communicate its achievements and successes to the broader society. It is likely that new directions will involve considerably closer liaison with communities at local and regional levels as we seek to work with a more informed and critically aware population and audience. Access to primary archaeological data, mapping and other online resources (e.g. http://www.excavations.ie, http://www.archaeology.ie, http://www.logainm.ie and Google Earth) as well as a heightened awareness of archaeology during the boom have increased a public appetite for the subject. It is likely that the only prospect for the full publication of many of the recent excavations is through digital media or online and other previously inaccessible archives are also being brought into the public domain. As this information is disseminated and interpreted by a larger audience multiple archaeologies and narratives will emerge changing the final role of the archaeologist as narrator and conduit to archaeological information increasingly towards one of guidance and partnership.

As discussed above, third level qualifications have traditionally been the foundation of a professional career in Irish archaeology; however, the role of universities and education as a whole needs to be re-examined in light of the dramatic changes that have occurred. While Irish third level institutions have been improving the balance between theoretical education and practical skills targeted towards professional practice (Kador 2011, 105) graduate education and training requirements have rapidly evolved. Many students do not intend to pursue archaeology as a career but for those that do a greater range of practical (Everill and Nicholls 2011, 28) and transferable skills are required, in addition to ongoing professional development. These skills should facilitate movement across international borders and within and across disciplines. As professional and research environments become increasingly collaborative and interdisciplinary, graduates require greater understanding of aligned disciplines such as geographic information, planning,

ecology, history, cultural resource management and media as well as construction-related professions. Graduates are also increasingly required to work in international/multinational contexts reflecting our more heterogeneous population and an increasing interconnected world.

A number of factors have combined to generate increased numbers of higher level archaeology postgraduates emerging from Irish universities. These include higher numbers in the profession as a whole, a number of education grant opportunities not previously availability and a national strategy to double the number of fourth level graduates with the aim of promoting a "knowledge economy" (DETE 2006, 8). Although the rational for universities in Ireland and elsewhere producing elevated numbers of PhD students has been questioned (e.g. Kador 2011, 109), the increasing numbers emerging from universities in this country are beginning to have a transformative effect on the profile of the profession and creating challenges for existing professionals and students planning a career path.

The recent cutbacks and uncertainties have a major effect on how Irish archaeology addresses the significant problems of job losses, career development, completion of archaeological project, publication and curation. The pending legislation and schemes such as the INSTAR offer some of the ways the issues can be addressed but other preventative and proactive measures are needed. In professional terms, the need for comprehensive continuing professional development programmes (CPD) has never been more apparent as is the need for a vocal and effective lobby. In strategic terms the establishment of a publication bureau (Cooney et al. 2006) has been suggested as has an archaeology tax on all developments as an alternative funding mechanism (Ciuchini 2010).

It is clear that Irish archaeology and the archaeological profession have undergone dramatic changes in the preceding 15 years and that much of the future is in a state of flux. A re-envisioning of the profession seems inevitable as new ways are sought to ensure both greater flexibility and greater security for archaeologists while meeting the challenges of archaeology as a subject, career and as part of society's broader cultural heritage.

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Chapter 6
Competition and the Development of Authorised Heritage Discourses in a Re-emergent Scottish Nation

Malcolm A. Cooper

Introduction

In seeking to understand the nature and development of cultural resource management in the Britain, it is common to explore the form and nature of heritage legislation—that is, the specific drafting of legislative sections and their intentions, and how legislation develops and changes over time. These are valuable studies, frequently identifying and contextualising the key drivers (social, economic, intellectual and others) for change in the legislation and accompanying policy. In recent years we have also seen the emergence of the interdisciplinary field of *heritage studies*, investigating how government-initiated activities supported by official regulation create a particular type of "heritage" and heritage practice (see for example Sorenson and Carman 2009; Smith and Akagawa 2009; Labadi and Long 2010) and which explores how competing discourses between the "official" heritage and others are operationalised and experienced.

In heritage studies, there can be a simple view of the "official discourse". This sees the existence and use of legislation and policy, activities such as planning appeals, scheduled monument consent hearings, and public local inquiries, and the activities of heritage professionals, as *the* mechanisms by which the prevalent discourse—termed the *authorised heritage discourse* (AHD) (see Smith 2006, 2008)—takes effect. However, for those working in the context of an authorised heritage discourse, the world frequently does not work in the simple way that Smith and others suggest. Legislation and policy may be applied in significantly different ways depending on its context—politicians at local, regional and national level may make decisions which ignore or reinterpret legislation and policy, and many groups and individuals seek to influence politicians and heritage professionals directly or through levers such as direct pressure, lobbying companies or the media

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(see Cooper 2008). The prevalent discourse is also open to significant levels of influence through broader changes in political philosophy relating to social, economic and cultural activities (see Cooper 2010; Waterton 2010). While there has been a strong focus on competing discourses between the AHD and, for example, local community discourse about heritage, there is similar competition between heritage discourses and other discourses such as those arising from development and economic development activities.

Less well recognised and studied though is the existence of competitive discourse behaviour within the discipline itself in terms of the creation and replacement of AHDs. This can be seen on occasions, for example, between archaeological and building professionals where their casework overlaps, but it may also exist between senior non-heritage professionals and their heritage staff within the same organisation. The relationship between the professional civil servant and the heritage professional within the UK's state heritage organisations has rarely been the subject of study, perhaps because of its sensitivities and the vulnerability of the heritage professionals in such circumstances.

Overall, it seems to me that the creation, development and operation of an AHD—or the operation of competing AHDs at any one time—is a complicated subject but one worthy of study if we are to fully understand the nature of cultural resource management and its operation.

The various Ancient Monument Acts in Britain are of interest because the same primary legislation has been in force across England, Scotland and Wales for long periods of time (this contrasts with listed building legislation, for example, where Scotland and England/Wales have differing primary legislation). One might expect therefore that the legislation would be implemented in a uniform manner. However experience suggests that there are very significant variations in approach and emphasis between Scotland and England/Wales, both before and following the establishment of devolved governments in Scotland and Wales.

There are many possible reasons why might this be. As the nature of the sites or monuments being protected and their significance vary geographically, so differing approaches are adopted. Also where different organisations are responsible for implementing legislation and developing the policy by which legislation is operationalised, they may develop their own approaches and priorities. Given this, it seems reasonable to expect that broader cultural perceptions about heritage and its meaning within *particular nations, communities or geographical areas* will directly influence how legislation is *implemented* on a day-to-day basis even where this legislation is identical in form and original intention. This is perhaps a less monolithic and far more "permeable" view of how legislative frameworks are operated than is often reflected in texts about heritage legislation and heritage studies (see Cooper 2010, 150–52). This seems to me to be important though in terms of seeking to analyse and theorise the areas of activity which lie between such frameworks on the one hand and the reality of every day cultural resource management and its relationship to broader society on the other.

To explore these issues further, this paper looks at the subject of castle and tower-house restoration in Scotland. This subject has formed the most persistent and high

profile debate relating to the historic environment in the country over the past two decades and is fertile ground on which to see the workings of competitive discourse behaviour in action. At times this debate has been highly charged, has seen the use of passionate (indeed intemperate) language and wide public comment. There have been significant levels of criticism of the public sector heritage managers seeking to apply the relevant legislation and policy. This in turn has threatened to damage the credibility of cultural resource management as a whole. And yet over a similar period in England and Wales this subject has attracted relatively little public debate. This is despite the fact that the legislation, policies and general approaches are similar and that there are sites which exhibit reasonable similarities in each country.

The Historical Context in Britain

It is perhaps helpful at this point to travel back exactly a century. In 1912, a joint select committee of the House of Commons and the House of Lords was appointed at Westminster, London, to consider three proposed bills—the Ancient Monuments Consolidation and Amendment Bill, the Ancient Monuments Protection Bill and the Ancient Monuments Protection (no. 2) Bill (see HMSO 1912). These rival Bills were the culmination of an important debate in Britain over the protection of its ancient monuments and the acknowledged weaknesses in the existing protective legislation at that time (see, for example, Champion 1996).

The detailed transcripts provide a wealth of information which illustrate why the legislation came forward in the manner that it did and the issues which had led to the move to strengthen the legislation. The evidence given also showed that there were significantly differing views about the acceptability or otherwise of "restoration" and that the views being expressed were influenced to some degree at least by the nature of the surviving monuments and an underlying recognition of these differences in terms of the differing nations making up the United Kingdom. For this reason, it is worth looking at some of the evidence in detail.

Key witnesses appearing before the select committee included Charles Reed Peers, the Government's Inspector of Ancient Monuments. For Peers, the discussion focused on the weaknesses of the existing legislation, the need for some form of "preservation order" and also the financial consequences of protecting monuments. Peers was clear in his views stating that "Powers practically do not exist for preserving ancient monuments at the present time, the system being purely voluntary". He went on:

> …we have absolutely no power—as, for instance, in the case of Tattershall Castle, which happened last year—to intervene to save what is obviously a most important monuments, and it is perfectly clear that things will not get any better until the Acts are extended in that direction.

As so often has been the case in Britain over the last century, the amendment and strengthening of heritage legislation has given significant momentum by highly publicised cases where sites, monuments or buildings were threatened

or lost. In 1912 significant momentum for strengthening protection had come from the problems surrounding the protection of Tattershall Castle. This mid-fifteenth century brick-built castle in Lincolnshire, England was in private hands and in 1911 the owner announced his intention to sell the decorative stone chimney-pieces for transport to America. There were also rumours that the rest of the castle would follow in due course! Lord Curzon who subsequently rescued the site and gifted it to the nation was a key player in the move to strengthen the ancient monument legislation in 1913 (Mosley 1961).

The Joint Select Committee's broader discussions ranged across areas which will be unnervingly familiar to historic environment professionals and cultural resource managers a century later and makes for illuminating reading: what should the scope of preservation orders be? Would owners be disadvantaged were a site to be scheduled? If the State spend money on repairs to a historic structure, would it be appropriate that the owner could then sell the structure for financial gain? Was too much money being spent on the management of properties such as the Tower of London, thereby removing funds to preserve sites in private ownership? Should the State be able to purchase such sites?

In their deliberations, the Select Committee drew on a wide expertise including witnesses from the Office of Works, organisations such as the Society for the Protection of Ancient Buildings, landowners and architects. Key witnesses were the secretaries of the newly-formed Royal Commissions on Ancient Monuments which had been created in Scotland, Wales and England in 1908. Despite their stated purpose of undertaking survey work across Britain, the early minute books show that they were drawn into a range of advisory casework in their early years (but this reduced after creation of the Department of Ancient Monuments and Historic Buildings under the Ancient Monuments Consolidation and Amendment Act in 1913).

In the Select Committee there was a detailed discussion of the desirability or otherwise of restoring ancient buildings such as abbeys, churches and castles. The evidence given by the Secretary of the Royal Commission on Ancient Monuments in Wales and Monmouthshire, Mr Edward Owen sets the tone for this debate. Committee member Mark Sykes raised the permissive approach to restoration of castles in Germany and sought Owen's views on how the proposed legislation might work in this context. Owen raised concerns over the authenticity of restorations and the need to protect the surviving character of a ruin. In a telling exchange of views, Sykes asked:

> I want to have it quite clear. Suppose for example, there is a castle that could be restored to what it used to be like, and it was thought that it would be useful for educational purposes to have one sample castle to show people what a castle was like at a certain period, you would object to it being restored in that way. Would you even object to restoring one tower as an object lesson to people to give an idea of what a castle of the period was like?

Owen replied:

> Quite because I think the object lesson that would be given would be one that in itself be a very defective and unfortunate one. Take for instance Conway Castle. There is quite enough of Conway Castle at the present time to provide an object lesson to anybody who desires to know what an ancient castle was like, although Conway Castle is in itself a ruin.

> But in order that somebody might have the benefit of seeing a perfectly—if I might use the term—brand new mediaeval castle, I should very strongly object to seeing one of the towers tampered with for that purpose. Indeed it would spoil the castle completely.

Later in this session Committee Member Mr Charles Price returned to the subject of restoration:

> In restoring a building do not you also preserve the building in a better way than if it were left as it is, and simply putting in cement and such like things, to keep the walls together. Is there not a greater likelihood of the building being preserved, even as a ruin, through a restoration, than if you leave it just as it is, and simply cement the walls together?

Again Owen seeks to raise the issue of authenticity:

> It all depends upon the length to which restoration is carried, and if the restoration alters the character of the building.

Price then turns to the case of the partly restored Dunkeld Cathedral [sic] in Scotland (restored by the Office of Works). Owen suggested that Wales did not have as many buildings of cathedral type and he noted the common practice of architects "recommending that an ancient church should be swept away. It has happened over and over again"; Asked if he approved of the restoration of St David's and Llandaff cathedrals in Wales, again Owen endeavoured to make the same point:

> I do not know if I approve of it. It would be a question really of how the restoration would be carried out. If it was going to be a drastic restoration, such as the classical instance of St Albans, I am not quite sure that I would approve of it… where a church is roofless, how are you to know what kind of roof was on the original building, particularly where, as in Wales, we have very little architectural tradition and not records of medieval constructions or reconstructions.

Whilst the discussions about restoration itself are of great interest, it was also pertinent that Owen sought to contrast the surviving Welsh monuments with those in Scotland. This topic was picked up again by Alexander Curle, the Secretary to the Royal Commission in Scotland, who argued that there should be an Ancient Monument Board for Scotland because:

> Scottish monuments differ essentially from English monuments, and we have monuments in Scotland not represented in England at all…. Our castles, as a rule, are of a different type. The social differences of life in Scotland during later medieval times were so rough and unsettled that the people adopted a type of building which is not represented in England so much—the small Border Keeps… We have a very much larger number of castles in Scotland to which the Bill is applicable than there are in England in proportion to our size.

This was a view that was reinforced by the architect Sir Robert Rowand Anderson, a highly experienced architect who had worked closely with amongst others, the 3rd Marquess of Bute, and had been involved in major restoration projects in Scotland such as at Iona Abbey and Dunblane Cathedral (McKinstry 1991). About Dunkeld Cathedral, Curle stated:

> I believe that it has been well done, but the whole question of the advisability of restoring ancient buildings depends upon the man who is going to do it. It is not so much a question of principle. One knows that in almost 99 cases out of 100 restoration has spelt ruination;

> the thing has been spoilt. The principle may be wise enough… I think there is many a castle that would stand restoration if it was done by competent hands. On the other hand there are many buildings in England too that have suffered sorely from the work of eminent architects—cathedrals that have lost all their charm and romance externally.

The Select Committee report is a mine of information for those interested in understanding the development of the philosophy of historic environment management in Britain as well as the parallel development of the legislative framework. For the purposes of this paper however the key point arising out of the discussion was the subject of restoration: was it acceptable at all; when was it acceptable; what level of intervention was acceptable and who should decide? A separate but linked issue was that of the nature of structural monuments and whether national distinctiveness might lead to a different approach in the different countries which made up Britain.

Castles and Tower Houses in Scotland

Given both the problem of definition and also of survival, it is difficult to establish with confidence how many castle and tower house sites once existed in Scotland. Geoffrey Stell has brought together various early and modern sources who seek to calculate these and the figures vary from under one thousand to over two-and-a-half thousand (Stell 2011). Of the sites that we know currently exist there are some 953 protected castle and related sites in Scotland, comprising 186 scheduled monuments, 483 listed buildings and 284 structures both scheduled and listed.

One problem both for calculation of numbers and also for the broader restoration debate is that there is a tendency for the term "castle" to be seen as referring to a clearly defined and singular entity but, as is commonly understood within the discipline, "castle" is frequently used as general term which brings together a very wide range of different types of sites, with different forms and intentions, and with significantly different periods of usage. In Scotland these can vary from motte-and-bailey type castles from the twelfth century through stone-built tower houses of the fifteenth century and later, medieval and later hall houses, and can even include eighteenth and nineteenth century houses. There is also a wide variation in terms of the nature, scale, purpose and history of these structures with some long-lived sites combining a range of defensive and other structures showing significant development and change over time.

While some sites exhibit continuous occupation and use, many others fell out of use at some time in the past. The reasons for abandonment are often complex and each site needs to be studied in its own right. There are though some common currents. Abandonment may have been the result of war or the need to move to sites with better strategic advantage. By the late seventeenth century broader changes of taste and convenience led to many earlier buildings being abandoned in favour of newly built country houses. In Scotland some structures, such as at Dundas Castle to the north of Edinburgh, were modernised or incorporated into the new houses, some were re-used

Fig. 6.1 Kinnaird Head, Fraserburgh (copyright, Malcolm A. Cooper)

as farm buildings, such as at Collairnie in Fife, some such as at Burghie Castle in Moray were used as features in the creation of wider romantic landscapes, and some found extraordinary new uses such as at Kinnaird Head, Fraserburgh, Aberdeenshire, where the tower house was used for a lighthouse (Fig. 6.1).

Reconstruction, Restoration and Adaptation

In the intervening century since the 1912 Select Committee, the debate about restoration has continued both within the discipline and more broadly. We have seen international charters such as the Venice and Burra charters specifically refer to restoration and provide definitions and guiding principles for such work. The Burra Charter makes a helpful distinction between the terms "reconstruction", "restoration" and "adaptation".

> *Reconstruction* means returning a place as nearly as possible to a known state and is distinguished by the introduction of materials (new or old) into the fabric. This is not to be confused with either recreation or conjectural reconstruction, which are outside of the scope of this charter.

Fig. 6.2 Fenton Tower, East Lothian (copyright, Malcolm A. Cooper)

Restoration means returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

Adaptation means modifying a place to suit proposed compatible uses.

In the last century or so there have been a large number of restoration, reconstruction and adaptation projects in Scotland. Cases involving castles and, in particular, tower houses have been common with a significant number of projects taken through to completion (see Walker 1984, 2000; Fawcett and Rutherford 2011). Between 1953 and 1985 Historic Scotland's predecessors grant-aided 53 restoration cases (Walker 1985) and a further 20 structures were brought back into use without drawing on public funds. Between 1990 and 2001 Historic Scotland grant-aided the restoration/re-use of a further 13 sites at a cost of c. GBP2.5m and subsequent to this offered a further c.GBP1m to four sites which were under consideration. The most recent successful restoration has been that of Fenton Tower in the Scottish Borders (Fig. 6.2).

There is one case however which perhaps is iconic in terms of characterising the challenges for all of those seeking to bring a ruined castle back into beneficial

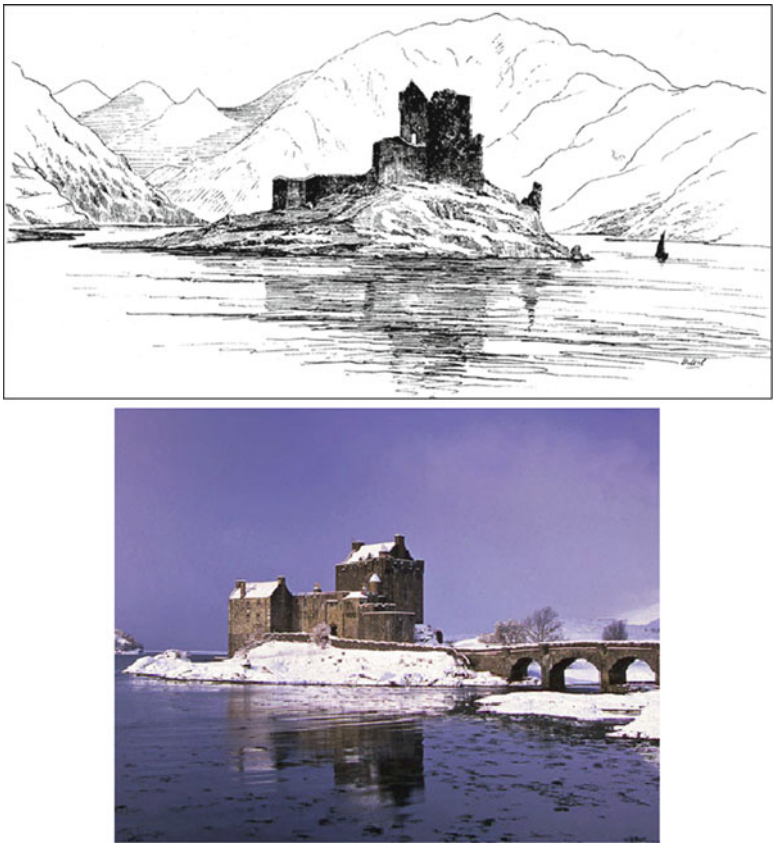

Fig. 6.3 Eilian Donan Castle prior to restoration (*top image*; from McGibbon and Ross 1889, 84) and after restoration (*bottom image* copyright Michael Macgregor)

use—this is Eilean Donan Castle on the west coast of Scotland near to Dornie and the Isle of Skye. This long-lived site saw the creation in the thirteenth century of a fortress which underwent significant modifications in fifteenth to seventeenth centuries. In 1719 the castle was blown up by three navy frigates prior to the Battle of Glenshiel, leaving the site damaged beyond use (see Fig. 6.3).

However by the late nineteenth and early twentieth centuries the Romantic revival and the re-celticisation of Scotland saw a renewed interest in such buildings and a desire to reconnect with Scottish history through reoccupation of key buildings with long-lived family connections (Anderson 2011, 284). John MacRea Gilstrap purchased the castle in 1912 and set about reconstructing the castle. The rebuilding was, however, undertaken by a mason, Farquhar Macrae who reconstructed the castle to a form that he "saw in a dream", albeit the architect involved in the project, George Mackie Watson, had worked with Sir Robert Rowand Anderson for 19 years.

This case raised significant criticism at the time and subsequently in terms of its authenticity (Anderson 2011, 293–6) and yet the castle in its modern form it is familiar to many as it is frequently used as an iconic image for Scotland as a tourist destination.

Issues Affecting Discussions of Restoration and Adaptive Reuse

As we have seen earlier, the complex history often exhibited by these sites—including their original nature and development and their subsequent adaptation, abandonment and/or reuse—undoubtedly adds to the challenges when seeking to arrive at appropriate decisions about their future. Some of the issues which become apparent when managing them are identified below and will be recognised by heritage managers dealing with such cases:

(i) *The use of the term "castle"*. As noted above, one issue for the restoration debate relates to the use of "castle" as a generic term. Discussions about castle restoration in Scotland—particularly those in the press and in political debates—tend to treat all sites as simple entities for which the issues around restoration are both straightforward and identical from site to site. However, the considerations relating to restoration are likely to vary depending on the nature, date, form, history and significance of a site.

(ii) *The intentions of scheduling*. The second issue relates to the nature of the ownership and statutory protection given to such sites in the past and the differing intentions of these. Returning to the 1912 Select Committee momentarily, one of the intentions of the proposed new legislation was to broaden the definition of ancient monument to allow medieval structural sites to fall within its scope (such sites had been excluded from the earlier legislation). Key to the legislation though was the idea that such sites could not form a permanent residence (other than as the home of a curator). Also the general assumption underlying this and subsequent ancient monument protection was that these sites would be protected and maintained "as they had come down to us" (see for example, Historic Scotland 2001).

(iii) *The intentions of listing*. However, as the twentieth century progressed there was recognition that some important structures were in permanent residential use and therefore protection through the ancient monuments legislation was not possible. This led to the introduction of a separate legislative scheme in the middle of the twentieth century for the protection of such buildings as listed buildings (see Mays 2009; Saint 1996; Walker 1994). The functioning of the listed building legislation tended to be more flexible in terms of what we would now call adaptive re-use, with change more likely to be allowed to take place in order to keep a building in beneficial use. This has caused issues in that in seemingly similar sites, in some cases the presumption appears to be towards "preservation as found" whereas with others there is a presumption that adaptive re-use would be acceptable in principle if historical merit was preserved.

(iv) *The problem of dual designations*. Given the above and the different dates of the implementation of the monuments and buildings legislation, the current situation is that some medieval structures might be scheduled as ancient monuments, other occupied or unoccupied buildings might be designated as listed buildings, and some sites might be both scheduled and listed (in which case the scheduling legislation takes precedence and certain part of the listed building legislation is dis-applied). This has led to some difficulties in understanding and transparency, particularly for the broader public, where structures which might appear similar in nature and significance had the potential to be treated very differently. Why was it, for example, that some sites gained permission for restoration and might also attract grant-aid for doing so, whereas others which might appear to the untrained eye to be very similar were seen as inappropriate for restoration and grant-aid was only offered for consolidation or not at all? This problem increases the vulnerability of heritage bodies to the accusation of treating applications differently on grounds other than heritage legislation, policy and best-practice. It also raises the spectre that if a heritage body, or its political masters, wish to change an approach to a designated site for non-heritage-related reasons, they can simply pursue a change to the site's designation to enable this.

(v) *State Owned Properties and Guardianship properties.*

(a) A further opportunity for confusion lies with the fact that a number of historic castle sites were either owned by the nation (often due to their role as seats of local administration which became courts or because they were sites with an ongoing military presence) or had been taken into guardianship by the State at some stage in their history. Two potential issues arise here. First, in days of pressure on public finances and the increasing demand on heritage bodies to achieve income from their properties in care, there is always the potential for arguments to be made that ownership should be surrendered to the private sector who might be able to both "reduce the burden of their running costs to the public purse" and also to achieve higher levels of income through more investment (which in some cases may mean redevelopment). This argument is commonly used by those supporting proposals for the restoration of scheduled and guardianship sites.

(b) The second issue is that, in the case of guardianship, the ownership of the site remains with the original owner but the State takes over the control and management of the site. The problem here is that while the site may have been voluntarily put in guardianship by an owner, it is possible that their descendants may wish to seek to reverse this decision and regain control of the site. Similarly, as the original owner or their descendants can sell the site to a third party, it may be that in these circumstances a new owner might wish to regain control of the site for their own purposes. Whilst the ancient monument legislation does contain provisions for the rescinding of guardianship, its intention had not perhaps been to allow new owners of a site to recover it for their own purposes, benefitting from the state investment which may amount in some cases to many hundreds of thousands of pounds. It does however open the way however for significant levels of political lobbying to this end.

Casework and Authorised Heritage Discourses

There have been a number of high-profile cases that have been discussed widely in Scotland over the past two decades. Of these two in particular have attracted considerable attention: the west coast site, Castle Tioram on the Moidart peninsula and Rowallan Castle in East Ayrshire (see Figs. 6.4 and 6.5 below). Both have been the subject of schemes for "restoration" and re-use and both have been the subject of public local inquiries.

Both sites are scheduled as ancient monuments under the provisions of the Ancient Monuments and Archaeological Areas Act 1979. The policy context within which these cases were considered was provided by the international charters and by Scottish Government policy. In 2001 Historic Scotland published *The Conservation of Architectural Ancient Monuments: Guidance on Principles* (Historic Scotland 2011) which gave guidance to potential applicants both on conservation approaches and on restoration. This set out the presumption that:

> In general, restoration rather than conservation would not be considered as acceptable for scheduled monuments that are regarded as the most outstanding examples of their kind or as being particularly representative of their type. There are many monuments that are so outstandingly important for the evidence they embody that nothing should be done which might compromise the integrity of that evidence.
>
> (Historic Scotland 2001, 51)

More recently, the policy framework has changed to the *Scottish Historic Environment Policy*. Here again we see a general conserve-as-found philosophy:

> Works on scheduled monuments should therefore **normally** be the minimum level of intervention that is consistent with conserving what is culturally significant in a monument.'
>
> (Historic Scotland 2011, 37, emphasis contained in original document)

Fig. 6.4 Castle Tioram, Moidart (copyright, Malcolm A. Cooper)

Fig. 6.5 Rowallan Castle, East Ayrshire (copyright, Malcolm A. Cooper)

This blanket provision is however tempered to some degree in the policy document:

> Extensive intervention will only be allowed where it is clearly necessary to secure the longer-term preservation of the monument, or where it will clearly generate public benefits of national importance which outweigh the impact on the national cultural significance of the monument. Such public benefits could come from, for example, interventions which make public access to scheduled monuments easier, or assist public understanding, or will produce economic benefits once the works are completed.
>
> (Historic Scotland 2011, 37)

Like Eilian Donan, Castle Tioram has been a ruined site since the early eighteenth century. Despite the outcome of the public inquiry and a later assessment of the site, the owner has continued to press his case to be allowed to restore the site and has gained very significant levels of support not only within Scotland but more widely from the global Scottish diaspora. The argument that the restoration will provide a renewed focus for the Clan Ranald McDonald has been well received by many and at times Historic Scotland has been labelled as "Hannoverian" in not supporting such proposals (seeking to tap into the strong feelings of national identity and feelings of oppression associated with the Jacobite claim to the throne and the associated historical events in Scotland before and after Culloden in 1716). As Mary Miers' charged narrative states:

> Stirring and impossibly romantic, the ruin of Tioram stands as a potent symbol of the power struggles and political differences that have fuelled emotions since the Middle Ages. Today it has become the cause celebre of a new brand of warfare—that waged between opposing factions of the conservation lobby. The debate centres around the owner Lex Brown's thwarted application to restore and reinhabit the castle; widely supported plans by A.R.P. Lorimer and Assocs were rejected in 2002, after a notorious public enquiry [sic]
>
> (Miers 2008, 112–13)

In the case of Rowallan Castle, a multi-period site, there is an additional complexity in that the site is not only a scheduled monument but is also one of the 345 historic properties in the guardianship of Historic Scotland (on behalf of Scottish Ministers). Unlike Tioram, Rowallan is a roofed structure but here again there has been a detailed case made for bringing the site back into residential use by the owner (who wants the Scottish Government to surrender guardianship under s.14 of the Ancient Monuments and Archaeological Areas Act 1979). The public local inquiry was of interest in that it was not only the first test of Scottish Ministers' policies set out in the *Scottish Historic Environment Policy* but it also explored whether, if Ministers' accepted the proposals for scheduled monument consent, they would therefore have to all intents and purposes have agreed to surrender the guardianship site under s.14 (3)(a) of the Act (that is, that "satisfactory arrangements have been made for ensuring its [the monuments] preservation after termination of the guardianship").

Despite the very clear decisions at public local inquiry, public and media pressure continues for "compromises" to be found and one might anticipate continuing pressure being placed on Historic Scotland to change its stance.

Regulation or Enabling

Historic Scotland examines some 3,000 consent cases every year involving historic environment assets. Almost without exception their work goes forward effectively and without controversy. However the two high-profile cases discussed above have nonetheless caused significant reputational damage for the agency despite its long track record of supporting and in some cases grant-aiding, restoration/re-use projects (for examples see Fawcett and Rutherford 2011 and Walker 2011).

The problem that a small number of politically-charged cases can cause for a regulatory body is not uncommon. The subject has formed a key part of the ongoing research programme undertaken by Malcolm Sparrow at Harvard University (1994, 2000, 2008). Sparrow has identified that successful regulatory bodies across the world have moved towards "problem-solving regulation" techniques where the agencies adopt a range of strategies including:

(i) Identifying key repeating problem areas in their overall workload and identifying new mechanisms for handling them as a group.
(ii) Seeking to "get upstream" of the problem. That is, to anticipate problems and resolve them before they occur rather than respond to them after they occur.
(iii) To work on a multi-agency basis to tackle key problem areas.
(iv) To seek to redefine their regulatory activities in a way that allows them to create a clear and understandable media and political positioning.

Historic Scotland's Inspectorate adopted this problem-solving approach in a number of key areas of its regulatory work including that of castle restoration/re-use (Cooper 2010, 2011). Rather than waiting for applications to arrive it set up the

Scottish Castles Initiative which allowed it to use it expertise to support and guide applicants to the acceptable sites for restoration and to adopt the right techniques and levels of expertise in bringing forward a project. The initiative included:

- The compilation of the Castles Conservation Register which identifies castle sites where restoration/reuse would be acceptable in principle
- The production of a good-practice guide for castle restoration including a range of case studies and contacts
- The production of a historic of castle restoration monograph with a focus on the role of the state in such projects
- The identification of an exemplary restoration/re-use project
- In selecting exemplar sites for the *Castles Conservation Register*, Historic Scotland identified a series of criteria it applied in determining which sites might be open to restoration/reuse in principle. The main consideration is the impact of any proposals on the cultural significance of the site and within this the considerations are:

  – Is the cultural significance of the castle/tower so important that anything beyond works to preserve it in its current condition should be regarded as unacceptable?
  – Can it be restored in a way that would preserve the important values of the castle/tower for future generations?
  – Can it be restored without detracting from what is important about the castle/tower?
  – If the changes could detract from the cultural significance of the castle or tower, would the public benefits of such changes be outweighed by increased access or understanding, or of wider economic benefits?
  – Is the castle/tower complete enough, or sufficiently well documented, for it to be restored without speculation about its original form?
  – Can the castle/tower be restored without major alterations or additions that would affect its character?
  – Is the castle/tower currently without a function such as a public amenity or a visitor attraction?
  – What are the current and foreseeable risks to the condition of castle/tower, and what is the possibility of alternative approaches—ones that would result in less change to the castle/tower—emerging within the foreseeable future?

Within this initiative such cases were coordinated across the area-based advice teams and a range of training ensured a consistent approach is adopted in all cases. The initiative was taken forward under the guidance of a reference group made up of castle-owners, architects and other stakeholders to ensure that the project is carefully targeted, helpful and understood more widely in Scotland.

There is no doubt that this project, and a number of other “upstream” projects, have improved the relationship between Historic Scotland and its key regulatory customers and stakeholders, despite the issues surrounding the two high profile cases referred to above.

Conclusions

What can we learn from these two cases and how are we best to understand why they have become such *cause-célèbres*? While I am certain that opinions will differ, there are a number of points that seem to me to be relevant:

(i) It seems a realistic and defensible position that not all structural monuments should be restored/re-used particularly where such proposals would significantly reduce its cultural significance.

(ii) However, there will be very real difficulties faced by regulatory bodies where international charters, and domestic legislation and policy clearly identify one desired outcome but public pressure is mobilised to seek a different outcome. However, this alone does not seem sufficient to explain the situation relating to castle restoration/re-use in Scotland.

(iii) There seems little doubt that an important factor for many in assessing the cultural significance of castle and tower houses in Scotland relates to the Scottish clans (Coventry 2008), to particular events in Scottish history, and in particular the very significant events surrounding the Jacobite risings, seeking to reclaim the Scottish throne. This factor leads to the likelihood of a far higher level of interest and passionate debate than is exhibited in England for example and this seems to have been exacerbated both by devolution and by the ongoing debate on full Scottish independence both of which have brought issues of national identity to the fore. Here we enter the broader philosophical debates relating to heritage, identity and nationalism which might be expected to become highly visible and more charged as issues of independence and national autonomy become increasingly high-profile in Scotland (Ashworth et al. 2007; McCrone 1998). The vote on full Scottish independence is due to take place in 1914 and it is perhaps no co-incidence that this year sees the 700th anniversary of Bannockburn.

(iv) The close identification of particular sites with particular families or clans leads to an increasingly strong desire for these families to determine their future. In this context though, the current legislative and policy frameworks are not well placed to respond to the desire for restoration/re-use where strongly differing views are held.

(v) The Scottish diaspora and the renewed interest in Scotland as a "homeland" has the potential to raise significantly the international interest in such cases and the symbolic cultural importance of individual sites with perceived historical family connections.

(vi) While it is clear that there are people both across Scotland and locally who may be uncomfortable with restoration/re-use of such sites, and would prefer to see them conserved as found, there is a tendency for these voices to be less evident in such a charged context.

(vii) We may also be seeing differences in philosophy between those cultural resource managers trained as historic building professionals and those trained as archaeologists—the latter being more likely to support preservation as found and the former seeing adaptive reuse as a more acceptable approach.

The case of castle restoration in Scotland also provides an interesting backcloth for the study of both the development of an AHD and the complex set of issues relating to its subsequent maintenance, modification and ultimately its replacement. These issues relate to how such discourses develop, how they come under pressure both from within and without the governmental organisations responsible for them, what mechanisms might be used to challenge, undermine and replace existing AHDs (Cooper 2008), and for what purposes and ends such processes might be used. At the time of writing, the authorised heritage discourse relating to the restoration/reuse of structural scheduled monuments in Scotland is under severe pressure.

Looking at this more broadly, we can see that the application of legislation and policy in cultural resource management exists and is operated in a highly dynamic context. Specific cases, broader political and social currents, and changes in philosophy within the profession itself mean that consistency of approach is hard to achieve at certain time and a migration of approach can be seen. This leads eventually to more substantive changes in the legislation and policy itself as it becomes increasingly out-of-step with society's broader wishes.

There is also a strong suggestion that we are seeing strong competition for supremacy between competing authorised heritage discourses within Historic Scotland, between Historic Scotland and other heritage bodies, and between Historic Scotland and wider Government. In the context of the political philosophy of localism currently being espoused by both the United Kingdom and Scottish governments, and the strong desire to reduce regulation and encourage economic growth we may well see significant changes in the regulatory framework (Cooper 2010). As we saw in the 1912 Select Committee discussions, a *cause célèbres* has often been a key factor in the strengthening of heritage legislation. It seems to me that the opposite may well also be true—that *cause célèbres* can also lead to changes which weaken the protective framework.

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Chapter 7
Confirming Relevance: How American and Canadian Archaeologists Are Training Youth and Adults in Archaeology, Heritage Studies, and Community Partnerships

Sherene Baugher

Introduction

Over the last 25 years there has been a growing momentum for incorporating community outreach into archaeology and heritage studies in Canada and the USA. Innovative programs brought archaeological research to the public through: tours of sites, museum exhibits, traveling exhibits, public lectures, newspaper, magazine articles, and even archaeology programs for television (Jameson 1997; Herscher and McManamon 2000). Initially, these programs were based on what the archaeologist wanted to present to the public not the topics of interest to the public or professionals in allied fields (Jameson and Baugher 2007a: 4). Fortunately, archaeologists are now partnering with nonarchaeologists in order to develop more meaningful public programming in heritage studies (for example, Derry and Malloy 2003; Merriman 2004; Jameson and Baugher 2007b). This interdisciplinary outreach enables archaeologists to work cooperatively with historic preservationists, museum curators, and educators. This cooperative work enhanced both the quality of the public programs and the underlining interdisciplinary research. Even the term "public archaeology," which used to be synonymous with Cultural Resource Management (CRM), now implies outreach work with and for the public.

To encourage public education, professional organizations such as the Canadian Archaeological Association, the Society for American Archaeology, and the Society for Historical Archaeology have public archaeology committees and have public archaeology columns in their professional newsletters and/or on their web sites. The Society for American Archaeology's *Ethics in American Archaeology*

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(Lynott and Wylie 2000) stresses the need for public education. The Society for Historical Archaeology produced a book, *Unlocking the Past* (De Cunzo and Jameson 2005), presenting an overview of North American archaeology for the public. There has also been a transformation in books on state and city archaeology, whereas in the past the books were highly technical, full of jargon, and written solely for archaeologists, a growing number of archaeologists are writing for the educated public as the target audience. Some examples are urban archaeology books on: New York City archaeology (Cantwell and Wall 2001); archaeology in Montreal (Desjardins and Duguay 1992); and urban archaeology in Philadelphia (Yamin 2008). Some archaeologists in both countries have gone a step farther and are involved in partnering with the public—working on interdisciplinary outreach programs with community members as partners in designing and implementing these heritage programs (Derry and Malloy 2003; Jameson and Baugher 2007b). Government agencies, such as national parks, are viewing community members as stakeholders in the preservation and public interpretation of heritage sites (Jameson 1999). These public education efforts are often undertaken by archaeologists in government agencies, museums, and cultural resource management firms.

One important area often overlooked in international discussions of community collaboration and public education is the role of the teaching in these interdisciplinary community partnerships. If we are to encourage the next generation of scholars in the value civic engagement and interdisciplinary partnerships in heritage preservation then we need to provide examples and opportunities for students. This chapter discusses three innovative teaching approaches to heritage studies (1) service learning classes for college-age students; (2) archaeological summer camps and school programs for high school, middle school, and elementary students; and (3) noncredit adult education programs in archaeological field and laboratory work. All of these programs are interdisciplinary and promote preservation ethics and heritage studies. All involve partnerships with professionals in other disciplines and they all promote community participation.

Service Learning for University Students

Service learning is a North American higher education reform movement that combines community service with academic courses. In service learning courses, students provide research, physical labor, educational and recreational leadership, and/or other activities that meet needs defined by the community in cooperation with a faculty member and the work is within the context of a course, not as an internship or an independent study course. “Students participate in organized service that meets community needs, and reflect on the service to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility” (Lounsbury and Routt 2000: 27). Students benefit from partnering with community members in research and practice because it provides new insights and perspectives to a project and the project becomes

interdisciplinary. In addition, working with community members, students may be exposed to people from different ethnic, cultural, religious, or socio-economic backgrounds.

Service learning has an educational pedagogy and had its roots in social activism in America in the 1960s. The Peace Corps and VISTA are community service programs that were inspired by President John F. Kennedy and supported by the federal government (Sigmon 1999: 252). American students were also motivated toward community action and civic engagement by the civil rights movement of the 1960s (Liu 1999: xii). In the 1970s, American colleges and universities provided opportunities for students to gain "real world" experiences through paid internship programs (Lounsbury and Routt 2000: 28). By the 1980s a shift had taken place when President Ronald Reagan cut federal funding for paid anti-poverty program internships; community service then moved to a model where the work was connected to academic courses (Lounsbury and Routt 2000: 28). In 1985, the presidents of Brown, Georgetown, and Stanford universities in an effort to institutionalize service learning on campuses, established the Campus Compact to support service learning (Stanton et al. 1999: 167). As a result, some college and university presidents provided financial support to cover the costs of transporting students from the campus to the community and/or for supplies and equipment (Crews 2002: 23–25). The *National Community Service Act of 1993*, signed by President William Jefferson Clinton, provided an additional impetuous for service learning.

Service learning courses are offered in diverse departments, such as sociology, government, planning, and landscape architecture. For many years service learning was not a part of archaeology courses but the last decade of the twentieth century and the first decade of the twenty-first century established a momentum for combining the two (Baugher 2007a; Nassaney 2004; Nassaney and Levine 2009). There has been a growing need in the profession for archaeologists to be trained in community service, public outreach, and ethics. With the passage of the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, archaeologists in the USA are required to address reburial and repatriation issues raised by federally recognized tribal governments (Mihesuah 2000). Native Americans were finally legally recognized as stakeholders in the protection and preservation of their sacred sites (Baugher 2005; Price 1991; Vecsey 1991). The highly publicized excavation of the African Burial Ground in New York City highlighted the involvement of the African American community in decisions regarding the preservation, protection, and public presentation of this heritage site (Harrington 1993; La Roche and Blakey 1997). In addition, throughout the world indigenous communities have been raising the question of "whose culture is it?" (Messenger 1989; Venables 1984). Most archaeologists now realize that "they are not the only stakeholders with an interest in the material remains of the past" (Nassaney 2009: 5). Because of the numerous changes in the way archaeology is conducted, the Society for American Archaeology in their book, *Teaching Archaeology in the Twenty-first Century* (Bender and Smith 2000) challenged archaeologists to rethink their approach to the teaching of archaeology and suggested the need to reform curriculum. Archaeologists have provided theoretical and pragmatic discussions on the

merits of interdisciplinary community-based outreach (Jameson 1997; Little 2002; Merriman 2004; Shackel and Chambers 2004). Some archaeologists have stressed the value in working with descendant communities, especially Native Americans (Swidler et al. 1997; Watkins 2000, 2003), while other archaeologists stressed the importance of ethical practices (Zimmerman et al. 2003). In addition, there are a growing number of case studies on the method, theory, and application of interdisciplinary community outreach heritage programs (Derry and Malloy 2003; Jameson and Baugher 2007b).

Community service learning courses in archaeology address ethics, heritage studies, outreach, and community partnerships. Michael Nassaney (2009: 29) notes that service learning courses in archaeology are "sensitive to the needs of the public and descendant communities, places students in real-world settings, charges them with making decisions under proper supervision, delivers practical results, teaches our students to be critical thinkers and show compassion for the human condition, while encouraging them to link theory with practice." Students in service learning courses still learn traditional archaeological methods and theories but they also learn something more because service learning provides an effective educational means to promote the values of pubic archaeology and civic engagement to the next generation.

Because of the involvement of numerous disciplines in the field of service learning there has evolved diverse pedagogies and theories, therefore archaeologists thus can choose from a wide range of approaches (Bringle et al. 1999; Stanton et al. 1999; Crews 2002; Jacoby et al. 2003; Macfarlane 2007). Fortunately, there is no one "right" methodology. In the USA, archaeologists have employed the diverse range of approaches to service learning courses. The following is a brief summary of some of the pedagogical, ideological, and pragmatic approaches to service learning.

Service learning can be the focus of an entire course or a component of a course (Crews 2002: 14–16). The advantage of a stand-alone course is that you will have students who are committed and excited about community outreach. But the downside is that service learning may become marginalized and the course enrollment may be limited to only the small group of students already committed to civic engagement. I have been involved in teaching archaeological service learning courses at Cornell University since 1992 and I created a model for integrating service learning as components to courses (Baugher 2007a). With different options of credited work all course work involves an equal investment of student time. By embedding service learning as an optional component of a course, all students can be exposed to the ideas that are generated; the community benefits from all the work, but all students do not have to be actively engaged in working directly with community members.

Incorporating service learning into a field school is one method used by archaeologists. Michael Nassaney (2009: 17) and his students at Western Michigan University hosted open house days at their excavation at Fort St. Joseph and "the students were really made aware of the importance of their work for the present when two thousands visitors stopped by for an open house." I have incorporated

Fig. 7.1 Archaeology student Brant Venables discusses his part of the excavation with visitors to the Enfield Falls site (photo: Sherene Baugher)

service learning as a component in my field schools (Baugher 2007a, b, 2009). In my 10-year project called Rediscovering Enfield Falls, my Cornell students and I have been excavating and analyzing a buried nineteenth century hamlet in Robert H. Treman State in Central New York State. We host two open house weekends every year and the students especially enjoy meeting members of the descendant community (Fig. 7.1). In 2007, Alice Baker, then 98 years old, spent time with the students discussing the artifacts from the 1880s that they had unearthed from the hotel run by her family. Meeting the descendants of the hamlet made the past suddenly come alive when the students realized that their work was more than academic research—it was part of a community's heritage.

Some large multi-year fieldwork-based community projects also have service learning components link to other classes. For example, in my museum class (Fig. 7.2), students worked with community members in the design of two permanent archaeology exhibits associated with our excavations of the hamlet of Enfield Falls (Baugher 2009: 50–51). In addition, my students and I created four traveling exhibit cases for programs in local schools and senior citizen centers. Michael Nassaney and his students produced two archaeology documentary videos for the public, and designed exhibits for local museums and libraries on their excavations at the Fort St. Joseph in Michigan (Nassaney 2009: 20).

Franklin and Marshall students enrolled in Mary Ann Levine's Introduction to Archaeology class can choose a service learning option (among other options) where the students work with public school teachers and students to bring urban archaeology programs into Lancaster, Pennsylvania schools (Levine and Delle 2009). The project is an outgrowth of the joint Franklin and Marshall and Kutztown State University excavations of the mid-nineteenth century houses of Thaddeus Stevens

Fig. 7.2 The exhibit case was designed by Cornell University students working in partnership with a community group, the Friends of Robert H. Treman State Park, including some descendants from the village described in the exhibit (photo: Sherene Baugher)

(Senator and an outspoken abolitionist) and Lydia Hamilton Smith (an African American landowner and landlord of multiple properties) in Lancaster (Levine et al. 2005).

Some faculty members choose to have service learning as a component of a course but as a required component for all students, not as an option. Scott McLaughlin (2009: 63) had his University of Vermont class work with staff from the Lake Champlain Maritime Museum and local teachers to produce ten-page first person historical narratives for fourth-grade students. The narrative used archaeological and historical data and oral histories. In another class, McLaughlin (2009: 63–64) and his students worked with the Jericho Center Cemetery Association to develop a walking tour brochure and create a database of the cemetery. These examples of mandated requirements are projects that benefit the community but do not have intensive one on one work with community members, as in optional service learning projects with students providing archaeology programs in public schools or conducting oral histories with community members. However, two community members took McLaughlin's course so students got to work with community members as fellow classmates.

Another debate is whether the service learning experience should be mandated for all majors or if it should be optional. Turning service learning into a mandated requirement could reduce student enthusiasm for community outreach and in fact, less than 10% of all American colleges mandate service learning as a requirement

for graduation (Crews 2002: 32). We should encourage students to value public outreach and civic engagement, but forcing students to work with the public when they do not want to could result in resentful students undermining a project, and community members angry and frustrated by student attitudes.

There is a danger in planning a service learning project that is simply one semester in duration and then have the archaeologist move on to another community and another site. Michael Nassaney (2004: 96) believes that limited community engagement can result in designing a project as a charitable service rather than as collaboration or faculty "merely using the community as a laboratory rather than working with the community on a mutually beneficial project." Even in a collaborative one semester project, the students, faculty member, and community members may realize at the end of the semester what they could and perhaps should have done but there is no time to implement change since the semester has ended (Baugher 2007a: 189). With a multi-year project there is time to develop a deeper understanding of the community and its history, time for the academic–community partnership to re-evaluate the original research questions, add new questions, revise the goals and the anticipated end products, and in the end accomplish a more detailed, mutually satisfying, community-based project.

With a close partnership both community members and the university teams can gain a greater understanding of each other. For example, for many decades there has been a tense relationship between Native Americans and archaeologists (Mihesuah 2000; Thomas 2000). Slowly there have been efforts to build bridges (Swidler et al. 1997; Watkins 2003). Community-based projects and service learning courses are one of the ways to create greater communication. For example, in my 4-year project in the Inlet Valley in Central New York State my students and I worked closely with Native Americans and urban planners to preserve and protect an eighteenth century Tutelo Indian village (Baugher and Frantz 1998). The Cornell students were aware that their archaeological work involved them in a major archaeological ethical debate—the debate over the preservation of Native American burial grounds. In addition to classroom lectures and reading assigned material on this subject, the students got to discuss these reburial and repatriation issues with Native Americans on the dig. "Because Native American students were working side by side with non-Native Americans, the protection and preservation of burial grounds became a very real issue, not an abstract scientific topic. Students who initially supported the scientific excavation of cemeteries came to support Native Americans right to protect their ancestors' remains" (Baugher 2007a: 196).

This joint endeavor continued beyond the field school phase of the project with the goal of bringing the story of the Tutelo Indians and the destruction of their village during the American Revolutionary War to light (Baugher 2007b). The goal of the Tutelo Indians was to have some type of commemorative site to remind people of their heritage and that the Tutelos still existed. Landscape architecture students become involved in the project to design a commemorative park. In the end archaeologists, landscape architects, planners, Tutelo and Cayuga Indians, land owners, and community members worked together to create Tutelo Park, which opened to the public in 2006 (Baugher 2007b).

Archaeologist Rick Knecht, who is the director of the Museum of the Aleutians, enlisted the aid of Bryn Mawr Professor Richard Davis and his students from Pennsylvania in a joint community outreach project on the island of Unalaska part of the Alaskan islands in the Bering Sea (Knecht 2003). Native Aleuts were actively involved in both the field and the lab working along with college students to survey, excavation, and protect pre-contact Aleut sites. Native Aleuts, students, and other community members also worked together on exhibits for the local museum. The joint endeavor was a win-win project for the community and the archaeologists.

Service learning projects have all resulted in tangible end products for local communities. However, in the early days of service learning, some faculty believed that research was not linked to teaching and community service (Bringle et al. 1999: 5). Because the academic rewards of tenure and promotion are based primarily on research and publications and not on innovative teaching and community-service some faculty were reluctant to become involved in service learning (Nyden 2003: 214; Zlotkowski 1999: 110–111). Brian Fagan (2000: 100) has noted, "archaeologists live within a hierarchical value system that considers research, excavation, new discoveries, and publication the pinnacle of achievement." However, studies indicate that research, teaching, and outreach can and should be integrated (Zlotkowski 1999: 109–111; Nyden 2003: 213–222; Baugher 2007a: 198–199). One of the ways to integrate research into service learning is to involve the community in the research project from the very beginning.

Participatory action research (PAR) is often viewed as being at the heart of service learning. Participatory action research is known by other names such as "action research" (Greenwood and Levin 2007) or in archaeology as "engaged archaeology," "community-based archaeology," or "value-committed archaeology" (Nassaney 2009: 5). Because the community is involved in a project, the cooperative effort breaks down the barriers between the subject population and the researchers (Nyden 2003: 215). In participatory action research (PAR), community members and academics bring ideas and perspectives to the table and the goals and focus of research are decided cooperatively (Whyte 1991).

Participatory action research and creating a research partnership with nonarchaeologists may in fact be the biggest barrier to archaeologists becoming involved in service learning. After all, the discipline of archaeology has evolved so that it is essentially a hierarchical system with the director of the project deciding the research agenda with the clear separation between archaeologists and the people they are studying (Baugher 2009: 41; Nassaney 2009: 21–22). However, archaeologists do not totally discard their own research questions when community members become involved in a project. When archaeologists become involved in a community dialogue, they find that community members may suggest research questions that were not the initial priority of the archaeologist but turn out to be important avenues of research. Community members can become involved in their own community history, assist in the research, and may come forward with information from family collections that provide unique additions to the research (Baugher 2000: 11). Service learning projects have generated research valued by the archaeologists and the community. Some service learning projects have generated senior theses and masters theses (Baugher 2007a: 198–199).

There are diverse ways to undertake service learning from a one-semester project with a simple community outreach component to a multi-year participatory action research partnership. Within service learning there are also numerous service learning pedagogies and theories that are acceptable. Therefore, archaeologists are able to select an appropriate approach for their site, their students, their community partners, and themselves (Baugher 2009: 54).

Archeological Summer Field Programs for School-Aged Children

Not all archaeological training programs are focused on college-aged students. Archaeologists in the USA and Canada have brought the concepts of preservation and archaeological heritage studies to younger students. By partnering with educators, archaeologists have created innovative programs for high school and elementary school-aged children. North American archaeologists have created training programs that educate and inspire youth, involve community partnerships, develop an appreciation for cultural diversity, and perhaps create the next generation of preservationists.

In the 1970s, Stuart Struever, then a professor at Northwestern University in Chicago, was an early pioneer in archaeological training for high school and middle school children. Struever's programs at Center for American Archeology in Kampsville, Illinois were connected to Northwestern University, which has a long tradition of encouraging students to learn outside the classroom and to become involved in community outreach work. Koster Site in southern Illinois was a large multi-component site with 13 horizons from 7500 B.C. to A.D. 1200 and served as both a research site and training ground for archaeology students from middle school to graduate students (Struever and Holton 1979: 207–221). Struever's highly structured summer programs provided student training in the various components of field and lab work. During their training students were able to experience the diverse components of laboratory work in ethnobotany, faunal analysis, palynology, lithics, and ceramics (Struever and Holton 1979: 81–136). Part of the success of the training was with an interdisciplinary team of professionals including educators who helped design programs that were age appropriate. This program was innovative for the 1970s because it not only brought the scientific rigor of what Louis Binford called the "new archaeology" to the Koster excavation, but Struever demonstrated that younger students could be trained in interdisciplinary, scientific archaeology. Even though Struever is retired his educational programs live on. The Center for American Archeology is an independent nonprofit educational and research institution, no longer affiliated with Northwestern University, and the center continues to offer innovative summer archaeological training programs for youth (http://www.caa-archeology.org).

With the success of the training programs at the Koster site, other archaeologists experimented with archaeological training for younger students. These early programs often focused on involving students in half-day or full-day programs. Some

offered 1-week summer field programs. Students participated in excavations, which could involve work on a mock dig, excavation through backfill, or excavation through the twentieth century levels of a site. By the twenty-first century, many of the 1-day youth training programs shifted emphasis away from fieldwork and now include laboratory and library work, experiential work such as flint knapping and making pottery, classroom lecture/discussions, and visiting sites. Fieldwork opportunities are often limited to highly supervised excavations, usually as 1-week summer programs. In all the successful programs archaeologists partnered with educators to insure that the program was age appropriate and that the archaeological material fit into the education curriculum.

While archaeology rarely appears in state or provincial educational requirements, archaeologist have partnered with educators to bring archaeology into the classroom. Scott McLaughlin (2009: 69) notes that archaeology "can be used as a tool to extend the primary and secondary grade school student's critical thinking power and knowledge about the past." Films such as, *The Turtle Stone: The Legacy of Abbott Farm* with an accompanying teacher's guide, present local heritage and archaeology to elementary school students (NJ Dept. of Transportation 1996). Short paperback books written specifically for high school students bring archaeological discoveries to a younger audience (Bartlett et al. 1986). *The Archaeology Educational Handbook: Sharing the Past with Kids* (Smardz and Smith 2000) provides diverse examples for teachers who want to integrate archaeology into their curriculum. In North American public schools the focus in science education is on inquiry-based instruction and archaeology lends itself to that type of inquiry format (Moe 2004: 177). But an equally important education connection is between archaeology and the social studies curriculum. Interdisciplinary partnerships, the link between archaeologists and educators, are the key to successful programs. The following discussion provides some examples of successful archaeology programs for young students and some weaknesses of terminated programs.

In 1983, archaeologist Gaynell Stone and the Suffolk County Archeological Association (SCAA) in Long Island, New York, established a program to introduce elementary school students to the rich archaeological heritage of New York (Stone 2007). The SCAA programs have been designed with a lot of input from local teachers and from an advisory board of public school principals and superintendents, and as a result the SCAA's programs fit into the criteria for New York State Curriculum for fourth-grade students and meet 90% of New York State's learning standards (Stone 2007: 285). Because the program meets all of these educational standards it has not suffered during economic recessions when school districts have had to decrease their school trips and the program continues to serve about 10,000 students per year (Stone, personal communication, 2009). Their fall programs on Native American life are run at Hoyt Farm Park with its "please touch" museum exhibits and the spring programs on Colonial Life programs are run at nearby Blydenburgh County Park with its historic structures including the Blydenburgh house (Stone 2007: 286–292). The SCAA program's success has been because of its interdisciplinary approach of combining history, archaeology, art, natural resources, and material culture into enjoyable diverse hands-on lessons during an all-day program.

Only 30 min of the day is devoted to actual fieldwork. Time is involved in training students in fieldwork with an opportunity to participate in an excavation and to carefully measure and record any artifacts that they find (Stone 2007: 285). Students and teachers are brought to the park by school buses. The SCAA also provides educational kits so that the teachers can introduce the students to the topics and do follow-up lessons after the site visit. In addition to the daylong programs, the SCAA also offers weeklong summer archaeological field programs involving field, laboratory, and library research (Stone 2007: 293). While only a few of these students will go on to careers in archaeology, the SCAA programs are creating an interest in history, archaeology, and community heritage.

From 1985 to 1994, the Archaeological Resource Center (A.R.C.) of Toronto, which was funded by the Toronto Board of Education, introduced 12,000 students a year to Canadian archaeology (Smardz 1997: 105–106). Every year the seven staff members ran a 6-month excavation of a site in Toronto with half day and day-long programs for elementary school children with two 6-week summer archaeological field schools for high school students (Smardz 1991: 140–141). Each year a different site was chosen in order to involve different Toronto communities in the excavation. The staff also provided classroom programs to promote an interest and pride in heritage among Toronto's large immigrant population (Smardz 1997: 109–111). It was an ambitious program. However, the excavations required additional staff time for excavation of sensitive areas of a site, curation of the artifacts, and writing of professional site reports (work that must be done by professional archaeologists) and it was time that took staff away from working with students (Doroszenko 2009, personal communication). The necessary time spent on professional reports could have been viewed by educational administrators as not connected with the teaching services they are funding. During economic downturns nonessential educational programs are cut from education budgets, such as art, music, and archaeology. In 1994, the Board of Education could no longer fund the program and the Archaeological Resource Center closed down (Doroszenko 2007: 266). Karolyn Smardz Frost, Director of the Toronto Program, later recognized that there is an economic danger in having an archaeological public education program solely dependent on education department funding (Smardz Frost 2004: 62).

Other innovative programs have survived by not being dependent on one source of funding, undertaking serious cost–benefit analyses, and deciding what type of meaningful programs they can afford to deliver. If they deliver expensive programs, then they find additional funding sources beyond just the registration fees for the courses. The Ontario Heritage Trust, a provincial agency, has taken a fiscally sound approach to providing archaeologically educational programs for youth. They provide programs for school children throughout Ontario but on a much smaller scale than Toronto's Archaeological Resource Center. Since 1990, archaeological excavations throughout the province (run by Ontario Heritage Trust) have been opened to school tours and starting in 2002 they have run a 2-week summer archaeological camp (Doroszenko 2007: 272–274). The excavations are all on Trust properties that contain historic houses (Fig. 7.3). The house museums are open to the public so it is easy to integrate lessons on historic preservation and heritage. The summer camp

Fig. 7.3 2005 Spadina Museum summer day camp in the field (photo credit: Ontario Heritage Trust)

program provides field and lab work combined with lessons on local history, architecture, and material culture (Doroszenko 2007: 274–276). The Trust programs for children have lessons that are age appropriate in terms of concepts, time appropriate in terms of the children's attention span. They try to "give the children an understanding of 'context' and how important that concept is to archaeology" (Doroszenko 2007: 277). But also the archaeologists remember that archaeology is enjoyable and that a program for children can be fun as well as educational. The Trust experimented with half-day and full-day school programs at archaeological sites, similar to the Toronto program, but found that while they reached a wide audience they were the most expensive programs to deliver (Doroszenko 2007: 274). In evaluating the success of the day programs versus the week-long summer camps, the Trust found that "the summer camp programs are more cost recoverable and provide children with exposure over a longer period of time to the philosophy of conservation and preservation that is inherent in our mandate as a heritage organization" (Doroszenko 2007: 274). The summer programs involve primarily seasonal staff archaeologists with one permanent Trust archaeologist supervising the programs

(Doroszenko 2009, personal communication). The Trust has tried to provide opportunities for poorer children to participate in the programs by finding grants or corporate sponsors to help fund some of the costs of running the summer camp (Doroszenko 2009, personal communication). The end result is a program that reaches students from diverse socio-economic backgrounds.

Perhaps the most publicized archaeological program for children is the Center for Archaeology in the Baltimore County Public Schools in Maryland. Baltimore has the 22nd largest public school system in the USA and it has been funding the Center for Archaeology since 1987 (Jeppson and Brauer 2007: 231–232). The program has received numerous grants and awards for its innovative work in connecting archaeology to the social studies curriculum including the Society for American Archaeology's award for Excellence in Public Education in 2001 (Jeppson and Brauer 2007: 233). Their program annually introduces 7,000 third-grade students to archaeology (Jeppson and Brauer 2003: 83). The Center provides learning aids for the classroom teachers, classroom activities, and opportunities to visit a real archaeological site owned by Baltimore County Parks Department. From 1985 to 1995, the Center ran an archaeological, preservation, and museum-focused program for high school and middle school students. The students under careful supervision excavated a nineteenth century tenant house, cleaned and catalogued the artifacts, undertook library research on the site, designed museum exhibits on the site, and also photographed and videotaped their work (Jeppson and Brauer 2003: 88). Using all the information gathered from the archaeology program, students in industrial arts courses re-pointed the foundation stones and reconstructed the building, which serves as the Peter Goff Tenant House Museum for the Center (Jeppson and Brauer 2003: 88–89). This program integrated teachers from art, communication, industrial arts, and social studies and exposed students from a variety of programs to archaeology, preservation, and local history. The program taught concepts of stewardship and demonstrated the roles the students could play in protecting and interpreting community history.

There are many other excellent archaeological training programs for children in both Canada and the USA, such as the Cataraqui Archaeological Research Foundation in Kingston, Ontario (Bazely 2009); Lost Towns Project in Anne Arundel County, Maryland (Noel Hume 2005); and the Community Archaeology Program for Kids run by the Public Archaeology Facility at Binghamton University in Binghamton, New York (Versaggi 2007). These experiential archaeology programs nurture an interest in archaeology and community history in both students and teachers. In both Parks Canada and the National Park Service in the USA archaeologists have partnered with teachers to introduce elementary school students to archaeology and heritage studies (Jameson 2004, 2007; Hansen and Fowler 2007). Karolyn Smardz Frost (2004) undertook a survey of North American public archaeology programs with archaeological training for children and found that these programs occur in both public and private agencies, in both nonprofit and for-profit organizations, and in diverse institutions from museums to cultural resource management firms.

Adult Education

Finally, teaching is not just oriented to youth or university students. Innovative educational (noncourse credit) programs for adults involve adults in field and lab work and promote preservation and heritage studies. However, some archaeologists still seem to have a residual fear that adults armed with a better understanding of archaeology will become looters. However, none of the programs providing adult training in archaeology have found that their former students have turned into pothunters. On the contrary, they have found the opposite to be true—former students become grass roots preservationists (Cressey et al. 2003; Versaggi 2007). Stuart Struever in addition to his programs for youth also had archaeology summer programs for adults in both field and laboratory work. The Center for American Archaeology still offers noncredit adult archaeology programs (http://www.caa-archeology.org). In 1983, Struever also helped establish a similar program in the American Southwest called Crow Canyon Archaeological Center in Southern Colorado, near Mesa Verde National Park (Heath 1997: 67). The adults are trained in both field and lab work and the attraction of the program is that the adults can become meaningfully involved in research. Even though the Center is located in a rural area four miles from the small town of Cortez, Colorado, the Center has had no problem in attracting students and there is a 40% return rate (Heath 1997: 67). Just as the Koster site was a multi-year and interdisciplinary research project, Crow Canyon also undertakes long-term research projects on ancestral Pueblo sites. The adults get to work alongside professional archaeologists on sites that have generated doctoral dissertations and master's theses and the adults involved in continuing education want to contribute to this research (Heath 1997: 70).

The City Archaeology Program in Alexandria, Virginia also trains adults and encourages them to become part of a long-term urban archaeology project. Alexandria was one of the first cities in the USA to establish a city archaeology program and in 1977 Pamela Cressey was hired as its first city archaeologist (Cressey and Anderson 2006: 17, 19). Cressey established a program to train adults in field and lab methods and incorporated the trained public in her urban excavations. "Four City archaeologists and one educator work with 100–200 volunteers each year to conduct research, plan, and preserve resources, operate a museum, provide educational programs, curate the collections, and promote the historic character of the city" (Cressey and Vinton 2007: 395). The volunteers at Alexandria are local residents who are concerned about preserving and protecting their heritage. The Alexandria Archaeology Program not only trains adults in archaeology but also learns from these community members. The community members are from many different professional, economic, and ethnic backgrounds and this interdisciplinary community team work in partnership with the archaeologists on excavations, exhibits, and the preservation of Alexandria's heritage (Cressey et al. 2003).

In 1996, the Public Archaeology Facility (PAF), a research center at Binghamton University (State University of New York) established the Community Archaeology Program (CAP) as a "partnership with the public in the research, interpretation, and

preservation of the cultural heritage in our local communities" (Versaggi 2007: 203–204). The program started out as a CAP program for kids with summer programs similar to the 1-week archaeological summer camps discussed in the previous section. The program expanded to include a CAP for adults. The 4-day CAP training program for adults is connected to the university field school and the participants included local teachers as well as interested community members. The program "provides a way for constituents to become stakeholders, and for stakeholders to experience the hands-on process of archaeology in their communities" (Versaggi 2007: 211). Some of the graduates of the CAP program return to volunteer on other PAF projects. The archaeologists have found that some CAP participants have become active preservationists who have lobbied to protect and preserve local sites (Versaggi 2007: 212). The CAP program is creating new "stewards of the past." The interaction of archaeologists and the public in the CAP program "creates an informed public, and transforms general constituents into stakeholders armed with information that allows them to evaluate what is significant to them and their communities" (Versaggi 2007: 213).

The premier eighteenth century restored community in Canada is the Fortress of Louisbourg on Cape Breton Island in Nova Scotia. In the 1960s and 1970s, Parks Canada undertook a massive restoration project employing numerous archaeologists, historians, architects, and designers in the restoration (Fry 2004). By the 1990s, archaeological outreach to the public was primarily in the form of exhibits but when a CRM-like excavation was in progress interpretative panels were placed on the barriers separating the public from the on-going excavations (Fry 2007). In the twenty-first century, the archaeological work at Louisbourg has shifted to more active partnering with the public. Every summer Parks Canada runs weeklong field programs for adults (Fortress of Louisbourg 2009). The experiential program combines training in field methods with sessions in material culture and history. The interdisciplinary approach provides the adults with a greater understanding of both archaeology and life in the French colonies in the eighteenth century.

More archaeological adult education training programs appear each year as archaeologists realize that an informed public will be the best partners for the preservation of heritage sites. Some state and provincial archaeological societies are engaging and training avocational archaeologists to work in partnership with professional archaeologists in both excavation projects and preservation efforts. Some nonprofit private organizations in both Canada and the USA provide field and lab training for adults and some of the adults end up providing much need volunteer labor on community excavations. Some examples of these collaborative projects are: the Jamestown Rediscovery Project in Virginia (APVA 1997; Kelso 2006); the Kingston Archaeology Program run by the Cataraqui Archaeological Research Foundation in Kingston, Ontario (Basely 2009) and programs run by the nonprofit organization Artefactuel in Quebec City, Quebec (Gaudreau et al. 2009). In the adult training programs, archaeologists have found that by involving community members in their own heritage that you help create grass roots preservationists.

Conclusions

For many decades archaeology was an inward looking profession, that is, archaeologists presented their work to their colleagues in conference papers and publications. Archaeological sites were closed to the public. But a dramatic shift has taken place in North American archaeology with some archaeologists engaged in community outreach programs. The goal of this chapter has been to discuss the diverse ways North American archaeologists have been providing archaeological training to a broad audience from children to senior citizens. The directors of the North American projects have been busy experimenting with teaching innovations over the years. This chapter has highlighted just a fraction of the innovative programs. Karolyn Smardz Frost (2004: 59) notes her informal Internet request for information on public education programs resulted in 122 e-mails describing North American programs that provide archaeological education to children and/or adults. Many more programs probably exist but are known only on locally.

Archaeologists involved in these programs realize that community members are stakeholders in protecting the past. Education is an effective way to reach these current and future stakeholders, even if some of them are only 9 years old. Working with children enables archaeologists to bring the excitement of discovery, the love of history, and the pride in heritage to a broad audience. While only a very small percent of the children will choose archaeology as a career path, many may grow up with an interest in archaeology, history, historical museums, and restoration centers. The adults involved in the experiential education also enjoy the joys of discovery whether in the field or the lab and some of the adult students become active in preserving their own community's cultural resources. Service learning trains students in method and theory but also promotes the values of pubic archaeology, civic engagement, and ethics. Service learning also challenges academic archaeologists to move beyond a hierarchical and elitist model of research to one incorporating interdisciplinary research and community-based research.

These diverse educational programs demonstrate what can be accomplished when archaeologists are willing think outside the box and experiment with new approaches to archaeological education. The archaeologists involved in these programs have been willing to learn from community members and their colleagues in other fields, such as, history, education, and museum studies. All of these innovative programs provide excellent examples of what we are capable of accomplishing.

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Chapter 8
Over Qualified and Under Skilled? Training and Professional Development in the UK

Kate Geary

This chapter is based on a presentation given originally at the World Archaeological Congress in Dublin in 2008. It has been updated to reflect developments since then although, sadly, many of the issues raised regarding how the archaeological profession in the UK trains and develops its practitioners remain to be resolved.

Archaeology in the UK is largely a graduate profession. Ninety-one percent of archaeologists have an undergraduate degree or higher. In 2008, it was estimated that around 8,000–9,000 students were applying to study archaeology in one form or another and around half that number were studying for a Masters degree. The total number of archaeologists working in the UK at that time was just under 7,000 (Aitchison and Edwards 2008). Since then, we have seen a decline in the numbers of students applying to study archaeology and are expecting that to be exacerbated by the significant increase in the cost of academic study as the cap on tuition fees charged by UK universities is lifted. We have also seen the market for archaeological services decline over the last 3 years as a result of the recession and collapse of the UK housing market and this is expected to continue as public sector cuts across the UK impact on national and local government archaeology services (Aitchison 2008–2010).

The issue which prompted the chapter back in 2008 was the concern raised by archaeological employers that they were finding it difficult to recruit skilled practitioners and that the majority of archaeology graduates lacked the skills needed to work in archaeology, particularly in a commercial environment. Whether or not universities should be teaching vocational skills at undergraduate level is a moot point but limited opportunities for practical work within most undergraduate programmes and for learning within a commercial environment have been cited by students as well as employers as key issues. Additionally, the fierce competition for

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archaeological jobs has led those keen to pursue a career in archaeology to gain ever higher levels of academic qualification without any real consideration of whether further study will provide them with the *skills* they need to be employable within the profession.

It is, of course, completely unrealistic to expect higher education institutions to produce "oven ready" graduate archaeologists complete with all the skills they need to embark on a professional career. This is not what higher education is for, and alongside the lack of vocational content in academic programmes, we have to consider the failure of the industry, particularly within parts of the commercial sector, to develop its own structures to provide the training and development opportunities necessary to maintain the skilled body of practitioners on which it relies.

The Institute for Archaeologists (IfA) is the professional body for archaeologists in the UK. The IfA's remit includes setting, promoting and monitoring high standards of professional practice and recognises that high standards cannot be achieved without appropriate training and professional development. The IfA's role, therefore, is to identify skills gaps and training needs and to develop exemplar projects to address them, promoting good practice and developing the tools the sector needs to improve training provision. Through its individual and organisational membership schemes, it can also require adherence to training requirements and good practice.

In recent years, the IfA has worked on a number of initiatives to promote high standards through vocational training. In 2002/3, we worked with the then Cultural Heritage National Training Organisation (CHNTO, now superseded by Creative and Cultural Skills) to develop National Occupational Standards (NOS) for Archaeological Practice and, based on the NOS, National Vocational Qualifications (NVQs) at levels three and four. Since then, with funding from the Heritage Lottery Fund and English Heritage, we have developed a programme of funded workplace learning placements aimed mainly at early career professional archaeologists and designed to provide a range of specialist and generalist skills. We have also introduced a compulsory Continuous Professional Development scheme for our members to ensure that skills are maintained beyond initial qualification.

The NVQ in Archaeological Practice was introduced in response to employer demand for a more vocationally relevant qualification. Unlike academic qualifications, the NVQ is designed to accredit vocational competence and is assessed in the workplace. It is aimed at archaeologists with or without academic qualifications who wish to accredit the skills learnt "on-the-job" and is offered at Level 3 (career entry) and Level 4 (mid career). Despite initial resistance ("why would you want an NVQ when you have degree?"), it has grown in popularity since its launch in 2007 and there are now over 60 candidates registered for the award. Many of these have been drawn from IfA's funded workplace learning placements and there is still a considerable amount of work to be done to persuade employers to invest in the NVQ, despite the original demand.

The IfA's Workplace Learning Programme has consisted of two strands of funded workplace learning placements, both closely aligned. An initial 4-year grant from the Heritage Lottery Fund, subsequently extended to 6 years, has

enabled 52 placements to be provided to date, linked to NOS and the NVQ. Funding from English Heritage has enabled a further 33 placements to be offered, largely hosted by English Heritage specialist teams. In addition to the high quality training opportunities offered to a total (so far) of 85 early career professional archaeologists, the schemes have enabled us to develop a model and a set of tools for structured workplace learning which we can provide to employers, along with support in their use, when our funding comes to an end in 2012.

One of the key aspects of the Workplace Learning Programme is its focus on the trainees' own assessment and review of their skills needs, through a structured learning agreement. Once they have completed their placements, they are encouraged to maintain this process through the IfA's CPD scheme, which requires IfA members to plan and review their own professional development and to undertake a minimum of 50 h CPD activity over a rolling 2-year period.

When this chapter was originally written in 2008, the commercial archaeology sector in the UK was at the height of a boom, competent practitioners were in demand and employers were struggling to recruit the skills they needed. The mechanisms by which early career archaeologists acquired those skills were much debated. In 2011, archaeological skills and competence are still hot topics but the current emphasis is on how to retain them in a sector under threat from government cutbacks and a volatile commercial market. As the profession comes under increasing pressure, the need to develop partnerships between industry, academia and the professional bodies in order to ensure that we can retain a skills base on which to build in the future, is more urgent than ever.

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Part II
Archaeology and Development: The Economic Forces and Consequences of Compliance-Driven Archaeology

Chapter 9
Resource Transformation: The History and Status of the Cultural Resource Management Industry in the United States

Michael R. Polk

Introduction

The current state of archaeology in the United States of America (USA), particularly its commercial side, known as "cultural resource management" (CRM), is quite apart from similar kinds of enterprises in other parts of the world today. Much of this has had to do with the fact that archaeology itself developed differently here than it did in Europe, Australia, New Zealand, Japan, or even Canada. It also has to do with the nature of the political and regulatory system within the USA. Even the term "cultural resources management" is singularly different than those used for similar endeavors elsewhere where "public archaeology," "commercial archaeology," or "heritage management" is more appropriate. This is part accident and part intention, based on the fact that CRM represents a broad range of studies done under this umbrella. It includes archaeology but also encompasses the professions of history, architectural history, ethnographic studies and, even urban planning. More recently, cultural landscape studies have come to the fore. While not a separate discipline, it represents an important offshoot of study not widely discussed in the past.

Cultural resources is a broad enough profession that a singular definition is difficult to make. Nevertheless, the following passage, found in the Cultural Resource Management page of About.com (Hirst 2012), including an excerpt by Tom King, one of CRM's pioneer practitioners and a most thoughtful sage on the subject, is a good approximation:

> Cultural Resource Management is, essentially, a process by which the protection and management of the multitudinous but scarce elements of cultural heritage are given some consideration in a modern world with an expanding population and changing needs. Often equated with archaeology, CRM in fact should and does include a range of types of properties: "cultural landscapes, archaeological sites, historical records, social institutions,

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> expressive cultures, old buildings, religious beliefs and practices, industrial heritage, folklife, artifacts, [and] spiritual places".
>
> (King 2002: 1)

While a discussion of CRM could be quite verbose, in practical terms, archaeological studies have been and continue to be the dominant force in the field. I will be restricting the majority of my discussion in this chapter to this part of CRM, though it will be impossible to entirely separate it from other parts of the field, as will become clear as we move through the discussion. Not unlike the differences between European academic archaeology and American academic archaeology, CRM attempts to be more encompassing of all social and cultural institutions and practices in its approach. In part, this stems from the unique influence brought to this country by Franz Boas. After extensive fieldwork and holding positions in a number of natural history institutions within the USA, Boas began a teaching career at Columbia University in 1896. In the early 1900s he established the first Department of Anthropology in the USA (http://www.columbia.edu/cu/anthropology/about/main/one/boas.html). In Europe, archaeology is a separate discipline from social anthropology and from linguistics. Boas and his students, such as Alfred Kroeber, Robert Lowe, and Margaret Mead, believed that anthropology should be more holistic in its approach, to include the study of all aspects of the human. As such, over time most academic programs teaching archaeology in the USA were created as part of anthropology departments (and continue to be), under the understanding that archaeology is a sub-discipline of anthropology, cultural anthropology, physical or biological anthropology, and linguistics. While this model has, in recent decades, begun to change somewhat, most people within the CRM field were trained in this way. Certainly, the creators of the regulatory environment within which CRM operates were all steeped in this model. It was only natural, that the field of CRM would be designed to be broader in its nature, as well.

This chapter is to capture the essence of what archaeological business is in the USA. This brief synopsis will come from the perspective of the contracting community as opposed to academia or government archaeologists. The difference between us will be that this perspective will focus upon the business of archaeology and how the regulatory environment affects it and how the practitioners interface with both government and academic spheres of archaeological practice. It will also discuss, in brief, the history of how we got to this point in time through a time line.

The "industry" as it is more often called these days, has matured enough over its 30–40-year existence, that there is potential to understand it in a more holistic sense than was possible even 10 years ago. With that in mind, let's move on.

The Roots of the Cultural Resources Management Industry

A wide variety of seemingly unrelated events and projects helped spur the development of American archaeology during the 1800s, which led to increasing public awareness and support for government protection and interpretation of the resources

in the 1900s. Many pieces of legislation and research efforts contributed to this, but I will focus on those that have had the most effect upon the eventual rise of private sector archaeological efforts in the country.

Developments in the Nineteenth Century

Some early scientific archaeology began in the southeastern US with Mississippian sites, but the most intensive efforts were focused upon the American Southwest, in the states of New Mexico, Arizona, and Colorado. Part of the interest in this area derives from the work and publically disseminated information of John Wesley Powell, the first director of the US Geological Survey and, beginning in 1879, the first director of the Bureau of American Ethnology (BAE), a part of the Smithsonian Institution. Powell's early exploration of the Southwest encouraged him to focus the energy of this Bureau in the Southwest. Through its publications and practitioners, it publicized the spectacular ruins of the area and the diversity of peoples living there. The BAE's efforts were soon joined by those of various academic institutions and museums. These included the Hemenway Southwestern Archaeological Expedition (privately funded from Boston), Yale University, the Peabody Museum at Harvard University, and the New York Natural History Museum. Over time, other schools and museums participated, including many regional institutions such as the universities of Arizona and New Mexico, the School of American Research, Amerind Foundation, Museum of Northern Arizona, and many others.

Early Twentieth Century

The kind of intensity of research and diversity of institutions involved in this relatively small area of the nation helped publicize the archaeology of the region and reinforced increasingly good field methods and standards. It also contributed to public and governmental pressure to preserve these archaeological sites. In 1906, the Antiquities Act was passed by Congress, being the first legislation to protect archaeological resources on Federal lands. Though this law was difficult to enforce and needed many years to begin to make a dent in the intense looting of sites in the country, its passage prompted other efforts at such preservation, including the creation of the National Park Service in 1916 to oversee the increasing number of national parks and monuments.

In the 1930s, the Tennessee Valley Authority (TVA) was established to develop power sources in the Tennessee Valley of the southeastern part of the USA. The work carried out in behalf of this effort, included extensive archaeological investigations. The 1940s saw construction of many reservoirs in the western USA. This led to the creation of the River Basin Survey (RBS), which included survey and excavation of archaeological sites in more than half of the western states.

The Reservoir Salvage Act of 1961 helped spur additional investigations of new reservoirs and related projects, not previously undertaken. These were primarily done by academic institutions under the guidance and, often, funding of the National Park Service. In 1964, the National Landmarks Act was passed by Congress, designating more important locations in the USA and, in some cases, fostering government-funded projects.

Beginnings of the Private Sector in Archaeology

It was during the 1960s that the first glimmers of private sector archaeology appeared in the USA. Perhaps the first large-scale private sector cultural resources project undertaken was a survey of Amchitka Island in the Aleutians in the early 1960s. This was undertaken by Roger Desautels prior to the detonation of a nuclear bomb in 1965. Desautels later started a company named Archaeological Research, Inc. in Costa Mesa, California (Phillips 2003: 4).

About the same time, Roberta Greenwood, of Pacific Palisades, California, began a private sector business in the field under a contract with the California Division of Beaches and Parks. She had been doing similar work before that time, but "…not with all-paid crews or with formal public contracts" (2003: 4). Dr. Greenwood continues her work in the field today.

These initial beginnings of CRM in America were not supportable on a large scale at this time. There was no comprehensive legislation to promote such a market. There were other small starts in other parts of the country, but this seems to be the earliest known initiation of private sector archaeology work in the USA.

The Foundation of Cultural Resource Management

The year 1966 was a watershed year for historic preservation as well as archaeology in America. During this turbulent time of social unrest in the USA, urban renewal projects in major cities had been ongoing for more than a decade. This was a process where many older portions of economically depressed cities were demolished to make way for parks, office buildings, and other public and private spaces. After passage of the Federal Highway Aid Act in 1956 (The Economist 2006), there was a major effort begun to link major cities within the USA together by a new network of highways, known as the Interstate Highway System. An unfortunate byproduct of this effort was to destroy older neighborhoods of many cities and bisect portions of them.

The increasing destruction of urban infrastructure, including large portions of some of the most historic cities in the country such as Boston, Massachusetts and Baltimore, Maryland, outraged many members of public organizations devoted to preserving the historic heritage of this country. Through the pressure brought to

bear by the National Trust for Historic Preservation, the public and other organizations, Congress was persuaded to pass a law in 1966 to begin to actively protect and preserve many historic buildings and districts. As part of that legislation, archaeological resources were protected as well. This legislation was passed during the Johnson Administration, when Democrats held both houses of Congress as well as the presidency. This law, the National Historic Preservation Act (NHPA), stipulated in brief, that any agency or private developer proposing to undertake a project that was (1) funded by a government agency, (2) licensed by a government agency, or (3) was to take place on federally owned land, was required to take into account its potential effects upon historic resources. The infancy of the CRM business as it exists today began with the passage of this act. It initiated the creation of the National Register of Historic Places (NRHP), which became the litmus test for determining significance of archaeological, ethnographic, and historical resources. And, while this act was federal in intent and purpose, it served as a model for the writing and passage of many subsequent state laws and regulations concerning the protection and investigation of archaeological resources throughout the USA.

In 1969, the National Environmental Policy Act (NEPA) was passed by Congress, a law which complements the NHPA in the natural resources fields. This law changed the landscape of development, making all federally related undertakings take into account their effects upon both the natural and cultural environments. Today, projects often take both NEPA and NHPA (among other federal laws and regulations in the natural and cultural areas) into consideration in tandem.

If anything was responsible for the rise of the private sector business of archaeology in the USA, it was these two laws. To this day, these laws and the regulations that they have spawned through the years, serve as the foundation and justification of the tasks carried out as part of the cultural resources profession. During those turbulent years in this country, Congress saw a need for protection of the resources that were neglected, deteriorating, and disappearing at an alarming rate.

The 1970s: Historic Preservation Strengthens

The 1970s was a growth time for the natural environmental protection proscribed by NEPA; archaeological and historical projects lagged behind as government agencies struggled to develop regulations to implement the passage of the NHPA. During this time, another momentous regulation was passed by the signing of Executive Order 11593 by President Richard Nixon. In one order, this 1973 EO mandated the inventory of archaeological resources on all Federal lands in the USA within 10 years. While not particularly practical because of the enormity of Federal lands in the country, this order began implementation of large-scale inventories and recording of archaeological and historical sites in the states.

This decade was also a period of time when the National Park Service took charge of many projects in behalf of other agencies that did not have the staff nor

expertise to implement or oversee archaeological and historical work on their lands. Also, many land management agencies and those agencies whose projects affected private and government lands began to hire archaeologists as staff. This included the National Park Service, National Forest Service, Bureau of Land Management, Department of Transportation, Army Corps of Engineers, Bureau of Reclamation, General Services Administration, and a handful of other smaller agencies whose projects did not, generally, have the large scope that the ones mentioned above did. Interestingly, the military lagged behind during this time, being some of the last of the federal land holding agencies to begin to follow their obligations to identify and protect cultural resources.

Other laws critical to protection of archaeological resources were also passed during this decade including the Archeological and Historic Preservation Act, passed in 1974, which gave oversight and coordination of pubic archaeology to the Secretary of the Interior and authorized agencies to fund archaeological surveys, excavations, and associated investigations. In 1979, the Archaeological Resources Protection Act (ARPA) was passed, which reiterated the validity of the Antiquities Act of 1906 and identified improvements in enforcement of archaeological resource protection.

During the 1970s, some states began to implement environmental regulations, in some cases mimicking NEPA and other regulatory developments done by the federal government. New York and California, in particular, passed important environmental laws that included historical and archaeological resources as part of its regulatory scope.

In private sector development, this is the decade when more widespread growth of CRM companies occurred. The rapid growth of environmental impact studies resulted in the emergence of companies devoted to this field. It also encouraged engineering firms to create environmental sections within their own companies. Many agencies requested baseline studies, which was an enormous boon to biologists and other natural environmental specialists. Interestingly, archaeological studies lagged in this regard, but some companies hired archaeologists and there was the emergence of new stand-alone archaeology companies in many parts of the USA to take advantage of the limited demand for such services. Phillips' article on the origins of the CRM industry identifies many start dates in the USA. Following is his list of the earliest known start dates for the first private sector companies to operate within a selection of states (Phillips 2003: 5): Alaska ca. 1973–1974; Arizona 1974; California 1962; Delaware 1977; Georgia 1970; Hawaii 1971; Idaho 1977; Iowa ca. 1971; Kentucky 1974; Louisiana late 1970s; Maryland ca. 1967; Michigan ca. 1973; New Jersey 1960s; North Carolina 1971; Oklahoma 1973; Pennsylvania 1972; South Carolina ca. 1974–1976; Utah 1976.

While this list is anecdotal, it still represents almost 40% of the US states. There is, undoubtedly, similar information available for the remainder of the states, but this list provides a sense of the timing and geographic emergence of the private sector in CRM across the country following the passage of the NHPA and NEPA legislation. The growth at this time was slow, uneven, and rather insignificant, but present. It is in the next decade that the industry arises and makes itself known to the wider

preservation community. It also begins to be recognized by its potential clients, the businesses in energy, minerals, development, communication, and manufacturing, as well as the federal and state governments.

The 1980s, CRM Emerges Nationwide

By the early 1980s, most federal agencies and many states had hired staff to both undertake surveys, excavations, and other investigations and oversee the work of contractors hired by agencies and private companies to undertake investigations under their jurisdiction. At the end of this decade, the Native American Graves and Repatriation Act (NAGPRA) was passed (1990), a law which significantly affected how archaeologists operate, particularly those in the private sector. It provides procedures which are required for disposition or repatriation of Native American, Native Hawaiian, and Native Alaskan human remains and associated objects.

While not regulatory, perhaps the most significant change in the field occurred during this time when the computer began to make its way into the field, ushering in sweeping changes in how data was processed and presented.

This decade also saw the emergence and rapid growth of cultural resources companies across the USA. In line with regulations developed for the NHPA and related laws, these companies undertook an increasing volume of development work in the oil and gas industry, in mining, in transportation, federal construction, federal building construction, gas pipelines, timber sales, urban renewal projects, and general private construction. While federal agency archaeologists, even when hiring directly within the federal government, carried out some archaeological and historical investigations, with few exceptions, project loads became too onerous for in-house execution. It was at this time that agencies expanded their use of educational institutions to fulfill these tasks, as they had begun to do in the 1970s. Over time, however, this linkage began to break down as universities found such work not cost effective nor in line with their educational and research mandates. There remain places within the country where this model continues, but by the 1990s, most CRM work carried out in the USA had moved to the private sector. Thus began the age of private cultural resources management. This growth has not abated, but grown to the point that most archaeological, architectural history, and much other historic preservation work carried out in this country is done by the private sector. There are literally thousands of archaeologists working across the country in a variety of private sector settings. Hundreds of environmental and engineering companies support cultural resource divisions that employ many of these professionals. Even more are employed by privately owned companies that specialize in archaeology, cultural anthropology, architectural history, geomorphology, and many other related fields (Polk 2002: 23).

The latter part of the 1980s saw economic downturns in the country which adversely affected cultural resources business and acted to weed out weaker companies. It was also a time of the emergence of larger, stand-alone cultural resources companies. The 1990s saw the increasing strength of larger companies but also the

continued growth of the industry with smaller companies. One particularly important event that occurred during this decade was the creation of the American Cultural Resources Association (ACRA). ACRA was a natural development in the industry's growth that brought together most of the large, and many of the smaller, companies in the country to form a trade association. The most important issues arising during this time included Congress' assault on the existence of the President's Advisory Council on Historic Preservation (ACHP) and historic preservation, in general. The ACHP, a quite small agency, was formed as part of the passing of the NHPA in 1966, as an integral part of the regulatory process of permitting Federal jurisdictional projects. It was formed to develop the regulations, interact with agencies and state historic preservation offices (SHPOs) (each state was granted such an office under NHPA), as well as to educate federal agencies of their obligations under the law. ACRA emerged in the same year that the Congress made its effort to eliminate the ACHP and reduce the costs of the federal government for historic preservation. The creation of ACRA provided the historic preservation community with one more tool to resist this reduction as well as the weakening of protections for historic preservation.

A particularly seminal moment in the 1990s for the world, including the CRM field, was the emergence of the Internet. This medium has changed the way the entire field operates, from email, publishing, social media, archaeological field recording, transfer of data electronically across space, and cloud computing. It has also made fundamental changes in the way we carry out fieldwork in archaeology with such instruments as GPS units, laser transits, digital cameras, and even IPADS.

CRM Comes of Age

The first decade of the new millennia saw continued changes in the industry and in historic preservation, in general. Economically, the Dotcom recession during the first few years of the decade and the enormous recession precipitated by the housing bubble and bank failures beginning in 2008 (and continuing to this day) had profound effects on companies. As Chris Dore, ACRA's past President, has recently pointed out, the latter recession also seems to have given momentum to larger environmental companies with cultural resources departments to continue to grow larger. This pattern parallels that of mainstream industries in the economy. During the earlier part of the 2000s, the CRM market share of environmental companies, if not diminishing, was not growing significantly. Stand-alone CRM companies were holding their own. The recession seems to have given help to the growth to environmental companies by increasing assimilation of the smaller, stand-alone cultural resource companies. In addition, there has been organic growth of the cultural resources portions of these environmental companies (Dore 2012).

More measured and thoughtful archaeological investigations emerged in the 2000s. Maturity of the industry has helped practitioners take a larger view of projects and regions, rather than focus myopically on individual sites and project areas.

This was also a period during which assaults on historic preservation laws and regulations continued. Congressman Richard Pombo, and his allies in Congress, particularly, attempted to undermine both NEPA and NHPA through targeted legislative changes in 2005 and 2006.

The second decade of the second millennia has seen a sluggish continuation of similar issues discussed in the last decade but also considerably diminished economic activity as a result of the worldwide recession. The increasing concern about the national debt leaves federal and state agency budgets in peril. Projecting future budgets for cultural resource programs is a somewhat grim exercise. The potential for adverse regulatory changes is of deep concern to the historic preservation and cultural resources communities.

The most important development, technologically, has been the emergence of GPS location devices and GIS software to begin to better understand data collected and what it can tell us about the resources. The increasing reliance of the field on electronic data will continue to alter the landscape of this field. More and more data is being generated electronically, to be stored and accessed digitally rather than on paper. This process is accelerating rapidly, becoming more and more the norm in the private sector as well as in government and academic settings. Many find the "paperless office," a term coined not long ago, becoming a goal to achieve. With cheaper costs for data storage and retrieval, there is little doubt that this trend will continue. Books and journals are also moving faster into the digital environment. Archaeological digital repositories have begun to emerge in several parts of the world. In the USA, a particularly important institution of this type to be formed is Digital Antiquity. It is a data storage institution located in Tempe, Arizona. This organization is capable and dedicated to the storage and accessibility of archaeological data from around the world. A particularly valuable aspect of their product is regular migration of data from dated digital mediums to make them accessible with current programs and machines. This is of immense importance to future CRM research and accessibility, especially considering the speed at which past and present data and documents are being converted to and, more importantly, created in digital formats.

Some interesting perspective on the current state of the private sector in the USA has been gathered through several initiatives in ACRA and private sector owners. An initiative was undertaken by ACRA of stand-alone cultural resources firms during my presidency in that organization in 2009–2010. The goal was to attempt to establish the number and location of firms that exist within the country. In large part, this effort was undertaken to find the universe of such companies in order to notify them of the existence of our trade association, but also to increase awareness of the magnitude of the industry for government agencies. No such daunting task has been tried before. In order to develop such a list, a number of publically available sources were used including: the ACRA membership list, state and federal agency contractor lists including SHPO, BLM, US Forest Service, and other agency lists, the Register of Professional Archaeologists (RPA), individual company websites, information from member firms, and other resources. These lists were cross referenced and checked as much as possible for accuracy and duplication. This effort resulted in the most comprehensive list of such companies ever compiled. It totaled 1,765

Table 9.1 The following is a table of the firms by state and number identified within each state. This list also includes Washington, DC, Puerto Rico, and Guam

AK	41	KS	12	NV	13
AL	26	KY	24	NY	48
AR	9	LA	15	OH	46
AZ	68	MA	11	OK	9
CA	195	MD	51	OR	46
CO	50	ME	14	PA	74
CT	13	MI	32	PR	1
DC	10	MN	43	RI	15
DE	17	MO	34	SC	18
FL	35	MS	17	SD	28
GA	60	MT	35	TN	24
GU	1	NC	12	TX	51
HI	19	ND	8	UT	15
IA	16	NE	4	VA	54
ID	31	NH	16	VT	5
IL	60	NJ	63	WA	75
IN	74	NM	58	WI	31
				WV	8
				WY	30

companies (ACRA 2009). This total does not include many environmental and engineering companies with cultural resource sections within those offices, but does include some historic preservation and architectural history firms, some of which may not have archaeological capabilities. Nevertheless, it represents the best list that could be compiled with publically available data (Table 9.1).

Several notable trends appear from this list. The largest group of companies (60 or more companies) naturally fall within the largest states in the country with a few anomalies. California being the most populous state has by far the most (165), but it is followed by Washington (75), Pennsylvania (74), Indiana (74), Arizona (68), New Jersey (63), and Georgia and Illinois, both at 60. The large number of firms which occur in California is not surprising, especially considering that the state has the most stringent state laws for the protection of cultural resources. The large number in Pennsylvania, New Jersey, Georgia, and Illinois, being rather populous states, is also not a surprise. However, the inclusion of Indiana and Washington in this largest group is surprising. This may represent a sampling error (more companies from a wider range of heritage resource groups appear in sources checked) or perhaps economic or legal factors operate within these states, which favor private sector operations.

The second tier (40–59 companies), consists of ten states, including quite populous states (New York, Ohio, Virginia, and Texas) but also much smaller states (Arizona, Alaska, New Mexico, and Oregon). The fact that these smaller states have such a large number of companies is likely due to the large amount of Federal land within each of the Western states (upon which all development activities require addressing potential cultural resources), or where there are more stringent state laws protecting sites.

The third tier (20–39 companies) also consists of ten states. Again, this segment is a mix of smaller and larger states. The smaller ones lie in the West, again where there is much Federal land.

The remainder of the states and territories (24) (1–19 companies) include the most diverse mix of large and small states. Almost all of these states have at least five companies and all except eight have more than ten. It is somewhat surprising given that most of these states have little Federal land, but a variety of projects are carried out in all states which are subject to NHPA regulations including, but not limited to, those involving transportation, communication, construction, mining, and activities on rivers and wetlands.

Similar to the mix of firms in ACRA's membership, these companies included those with one or two persons up to the largest, which, at that time, was about 130–150 persons. The vast majority of companies of this type in America are those with two to five persons. Most of the companies with 20–30 or more are in ACRA. In 2011, ACRA's membership included a total of about 137 companies, of which 33 were large. Large companies are those grossing between 1.5 and more than 4.5 million dollars annually and, commensurate with such a size, will employ many more than 20 archaeologists and professionals in related disciplines, in their companies. With my more than 30 years of experience in the field and association with ACRA and its member firms, since 1995, I can confidently say that there are many companies in the large category (and others not in ACRA), with yearly gross incomes of between $10 and $20 million.

A recent statistical study of trends in employment in American archaeology, Jeff Altschul and Thomas Patterson (both of Statistical Research, Inc.), make some projections of the actual numbers of archaeologists who may be employed in the CRM field. Based on a fairly complete survey of archaeologists in New Mexico in 2005, a national projection is made that there are about 4,220 public sector archaeologists and about 9,850–12,650 private sector CRM practitioners working in the USA (Altschul and Patterson 2010: 300). Using a second method of estimating based on gross CRM revenues and comparing the two approaches, Altschul and Patterson come to an estimate of CRM practitioners in the USA equaling about 14,000, which would mean that there are about 10,500 people in the private sector field, of which most are archaeologists, the remainder being historians, architectural historians, and other support specialists.

Altschul and Patterson also estimate revenues for archaeological work in the CRM field in the USA. They used pre-recession figures, i.e., 2007, and developed statistics regarding yearly expenditure of funds for academic, governmental, and private sector archaeology (Altschul and Patterson 2010: 292–296). They estimate that between $683 million and $1.09 billion dollars was spent annually (as of 2008) in the USA on cultural resources services. This includes federal and state government expenditures as well as those in private industry, the latter of which are required by existing legislation protecting archaeological resources (Altschul and Patterson 2010: 297). The estimated cost for private sector work is $231 million to $507 million. This cost can be compared to similar expenditures in the United Kingdom (UK). In 2003, private sector funding for archaeology was estimated to be about 144 million pounds

($230 million in 2003 US dollars) (2010: 296). This revenue generated in a country with a population of about 62 million versus 310 million in the USA.

Altschul and Patterson also make another interesting comparison with the entire environmental industry in the USA. In 2005, revenues in this broad field (of which CRM is a part) were $264.6 billion. The consulting and engineering segment of this field, for which CRM most closely matches, generated revenues of $22.4 billion within 3,650 companies, which employ more than 220,000 people (2010: 296).

While it is using information somewhat removed from CRM, a comparison can also be made between the figures described for the environmental industry and CRM companies in the USA (estimated earlier in this paper). Though I do not have the methodology used in the environmental industry survey, it is likely that only a portion of the CRM companies described (1765) would have been included, due to the small size of so many CRM companies. However, it would almost certainly have included, at least, companies represented in ACRA in the large category ($1.5 million to more than $4.5 million in revenues). It is likely that the percentage of large companies in ACRA is higher than the national average (this likely due to the attractiveness of a trade association to larger companies which generate far more revenue, work regionally or even nationally with multiple agencies and have more need of networking than small companies). Thus, rather than the 24% representation within ACRA, it is likely that, perhaps, 5–10% is more probable. Using the lower figure, it is estimated that 88 CRM companies are represented within the environmental survey (2.4%) and that revenues for CRM in this scenario, equal about $560 million (2.5% of the environmental field). This dollar figure is similar to projected CRM revenues for archaeology (and directly related fields) in the USA by Altschul and Patterson (2010: 297).

The Immediate Future of the CRM Industry

A quite important facet of the CRM industry in the United States has been its resilience in the face of the many obstacles described earlier. In part, this resilience may be due to the diversity that has been developed within and between companies engaging in business. An example of this is the focus that different companies have to maintain themselves. Some companies, particularly in the eastern states, focus much of their business toward government contracting. Other companies focus most of their energy in private industries of various kinds. Private industry work tends to be variable in both volume and type, but can be substantially more profitable. State and federal government projects, on the other hand, are often longer term and can provide more stability for a private company. Highway projects generated by state departments of transportation are a mainstay for many companies, as are those for the Corps of Engineers, National Park Service, and General Services Administration. Other agencies also provide substantial work including the Bureau of Reclamation, Department of Defense, and many others. There are many companies who depend upon contracts from these agencies to exist (Polk 2002: 23–24).

A brief list of projects carried out for some clients provides a sense of the range of projects undertaken by many private contractors. This list is, in no way comprehensive, however. Project types include historic land use reconstruction, background and literature searches, surveys, archaeological testing and full scale data recovery projects, cultural resources management plans, cultural and historic landscape assessments, National Register of Historic Places (NRHP) structure assessments, Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) studies, NRHP individual and multiple property nominations, ethnographic and community studies, expert testimony and legal case support (Polk 2002: 24).

All of the foregoing discussion of CRM in the private sector provides some sense of the nature of the profession in the USA from an historical and statistical perspective. Certainly, it doesn't provide any information on the intricacies of the profession, details about working within different regulatory environments, with different methodologies, and in different regions with different archaeologies. This kind of information has been presented in many other books about CRM.

Concluding the description of the profession as presented in this chapter, I will attempt some future projections about CRM in the USA. While future projections are always difficult and fraught with danger, the fact that CRM is a fairly new profession certainly adds to the difficulty. It is hard to know how mature it is, though current patterns suggest that it has, at least stabilized and even continues to grow, though the recent economic downturn and continuing sluggishness in the economy has also adversely affected CRM. As Altschul and Patterson suggest in evaluating the recession's effects on the field, however, "…at least from our vantage point the American archaeological economy has shown remarkable resilience. We suspect that archaeological spending in the USA for 2009 will fall comfortably within the range estimated for 2008, and we would not be surprised to find 2009 spending actually falling on the "high" side of the range" (2010: 316).

At the moment, in mid 2012, while CRM business is not thriving in the country, as with other sectors of the economy, slow recovery seems to be occurring. Without doubt, the recession had a deleterious effect upon the profession. There are no recent figures for companies lost, jobs lost, and what the reduced revenues may be from this serious hit to the economy, but there is no doubt that it had a profound effect. Nevertheless, at this point in time, with the important regulations governing CRM and agencies which carry out and oversee archaeological work still in effect, it appears likely that the CRM economy will recover and continue on, likely tracking with the economic recovery. The wild card that cannot be predicted is whether there will be continued financial support within agencies as well as through the regulatory process for private sector development, as the debt crisis in this country is, at some point resolved. At this point in time there has been no resolution in Congress concerning how the budget will be reduced and, should nothing be done; a $1.5 trillion dollar reduction in expenditures by the Federal government over the next 10 years will begin, in January 2013. How this will affect budgets for key agencies which carry out most CRM work in the country is not known. The recent severe reductions of archaeological programs in Parks Canada is not a reassuring sign for the USA.

Nevertheless, public support in the USA for archaeology remains high. The CRM profession has weathered many threats to its existence over the past more than 40 years. In my opinion, it is resilient enough to survive the latest of these, as well.

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Chapter 10
Archaeology in the "Real World": The Training–Practice Disconnect in North American Consulting Archaeology

John P. McCarthy and Aaron Brummitt

Introduction

The 1966 passage of National Historic Preservation Act (NHPA) formally established as US government policy that the effects of federally licensed, funded, or approved undertakings on places and objects significant in the nation's history and archaeology should be "taken into consideration" as such undertakings were planned. Amendments to NHPA in the early 1970s extended that consideration to properties not previously known and recorded and mandated efforts to identify and evaluate "cultural resources" including historic and archaeological sites. These requirements lead to employment for archaeologists, architectural historians, historians, and other specialists in federal and state government and as private sector consultants in what came to be called the field of Cultural Resources Management (CRM). Obviously, there was no formal training for this new field immediately available to its practitioners or for those seeking employment in this area. But it was not long before programs in the broader field of Historic Preservation were established, usually connected to schools of architecture. Specialized applied training for archaeologists, however, lagged behind, and by the mid to late 1990s it became increasingly evident that the formal training that archaeologists received and the demands of workplaces that was increasingly nonacademic were disconnected from each other. Zeder (1997) perfectly captured the problem when she stated, "Nowhere was the disjunction between academic and private/public sector archaeology more keenly apparent than in the latter's responses of high dissatisfaction with their academic

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preparation for their current careers, and the discrepancy between their career expectations and their actual careers." The pages of the *SAA Bulletin* in this period often carried essays analyzing the deficiencies of the educational preparation of archaeologists and offering proscriptive advice on how the perceived discrepancies might be addressed (e.g., Schuldenrein 1998a, b).

The purpose of this paper is to identify just what it is that archaeologists employed in the field of CRM consulting in the USA do for a living, what skills they need, and to assess how the graduate education of the authors prepared them, or did not, for the challenges of the work place. The paper will demonstrate that despite the passage of nearly 30 years, there remains a significant disconnect between the requirements of the professional practice of archaeology in a consulting context and the formal training that the typical aspiring archaeologist receives.

The Day-to-Day Work of CRM Consulting

CRM consultants apply their knowledge of archaeology and related academic disciplines to the problems of obtaining regulatory approval for their clients' undertakings that are federally funded, licensed, or approved in accordance of Section 106 of the NHPA, as amended, and under the provisions of a host of state and local requirements, all of which are designed to identify significant cultural resources, including, but not limited to archaeological sites, and manage the effects of development processes on such nonrenewable resources. As such, consultants spend a great deal of their time advising clients as to the regulations that affect their activities and the nature of the studies that are, or may be, required prior to construction. They conceptualize and design studies and prepare technical and cost proposals for such studies. They oversee the technical execution of studies, sometimes spending time in the field conducting or supervising field work, and they may also conduct or oversee the laboratory processing of artifacts and other data. They analyze data and develop and/or edit reports of findings. They manage budgets, personnel, and other resources necessary to the studies, and liaise with the interested public, tribal groups, government regulators, and with the staff of the appropriate State Historic Preservation Office on behalf of their clients.

Skills

There is a diverse set of skills necessary in order to have a successful career as a CRM consultant. As one's career advances from the entry level Field or Lab-Technician position to the level of Principal Investigator, Project Manager, or Firm Principal/Department Head, an archaeologist must continue their education to learn a variety of managerial skills. While some of these skills are tangentially related to archaeology, such as managing data sets, becoming ever more familiar with the broad body of resource management regulations, and developing efficient research

designs, they also include proficiencies related to any successful business such as administrative work, personnel management, contract negotiation and other communications with clients, and analysis of legal exposure and risk.

An archaeologist can develop many of these skills, particularly those that are more closely related to actually doing archaeology, during the course of their academic training. However, given the relatively short duration of a student's academic tenure, the development of communication abilities and business management techniques is not something that a student can develop to a level of functional proficiency while completing their graduate studies. Accordingly, these skills are learned and refined through on the job training, continuing education opportunities, and from more senior employees that serve as leaders and mentors.

Some Necessary Skills and How They Apply to CRM

- General knowledge of the current and past archaeological research, culture, history, field techniques, and artifact analysis of the region where one is employed, as well as more specialized analytical skills
- General and more specialized knowledge of archaeological techniques and analysis is necessary in order to conduct investigations and research as well as review and make contributions to other staff members work
- The ability to write clearly and concisely and edit others' writing for style, copy, and content
- Good writing skills are necessary for field and laboratory documentation, preparing proposals, communicating with clients and review agencies
- Statistical analysis and Geometry, as well as general mathematical skills
- Mathematical skills are necessary for both budgeting and financial management of projects and a variety of analyses
- Inter-personal skills
- Necessary both for communication and marketing as well as consulting with project stakeholders and managing personnel issues such as staff morale and training
- Knowledge of pertinent regulations and ability to conduct legal research
- Necessary to stay abreast of the legal and regulatory environment that motivates archaeological work and potentially creates limits or legal exposure to clients, project proponents, or overseeing agencies

The Education of an Archaeologist 1970s–1980s

The senior author completed his undergraduate and graduate studies at Temple University (TU): his undergraduate work from the mid 1970s and his graduate work in the early to mid 1980s. He had been exposed to archaeology and anthropology as high school elective courses and was lucky enough to attend a field school program

in the summer after finishing high school. He deliberately pursued a broad education as an undergraduate with an eye toward a career in the museum or historic preservation fields and hoped to combine those interests with archaeology in some form, co-majoring in American studies as well anthropology, supplemented by extensive course work in US history.

Having found regular summer and off-term employment, in CRM, first a field technician and then later as a field supervisor beginning the summer after his Sophomore year, the senior author began to focus on the CRM field has his career choice, and much of his course work was directed toward research methods.

In graduate school, however, the senior author's education took a different turn. His coursework choices were largely limited to those of the anthropology department, and there was a clear focus on preparation for an academic career. While he was the recipient of a Research Assistantship in his first year of study, he was required to take a class titled "Teaching Anthropology" in his first term of graduate school, along with the teaching assistants. He then went outside the department during his second year of full-time study and served a Research Assistantship at TU's Social Science Data Library rather than accept a teaching assistantship in the anthropology department. His course work was heavily weighted toward social theory, especially radical political economy. Throughout this period he continued to do CRM work part-time during the academic year and full-time as his schedule allowed.

After his fifth semester of full-time study, the senior author reduced his enrollment to part-time, and he found a full-time position in CRM consulting. He eventually finished his doctoral coursework and examinations, but failed to develop a dissertation topic compatible with his research interests, which became focused on the uses of material culture to express and manipulate complex social identities, and acceptable to his graduate adviser.

Frankly, the senior author's graduate education prepared him in no practical way for the career he would pursue. He later completed a mini-MBA certificate program to develop the business-related skills he needed as he took increasingly managerial roles at work.

The Education of an Archaeologist, 1990s–2000s

After the junior author completed his undergraduate degree, he wanted to find a way to make a living doing archaeology. Having just received a bachelor's degree and spending two seasons, first as a student then as a staff member, at a field school he felt that he had the necessary skills to at least secure an entry-level position as a field technician. The problem was that he didn't even know where to apply. Professors at the university were either unwilling or unable to offer any career advice and, in retrospect, the fact that they were career academics makes it likely that they were just as ignorant as he was as to employment opportunities outside of the classroom. However, with the assistance of a field school instructor

and other professional connections made through him, he was able to eventually find work as a technician on the Atlantic coastal plain. Spurred mostly by the housing boom, large tracts of the coast between Virginia and Florida were slated for development. Because of a variety of both local ordinances and the requirements of the NHPA, this surge in development resulted in many opportunities to work as an archaeologist.

After a couple years of digging in the coastal plain, the junior author realized he needed to begin focusing on continuing his education so that he could conduct more advanced and specialized analysis, and not be relegated to the career that his father always warned him about: digging ditches for a living.

The first real opportunity that presented itself to the junior author was under the employment of the Savannah River Archaeological Research Program (SRARP), an organization that provides the archaeological compliance efforts necessary for the continued operation of the US Department of Energy's Savannah River Site through the South Carolina Institute for Archaeology and Anthropology (SCIAA) at the University of South Carolina (USC). The leaders of this organization provided him the tools needed to learn to make high-resolution topographic maps. As he got better at both collecting and processing the data, which is sometimes more of an art than any real technique, his employers found more ways to use the data as an interpretive tool.

Eventually, the junior author entered graduate school in anthropology at USC, but he continued his work with the SRARP as part of an assistantship. As part of his job, and eventually incorporated into a Master's thesis, he studied the emergence of Mississippian social patterns by comparing a suite of AMS dates recovered from soot on pottery sherds with a suite of in-depth analysis of the pottery assemblage.

Although there was some overlap, when the junior author was a student at USC, there were essentially two somewhat discreet avenues for students to receive education and training in archaeology. The Department of Anthropology was the major force and provided the majority of the course instruction and teaching assistantships for the graduate students. While SCIAA operated in parallel, with SRARPs program under the SCIAA.

Because his research assistantship was through the SRARP, the junior author was exposed to the practice of compliance archaeology that was conducted by a relatively younger group of professionals with more practical experience in North American archaeology than was available through training by the staff at the USC Department of Anthropology. This relationship allowed him gain valuable experience with project scheduling and budgets, as well as working with multiple staff members, subcontractors, and volunteers.

The career advantages afforded the junior author by his association with SRARP is evident when his experiences are compared to those of the majority of his peers at USC. While he was gaining experience conducting archaeological investigations, learning about regulations and compliance, and contributing to valuable research, as part of his Research Assistantship, many of his classmates were involved in Teaching Assistantships. While the financial stipend was identical, the work load and experience were not. The professors that managed Teaching Assistants

required that they teach small sections, proctor exams, and grade papers. While this is a valuable thing to the professor, and provided low-cost labor to the university, the experience offered only modest returns to the graduate student who were unlikely to find employment teaching. The students did get practice in public speaking, but beyond the material in the course they were teaching, which are invariably introductory survey courses, they got no exposure to the practice of actually conducting archaeology.

All of this is not to say that the academic offerings were not also beneficial. The laboratory classes did provide a reiteration and intensification of analytical skills the junior author learned while on the job. Every class had a large writing component and there was one elective course titled "Public Archaeology" that provided very valuable exposure to the NHPA and other similar regulations, and a climate science class offered by the Department of Geography provided him with valuable analytical skills on the subject of proxy indicators of the past climate. However, the majority of the course offerings did seem to remain focused on archaeology as an academic pursuit and not as a trade or profession.

Assessment and Conclusions

CRM provides employment opportunities for the vast majority of archaeologists working in North America today. In the early 1980s, graduate education tended to train archaeologists for an even then dwindling number of academic positions without any real regard for the needs of the CRM workplace. By the late 1990s, various efforts to analyze and suggest reforms in graduate program curricula were made, some of which addressed the substance of CRM and needed skills of the consulting workplace (e.g., Schuldenrein 1998a, b). In the interim, many programs have added course work addressing at least to some extent the regulatory environment of CRM and offering training in Geographical Information Systems and other more technologically based analytical skills. However, it was only because of the junior author's work experience involvement with the SRARP and taking courses outside of the standard program of study that he was able to gain a wide range of practical skills and experience relevant to CRM work.

In practical terms, a significant disconnect between the needs of the consulting work place and the substance of graduate education remains. These issues are not limited to the discipline of archaeology. The senior author has heard engineers and environmental scientists make very similar complaints about the training that students in their disciplines receive as well.

The authors do not believe that reforming anthropology graduate programs is necessarily the best solution. We would instead argue for increased flexibility in programs so that motivated students can seek out coursework in other departments and schools of the university that might complement that provided in the anthropology department, such as in environmental sciences, business administration, and perhaps even in law. There is also clearly a need for practical experience that might

be addressed through internships and other similar hands-on opportunities. The academy needs to recognize that the careers of most of its students will not be within its halls and take steps to help students access the information and develop the skills outside the discipline that are relevant in the real world.

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Chapter 11
The Emergence of the Commercial Sector in Irish Archaeology 1987–2007: Lessons to Be Learnt on Research Opportunities Lost

Margaret Gowen

Archaeology was well established as a state sector and academic profession in Ireland by the 1960s and 1970s; however, Irish archaeology experienced a very remarkable development-led growth between the 1980s and the 1990s with that growth accelerating beyond all expectation between the mid-1990s and 2007/8. At that point the construction-industry-led Irish economy suddenly commenced its bewildering decline into severe recession (Gowen 2007a, 23–5; 2012; Eogan 2010, 19–24). Irish archaeological research, which was also very well established in Irish universities within a northern European research tradition from the 1940s[1] onwards, did not identify or maximise the opportunity that this growth presented. It regrettably remained quite disengaged with commercial archaeology until it became clear that the increase in development-led activity was producing very significant findings and that these were being neither adequately disseminated nor resulting in a tangible return to research knowledge (University College Dublin 2006, 7–10).

The growth in the profession, which was very rapid from the late 1990s onwards, was dominated by the establishment of a very significant commercial sector, the origins of which can be traced to the emergence of a number of independent archaeological consultants in the early 1980s. Initially expansion was slow and tentative, a response to a "free-market" environment in that first decade. As in many European countries, the increase in "rescue archaeology" coincided with the growth in state and public awareness of development impact on archaeological heritage, vividly evoked by a public protest march in Dublin following the highly contentious destruction of the medieval city wall of Dublin at the Wood Quay site in 1978 and its declaration as a National Monument; the excavations of

[1] The Irish National Monuments Act still forms the essence and backbone of Irish heritage protection law was first passed in 1930. Since that date the Act has seen a number of additions and amendments (1954, 1987, 1994 and 2004).

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Viking period archaeology at Fishamble Street on the Wood Quay site continued thereafter until 1980 (Maxwell 1980). The drama of the Wood Quay case pointed to the obvious need for state policy formulation in the area of "rescue archaeology" and heritage management. This need? of course, was already well recognised as an issue in the 1950s and 1960s in the UK and firmly established in Britain and many other European countries by the early 1970s (RESCUE, The British Archaeological Trust founded 1971; Rahtz 1974; Mytum 1987; Everill 2007,105; Willems et al. in Willems and van den Dries 2007). Soon afterwards, in 1985, the state archaeological service decided that it was necessary to accelerate the work of the Archaeological Survey of Ireland and to establish a Sites and Monuments Record (SMR) for the Republic of Ireland. The drive to establish the SMR reflected the recognition by the National Monuments Section (then under the direction of the Office of Public Works, OPW) that there was a need for a workable link between heritage protection and development control. However, in Ireland as for most European countries it was the European Convention on the Protection of the Archaeological Heritage 1992 (Valetta Malta) that provided the impetus to support the more focused formulation of both policy and legislation in respect of preservation, protection and management of archaeological heritage. The Convention was ratified in Ireland in 1997. Developing environmental policy within the European Union (EU) and the Environmental Impact Assessment directive (85/337/EEC) had previously reinforced the need for the issue to be addressed in a substantive manner. The EIA directive was transposed into Irish law in 1989, and this was followed by an amendment to the National Monuments Act placing the SMR on a statutory footing in 1994 (after which it was named the Record of Monuments and Places (RMP)). However, it was not until 1999 that Irish government policy on Archaeological Heritage was published (Irish Government 1999).

During the Irish economic recession of the 1980s, an embargo on the employment of professionals in the state services coincided with a small-scale increase in urban and infrastructure projects. The increase in demand for a professional archaeological response to development was first addressed with state and university involvement in the commissioning of "contract archaeologists" and the funding or partnership funding of development-led excavation and its publication (e.g. Cleary et al. 1987; Gowen 1992). The approach was dropped in favour of the adoption of a "polluter pays" (development pays) principle at the time when Ireland gained access to EU Structural and Cohesion funds from the late 1980s onwards. By the 1990s EU funding kick-started and sustained a confident and burgeoning capital investment programme in regional development, infrastructure and urban renewal (Lynch 2007, 53). The state archaeological service responded by actively engaging in providing planning guidance, advice and support for county and city-based planning authorities with the active referral of planning files to the service, linked to the identification and protection in law of sites listed in the RMP from 1994 onwards. In the UK, the Planning Policy Guidance document PPG16 was published in 1990 and its implementation certainly influenced approaches adopted in the Republic of Ireland.

Rapid construction-led growth in the Irish economy followed and the "polluter pays" principle under-pinned the approach of Irish planning authorities. The range of work undertaken in this context included pre-development site evaluations, surveys, planning-related impact assessments, mitigatory archaeological excavations and, of course, the resulting post-excavation analysis and report compilation. Generally archaeological services were procured following a competitive pricing and tendering process.

With no strategic plan for the profession, and subject to the vagaries of the "free market", Ireland's commercial archaeological sector, comprising both individual professionals and companies, was left with no option but to develop their infrastructures independently. Excavations increased in number and scale during the 1990s initially responding to economic growth and associated urban renewal. With no tradition of state, urban or university-based excavation units in Ireland (with the notable exception of the Archaeological Services Unit at University College Cork and the Irish Archaeological Wetland Unit at University College Dublin), and no archaeological trusts established, as was the case in the UK, a significant gap emerged between university-based archaeologists and the commercial sector; effectively the universities looked "on from the sidelines, with little real engagement with the other partners" (Anon., quoted by Slevin 2007, 34). There was no mechanism for a professional, structural or organisational link between commercial-sector activity and university-based research. It is perhaps notable that the subjects of medieval, post-medieval and urban archaeology were relative latecomers to archaeology curricula in Irish universities, the first appointments to lectureships in medieval archaeology occurring after 1978 in University College Cork and Trinity College Dublin (Johnson with Hurley 2000, 51).

Professional regulation of archaeologists in Ireland occurs only in the context of excavations which are licenced (see below). In the early years of commercial sector development, the state's heritage management adopted an approach which continued to control this activity. More importantly, it commenced the task of providing policy and guidance to planning authorities while it activity engaged in the adjudication of development control and the increasing demand for pre-development archaeological impact assessments (with evaluations often based on test excavation) and rescue excavations. No other area of commercial activity was subject to quality control either by the state service or by what was then the Irish Association of Professional Archaeologists (which became the Institute of Archaeologists of Ireland (IAI) in 2001 below). In those early years of the 1990s "contract archaeology", as it was called was professionally marginalised as the academic and state sector apparently struggled to accept the integrity and principle of archaeological research, fieldwork and excavation as a service to development control, paid for by developers; Ireland was not alone in this professional "dilemma" (Willems 2007, 5–23).

In the accelerating development-orientated economic environment of the late 1990s and early 2000s, the entire profession faced an enormous challenge to keep pace with the demands of the changing and hectic professional climate; both state and commercial sector were in "fire-fighting" mode for many years; loss of cohesion was inevitable.

The development of proficiency within the commercial sector, together with the professional competence of commercial sector archaeologists, occurred somewhat haphazardly, but the sector gradually achieved a very significant level of professional and technical competency. Largely learnt "on the job", the maturing quality of commercial sector work was generally guided through its professional interaction both within the discipline and particularly with other related construction-industry disciplines. Archaeological companies simply had to keep up and develop the equivalent technical and presentation standards of architects, engineers, planners, project managers, designers and business managers. There was a commercial imperative to achieving such proficiency as it was led by the exigencies of commercial demand and reputation building.

Regrettably, however, commercial archaeological practice and especially survey and excavation (with their respective opportunities for research) was seen by some to be a matter of technically efficient data retrieval, recording and presentation with the location-specific "preservation by record" of remains required in a situation where they would otherwise be destroyed by development. In hindsight, it is clear that this rather narrow perspective gradually started to pervade as the National Monuments Service. Forced to meet the demand for a response to a massive increase in development-led excavation during the late 1990s, it diluted the educational requirements for licence eligibility to the level of primary B.A. degree, or its equivalent in Archaeology, a move which occasioned the withdrawal of support by the universities in the adjudication and interviewing of candidates. A reduction in state-sponsored finance for research excavation did not help matters. It resulted in a decrease in the numbers and scale of excavations carried out for research purposes by universities while their research interests shifted in emphasis to more theoretical and large-scale themes. This, in turn, resulted in a loss of focus on the university training of students in the processes of excavation and excavation evidence-based research. Furthermore, with no research link to the requirements of licensing and no other form of professional quality control, the integration of research context and content and the quality of research undertaken within commercial sector projects was largely a matter for the interest and capabilities of individual archaeologists and the commercial practices concerned. It was also, perhaps more critically, contingent on individually brokered, inconsistent funding provision and whatever time could be achieved or made available, while the demand for excavation fieldwork was relentless.

The rapid, independent and eventually confident capacity building within the commercial sector did nothing to bridge the developing gap with the university sector and those with research interests within the profession. It was not helped by the lack of an overt, transparent framework for quality control. In particular, the lack of accepted minimum standards in report presentation can now be seen to have resulted in some serious shortcomings especially during the 1990s. There was no enforceable requirement to publish within the planning and development control compliance mechanism. The challenge of securing the funding necessary for publication as an essential element of the development-led excavation process was often therefore insurmountable. The outcome (inconsistent and wholly inadequate publication

of the results of excavations by the commercial sector) can be understood as a reflection of the ad hoc adoption of standards within Irish archaeological practice).

The opportunities within commercial archaeology to conduct research of interest to existing programmes of university-based research were quite limited. By 2000, in urban archaeology for instance, it was clear that "the chasm between the academic and the commercial sector needs to be addressed before any co-ordinated attempt can be made to synthesise the available evidence and provide appropriate strategies for further (research) work" (Johnson with Hurley 2000, 17). Furthermore, other research and research opportunity was somewhat constrained as the development-led sector, served a particular purpose within the framework of heritage management as elsewhere across the world. In planning, the value of archaeological research was perceived mainly as a means of informing both sides of the development planning divide: on one hand identifying the risks posed to the archaeological resource; and on the other hand, identifying the constraints that archaeological sites and archaeological heritage could present to a proposed development. The adjudication of the mitigatory response to development impact and the scope of mitigation projects was largely a matter for the National Monuments Service and its statutory consultee, the National Museum of Ireland. Mitigation measures necessarily responded to the scale, extent and scope of the development impact. Commercial-sector research activity therefore can be defined in three discrete areas (1) where it informs the heritage and archaeological evaluation of site/locations for the purposes of planning and development control; (2) where it can either be integrated in or "bolted on" to mitigation projects of a large scale, and (3) where it can be cumulatively developed within small projects in a particular location to form the basis for a loose research framework. There was, and is, rarely an opportunity for choice about the research topic and its scope. The research is necessarily evidence based and it is, of course, location specific. Like all research it can only draw on published and publicly available documentation and the material and physical evidence available at the time it is undertaken. It frequently has limited research time and is often undertaken at a very different pace to university-based research. It is now understood that, as such, it may be insufficiently informed about relevant or current themes in academic research, if this, in turn, is not the published or widely disseminated in the public domain. Where small in scale, the location-specific nature of commerical-sector research is often such that the outcome may not result in a significant contribution to knowledge. It follows, however, that only synthetic research can draw significant benefit from these smaller "blocks" of information.

Archaeological excavation activity in Ireland reached truly remarkable levels in the early 2000s, driven by the National Development Plan (2000–2006) and a particularly ambitious focus on improving the Irish roads network and infrastructure generally. The profession responded as best it could to the development-led demand. As stated above, practice was regulated only by the statutory requirement for the licensing, prior to commencement, of all archaeological excavations. It is important to note, in an international context, that the licence is issued to the director of the

excavation as an individual, not to the company for whom the excavation director works. The licence is issued further to the submission of an application, supported by a method statement.[2] The method statement is not a project design; it simply outlines the reasons for the excavation (investigation/evaluation/mitigation), its planning and development-related context and its practical approach to the location, scale and conduct of the proposed excavation. As stated above, no other aspect of professional archaeological practice, including post-excavation work and, more importantly provision of funding, was or is regulated or subject to quality control of any kind. This remains the position and therefore the profession is essentially self-regulating (Gowen 2007a, 25–9).

The development of the professional body to Institute status in 2001 improved matters through the development of its codes of ethics and practice and its guidance documents on various aspects of practice. But regulation remained with the National Monuments Service licensing system. The institutional and professional disconnection that had commenced between existing research bodies and the commercial sector was regrettably reflected within the professional association prior to 2001 and later within the Institute. A very regrettable distancing and reduction in the numbers of its state and university members occurred while the professional body's most active members focused (necessarily) on the remediation of the most significant issues arising for the profession within the rapidly growing development-led sector.

Education and training in excavation methods and fieldwork practice fell more and more to "on the job" and "in-house" training in the commercial sector, where the aggressive demands of the market had to be addressed with well-trained fieldworkers. There was no framework for this training other than the requirements of the department for those applicants who sought licence eligibility.[3] In Ireland, excavation and especially recording methods were guided by principles developed within the framework of research and urban excavations during the 1960s and 1970s in addition to developments made based on the experience of many archaeologists who had worked with the developing methodologies on large-scale excavations in the UK and north-western Europe in the 1970s and 1980s. There was no need to "re-invent" the methodological "wheel".

For a very long time, the singular emphasis on servicing excavation field work dominated by the urgent imperatives of development programmes, resulted in a loss

[2] All directors of excavations undergo an examination by interview prior to acquiring licence eligibility but it is notable that post-graduate university degrees in archaeology are not required for this qualification and candidate with higher degrees do no gain any additional "weighting" in the selection and evaluation process; in effect archaeological research experience is not accorded a place of importance in the adjudication of a candidate's competency to undertake archaeological excavations.

[3] The basis for eligibility of applicants, supported by a comprehensive Curriculum Vita, is a primary degree in archaeology or equivalent, a proven knowledge of Irish archaeology and legislation, and at least 2 years appropriate experience in excavation fieldwork, including substantial supervisory experience.

of focus by the profession generally on the quality of the information return. This occurred in spite of the licensing obligation to submit a final report. The quality and content of the reports submitted was not and, still, is not subject to systematically independent assessment or validation. The state heritage service anxious to improve standards published a consultation document in 2001 on *New Initiatives for Procedures and Practice in Archaeological Licensing* (Dúchas 2001) and eventually prepared a published guidance document on the preparation of reports (Dept. of Environment Heritage and Local Government 2006) following the preparation of a report in 2003 (unpublished) by the Consultative Group on Development-led Archaeology, under the umbrella of the Royal Irish Academy's National Committee for Archaeology. The profession in Ireland cannot have been blind to the development of similar issues in the UK and within Europe. The debate on the quality of "grey literature" and the growth in the volume of data being generated by development-led archaeology commenced in the 1990s and was being actively debated (e.g. Thomas 1991, 822–8; the first annual conference of the European Association of Archaeologists in 1995, included a session titled "Models of organisation in development-led archaeology"; see also Demoule 2002).

Nonetheless, competitive tendering inexorably became more common within the commercial sector. The evaluation of those tendering for archaeological work increasingly focused on the cost-driven necessity for technical, fieldwork and project management competence. The quality of the outcome was contingent on funding provision provided by those promoting developments and their intermediaries. This left research opportunities and the need for publication to be identified and promoted by individual project managers, excavation directors and the company awarded the contract. It was therefore dependant on the focus and negotiating skills of these individuals and organisations. With no regulatory requirement in Ireland and no commercial or market imperative to conduct or publish research related to excavations undertaken, and inadequate financial provision for research and publication in commercially commissioned project design, this was exceptionally difficult to achieve. Private sector clients were very rarely persuaded to perceive any stakeholding in a high quality published outcome, or indeed in publications of the most rudimentary nature. They were disinclined to accept that they should support research; a matter, as they saw it, for universities or state bodies. With some vision and ability individual commercial projects did manage to achieve ambitious project designs and to integrate high quality research, incorporating university-based research. However, this was often achieved "by stealth" almost without being perceived by those promoting the project. Securing adequate funding provision also depended to a great extent on the quality of the client/consultant relationship in particular project contexts. It is hardly surprising therefore that, even when this was successful, it often resourced little more than the minimum synthetic and contextual research content. For those practitioners keen to do so, opportunities to undertake research of interest to the university-based and research sectors of the profession depended also, to a very large extent, on luck. Securing appropriate developer funding in a highly competitive "market" required an ability to identify and maximise

research opportunity in those contexts where it presented itself. With very little lead-in time, this required often unanticipated unilateral requests to university-based researchers to participate in projects as opportunities arose within commercial projects. For obvious reasons these requests could not always be facilitated or resourced. Furthermore, with little interaction of a formal nature between the sectors and much university-based research also unpublished, achieving successful project-based research integration was extremely challenging.

Large-scale development mitigation projects did, however, present significant opportunities for research occasionally, but sadly in the absence of commercial or statutory requirements the value of the research opportunities was not always recognised and rarely financially supported. Some projects did successfully manage to integrate research design and focus as part of the overall development project yielding at the very least modest and, at best, quite significant research outcomes. For instance, the Lisheen Archaeological Project 1996–8 (Gowen et al. 2005) which was supported by active dialogue with National Monuments Service personnel during the planning adjudication for the development, and the Temple Bar Archaeological Reports nos. 1–5 (Simpson 1994–1999; Gowen and Scally 1996) which was supported by the presence of a steering committee at project inception. Bord Gais Éireann supported several publications on the results of archaeological excavations on gas pipeline projects (e.g. Grogan et al. 2007), a model that had been established by the involvement of University College Cork during the first of these projects in the 1980s. Occasionally, the results of such projects or some aspects of their primary research gave rise to further research, e.g. the cross-country gas pipelines in Munster (Gowen 1988) aspects of which informed elements of the Discovery Programme's North Munster Project (Grogan 2005).

The focus on research and publication, however, required an embedded culture and resourcing commitment within archaeological companies, the support of commissioning partners/agencies and sufficient time for individual archaeologists to engage with the research context, undertake the work and to see "their" projects through from commencement through to publication. Some local authorities, city councils and private sponsors, with the assistance of the Heritage Council, supported these endeavours. Examples in urban contexts can be readily identified (for example, the publications and displays arising from excavations in Cork, Dublin, Waterford, Limerick, Galway, Kilkenny and Drogheda as described in Johnson with Hurley 2000) but they represent only a limited response and a small percentage of the overall work undertaken. Without this kind of support, funding provision and sponsorship, the challenge of securing adequate funding and especially adequate time was simply too much for many companies and practitioners. Those archaeological companies that did manage to develop a significant knowledge base with well-ordered archives, technical and IT capacity also developed research capacity and gained the confidence to seek research partnerships, relationships and peer review within well-funded projects, also finding publication opportunities for their work in stand-alone monographs and through the development of strategic alliances with some other publication outlets, e.g. the Archaeological Services Unit at University College Cork and *Journal of the*

Cork Historical and Archaeological Society and the writer's company and the annual *Medieval Dublin* series.

Following its foundation in 1995, the Heritage Council's critical support of archaeological publication resulted in a number of very significant excavation projects being presented in publication, many notably published by the specialist archaeological publisher Wordwell Ltd. The arrival of the quarterly *Archaeology Ireland* also published by Wordwell and on-line publication of the annual excavations bulletin (http://excavations.ie) had a transformative effect on the rapid dissemination of ideas, excavation results and news items within the profession as a whole.

Some of the issues arising from a lack of coherent structure and strategic direction across the profession were most evident in the context of the national road-building programme. These were first addressed in a concerted way following the agreement of a Code of Practice (DAHGI & NRA 2000) between the National Roads Authority (NRA) and the Minister for Arts, Heritage Gaeltacht and the Islands. While the NRA had been established in 1994 and significant archaeological studies and excavations had taken place on road development projects from that time no specific management structure was put in place until the appointment of Project Archaeologists by the NRA in 2001. The NRA's response to discharging its archaeological responsibilities, together with the general competitiveness within commercial sector, certainly assisted in creating an environment where standards of fieldwork and recording practice improved generally, including standards of report writing. A greater level of compliance with the contractual and licensing requirements of report submission followed the appointment of Project Archaeologists. Some of the major road projects eventually gave rise to significant research opportunity and these are still yielding important research outcomes. By 2003 the NRA had actively commenced the publication of its archaeological work through a series of monographs, the periodical *Seanda* and numerous project-related booklets and papers (http://www.nra.ie/archaeology). The overall quantity, quality and content of the record achieved from the NRA programme of excavations can now be seen to be very significant indeed.

It was salutary to note that during the earliest planning and development stage of the IAI's Continuing Professional Development programme, a survey conducted in 2001 by the IAI on "Training needs in Irish Archaeology", identified training in research methods as one of the highest priorities for respondents. This perhaps reflected the largely primary-degree level of entry to the profession in the commercial sector but it also reflected a very limited formal post-graduate training, even in generic skills, for most respondents.

It is clear, in hindsight, just how the failure to achieve an embedded principle of research in all commercial-sector activity occurred; it was a hectic, market driven and cost-competitive environment, with very limited mandatory requirements in place. Given the lack of enforcement of requirements relating to research and publication, and the fractured nature professional dialogue in this regard, and with no over-arching, professional-wide strategic management of knowledge

return from development-led archaeological activity, structural weaknesses surrounding other issues that were not subject to regulation also became increasingly evident; particularly in the areas of archiving, curation and storage of excavated finds and samples and excavation documentation. Notwithstanding the guidance documents prepared by the institute it became clear that, unless individual companies developed their own internal quality management systems for these functions, and funding this expenditure from their "bottom line" profit, these issues sometimes remained unaddressed or poorly managed. Until very recently, these areas also remained unresourced by the state at a national level and were therefore neglected by understaffed state agencies.

Conclusions

It is important when reviewing research in the context of commercial sector archaeological work to acknowledge the research limitations of commercial archaeological projects and the nature, focus and function of the research undertaken (Gowen 2007b, 45, 48–9). Commercial archaeology, in its range of professional activity and research provides a very wide range of high quality information outcomes, the function of which is to service national heritage management and development control. While the excavations conducted for evaluation purposes or to mitigate development impacts have generally provided, at a minimum, a generally high standard of evidence-based record. The Irish licensing of excavations carries with it a mandatory requirement to submit a full excavation report, a requirement that has been generally complied with to a very significant level. The licence obligations also include publication. However, the presentation of a summary account in the annual published *Excavations* bulletin has generally been taken to address the publication requirement up to now (1976–2008). The reports held by the National Monuments Section, the "grey-literature" contain the detailed results of the licenced excavations. This is accessible and can generally provide competently analysed, well-presented and well-illustrated data and results, as Prof. Richard Bradley was so keen to inform colleagues following his review of "grey literature" for the purpose of a research project on the prehistory in Britain, a project that later included Ireland (Bradley 2006, 2007). The National Monuments Section's proposal to place all excavation reports submitted in compliance with licences on a web-based publication platform would be a very welcome development but in the meantime the archives of the department contain the hard copies of all these reports. Many have been already scanned and all can be requisitioned for research purposes. The NRA has an on-line database containing details of excavations carried out under their remit and plans to make all excavation reports available on line (http://www.nra.ie/archaeology).

More than 20 years after the identification of its earliest development-led/free-market issues, Irish archaeology finally commenced a concerted reflection on the scale of the collaborative research opportunity lost and the failure of so much excavation to "return to knowledge". Long before the cross-sectoral

foresight process that gave rise to the *Archaeology 2020* report (2006) it was clear that the situation was dysfunctional and unsustainable and that simply "harvesting" the data of the commercial sector would present its own challenges and yield inadequate results if not undertaken in a spirit of partnership. The foundations for identifying and addressing many of the issues that faced the fractured profession, and a free-market policy response to development demand, had already been identified in a number of studies commissioned by the Heritage Council (especially 2000 and 2002) under the auspices of its Standing Committee on Archaeology. The University College Dublin *Archaeology 2020* foresight study summarised the issues unequivocally, for the first time, following the participation of all sectors of the profession (University College Dublin 2006). The foresight process, which highlighted the unsustainable nature of the profession's structures, was rapidly followed by the Royal Irish Academy Forum in 2007 and in two annual conferences of the IAI in the 2007 and 2008.

Recognising the dynamic turn of the debate within the profession and its potential for informing policy orientation, the Minister of the Environment Heritage and Local Government approached the Heritage Council in early 2006 and requested that it prepare a consultative document outlining a ***Framework for Irish Archaeological Research***. The development of the Irish National Strategic Archaeological Research Programme (INSTAR) was the very notable outcome of this work (http://www.heritagecouncil.ie), and is now an active programme of synthetic and thematic research, largely drawn on the results of the past 20 years of Irish development-led archaeology. It, critically, involves the participation of a number of archaeological companies and individual practitioners in collaboration with university and other research organisations.

In mid-October 2007, the Dept. of Environment Heritage and Local Government initiated a major ***Review of Archaeological Policy and Practice in Ireland*** to include the consolidation of the National Monuments Acts but also to address the lack of cohesion, uneven capacity building and systemic failures that had occurred during the years of the Celtic Tiger economy. The process was unfortunately interrupted by the economic events of 2008–2009 and a change in government, but its working documentation and draft legislation remains in place. It is hoped at the time of writing that the process will be seen through to a conclusion in the near future. The deep recession has given rise to a very challenging environment for Irish commercial sector archaeology. Meanwhile, the Phase 1 INSTAR projects 2008–2009, involving a number of successful strategic research partnerships with commercial companies and organisations, have been completed (http://www.heritagecouncil.ie). Its Phase 1 research topics drew significantly from the records, reports and research of the commercial bodies with whom it partnered. A second phase of projects, with similar strategic relationships, has commenced. The Phase 1 research topics included: Making Christian Landscapes; Neolithic & Bronze Age Landscapes of North Mayo; An integrated GIS model of landscape evolution and landuse history in the River Boyne Valley; Early Medieval Archaeology Project I & II; Mapping Death: People, Boundaries & Territories in Ireland first to eighth centuries AD; The People of

Prehistoric Ireland: Health and Demography; WODAN: developing a wood and charcoal database for Ireland; Cultivating Societies: assessing the evidence for agriculture in Neolithic Ireland. INSTAR is now in its second phase. In addition, the Discovery Programme has commenced the earliest stages of its forthcoming third phase of major research themes and has, significantly, identified synthetic themes that will also, necessarily, draw on the results of projects undertaken by the commercial sector in the past 10 years. Furthermore, several universities have also chosen, within INSTAR and elsewhere, to pursue synthetic research based on the rich research resources of development-led and commercial sector work. It is hoped that, in this way, much of the evidence based record will quite rapidly inform knowledge generally while the work of the ministerial review of policy and practice has unequivocally identified well-structured research and a return to knowledge as the primary focus and essence of all archaeological work.

Lessons Learnt

There are those in Ireland, especially in the academic world, who have judged commercial archaeology particularly harshly, some seeking to decry its demonstrably essential function as a service to national archaeological heritage protection and management. Given the scale of the professional capacity building that has occurred within the sector, it will continue to perform an essential role, in a regulated environment, linked to sustainable national, regional and local development projects in the future.

In time it will be acknowledged that, while the enormous level of excavation activity did not yield an adequate or immediate published record, the excavations undertaken have produced a very significant documentary and artefactual record indeed. More importantly a European and global view, one of the most significant outcomes of this archaeological activity is the record is secure being “housed” in a centralised “resource centre” run in partnership between the National Museum of Ireland and the National Monuments Service. Already, there is ample evidence that the record is not only readily accessible, but that its existence is facilitating research, providing a very significant return to knowledge within the, albeit relatively small scale, research contexts of the INSTAR programme, university-based post-graduate research and the significant on-going research work of the Discovery Programme.

Notwithstanding the difficulties currently being experienced due to the economic downturn, the commercial sector and the service it provides at a very proficient level, is an essential element of Irish archaeological heritage management. The most important lesson learnt must be that the primary function this sector serves, and must serve in the future, is to extend existing knowledge and to use this knowledge to ensure the protection of the national archaeological resource. This carries with it a requirement to ensure that the results of commercially commissioned, development-related, research and mitigation projects are not just

isolated datasets or stand-alone findings but are or can be integrated with existing or future research projects. Commercial work, like any archaeological research must be conducted within a context of existing archaeological knowledge and advancing and extending that knowledge for the state, the public and the profession alike. Its fundamental purpose, quite simply, is to inform and enrich Irish cultural life. This presupposes that any professional archaeologist cannot and should not conduct their work without understanding and having full regard for the chronological, cultural, national and/or regional context within which the work is being undertaken. This challenge must be addressed through innovative programmes of professional education and training in third level institutions and continuing professional development through the Institute of Archaeologists of Ireland.

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Chapter 12
Knowledge Creation and Publication in Development-Led Archaeology in Ireland: Some Problems and Possible Solutions

Linzi Simpson

One of the most worrying issues in Irish archaeology today must be the damning conclusion that there is a distinct and demonstrable lack of collaboration between "commercial or development-led archaeologists" and the state-sponsored archaeological sector, which has had a negative effect on academic output, especially in regard to publication and dissemination of information. While much discussed at various conferences and other fora, this is most clearly articulated in *Archaeology 2020: Repositioning Irish archaeology in the knowledge society* (Foresight Report) (Cooney et al. 2006), a detailed and probing report, compiled and published by University College, Dublin and the Heritage Council of Ireland. The systemic failures of the profession are therein clearly articulated and include:

- "A lack of clear, coherent structures and strategic directions which set out the role of central government in the regulation of archaeology combined with a lack of connection—or disconnectivity—between development-led excavations and research-driven problems… The primary causative factors are highlighted by the under-resourcing of the national and local organisations with responsibility for archaeology and variations in excavation standards, reporting standards and databases".
- "The accumulating and unsustainable backlog of unpublished excavations …is unlikely that many of these will ever be published".
- "A failure to publish and create knowledge, which is not sustainable … there is a an inadequate return on the substantial expenditure involved".
- "Curation and archiving of records and material from excavation are reaching crisis proportions" (ibid., 11).

While the report went on to explore other significant problems, the lack of publication is certainly highlighted in this litany—and rightly so, as academic

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publication has long been considered the most suitable mode for the successful dissemination of information, preferably peer-reviewed (ibid., 14). The main thrust of the Foresight Report in this regard is that the conversion from "accurate information gathering" to "accurate knowledge creation" must be the ultimate goal for every archaeological investigation that warrants it and it is difficult to disagree.

This topic was returned to in a panel discussion on professional archaeology at a recent Institute of Archaeologists of Ireland (IAI) seminar, at which part of the discussion centred on the fact that the development-led sector has become an excavation rather than a knowledge industry and that somewhere along the way the knowledge creation function has been lost (IAI Seminar, "Whither Archaeology", 10th May 2010 (http://www.iaireland.ie)). Essentially, one of the charges is that those employed in the development-led sector have become data collectors as opposed to knowledge creators, the implication being that many operate without a clear research strategy, necessary for the successful production of knowledge. This, some feel, contributes directly to the lack of publication but is it a fair and accurate estimation of the problem?

It is clearly not the case that all development-led archaeological projects have no defined research strategies and one of the great successes of the industry in the past couple of decades has been the very rich harvest of knowledge and resulting publication arising from large-scale and significant projects whose talented directors have stepped up to the plate (e.g. the National Museum publication series, The National Road Authority Monograph Series; Duffy 2000 to present; Gowen et al. 2005; Hurley et al. 1997). But the rapid pace of work, the scale of development, the vast number of pressurised investigations and the high proportion of young directors operating in Ireland have created disastrous problems. While large amounts of data have been collected, this record creation has been dictated by unstructured, scattered and sporadic development, which we in Ireland now know was chaotic and economically unsustainable: no mystery, then, that what has been left in its wake in terms of the archaeological record is significantly less than perfect. But all is not lost: while there can be no argument that the gathering of data is of little use if it is not used to create knowledge, it is ultimately preferable to gather the data accurately and hope the knowledge creation will follow than attempt to do the reverse. The strategy of 100% excavation in Ireland where preservation in situ was not feasible was, then, as Cooney suggests, a "good holding line" in a period of "frenetic change and activity" (Cooney 2008, 9).

One of the problems with the current debate about publication, however, is that it creates the false impression that all that is required to improve matters is simply an increase in publication by the development-led sector. This distracts from the root of the problem, as it throws the spotlight on the end of the excavation process rather than on the actual process itself. While the Foresight Report's summarised list of systematic failures does include "variations in work practices", this problem is not given the prominence it deserves: it should be heading rather than ending the list (Cooney et al. 2006, 14). The difficulty is that these innocuous-sounding "variations" can fundamentally inhibit the smooth transition from "information

gathering" to accurate "knowledge creation" and therefore jeopardise any research strategy and potential future publication. The problems are so serious that they ultimately represent a far more long-term threat to the profession than a straightforward lack of publication.

In simple terms, the archaeologist in the field *is* a data collector and the primary function at that initial crucial first stage *is* to extract detailed and accurate information, which can be used by future researchers with some degree of confidence, perhaps in a hundred years from now, when nothing survives in the ground. That must be, at the very least, the legacy this development-focused society, who have chosen to remove these archaeological sequences, owe future generations interested in their heritage. What happens after that on-site phase becomes knowledge creation but if we don't get the "information gathering" phase right, the actual building blocks of potential knowledge, what follows is likely to be, at the very best, incomplete and, at worst, fundamentally flawed. The problem is an overemphasis on highlighting the difficulties in obtaining the "desired" end product without involvement by the various end users in scrutinising how the information has actually been gathered in the first place and the factors affecting its reliability. A far more pertinent question might be: have concerns about publication of the end product and making it available to all stakeholders overshadowed the importance of this critical first stage of investigation? And does no responsibility attach to other heritage stakeholders (who seek to use information from excavations) to help create an environment which ensures optimal conditions for accurate and reliable data gathering?

There are several significant practices which have evolved in the development-led sector and which can have a major influence on the successful outcome of an excavation but which, for the most part, are not regulated by any authority, either statutory or academic, it being left to the site archaeologist to muddle through, with little support from any other archaeological entity. The first and most significant is the thorny issue of funding and adjudication of costs. A review process is currently underway, having been established in 2007 by Ireland's then Minister for Heritage, entitled *A review of archaeological policy and practice in Ireland: identifying the issues*: this subject is being dealt with by a sub-group chaired by Margaret Gowen and comprising Stefan Bergh, Ian Doyle and the writer.

In Ireland, the stated policy is "preservation in situ" by avoidance, if possible, but, during the "Celtic Tiger" years (especially the 1990s and the first half of the following decade) and the rapid development of almost all our urban centres, 100% excavation was the norm and "preservation by record" became one of the most common mitigating strategies. The statutory licensing process, which requires a licence for each "preservation by record excavation", reinforces the primacy of the record, conferring responsibility wholly and completely on the individual licensee and thereby placing the burden firmly on the licensed data gatherer, as opposed to any other bodies—for instance, the archaeological companies that negotiated the contract in the first place (Mandal and O'Carroll 2008, 39). The prospective licence holder submits a method statement along with the licence application to the National Monuments Section of the Department of Arts,

Heritage and the Gaeltacht, and the National Museum of Ireland. The sine qua non in this process is that conditions will be such as to allow the site archaeologist to obtain an accurate and complete record in order to fulfil these obligations, as specified in the method statement.

But development-led excavations are reliant on developer funding, which can throw a heavy spanner in the works. Developer funding has been heralded as a great advance both at home and abroad, enshrined in the 1992 European convention (the Valetta Convention) on the protection of the archaeological heritage (Ciuchini 2008, 12) and it is certainly the case that the public archaeological sector could never have financed the vast number of archaeological investigations carried out in the last 40 years in Dublin alone. But it is not without its problems and there is a price to pay, which must be acknowledged and understood by all sectors of the industry (Simpson 2010, 101–3). The plain fact is that the development-sector archaeologists find themselves working for the developer, in the pay of the developer, and are there primarily to "solve the archaeology problem" for the developer, as cheaply as possible, while trying to satisfy the regulatory and statutory authorities that the work is carried out to the highest standards. Despite this obvious paradox, there appears to be little understanding amongst the rest of the archaeological community of the enormous elephant in the room and the difficulties this can cause in practical terms, especially in regard to the execution of research strategies and ultimately securing publication. To put it bluntly, development-led archaeologists do not get to call the shots on their own excavations and cannot dictate the terms and conditions without risking being fired from the job.

A very basic difficulty, and one which can significantly alter the successful outcome of a project, centres on the nature of the commercial contract between the archaeologist and the developer as there is no adjudication on the costs, from any authority whatsoever. It is a simple fact that most private developers are, for the most part, very reluctant to pay for any archaeological works. A large number (but not all!) place little value on the work and certainly have little interest in disseminating the results in the form of publication, especially as they are not obliged to as part of their planning approval. But in the absence of any independent financial adjudication, in bald terms, it is these very developers who decide how much the archaeology will cost in any given project. And they do so in the absence of any independent body that might be charged with looking at the proposed budgets and deciding whether or not the research strategy, as per the method statement, can actually be achieved under the conditions in which the excavation is carried out.

In the past, for the most part, private developers would do what they had do to progress their development, especially if there was a clear critical path that included them in the process rather than placing them on the outside. However, with the collapse of the Irish economy within the last 5 years, the percentage of building costs that can be attributed to archaeology has shrunk even further, which must have an impact on the data-gathering process and the ultimate successful outcome—the creation of knowledge and the delivery of publication. The shrinking of budgets or slimming down of costs for competitive reasons has a direct

impact on the quality: in the absence of adjudication is there a danger that the race will always be to the bottom, the lowest price inevitably winning the tender (Mandal and O'Carroll 2008, 39)?

The second significant problem is that little attention is paid to how the "information gathering" is actually achieved in the field, the physical conditions on site, which will ultimately determine the quality of the record and therefore of the publication. The problems are numerous. The archaeologist has little influence over some of the most very basic of details, for instance, the simple matter of *when* the excavation will be carried out: obviously, wet and muddy conditions in winter mean that information gathering is much more difficult than in summer.

But more significantly there is no stipulation on *how* the excavation will be carried out. In the past, excavations were carried out in advance of construction but now there is a tendency to put the archaeology into the main programme of works purely because this reduces the construction time frame always a critical issue, and is therefore a cheaper option. But this strategy puts significant pressure on the site archaeologist who now has to lead his or her team in a fully fledged building site under very stressful conditions. The excavation is essentially just part of the site works and thus the archaeologists are in with all the other contractors and the work they have to do—for instance, piling, pouring foundations and underpinning, to name just a few. These operations require space and, as a result, large-scale open-plan excavation is rarely an option, as the entire site cannot be "released" to the archaeologist at one time. Instead, the sites are usually divided into sections and released to the archaeologist one at a time, usually out of sequence and often with significant delays in between. In some large urban sites in Dublin, sites have been divided up into as many as 12 different sections, which greatly increases the amount of recording required, with a resultant severe drain on the budget, along with the difficulties it might cause in interpreting the site at a later date. The execution of a "research strategy" which will bear fruit in the form of knowledge, and ultimately publication, under these conditions can be very difficult (Illus. 12.1).

The third significant difficulty is that the restructuring of the contract system in Ireland means that most of the financial risk is now passed on to the site contractor (the building company contracted to do the work after planning permission has been received), which can have serious consequences for the archaeology of the site. The contractor will usually have had no involvement in the decision-making process in regard to archaeology, as it progressed through planning, and will not have attended any design meetings. If the agreed process has not been clearly articulated in the contractor's tender documents, as often occurs for various reasons, this can cause significant problems when construction starts, most notably a breakdown in communications, which is manifestly detrimental to the project. In some cases, the contractor will not have allowed enough time or budget for the excavation and, as a result, it is the archaeologist who is squeezed, not being considered a critical function.

The fourth (but by no means the only remaining) major problem I wish to highlight is the high risk that the archaeologist will simply not be paid, which, in the current economic crisis in Ireland (and elsewhere of course) is becoming a more

Illus. 12.1 Archaeological excavation (foreground) as part of the construction/demolition process on a site in Dublin city centre (Linzi Simpson)

frequent occurrence. If an archaeologist or company is not paid for the on-site works, then the likelihood of a successful post-excavation/publication phase plummets. While, previously, monies may have been accrued from other projects to compensate and fill in the gaps, the collapse of the entire development-led sector makes this option impossible: the production of a publication under these conditions is extremely unlikely.

As the above indicates, the problems associated with executing research strategies and producing publication can begin very early in the excavation process and can be catastrophic, the very record being fundamentally compromised from the start. These are issues that require urgent attention but which must be addressed by the archaeological community as a whole—the development-led sector, the regulatory and statutory authorities, and the academic institutions, in effect, the professional stakeholders of the knowledge being created. The problem of funding and adjudication on costs is a difficult one, complicated by issues surrounding competitive tendering within the commercial sector. However, it remains a critical gap, which simply must be addressed, if the process of excavation is not to be debased entirely. The problem is certainly not insurmountable and requires little more than a basic knowledge of excavation budgeting on the part of the statutory authorities or a body authorised to do so on their behalf, and the production of a rough scale of costs which allows for competitive tendering but ensures the maintenance of standards. Critically, what such a system would do is allow for an intermediary adjudicator between the developer and the archaeologist, which could be very beneficial to both parties.

Controlling conditions on the excavation site is also not an insurmountable problem but requires enforcement and quality control from the regulatory authorities rather than the site archaeologist. The most obvious solution is to strengthen the method-statement element of the licence application to include detailed methodology of the proposed site works and construction phase in an effort to redress the balance of importance between excavation and construction. The presentation of a detailed programme of works, in advance of the commencement of construction, would obviously be enormously beneficial in determining whether or not suitable conditions are likely to exist for a successful campaign. Once on site, this would allow for a monitoring role by the statutory authorities which would help redress the balance between the site director and site contractor, even if it simply involved resubmitting the original method statement but including any unforeseen alterations to programme or changes in circumstances. This strengthening of the method statement would also address the problem of non-involvement on the part of the site contractor as these details would have to be included in the expanded method statement. This would return the onus of responsibility for compliance to the design team, the individuals responsible for agreeing the archaeological strategy in the first place.

The matter of non-payment is also a very difficult issue but there must be some recognition that this has become a serious concern, because it simply collapses the post-excavation process instantly with devastating results. While licensed directors are left to pursue these individuals through the courts, a costly business, the fact is that these archaeologists are working on behalf of the State, and enforcement of the archaeological conditions under which planning permission was granted is a matter for the regulatory authorities, especially (in an Irish context) the National Monuments Section of the Department of Arts, Heritage and the Gaeltacht and the planners in the various local authorities.

While the roles of the statutory and local authorities are critical components in ensuring best archaeological practice, and the problems on the ground can be reduced by taking direct action in regard to how the process works, the academic community also has a significant responsibility in regard to their involvement in the data-gathering process and cannot allow themselves to become consigned to simply being end users, involved only in the harvest of data. In Ireland, the university and related sector is now subject (albeit reluctantly) to State intervention and in receipt of State funding (however inadequate), and such centres of learning must help to provide the lead in knowledge creation, and be encouraged in their efforts to support both the State sector and the field archaeologist on the ground (after all, most archaeologists in Ireland are products of these institutions and all are therefore strongly interlinked).

It is time for the archaeological community to face up to the fact that the "polluter pays" policy of developer funding is sometimes not all that it is cracked up to be and that "developer money" does not pay for everything and cannot ensure best practice in the absence of rigorous regulation and strong academic support. And, while there have been some outstanding collaborative projects, it is also time to admit that, at some stage in their careers, most development-led archaeologists have

been put in a place they didn't want to be, which has contributed to an anxiety about the quality of the record that is subsequently available for publication. What we are left with is a wonderful bounty of archaeological data that has been meticulously retrieved from every corner of this island (the persistent adherence by the regulatory authorities to the 100% excavation policy being a real triumph for the people of Ireland). The "value for money" so often talked about these days in relation to development-led archaeology might not be fully realised in our life time but now is the opportune time for the profession collectively to switch mode and to begin to process this treasure trove of information which, properly managed at this stage, will sustain the profession for many generations to come.

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Chapter 13
Knowledge, Value and the Celtic Tiger

Brendon Wilkins

Introduction

In July 2008 Dublin paid host to the sixth *World Archaeological Congress*. With over 1,700 delegates, it should have been a glorious opportunity to present Irish archaeology to a global audience, but instead of celebrating the national press ran with a story of alleged compromised standards and corruption in commercial sector archaeology. Controversial excavations on one of Ireland's major infrastructure projects—the M3 Clonee-North of Kells—were in an advance stage of completion, and pressure groups protesting against the development made it clear that there would be no truce for the sake of our visitors. The opportunity was too important to be missed, and with exquisite timing and skilful management, the news agenda was firmly seized.

Maggie Ronayne, a lecturer in the Department of Archaeology, NUI Galway, fired the opening salvo with a paper published in Public Archaeology entitled "*The State we're in on the eve of World Archaeology Congress (WAC) 6: Archaeology in Ireland vs. corporate takeover*" (2008a, 114). Despite fierce rebuttal by the individual archaeologists involved, the national media seized on claims made in Ronayne's paper of corruption on the M3 road scheme. The wider archaeological community emphatically rejected the inference, arguing that archaeological practice in Ireland is regulated and cannot be exercised without reference to a professional Code of Ethics (IAI 2008). Ronayne countered, pursuing the "ethical" implications of financial dependence on developers, throwing what she believed to be the validity of the work they do on behalf of these relationships into question. When Brian Duffy, the Chief Archaeologist of the Department of Environment, Heritage &

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Local Government, responded in the WAC Tara Plenary session that he didn't "care where the money came from to excavate sites, just as long as it came in sufficient quantities", (cited in Ronayne 2008b) Ronayne was disgusted, following up her conference media campaign with a letter to the *Irish Times* (ibid.).

> …What is ethical about facilitating the construction of a four-lane motorway through the landscape of a symbolic national monument, alienating communities, bringing archaeology into disrepute, and providing cover for corrupt development and profiteering by multi-nationals—in some cases the same multi-nationals massively profiteering from the murder of over one million people in the Iraq war, the majority women and children?
>
> (Ronayne 2008a, 123)

There is an important argument hiding in here somewhere (what exactly are the implications of a fully privatised profession?) but it is devalued by absurdly equating a job in commercial archaeology with tacit support for the Bush administration. This may seem like an extremist view of infrastructural archaeology, but it is not an unusual sentiment to find expressed in the media. Responding in *The Observer* to Seamus Heaney's criticism of modern day Ireland's pursuit of the secular above the sacred (McDonald 2008), Jonathan Foyle, Chief Executive of the *World Monuments Fund*, declared that the construction of the M3 was equivalent to the state-backed destruction of the Bamiyan Buddhas in Afghanistan (Shamrock 2008). In this media tribunal on international war crimes against archaeology, it would seem that the commercial sector practitioners are in dereliction of duty.

With headlines like this, WAC delegates could be forgiven for thinking that Irish archaeology is dominated by high profile controversies; however, much more significant is the seismic shift that has been wrought in our archaeological understanding as a result of pre-development excavation and surveys. Irish archaeologists, particularly those who are commercially funded by development, are loath to take a position on these cases; irrespective of personal feelings concerning the appropriateness of development, in entering into a planning process archaeologists are constrained by the terms of engagement. It is their responsibility to undertake work to the highest professional standard, but they are powerless to alter due process whether happy with the eventual outcome or not (Cooney 2005).

When this paper was presented at WAC, the intention was to demonstrate how the Irish road-building programme has generated significant new data that has challenged accepted interpretations and enhanced regional sequences in a way that was unthinkable to an earlier generation of archaeologists (Wilkins 2009, 243). The arguments centred on the significance of the archaeological results as justification in and of itself, but elsewhere the conference was being challenged on the question of archaeological value—about why we are choosing to excavate in the first place. This is a fair point: can the significance of the archaeological material—of this new resource—be balanced against the social, political and economic arguments for development? This paper will consider how these issues connect to excavation work on the ground, and assess how these weighty arguments might be operationalised as strategies in the field.

Background

There is a broad global consensus that the impact of change on archaeological remains must be controlled and managed, although the precise legal and administrative mechanisms can vary significantly between nation states and federal regions. This rests on the principle that the historic environment is a finite, non-renewable resource that must be protected, managed and studied for the benefit of present and future generations. The ultimate loss of the material remains of the past must be balanced against their significance, and the ability of the practising archaeologist to produce a measured, drawn and written record; appropriately conserved and archived finds; and a fully synthesised final report lodged with the relevant authorities. At a fundamental level, development-led archaeology can be organised according to either socialist or capitalist principles: projects can be delivered either as a public service or procured through a market of service suppliers (Demoule 2002, 170; Thomas 2002, 236). In keeping with a western economic trend, Ireland has adopted a commercial approach to delivering what was previously organised exclusively as an academic discipline (Willems and van den Dries 2007, 1).

The market-based model became viable when planning regulations, driven by government policy not to provide archaeology as a public service, enforced an obligation to consider the potential impact of proposed development on archaeological remains with all costs met by the developer. The foundations of the commercial sector were consolidated by a revision of the European convention (the Valetta Convention) on the protection of the archaeological heritage by the Council of Europe (1992). Article 3, relating to "the authorisation and supervision of excavation and other archaeological activities", makes clear recommendations as to how projects should be managed, whilst Article 6, relating to the financing of archaeological research and conservation, indicates that costs should be budgeted for by all developers—public and private. The Valetta Convention was ratified and implemented by most member countries and was followed in 1997 by European Union legislation on environmental impact assessment (council directive 97/11/EC) that included archaeology (Willems and van den Dries 2007, 2). This is administered at a national level in Ireland through the National Monuments Act (1930–2004) and articulated through the *Framework and Principles for the Protection of the Archaeological Heritage* (DAHGI 1999).

Celtic Tiger Archaeology

The Irish "Celtic Tiger" boom resulted in a dramatic increase in the scale and quantity of archaeological work, as both private developments and major public infrastructural projects stimulated demand for commercial archaeological services. In 2005 the budget of the annual road building programme was estimated at 1.5 billion €,

initiating some of the largest infrastructural archaeology projects ever undertaken in Europe. A national development plan was implemented from 2000 to 2006; this provided ring-fenced resources for improving the country's inadequate infrastructure underpinned by generous European funding and tax incentives for investment. The impact of this growth can be gauged by the increase in excavation licences and survey data of the number of archaeologists employed in the sector. The number of excavations reported in the annual *Excavations Bulletin* rose from 214 in 1993 to 2,044 in 2003 (Eogan 2008). In 2002 there were an estimated 650 professional archaeologists working in Ireland, 45% of which were in the commercial sector (CHL Consulting 2002). These figures increased exponentially, with a high watermark reached in 2007 when the estimated number of archaeologists in Ireland expanded by over 260% to 1,709, with 89% of this figure employed in the commercial sector (McDermott and La Piscopia 2008).

The commercial sector responded to these changes with significant developments in professional methods and technical processes (O'Rourke 2007, 39), and the consequent discovery of new data has challenged accepted understanding of regional sequences in a way that was unthinkable before the boom (Eogan 2008). But despite the successful identification and excavation of a vast quantity of previously unknown archaeological sites, the system is currently under government review in Ireland with new legislation being drafted (DoEHLG 2007). Calls for change have come from within and without the discipline and focus on the question value for money—a question that was not considered relevant when excavation was only practised as an academic discipline (see Waddell 2005, 7; 2007, 4).

Richard Bradley has argued that in both Britain and Ireland there are two different cultures of archaeology: academic, committed to research and the pursuit of knowledge, and commercial, devoted to the "preservation by record" of archaeological remains threatened with destruction (Bradley 2006, 1). The commercial sector has been criticised by some academics for becoming a specialist sub-discipline, where the concept of an objective, quantifiable resource can be managed in the manner of a production line (Barker 1993, 147; Adams and Brooke 1995, 93). This follows a long-standing debate regarding the viability of archaeology in a market-based economy, and uncertainty as to what exactly constitutes a quality archaeological product (Willems and van den Dries 2007, 4). Given that development-led work is paid for in the public interest, criticism has focussed on the question of "fitness for purpose".

Fit for Purpose

Concerns expressed in the Irish media over expenditure on infrastructural archaeology have focussed debate on the resulting public benefit from such large-scale excavations (O'Connell 2009). In November 2007, no doubt influenced by the public debate surrounding the construction of the M3 through the Tara environs, John

Gormley, then Minister for the Environment, Heritage and Local Government, invited submissions from all interested parties to debate the issues confronting Irish archaeology; he also appointed an expert committee with international representation to undertake a review of the existing legislation and make recommendations for the development of comprehensive modern legislation (DoEHLG 2007). The challenge for the archaeological community is to ensure that policies and strategies adopted to protect our historic environment are "fit for purpose"—a measured approach derived from manufacturing industry that equates quality with the fulfilment of a specification or stated outcome (Woodhouse 1999, 29).

The problem of "public benefit" is perceived as resulting from the failure of the commercial sector to convert technical survey and excavation reports into published and accessible information which can be transformed into knowledge (O'Sullivan 2003). Both the Royal Irish Academy (2006) and The Heritage Council (2007) have published detailed analyses of archaeological issues in relation to "Celtic Tiger" archaeology. The main problem is seen to stem from a lack of cohesion and inter-institutional collaboration between contracting archaeology companies undertaking fieldwork and university based archaeologists involved in research. A result of this "disconnectivity" is that development-led archaeology has been undertaken purely to facilitate development projects and the data from a vast number of excavated sites remain unpublished (UCD 2006, 25).

> The success of any archaeological project must be judged primarily by the research questions/issues it sets out to answer and the knowledge it produces. With some exceptions, the current preoccupation of the development-led archaeology is largely with data/information collection and management rather than the quest for knowledge. To address this situation, immediate priority must be given to the standardisation of data collection/recording and to its interpretation by directors and other archaeologists involved in excavation projects.
>
> (UCD 2006, 35)

The Heritage Council document is an attempt to redefine "fitness for purpose" by repositioning the focus on knowledge production. But rather than address the issue of "disconnectivity", the document persists with the traditional view of archaeology as objectively recording the nature and extent of archaeological layers and deposits to create a data set that can then be used to generate knowledge. The emphasis is on generating a quality product (such as publication) without considering quality as process (or how this product might be realised by our excavation strategies). This is an important distinction, because in commercial sector archaeology a quality archaeological product (generating new, secure knowledge of the past) is not necessarily the same thing as quality management of archaeology (managing a programme of archaeological work within time and budget).

In "quality management systems" the concept of quality is defined as "means of satisfying the needs of the customer, outspoken or not" (Willems and van den Dries 2007, 6). There is a tension inherent in commercial archaeology as the needs of the customer, in this case the developer, will be judged in terms of time and money and not in terms of the quality of the end product: new knowledge about the past. This tension can be overstated, and there are clear examples of developers such as

British Airport Authority (BAA) in the UK and the National Roads Authority (NRA) in the Republic of Ireland who are not indifferent to archaeologist's aspirations, and see publication of the results of the excavations they fund as a valuable output. However, the current market structure makes these the exceptions rather than the rule. A highly successful archaeological business can trade on an exceptional reputation in the construction industry, whilst simultaneously producing poor quality results for society as a whole.

Commerce depends on market principles to operate, but the extent to which these can be applied to commercial sector archaeology is limited (Hinton and Jennings 2007, 106). The archaeological market is an artificial creation that exists because the state wants archaeological information and creates legislation with which developers must comply. The product bought from an archaeological contractor is of no interest to the developer and has to be delivered to and shared with the state. As buyers do not have exclusive control over the product they purchase, this is an additional motive for wanting to keep the price as cheap as possible. In this situation, there is no market logic driving the impetus for quality of the archaeological product, and in an increasingly competitive market the quality of the archaeological results is placed in jeopardy (Hinton and Jennings 2007, 107).

European states have addressed this challenge in different ways, but measures introduced to ensure "quality archaeology" can be summarised as working at two distinct levels. At an organisational and policy level, the market may be regulated with voluntary or enforced guidelines on standards and methodology, and supervised with monitoring systems or regulated permits and licensing. Another approach would be to guarantee the quality of the product and its relevance and contribution to knowledge about the past, supported with a research agenda and peer review system. The current call in the Republic of Ireland for a quality product relates to this secondary level of regulation, but in treating the market model as neutral it fails to adequately address the potential negative effects of commerce on knowledge production.

Margaret Gowen, in her capacity as vice-chairman of the Institute of Archaeologists of Ireland, has explained the shortfall in publication as a consequence of how the market is structured and regulated (Gowan 2007, 29). The DoEHLG controls access to market in Ireland, issuing site-specific licences to individual archaeologists that have sat an eligibility entrance exam. Given that companies rather than individuals tender for the majority of work, this has created the situation where licence holders are professionally liable for projects but not commercially liable. With no mandatory structure or mechanism for monitoring excavation or post-excavation work (other than the issue of licence numbers and the checking of method statements), individual directors rely on voluntary, self-motivated efforts to publish for peer review, often without the financial support of the archaeological companies that tendered for the work in the first place. Without a rigorous system of supervision, the licence system provides no guarantee that individual archaeologists or the companies they work for will produce a quality archaeological product, only that they will provide a state accredited service.

Significance and Value

While many disagree over the finer points of how policy should be implemented, all would agree that the objective of the Irish legislative review is to achieve quality and best practice according to internationally agreed standards. The current calls for wider publication—argued for as a measurable way of achieving archaeological quality and delivering value—are all attempts to patch up the flaws in developer-funded archaeology. But these issues stem from the language and theoretical perspective that informs commercial practice, so solutions will have to be found at that level. The material remains of the past are assumed to be a "resource", coming under general environmental legal protection designed to ensure sustainability. This equivalence with other "raw materials" such as minerals has come to perceive archaeological remains as something with an inherent value independent of our intervention (Darvill 1999, 300). The consequence has been to orientate the commercial sector around the preservation of archaeological remains (either in situ or by record). Interpretive decisions can then be delayed to a later phase of the project because the material uncovered by the excavation and the record produced by the individual excavator is seen as impartial and a-theoretical.

Ireland differs from many other European states in that the basic reasoning of heritage policy is non-discriminatory; in the UK sites are considered to be of varying importance, requiring either preservation in situ or by record, on the basis of criteria that can be applied in order to judge relative levels of significance. A monument is assessed to be of national importance on the basis of survival and condition; significance of the period to which the monument belongs; rarity; fragility and vulnerability; representivity; potential to contribute to understanding and the extent of supplementary documentation enhancing the monuments significance (Breeze 1993). These decisions are always linked to value judgements—socially defined perceptions of what is good, right and acceptable—and these ideas are applied to the resource as a whole. Darvill's (1995) threefold division of use value (education, research, recreation, symbolic representation, economic gain, legitimation), option value (stability, mystery) and existence value (cultural identity, resistance) illustrates that an archaeological site may be significant, but can only be valuable for some specific purpose. In commercial sector archaeology, the "use value" has taken second place to "existence value", as the actual meaning of archaeological remains is sidelined by policy decisions to preserve those remains (in situ or by record).

Ireland's non-discriminatory approach is a strategy linked to a value system of a wealth generating structure, and the dramatic growth of the sector throughout the Celtic tiger period is a sign that the archaeological profession has undoubtedly benefited. The road-building programme is about creating the conditions for business competitiveness, and the methodologies of commercial archaeology have been crucial in enabling the efficient management of this change. The goal must now be to build a knowledge-generating framework from a wealth-generating foundation. It is no longer sufficient to justify excavation in terms of the percentage of features rescued or commitment to agreed standards of recording, and the call

for research agendas and wider publication is an indication of the shortcomings of the value system underpinning development-led archaeology. It isn't a question of whether or not we value archaeological remains; the fundamental issue is *how* we value those remains.

Decisions concerning the preservation of specific archaeological sites in situ or their preservation by record should be made in relation to wider issues—both archaeological and sociopolitical (Lucas 2006, 20). There are strong social and economic reasons for constructing infrastructure, but it is only by aligning "commercial archaeology" with "research archaeology" that the value of an excavation can be balanced against the decision to develop the site in the first place. If excavation is alternatively conceived as research, albeit development-led research, the cost of the work paid for by the developer can be offset against the value of the results obtained. The research value of the archaeology must ultimately be weighed against the social and economic value of the development. If society wants archaeology to live up to its potential, providing a unique commentary from afar as a transformative force in the present, any review of policy cannot take place without also undertaking a detailed examination of practice.

Excavation Practice

Excavation strategies will differ depending on how archaeologists visualise the evidence below the ground and how this relates to past behaviour (Carver 1993, 53). Cultural historians will see sites as fossilised historical events and investigate them with targeted trenches. Mortimer Wheeler (1954) developed a system of box trenches and a system for retaining finds from separate layers. Each section had a separate drawing carrying a version of events—making up the story of the site. Kent Flannery (1976) has outlined the processual approach to excavation based on a conception of sites as part of buried systems. Transects and test pits are used to understand past societies through sampling the static remains of its behaviour in a structured and methodical way.

The British "Rescue" movement developed a methodology of open area excavation originally used in Scandinavia during the 1930s, where archaeologists began dispensing with sections and began reducing sites in layers. The idea of "context", invented by Max Foster, leant itself well to this system and was taken into use by urban contract companies (Carver 1993, 53). Harris (1989) demonstrated that the context (defined as the prime stratigraphic unit in an excavation site such as a layer, interface, cut of a pit or foundation stones of a wall) could be represented on a diagram and given its own description. This system was adopted in Ireland in response to a similar service need by an expanding commercial sector, as the profession moved away from an empirical tradition.

Hodder argues that the growth of a state interest in British archaeology ran parallel with a commitment to scientific endeavour to the extent that it was paramount that the first Inspector of Ancient Monuments, Pitt-Rivers, was also recognised as

the first objectively scientific excavator (1989, 1999, 170). Following Foucault's discursive analysis of the manner in which authoritative statements in medicine were gradually imported into a neutral, public domain, Hodder sees the expansion of commercial archaeology as progressing along similar lines. The material uncovered by the excavation and the record produced by the individual excavator is seen as impartial and a-theoretical. Translated into the language of cultural resource management, the concept of "the archaeological record" and the strategy of "preservation by record" become equivalent. The process of excavation therefore ceases to be exploratory and inquisitive and instead becomes led by the service requirements of discharging a planning condition (Hodder 1999, 170).

The influence of the New Archaeology is felt at every stage of fieldwork from field survey and sampling techniques to statistical representations of the data, but post-processual approaches have clearly had a limited impact on practice. Theoretically engaged field archaeologists have argued that archaeological methods should foreground interpretation, relationality, multivocality and reflexivity (Lucas 2006, 20). Excavators should be conscious of why they do what they do (reflexivity), sharing their initial findings with specialists at the moment of discovery (multivocality) and conscious of the situated nature of knowledge production (relationality). Returning to fundamentals, Gavin Lucas (2001, 2) asks "why do we even go into the field at all?" Drawing on Tilley's paper "*Excavation as Theatre*" (Tilley 1989, 275), the process of excavation can be highlighted by explicitly articulating the purpose behind it. Tilley argues that this should shift from "a process whereby the material traces of the past are 'rescued' to being an exercise in a very different kind of production: the manner in which interpretive experience is produced" (Tilley 1989, 278).

By stressing the embodied nature of archaeological work (Bender et al. 1997), a coherent critique of traditional field practice has emerged, culminating in two separate but related approaches. The first a foreign research project organised by Cambridge University (Hodder 1997, 1999), and the second Framework Archaeology (a joint venture established by Wessex Archaeology Ltd and Oxford Archaeology Ltd in the UK) a commercial company formed by set up to undertake archaeological work at British Airport Authority (BAA) airports in the UK (Andrews et al. 2000). The main departure between these new approaches and traditional fieldwork is with how they conceive of the excavated data. The "archaeological record" is not a unified notion, but a heuristic device used to conceptualise past human action in relation to the remains of the past. Linda Patrik has identified two main contrasting models for the archaeological record: the physical and the textual (1985, 29). The physical model recognises the archaeological record as a direct record of physical objects and processes. The features and the spatial order of the record is a result of causal regularity and operate according to universalistic and probabilistic laws. The textual model sees the record as composed of physical objects and features that are material signs and symbols of past concepts; the record is structured through rule-guided behaviour and this is expressed in culturally specific ways.

Ian Hodder's work at Catalhoyuk was an explicitly reflexive, involving a multidisciplinary team of specialists to engender collaboration at every stage of the project from data collection to final analysis. By adopting this approach knowledge

claims could be secured by exploiting as many conceptual and empirical resources as possible; interpretation is embedded in the excavation process, and returned to what Hodder calls the "trowel's edge". It has been argued that this maintains the traditional distinction between objective field record and historical interpretation, by recognising the material in the first instance as "material", over which historically specific meanings can be mapped. The main critique of this position is derived from the final sentence of Patrik's paper:

> Might there be a new model of archaeological evidence that does not borrow at all from the concept of a record… I would like to raise the question expressed in the title of this paper: "Is there an archaeological record?" For the question hints that archaeological evidence may not form any kind of record at all… If neither the physical recording connection nor the recording connection of signification seem exactly right for an appropriate conception of archaeological evidence, if neither seems to capture the actual connection between archaeological evidence and what it is evidence of, then perhaps the whole concept of recording is not appropriate for the evidence.
>
> (Patrik 1985, 57)

Hodder's "archaeology of meaning" is seen to replicate more functionalist explanations where abstract social structures govern human behaviour, replacing this with the primacy of the individual. This fails to recognise that material conditions are not just the residue of past activities, "they are to be seen more as the anchors and points of reference around which different kinds of life have been constructed… The analysis of history involves understanding the relationships between structural conditions, that is, the existing material and social conditions which confronted the lives of the landscape's inhabitants in any one period, and the structuring principles through which people found it possible to live out there lives within those conditions" (Andrews et al. 2000, 528).

In rethinking the primary objective of the excavation process as the production of historical knowledge, the stated objective of Framework Archaeology's (a joint venture set up by Wessex Archaeology Ltd and Oxford Archaeology Ltd) programme of archaeological research at Heathrow Airport in advance of construction of Terminal 5 and Stansted Airport has been to construct an on-site history of the human inhabitation of the landscape. The usual aim of developer-funded excavation is to describe the history of the archaeological site as a stratigraphic sequence of phased plans and associated artefact assemblages. Stepping beyond this focus on depositional context, the Framework programme is concerned not with how things were made, but with how "people were made as social beings" (Andrews 2000, 529). A two-stage sampling design moves from establishing the general characteristics of the landscape to the more specific archaeology of the human presence:

> Onsite analysis therefore examines material residues in relation to three basic and interrelated themes: the architecture of the landscape at anyone time (by which we mean all those elements often divided between the 'cultural' and 'natural' environments); the long-term formation processes operating across those landscapes (such as soil erosion); the strategies by which different elements of the community coped with and redesigned the conditions before them (such as how land was worked, food prepared, or the ways the dead were buried).
>
> (Andrews 2000, 529)

The manner in which these landscapes (or locales) are experienced and perceived is closely related to the activities and tasks that are undertaken (Ingold 1993, 152). To take the example of wetlands, these landscapes were more than just a source of economic benefit. Through their practical and knowledgeable engagement with estuarine landscapes, people actively constituted their identities (Van den Noort and O'Sullivan 2006). With an intimate knowledge of the hidden places within these landscapes, people may have used such knowledge and folklore to help construct social and economic relationships in the communities in which they lived. The goal of this type of "historical understanding" is to develop a more detailed analysis that can be encapsulated by the generic term "landscape" and appreciate the range of values attributed to different landforms by people in the past.

The Pursuit of Wealth

Despite the boom in public spending on archaeological projects, there have been no similar attempts to rethink excavation practice in Ireland. In 1995, Gabriel Cooney noted that the international debate concerning theory and practice had passed Ireland without impact (1995, 264). He interpreted this scepticism as the reaction of a nationalist archaeology to an imperialist tradition. With a continual steam of new discoveries capable of throwing light on all prehistoric and historic periods, he saw an inverse relationship between engagement with theory and the wealth of the archaeological data excavated. In this climate, the dramatic new finds arising from road schemes will be quickly rewarded in the disciplinary hierarchy if they conform to expected preconceptions (Cooney 1995, 272).

The buoyant Celtic Tiger economy and the concomitant rise in commercial sector archaeology have arguably consolidated Irish archaeology's general mistrust of theory. Developer-funded archaeology is modelled on a system of competitive tender, and the commercial imperative created by this structure does not easily accommodate uncertainty (Lucas 2001, 2). The conception of an objective past, "preserved by record", continues to justify the collection of ever-increasing amounts of data, on the proviso that "if enough records are made and sufficient phenomena observed, we will experience some kind of enlightenment" (Bradley 2006, 6). But if the right questions are not brought to bear on our observations in the field, then new secure knowledge of the past will remain elusive. These are the limits of a commercial paradigm, and they must be acknowledged and challenged if a system designed to deliver quality management of archaeology for the customer (time bound and within budget) is enabled to find new, secure knowledge of the past for the betterment of society as a whole. But it is a very different critique of commercial archaeology that has entered the public consciousness, deftly illustrated by the Ronayne article, and it begins and ends with the bold assertion that the provision of a commercially traded service leads to corruption.

Ronayne cites McDonald and Nix's (2004, 33) polemic on the construction industry in Ireland, referring to the "close collusion" and "vested interests" between

"the development-at-any-cost lobby and the short-term thinkers who lead us". This paper has sought to explore different concepts of archaeological value and how they influence the choice of strategies that are adopted in the field. It will conclude by arguing that the simplistic criticism of commercial archaeology as "guilty by association" with the construction industry is itself another way of devaluing the past as a transformative force in the present.

Embedded

The subtext to the Ronayne paper is a difference in opinion between two separate academic departments—University College Dublin School of Archaeology (UCD), headed by Professor Gabriel Cooney; and the Department of Archaeology, NUI Galway (NUIG), then headed by Professor John Waddell. UCD has engaged actively with contemporary commercial archaeology in Ireland, authoring policy review documents (UCD 2006) or co-authoring archaeological guidelines with the NRA (NRA 2006). NUIG, on the other hand, has been openly critical of commercial sector archaeology. Referring to the Heritage Council policy document "*Identifying the Issues*", co-authored by UCD, Waddell wrote in the popular magazine *Archaeology Ireland*:

> This report contains many sensible suggestions for the future development of archaeology in Ireland but starts from a premise that is as banal as it is unacceptable: 'Today archaeology is predominantly a business domain, operating in a competitive economic climate radically different from the research ethos which characterised earlier decades'.
>
> (Waddell 2005, 8)

Banal, one imagines, because it is an obvious statement, unacceptable, one assumes, because archaeology is first and foremost an "intellectual discipline" (Waddell 2005, 7). But the title of Waddell's paper "Cheques and balances" reveals his real objection.

> The agenda of scholarship is increasingly set not by the collegiate academy but by the political establishment and their academic supporters in the name of the market place. The degree to which the acceptance of consultancy work or research contracts from commercial concerns may compromise academic freedoms, including the freedom of speech, is unknown. Indeed, the problem may be very limited, but the ethical issues are worth discussing.
>
> (Waddell 2005, 8)

Pursuing this theme at WAC, Ronayne argued that the Dublin conference was "pivotal because WAC will decide for or against archaeologists' accountability to communities and their life and death struggle for survival, and for or against embedding the profession with cultural destruction in the private sector" (Ronayne 2008a, b, 114). The concept of "embedded" is crucial here, a term that first came to be used in the media coverage of the 2003 invasion of Iraq to refer to journalists attached to military units involved in armed conflict. Reporters signed contracts

with the military that limited what they were allowed to report on, and in return, they received access to the front line. It is often said that the first casualty of war is truth, and the situated position of journalists within military units is considered problematic, throwing into doubt their capacity to report from different perspectives, such as civilian populations and dispossessed groups. Reflecting this, Ronayne asks whether archaeologists, who remain embedded within the construction industry, servicing the needs of development, can still produce valid results for the benefit of society as a whole?

> When academics take research funding from developers to assess the impact of developer projects, or receive joint funding for collaborative projects with the private sector, we have gone over the precipice: in both cases the agenda is set not by archaeology but by the market. […] Our autonomy must remain a key feature of academic life, and in the climate of corporate takeover is an independent means of checking the free reign of market forces among professional sectors of society. This autonomy is not ours to give away; we are public servants, and communities require from us that we stay independent in their service. […] I hope WAC members will decide for communities and their life-or-death struggle for survival, which is the fundamental basis of the struggle to preserve, maintain and pass on culture.
>
> (Ronayne 2008a, b, 127)

Biases are often unconscious, which is perhaps why Ronayne has chosen to be explicit about hers. Large-scale infrastructure is objectionable on principle because of the global scale of the companies connected with such projects and their alleged involvement in the arms trade and post-conflict reconstruction projects. As an archaeologist she seeks to identify with the displaced communities that make way for these developments worldwide and wants archaeologists employed globally in the commercial sector to realise that clearing a development of archaeological deposit is not preservation by record but an Orwellian sleight of hand. Her challenge to Congress was that if we, as commercial sector archaeologists (or as academic archaeologists cooperating with the commercial sector) do not take a direct stand on these issues whilst still taking this tainted money, then we are taking a position by default.

Conclusion

The decisions archaeologists make are coloured by gender, ethnicity, politics, class, age, personal relationships and a multitude of different interests at play in modern societies. Labouring under specific historical, political and economic conditions, archaeologists select from a range of potential interpretations of the past, and their decisions are mediated by how they identify, understand and relate to those interests. Field archaeologists employed to undertake pre-development archaeology on the Irish road schemes are undoubtedly embedded—embedded with the National Roads Authority—without whom they would have no contractual access to the front line trenches. But all archaeologists are embedded in some form or other and to suggest otherwise is missing the point. The commercial sectors relationship with the NRA is no more corrupting than Ronayne's relationships

with the "Global Womens Strike" or other "grass roots communities". The crucial difference is that commercial archaeologists, no matter who funds their work, are actually getting their hands dirty.

Strident politics or strong commitment to the scientific method will not guarantee academic autonomy. Irrespective of the ambiguous influence of the present, "the findings of archaeology, however subjectively interpreted, have altered our perception of the general course of human history, of our relation to nature, and of our own nature in ways that are irreversible without the total abandonment of the scientific method" (Trigger 2006, 531). The ground beneath our feet presents the ultimate antidote to the postmodern imagination, a culturally relative world where a linear pattern of past, present and future has been replaced by "post fordism" (Jameson 1991). If products are tailored to individuals' specific needs and we can re-fashion ourselves at will, there is no clear sense of acquiescence or resistance; "everything now submits to the perpetual change of fashion and media image, and nothing can change any longer" (Jameson 1991, cited by Wallace 2004, 17). This concept is further developed in the following quote from the philosopher Frederic Jameson:

> Social changes no longer carry revolutionary possibilities for political progress but rather erase the past, 'sweeping the globe clean for the manipulations of the great corporations'. In this climate, 'space and psyches can be processed and remade at will', apparently free and self-empowered but actually malleable, denuded of the power of concerted resistance. Literal and metaphorical demolition begins to 'connote the speculations of the developers far more than the older heroic struggles of oppositional intellectuals'
>
> (Wallace 2004, 17, citing Jameson 1991)

But archaeology encounters resistances—a sedimentary matrix of dirt that has to be worked through and understood. To paraphrase David Clarke, commercial archaeology is commercial archaeology is commercial archaeology, and it's precisely this unique engagement with material remains (material that is itself embedded in stratified history), that creates a dissonance between past worlds and our present embedded selves. Before we can confront our own social and political situation, and build a foundation for an effective ethics in a way advocated for by Ronayne, we must acknowledge what Terry Eagleton celebrates as the intractability of history, or "the burden under which we stagger" (Eagleton 1996). As we engage with the material conditions of the past, and study how humanity entered into and was changed by those conditions, we engender a commonality of meaning—a co-presence with humanity of the past. This entails both a deep commitment to get it right and a deliberate decision to recognise both the beautiful and horrific facets of humanity (John Barrett, pers. comm.).

In the "knowledge economy", the capacity to adapt and innovate is capital to business and countries; knowledge is not only the source of wealth and power but also the indicator of difference between nations, regions, companies and people (Castells 1996). In orientating commercial sector archaeology exclusively towards wealth creation, the net knowledge gain for society as a whole is dramatically reduced, and this devalues the past as a force for transformative change in the

present. Archaeology is concerned with social change, and results derived from development-led excavations could potentially serve as a guide for future development by enabling citizens to make informed choices with regard to public policy (Trigger 2007, 547).

> In a world that, as a result of increasingly powerful technologies, has become too dangerous and is changing too quickly for humanity to rely to any considerable extent on trial and error, knowledge derived from archaeology may be important for human survival. If archaeology is to serve that purpose, archaeologists must strive against heavy odds to see the past and the human behaviour that produced it as each was, not as they or anyone else for their own reasons wish them to have been.
>
> (Trigger 2006, 548)

Properly realised, the material remains of the past—the accumulation of sedimented layers of history—are a powerful reminder that life was once radically different. Moving towards an uncertain future, it's vital that this hard won knowledge is shared with society as a whole.

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Chapter 14
The Malta Convention and Contemporary Polish Archaeology

Zbigniew Kobyliński

The last decades of the twentieth century saw the introduction of environmental impact assessments that were demanded by the national law for all, or at least larger scale, developments, in the spirit of the holistic vision of human environment. In many countries it also became gradually understood that there was a requirement to cover the costs of necessary archaeological prospection and mitigation activities from the total budget of the development. This rule, explicitly included in the *Lausanne Charter* of 1990 (ICOMOS 1990) and in the *Malta Convention* of 1992 (EAA 2000), followed by the adequate EU directives, has radically changed the character of archaeology in many countries.

This has happened also in Poland, and the situation of contemporary archaeology of this country can be used as an example of both the positive and the negative consequences of some doctrinal statements. These negative effects of the international doctrine of archaeological heritage preservation and management has occurred in Poland, in my opinion, because implementation of this doctrine has in this country a form of acceptance of not the whole new approach to the archaeological heritage but of only some statements which have been taken out of the whole context of the doctrine and used separately as arguments in legislative and administrative processes.

When the International Committee on Archaeological Heritage Management (ICAHM) of the International Committee on Monuments and Sites (ICOMOS) formulated the new, revolutionary, doctrine of archaeology in 1989, in the document later accepted by the General Assembly of this organisation and widely known as the *Lausanne Charter*, this new approach was a logical result of the fundamental global ideological changes concerning the vision of the place and role of human being in the world. This was initiated by publication of Rachel Carson's alerting book *Silent Spring* in 1962 and led gradually to nature protection

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social movements, to focus on ethics and responsibility in philosophy and theology, and finally to formulation of the sustainable development doctrine in world's economics and politics.

In archaeology these ideological transformations were announced, perhaps for the first time, in Charles McGimsey's seminal book *Public archaeology* in 1972 that stated explicitly that archaeological heritage is a fragile, limited, and non-renewable public cultural resource. This statement, which was an eye-opening discovery for most archaeologists, has several logically obvious and unavoidable consequences, crucial for the new vision of the role of archaeology in society. First of all, archaeological heritage must be considered a common property, and therefore archaeologists are only stewards of this property and not its owners. Moreover, all sectors of society have rights to use archaeological resources for their benefit, if only this use is not preventing other sectors from using the heritage in another way, and this can only be achieved when the use has non-destructive character. Therefore, the archaeological heritage resources can only be exploited in a destructive way for public benefit and in a sustainable way. Decisions concerning the archaeological heritage must be publicly accountable and society has rights to participate in this decision-making process. Finally, the expenditure of funds, time, and labour necessary for protection and conservation of the archaeological heritage must be balanced by benefits received by the society, and society must get a compensation for any destruction of the heritage which is not justified by a public interest.

This last consequence leads unavoidably to the rule that the destroyer should pay for archaeological prospection, excavation, analysis, publication, conservation, and storage of finds, which in the English-speaking world is known as the *polluter pays* principle. Authentic substance of the archaeological resource must be in such a case transformed into another form of being, into finds and records of archaeological research preceding the destruction, or, in extreme situations (for example, during illegal activities) aimed at the archaeological heritage during the process of destruction.

In case of rescue excavation, both conducted before a destruction and during the disaster, an important rule is that, as the *Lausanne Charter* formulated, "legislation should in principle require full archaeological investigation and documentation in cases where the destruction of the archaeological heritage is authorised". The *Malta Convention*, which evidently was based on the *Lausanne Charter*, is however less clear in respect to such a situation. In Article 6, it states that each Party State should "increase the material resources for rescue archaeology" by "taking suitable measures to ensure that provision is made in major public or private development schemes for covering, from public sector or private sector resources, as appropriate, the total costs of any necessary related archaeological operations", and "by making provision in the budget relating to these schemes in the same way as for the impact studies necessitated by environmental and regional planning precautions, for preliminary archaeological study and prospection, for a scientific summary record as well as for the full publication and recording of the findings".

The most important, and really innovative or even revolutionary, part of the new doctrine of the archaeological heritage conservation has been obviously the

focus on the preventive conservation (which in archaeology has been frequently described also as the preservation of archaeological remains in situ, and therefore abbreviated as the *PARIS doctrine*), clearly favouring non-destructive methods of research and advocating limiting the number and size of excavations, in some countries. In Poland, for example, the specific ways and conditions in which this doctrine has been accepted and implemented, paradoxically, have led to results just opposite to this philosophy, namely to the enlargement of the number of excavations and to general acceptance of excavation as the only response to threat to the archaeological heritage.

The requirement of preceding every planned development with environment impact assessment and with programme of mitigation of eventual negative effects of such a development on natural and cultural resources, in relation to archaeological heritage in Poland, has become understood simply as an obligation to lead archaeological excavation in every case a development is to be located on an archaeological site. After a decree of the Minister of Culture of 1994 making it practically possible to implement the *polluter pays* principle, and ratification of the *Malta Convention* by the Polish Parliament in 1995, a completely new phenomenon emerged in Polish archaeology: the emergence of private archaeological firms.

This phenomenon, observed much earlier in the UK and just a little bit earlier in other countries, such as Germany, was a direct result of the demand for archaeological teams able to conduct large-scale rescue excavation in a relatively short time, irrespective of season of the year or weather conditions.

In the times of communist government, Polish archaeologists very seldom conducted such excavations. Usually scholars, working at universities, in museums, or in the Polish Academy of Sciences, carried out fieldwork only during the summer months and the scale of these excavations was rather limited. Quite comfortably, thanks to the system of state financing, archaeologists were able to make their own decisions of which sites to excavate. The excavations, which usually had a form of both research and training for students, were not carried out in any hurry. Many unthreatened sites were excavated, such as, for example, Early Medieval strongholds in forests. Only in such rare cases as, for example, construction of ironworks in Cracow in the late 1940s and early 1950s, a copper mine near Głogów in the 1960s and 1970s, a brown coal mine at Bełchatów in the late 1970s, or the dam of Jeziorsko on the Warta River in the early 1980s, archaeologists were called to carry large-scale rescue excavations. Since research institutions or museums were usually unable to fulfil such a task, a state company was created in 1950, called Workshops of Conservation of Monuments. Until the collapse of communism in 1989, the state company monopolised all the conservation works in historical buildings and all the large-scale archaeological rescue works all over the country. Other, smaller scale developments were usually ignored and destruction of archaeological sites was in many cases accepted.

After the great political change in the end of the 1980s, the situation of archaeologists in Poland changed dramatically. Growing numbers of developments, and, at the same time, collapse of the system of state-sponsored research, forced Polish archaeologists to leave their ivory towers in order to find a way to continue their

professional activities. Research scholars, who previously could freely decide on subjects of their studies, according to their personal interests, had to transform themselves now into salvors, ready to work in every conditions and on every site, excavating in the shadow of, and under pressure of, bulldozers and caterpillars impatiently waiting for the end of their fieldwork.

This phenomenon, appearing in various European countries at different times—Eastern European countries of the former Soviet bloc were the last to experience this—has had both positive and negative results. On the one side, the national and the European legislation presently guarantee that practically no development may be carried out without necessary archaeological studies and protective measures. As a result, we can notice an intensification of archaeological excavations and unexpectedly many spectacular discoveries have been made recently during rescue excavations, even in such regions as Wielkopolska (Great Poland) or Śląsk (Silesia). Those regions were previously thought to be well understood from the archaeological point of view. Also, the possibilities of finding employment radically improved for the discipline of Polish archaeology, which, in the pre-Malta period, was a rather elite activity of a small academic community.

However, on the other side, the post-Malta aftermath in Poland awakened anxiety: the demand for archaeological teams ready to conduct contract excavations caused not only emergence of private archaeological firms active in the business of rescue excavation, but changed completely the understanding of the role and character of archaeology towards considering archaeological research as a form of profit-making economic activity and consequently led to commercialisation of the discipline.

Perhaps commercialisation of archaeology itself would not necessarily have to be considered disastrous for the discipline, since in the Western world this phenomenon was present in research in many disciplines, and for a long time was a motor force of scientific research. Unfortunately, however, in the moment of the sudden socioeconomic and political transformations, Poland was not prepared to create mechanisms able to foster the positive aspects of commercialisation of archaeology and at the same time to control its eventual negative aspects. There were no institutions or state agencies which could organise the transformation of archaeology from the previous purely research-oriented academic discipline to the new required form of activities strictly related to the economic development of the country. There were no think tanks, non-governmental organisations, or individual scholars of high influence, which could advise the government to use wisely the lessons offered by the recent history of archaeology in other countries, such as the UK, and try to avoid the traps of rash commercialisation. There were no politicians or parliament members able to prepare legal documents adequate to the requirements of the new situation.

As a result, archaeological excavation has been treated as a regular form of economic activity. This has, quite naturally and obviously, led to the situation in which the developer, who pays for excavation, decides which entrepreneur will get the contract and conduct the research. Systems of tendering in which, in accordance with the principle of equality of all the economic subjects, small private

firms and the state institutions compete to win contracts for such rescue excavations. However, the experience in Poland suggests that, contrary to the optimistic expectations, tendering for archaeological services does not necessarily lead, as is the case in production of various consumption goods, to improvement of quality of the offered products. Quality of consumption goods is obvious and easy to test objectively. However, this is not the case with rescue excavation. As a result, in many cases known to the author, tendering for archaeological services has led to the lowering of the quality of excavation in order to lower the cost, which is the decisive factor for the developer commissioning the work.

Such is the case especially in these countries where, as in Poland, commercialisation of archaeology happened at the same time when the archaeological heritage management became decentralised and deregulated. Then the developer alone decides on the result of tendering, and it is obviously difficult to expect that the developer would be seriously interested in quality of rescue excavation, which, above all, is not possible to be checked by laymen. Even if, as is recently sometimes the case, large developers employ special archaeological consultants, such a person finds herself or himself in a highly awkward situation of ethical dilemma of whom should she or should be loyal: to the developer who employs her or him, or to impersonal archaeological heritage. Usually the first, more easily testable loyalty, is chosen.

Paradoxically, the particular way in which contract archaeology has developed in Poland after the collapse of Communism forced state research institutes, museums, and universities to behave as private firms and lower quality of their research. Since the cost of archaeological work has become the only factor taken into account by the developer, even in cases when developments are to be financed from the state budget, small private firms, which have no offices, employ no administration and do not to have to pay overheads and so are always able to offer lower costs for excavation. For universities or museums the only way to compete with such a low price would be to radically lower the quality of their fieldwork. This, unfortunately, is sometimes the case nowadays.

In case of motorway building, which is the greatest development in Poland now, it was hoped that another system, favouring state research institutions, would be implemented. A special state agency, the Centre for Protection of Archaeological Heritage, was created in 1995 to control excavations on motorways. During the following years, large-scale excavations preceding building the system of motorways in this country were carried by universities and Polish Academy of Sciences as prime contractors. Private excavation firms, if they wanted to obtain a contract, could only get it as subcontractors. This system, theoretically guaranteeing scholarly control over commercial archaeological activities, collapsed dramatically in 2006 when it was disclosed that its functioning was based on corruption. As a result, at the moment, the largest archaeological contracts connected with building of motorways undergo regular procedure of tendering, in which price is the only decisive factor taken into account during the process of selecting of the archaeological contractor. As could be expected, only private archaeological firms win such contracts now.

Also, other archaeologists involved in rescue archaeological activities continuously find themselves in situations of ethical dilemmas: those who do commercial archaeology, and those who are theoretically responsible for control of these activities as officers of deregulated archaeological heritage management service. Archaeological heritage management is weak, decentralised, and dependent on local political authorities. Erosion of ethical norms in the community of archaeologists recently became an illness of truly epidemic scale, touching even the highest academic authorities, which in this new situation became clients of persons, who, acting on behalf of business consortia, have large financial resources for rescue archaeology at their disposal.

This whole sad story shows how idealistic vision, present in the programmatic statements of the Lausanne Charter and in the provisions of the Malta Convention, can lead the whole discipline of archaeology astray and result in disunity of the archaeological community, conflicts between individual archaeologists and archaeological institutions, and even to personal hatred, slanders, and even to lawsuits. Moreover, the most important consequence from the point of view of the philosophy of archaeological heritage management is that all these phenomena have very negative influence on the archaeological heritage.

Archaeological contractors, both private and institutional, feel compelled to lower the quality of their research; there is a growing mass of not analysed and not published data obtained during commercial excavations. And, what is perhaps most important, social opinion on archaeologists is becoming more and more negative, since media frequently present conflicts within the archaeological community. It is quite clear even for the laymen that the reason of these conflicts is money and not any scholarly arguments.

A peculiar paradox of the contemporary situation is that while formerly the nature of conflict concerning the protection of archaeological heritage could be described as a conflict between those who protect (archaeologists and heritage managers) and those who destroy (developers), at present a large part of the archaeological community has began to see its interest rather on the other side of the barricade, leaving the heritage inspectors alone on the battlefield. This new situation is the reason why the idea of preventive conservation—the principle of priority for preservation of the archaeological heritage in situ—is not popular in the Polish archaeological community. Quite simply and obviously, such a conservation philosophy is perceived as hostile to the professional interest of archaeologists. Calls to change the routes of motorways in such a way to avoid destruction of at least some identified archaeological sites were treated as betrayal of archaeology and quickly suppressed by the most prominent members of the archaeological establishment.

In this commercialised situation, there is also no place for the protection or enhancement of archaeological landscapes, since developers are obliged to finance the cost of rescuing cultural remains only within the limits of their development. So the wider concept of cultural landscape protection is not taken into account.

This way, in countries such as Poland, with the economical and political changes resulting from the systemic transformations after the collapse of the Soviet bloc, commercialisation of archaeology and deregulation of conservation service made it

impossible to realise in practice the theoretical concepts of sustainability and holism in protection and management of cultural landscapes. The only solution now seems to be the self-regulation of the archaeological community by means of professional organisations demanding that their members observe ethical codes. An attempt of such a self-regulation has been recently undertaken by the Scientific Society of Polish Archaeologists which in 2010 accepted its ethical code and rules of good archaeological practice.

Having said all this, which certainly is a subjective picture of the situation of archaeology in Poland in the last almost 20 years, the question which must be asked is could this all be avoided; was it possible for the Polish archaeology to go another way? We now know that this was possible and there are alternatives: not all countries of Europe treat archaeological research as a matter of free-market economy. In many, perhaps most, countries rescue excavations are the domain of universities and museums, in some of them (as in France or in some of the German states) special state institutions were created to deal with these problems. In other countries, such as the Netherlands, private contract archaeology is controlled by state archaeological inspection. The inspection in Poland, while theoretically existent, is too weak to assure such a control. It would probably not be possible now to stop the development of the private contract archaeology in Poland. We can only hope that the new act on protection of historical heritage, which is supposed to be prepared by the government soon, will create strong and numerous state inspection of heritage, which could help to change the present situation. However, if we take into account that freedom of economic activities, liberalism, and deregulation of the state are nowadays the paradigm of the Polish sociopolitical ideology, we must be rather fearful that the new act will aim at diminishing the protective regime, as every indications of state control are nowadays treated as relicts of the extinct Communist system.

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Chapter 15
Process and Realisation of Archaeological Research

Frantisek Zak Matyasowszky

Introduction

This chapter is a personal reflection on archaeological practice in Ireland and Slovakia. It examines the process of archaeological research in eight elementary steps. These steps are as follows legislation, planning, survey, excavation, documentation, analysis, interpretation and publication. All eight steps are an integral part of archaeological research. All of these are consistent and become consecutive phases of research. If only one step is omitted, archaeological research becomes devalued and sometimes almost worthless. This chapter focuses directly on a comparison of the Slovakian and Irish systems of archaeological protection and management, theory and practice, quality assurance and institutional cooperation. It aims to show that archaeologists are not only diggers, but creators of archaeological knowledge. This model of archaeological research will endeavour to find a common interest between development-led and academic archaeology, which is a very important task in the twenty-first century (Fig. 15.1).

Slovakia (covers area of 49,035 km^2 with population almost five and a half million) as a Central European country has a lot of common features from the archaeological point of view with its neighbours, especially with the Czech Republic (which formed together with Slovakia one state until end of 1992), Austria, Poland and Hungary. There is also the strong influence of German's archaeology, which contains many similar features. In wider context Slovakia could be an example within many aspects of archaeological theory and practice in Central Europe.

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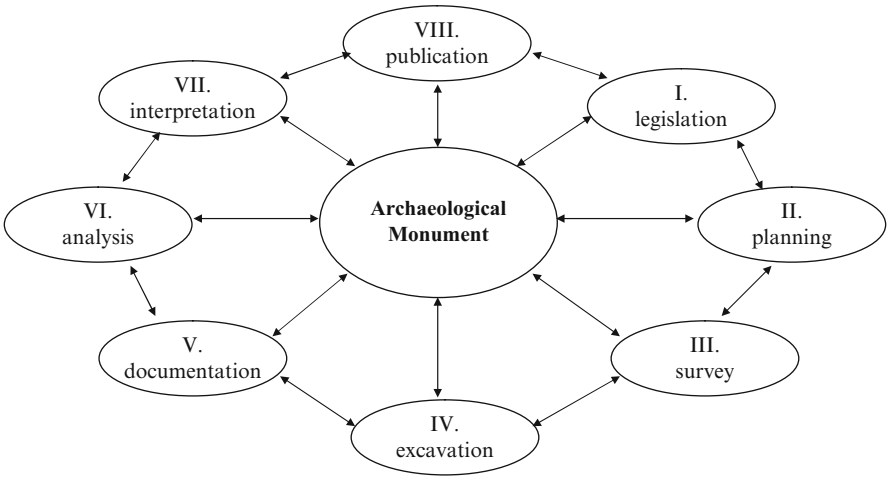

Fig. 15.1 Model of elementary steps of archaeological research (compare Zak Matyasowszky 2008b)

The island of Ireland (without Northern Ireland covers 70,282 km^2 with population over four million people) has very similar archaeological techniques and system of archaeological excavations (including research) as it is in Northern Ireland, Scotland, England and Wales. Ireland creates very good basic sample of Western European archaeology.

Like all research archaeological research is time consuming and expensive. Standard process of archaeological research in Ireland is described as pre-excavation, excavation and post-excavation (this is not typical for archaeology in Slovakia, nor in other Central European countries). Certainly, this is only a very basic layout. The origin of this is in excavation, which is the main part of this process and all the other things which are before (pre-) and after (post-) excavation. Pre-excavation can be divided into three basic steps: legislation, planning and survey. Post-excavation contains documentation, analysis, interpretation and publication. This model is just implementing last few decades of improvement of archaeological research in Europe. In other words, pre-excavation steps are more focused to avoid archaeological excavation and protect archaeological monuments, and post-excavation steps are mainly for interrogating data and information as much as possible from excavations to create better knowledge about our past.

Legislation

Legislation is the first basic step for all archaeological research in Europe. Indeed legislation varies from country to country. If a country's legislation does not reflect best practice it can cause major problems in whole process and realisation of archaeological research. This variation requires from archaeologists knowledge of legislation related to archaeology in country of proposed archaeological research (especially excavation).

In Slovakia the most important legislation for archaeology is Act no. 49/2002 on the protection of monuments and historic sites with new Amendment 208/2009. This is alfa and omega for each archaeologist in Slovakia. This act governs conditions for the protection of cultural heritage monuments, historic sites, archaeological finds and archaeological sites in accordance with scientific knowledge and on the basis of international conventions in the field of European and world cultural heritage. It further regulates the organisation and competence of state administration authorities and territorial self-government authorities as well as the rights and duties of owners and other legal entities and natural persons, and the imposition of fines for unlawful conduct in the field of the protection of monuments and historic sites that form an important part of cultural heritage and the conservation of which is in the public interest (art. 1 of the Act no. 49/2002, Amendment no. 208/2009).

In Ireland archaeology is directed by the National Monuments Act 1930–2004. This act has a long history going back to 1930 and was amended many times, especially in 1954 (concerning preservation orders, publication of lists of national monuments, removal of monuments to sites of other monuments, burials in specified parts of national monument and inspection of national monuments), 1987 (targeted on restriction on use of detection devices, protection of sites of historic wrecks, register of historic monuments, removal and inspection of historic monuments, penalties and fees), 1994 (focused about ownership and possession of archaeological objects, forfeiture of detection devices and other equipment, recorded monuments, offences and penalties) and 2004 (primarily dealing with the transfer of functions to the minister of the Environment, Heritage and Local Government and prohibition of injury to national monuments). http://www.irishstatutebook.ie.

In both countries the relevant central authority is a government minister. The difference is that in Slovakia it is the Ministry of Culture of the Slovak Republic and in Ireland it is the Department of Environment, Heritage and Local Government. It is clear that archaeology in Slovakia is more connected with issues related to culture whereas in Ireland is more related to environment and heritage.

There are three advisory bodies of the Ministry of Culture of the Slovak Republic: Monuments Council (focuses on issues concerning the protection of monuments and historic sites), Archaeological Council (gives professional advice related to archaeological research, finds and sites) and Committee for the verification of special professional qualifications for carrying out research on monuments and historic sites.

The Monuments Board of the Slovak Republic execute state administration as the second instance authority in the field of the protection of monuments and historic sites concerning matters decided in the first instance by Regional Monuments Boards (art. 10 of the Act no. 49/2002). This state body's responsibilities are similar to those of the National Monuments Service in Ireland.

In Ireland there is one Expert Advisory Committee established to advise the Minister of Environment, Heritage and Local Government in relation to archaeology. It is concentrated especially for the creation of new national monuments legislation. Key protection of archaeological heritage in Ireland is the responsibility of the National Monuments Service, which is part of the Department of Environment, Heritage and Local Government. It is responsible for identifying and designating monuments; implementing legislative provisions in relation to the protection of monuments; implementing protective and regulatory controls under the National Monuments Act; providing heritage advice to planning and other consent authorities in respect of individual planning and other development applications, projects and plans (see http://www.archaeology.ie).

The National Museum of Ireland has a very specific and important position in Irish archaeology. It asserts the state's ownership of archaeological objects which are found and which have no owner. It is also a regulatory body in Irish archaeology. It has a consultative role with the Department of Environment, Heritage and Local Government in the licensing of excavation, consents for the use of detection devices and formulation of Codes of Practice with major developers. The Slovak National Museum is a leading institution within over 100 of museums in Slovakia but it's related to primary museum's work focused on the acquisition, recording, restoration, preservation, presentation and publishing of artefacts from Slovakia. Consultative role is supplied by three advisory bodies of the Ministry of Culture of the Slovak Republic (see above).

The Institute of Archaeology of Slovak Academy of Sciences is the biggest archaeological organisation in Slovakia and the only archaeological scientific organisation that has been legally established for this purpose. This institute develops scientific research activities within archaeology; performs and coordinates archaeological investigations within the whole of Slovakia; performs scientific education; publishes results; maintains the Central Evidence of Archaeological Sites (CEANS) in Slovakia and gives professional opinions and expertise for local administration authorities, state government administration and specialised state government authorities (Fottová et al. 2008, 10–11).

In Ireland there is no a central institution such as Institute of Archaeology of Slovak Academy of Sciences with its functions and powers. Ireland has two different organisations—Institute of Archaeologists of Ireland (IAI) and The Heritage Council—which are very helpful to archaeologists. IAI is a professional organisation representing archaeologists working throughout Ireland. IAI adopted Code of Professional Conduct and it organises Continuous Professional Development (more information on: http://www.iai.ie).

The Heritage Council assists the archaeology profession greatly by commissioning studies that facilitate the quantitative and qualitative analysis of the whole range of issues for archaeology in Ireland. These include studies on unpublished

excavations; research and standards in urban archaeology, archiving of excavation records; monuments at risk and so on (Gowen 2007, 30–31; more information see: http://www.heritagecouncil.ie/archaeology).

Ireland has some more specific features. It has county and city archaeologists, archaeologists with the Railway Procurement Agency and the National Roads Authority. Especially it is the National Roads Authority (NRA), an independent statutory body with the primary function of securing the provision of a safe and efficient network of national roads. It contains an archaeology section and directly employs 26 archaeologists. It develops archaeology strategy especially with focus on avoidance and mitigation of known and potential archaeological sites in relation to proposed road construction, while complying with all relevant Irish and International legislation regarding archaeology.

Both countries are involved in international legislation such as the Convention for the Protection of Cultural Property in the Event of Armed Conflict [(1) protocol—Hague 1954, (2) protocol—Hague 1999], the Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (Paris 1970), the Convention for the Protection of the World Cultural and Natural Heritage (Paris 1972), the Convention on Stolen or Illegally Exported Cultural Objects (Rome 1995) and so on.

European legislation is adopted by Ireland and Slovakia especially through the Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985) and European Convention on the Protection of the Archaeological Heritage (revised, Valetta, 1992). Hopefully both countries will soon ratify the Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro, 2005), which is very important in relation to archaeology as well.

Planning

Planning is a very important step in the whole process of archaeological research. In Slovakia and Ireland, the main focus is to avoid any destruction of archaeological sites, features and artefacts. It seems that the best protection is to avoid any archaeological excavation. This would be a perfect outcome for both archaeological heritage (especially for conserving unknown archaeology for next generations) and development (mainly for economic and time management issues). Of course, this is in many cases not possible. A huge amount of development activities requires mitigation. Mitigation is, in most cases, the only possibility to save as much as possible in relation to our archaeological heritage. The most important in any stage of planning should be mitigation of all negative impacts.

Planning within archaeological research is very often closely connected with national development plan of the country. Construction of roads, railways, business parks, shopping centres, gas and water pipelines and all other infrastructure changed shape of each country for a long-time period. These enormous development projects started in Ireland in 1980s and in Slovakia going back to 1990s. These made huge

impact on archaeology. Development-led archaeology accelerated rapidly and changed a lot of archaeological practice. One of the very big differences in development-led archaeology is that Ireland saw the development of a commercial sector. A number of archaeological consultancies were formed. Most of the development-led archaeology was realised by private commercial archaeological companies. The provision of archaeological services in Ireland became more or less privatised and accelerating construction created independent private sector opposite to academic. In Slovakia the situation was different and first private companies were established in 2006. Before that time only state institutions carried out archaeological activities. Commercial archaeology is at a very early stage—there are only six private archaeology companies in Slovakia at this time (for information thanks to Dr Tomáš Michalík from the Ministry of Culture of the Slovak Republic). Most of the development-led archaeology is still provided by state institutions such as Institute of Archaeology, National Museum, other museums and universities. Archaeology in Slovakia is still very centralised and state controlled opposed to practice in Ireland.

The other main difference between Slovakia and Ireland is planning related to unknown archaeological heritage. An example could be the planning process in the National Roads Authority (NRA) in Ireland. Project planning of any national road is divided into Constraints Study, Route Corridor Selection and Environmental Impact Assessment. The archaeological heritage is seen in conjunction with engineering constraints and other impacts such as those on the natural environment, communities, homes, farms, socioeconomic factors, visual amenity, etc. Each Route Corridor Selection process will have unique features and constraints may vary. In some cases, the optimum route from an archaeological perspective may not be the overall optimum route when other impacts are evaluated (NRA Archaeology Guidelines 2005, 3). As mentioned above, it is clear that archaeologists have a real power to influence (affect) route selection. They are part of the planning process from the very beginning. This is not possible in Slovakia and archaeologists are not involved in roads planning. Archaeologists start their work when the route is already selected and they have to survey and excavate all possible archaeology within the affected area.

Phase of planning is related to whole archaeological research and not only to archaeological excavation. All other steps of this process (survey, documentation, analysis, interpretation and publication) should be considered with any possible details. Planning is also connected with budget—a very important part of any archaeological research. Economic terms and conditions create possibilities and have direct impact on quality and scale of further steps (survey, excavation, etc.) (Zak Matyasowszky 2008b, 23).

Survey

Survey is an integral part of Environmental Impact Assessment (EIA). Main feature of EIA is to describe and assess the receiving archaeological heritage environment; to identify and evaluate the significance of the impact of the proposed

development on the receiving archaeological heritage environment; to advise on and propose measures to avoid, minimise or ameliorate the impact of the proposed development on the receiving archaeological environment in respect of anticipated significant impacts and effects; to identify and evaluate the significance of the residual impact of the proposed development with mitigation in place (NRA Archaeology Guidelines 2005, 43).

Survey is a very important step in any archaeological research. In recent times non-destructive archaeology is preferred more and more. It means archaeological field research carried out with no or at least negligible damage to sub-surface archaeological layers. The impact of non-destructive archaeological methods on archaeology is permanently growing because of their relatively low price, high effectiveness and the potential for studying whole sites or even regions. Therefore, non-destructive approach is of key importance for the research on settlement and landscape archaeology but also for planning archaeological excavations and archaeological heritage management (Kuna 2004, 15). Non-destructive archaeological methods should be preferred especially in areas which will be not directly destroyed by proposed development. The most common and preferred non-destructive archaeological method is surface survey. It could be done mostly through field walking, satellite images, aerial photographs, geo-botanical analysis (pollen analysis) and geophysical survey (Fig. 15.2).

Field walking is the most applicable method of all, because of easy accessibility, low equipment requirements, minimal labour and economic effectiveness. Field walking is possible to cover by two main methods: artefact collection and topographic survey. Artefact collection is very common method used in Slovakia because of the type of agriculture practised. Slovakia is characterised by a high number of open and uncovered fields with extensive agriculture. Ploughing in spring and autumn make fields ideal for artefact collection. This is rarely possible in Ireland because most of the countryside is covered by pastures for cattle and sheep. Ireland is more appropriate for using of topographic survey (finding and sorting mainly still visible relics of human activity).

Satellite images are used in both countries very sporadically. Aerial photography is quite common in both countries and is a very important non-destructive method within archaeological research. Aerial prospection (survey) and its systematic exploitation in archaeology in Slovakia are still in their beginnings compared to the countries where they have been used for several decades. Nevertheless, aerial photography has over 40 years of use at the Institute of Archaeology of Slovak Academy of Sciences. It is the only institution that deals with aerial archaeology in Slovakia. Systematic aerial prospection started in mid-1980s (Kuzma 2007, 11–12). The number of newly found archaeological sites is currently around 800. The most represented are circular features (especially enclosures, so-called roundels), burial grounds and Roman temporary camps.

Main aerial prospection (survey) started in Ireland in 1951–1955 and more particularly 1963–1973. From the 1970s much has been done by the Ordnance Survey of Ireland, Geological Survey of Ireland, the Office of Public Works and individuals. From the 1980s onwards, aerial archaeology has been carried out increasingly

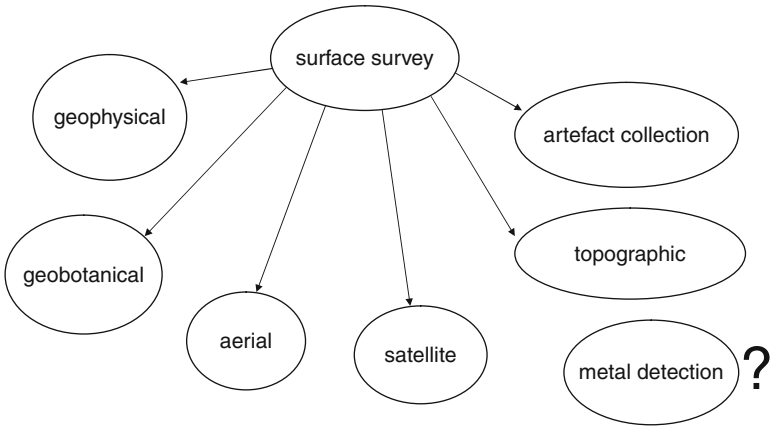

Fig. 15.2 Principal non-destructive archaeological methods (compare Kuna 2004, 17)

in the context of research through the Discovery Programme and some academic initiatives (Lambrick 2008, 13). While the archival sources of aerial archaeology in Slovakia are centralised at the Institute of Archaeology of Slovak Academy of Sciences (some also at Military Topographic Institute and Geographical Institute), in Ireland they are spread throughout the country: National Monuments Service of the Department of the Environment, Heritage and Local Government; National Museum of Ireland; Ordnance Survey Ireland; Geological Survey of Ireland; Air Corps; Marine Institute; The Discovery Programme; local authorities; universities and even private collections.

In relation to principal non-destructive methods it is important to mention geophysical survey (prospection). Geophysical survey confirms the result of aerial prospection quickly and unambiguously. They are primarily used for verification of the existence of archaeological features and only secondarily for their cultural classification. The detected feature does not, however, always relate to an anthropogenic feature, in some cases it might be a geological phenomenon or a recent feature. Geophysical survey is thus the first step in confirmation of the existence of archaeological features and in determining their exact position, size, range, orientation, etc. These data allow for a more effective approach to excavations, which can in turn confirm the previous findings (Kuzma 2007, 14). It is a common practice in Slovakia that features identified by aerial prospection are subsequently explored by geophysical methods (Tirpák 2007, 41).

Geophysical survey focused on archaeology is limited by various conditions. It is not applicable to surface covered by high vegetation, forests and mountains. From this point of view, Ireland is very suitable country for geophysical survey, mostly rural areas where the surface is covered by relatively flat pasture. In Slovakia geophysical methods are used especially on open fields. These are seasonally limited to spring and autumn when they are not covered by crops. Within the winter whole

country is very often covered by snow and geophysical surveying is not possible. Furthermore, significant parts of Slovakia are very mountainous and covered by forests. Other conditions limiting geophysical survey include the size of archaeological features. Smaller features, such as stake holes, are very difficult to recognise and are very often invisible to geophysical equipment.

Geophysical methods are widely applicable in maritime (underwater) archaeology. This is typical for Irish archaeology but is absent in Slovakia for obvious reason (Central European country without any coastline). Geophysical survey in Ireland is carried out by numerous organisations, agencies, universities and private companies, while in Slovakia geophysical survey is conducted more sporadically and only the Institute of Archaeology of Slovak Academy of Sciences and Comenius University have own geophysical equipment and specialists involved in archaeology. This is the second big difference in comparison with Slovakia.

Metal detection is a non-invasive archaeological method for identifying metal objects (artefacts), but is very often connected with the removal of discovered metal artefacts. The crucial problem of metal detection is amateur excavation of identified metal artefacts. This can destroy a whole archaeological object or even site. Today's metal detection equipment is so sophisticated that it is possible to identify not only location, but also depth of metal artefact, type of metal and even its shape. Metal detection amateurs could specialise only for valuable artefacts made from copper, bronze, silver or gold (Zak Matyasowszky 2008b, 46). Irish and Slovak legislation is very similar and prohibiting any metal detection by amateur individuals or organisations. This is opposite to legislation in England, Scotland and Wales, where amateur metal detection is permissible under specific conditions.

Slovakia and most Central European countries have enormous problem with amateur metal detection connected purely with treasure hunting. Numerous sites in the last two decades were destroyed by these people and hundreds of valuable artefacts were lost. The worst result of amateur metal detection is the loss of important historical information (damaged archaeological sites and monuments by digging, export of artefacts, etc.). Easy access to open fields, forests and ruins of castles is probably the biggest problem of this issue in Slovakia. Closer collaboration (as it is in UK) and mostly education between archaeologists and amateurs is one of the solutions.

It is not possible to explain all methods applicable in survey in this chapter, but there is one very common in Irish development-led archaeology. The NRA practises centreline testing (test trenching) under archaeological supervision, which generally involving mechanically excavating two metre wide trenches (by machine fitted with toothless bucket) through the already agriculturally disturbed topsoil along the centreline of the route and excavating perpendicular offset trenches to the edge of the road corridor every 10–20 m (Fig. 15.3).

The patterning of these trenches is calculated to identify all concentrations of archaeological features. This method is partly invasive and is considered only after EIA. It is applicable especially to proposed road construction and often followed by excavation. Test trenching is also possible to use not only as part of road construction but on large areas proposed for development such as business parks, factories, shopping centres, etc. (it is a very common practice used in Slovakia).

Fig. 15.3 Test trenching of proposed road corridor of N9/N10 Phase 4 Knocktopher to Powerstown, Co. Kilkenny, Ireland (courtesy of National Roads Authority)

Excavation

The fourth step of archaeological research is excavation. It is unfortunately, a destructive process in which the excavated site, object or feature is physically lost and preserved only by record. It should be carried out only when avoidance of archaeology was not possible to adopt. In recent times excavation has become very connected with development-led activities. There are some differences between Slovakia and Ireland in relation to the number and nationality of professional archaeologists and principal methods of archaeological excavation.

There is a very different definition of archaeologist in Slovakia (and most of Central European countries) than in Ireland. In Slovakia only those individuals who have completed university studies in an archaeological discipline and have qualified with an appropriate degree or doctorate are referred to as archaeologists. They are professional or scientific workers with minimum Master of Art degree (so-called Magister). They are employed mostly as archaeologists in Monuments Board, Institute of Archaeology, museums, universities and private organisations. All of the other people who are directly active in archaeological excavation are not archaeologists, but technicians (mostly drawing, photographing and supervising diggers) and excavation workers (mostly digging under supervision of archaeologist or technician).

An archaeologist in Ireland is more or less any person working in archaeology. There is no limitation such as a university degree. Archaeological courses and BA degrees are also accepted. Most of these people are employed in the private sector

and practical skills are preferred. Typical staff composition is: site director (comparable with archaeologist in Slovakia), supervisor (comparable with technician), site assistants (mostly students of archaeology) and general operatives (excavation workers). Another very specific feature of Irish archaeology is that professional archaeologists (with full university degree) from other European countries very often work as supervisors or site assistants. Archaeologists in Ireland employed in state organisations and universities mostly require relevant university degree as in Slovakia.

The composition of archaeologists in Slovakia is quite different to Ireland minimum in three basic respects. Education: university background for archaeologists in Slovakia has strict minimum requirements and so all of them are more unique. Archaeologists in Ireland are divided into two parts: commercial and academic. Commercial: in Ireland archaeological companies are private and represented mostly as development-led archaeologists. Academic: archaeologists in Ireland are employed by universities and state organisations and focused on policy and research. Between these two sectors there is sometimes a lack of collaboration and more interchange of information is required. This is caused also by very fast and strong establishment of development-led archaeology in Ireland over the last 20 years. Second relevant difference in Slovak archaeology is related to nationality. Almost all archaeologists in Slovakia are of Slovak nationality. This is opposite to Ireland where archaeological community is very open to all other nationalities from all around the world. This phenomenon is still not possible to find neither in Slovakia nor in other Central European countries. The third issue relates to the number of archaeologists (Fig. 15.4).

Despite the smaller population of Ireland, the number of archaeologists is over 1,700 compared to approximately 200 archaeologists in Slovakia (for exact numbers, see Fottová et al. 2008; McDermott and La Piscopia 2008). This is caused by different definition of archaeologist in Slovakia and most Central European countries compared to Ireland and UK. These different numbers are also the result of the enormous numbers of development-led archaeological excavations in Ireland. Rapid slowdown of development (construction sector) in Ireland from summer 2008 has caused the number of archaeologists in Ireland to rapidly reduce (Eogan and Sullivan 2009, 27) but in Slovakia the numbers are still the same.

Excavation methods also differ in both countries. Excavation sites in Slovakia are very often divided into sectors. These sectors consist of square or rectangular boxes. Their size depends on the overall size of the excavated area. This method has the advantage that each sector (box) has four controlling profiles which it is possible to record. Excavation is realised sector by sector. When one sector is opened, excavated and fully recorded, work starts on the next sector. This method requires a relatively small archaeological team and causes minimal weather damage (strong sun, storms, etc.) to archaeological excavation.

Archaeological excavation in Ireland is characterised by firstly stripping the topsoil from the whole area of excavation, even in the case of enormous areas (hectares, for example). Topsoil stripping is very often done by machine and is followed by cleaning and trowelling by the archaeological team. Levels are measured

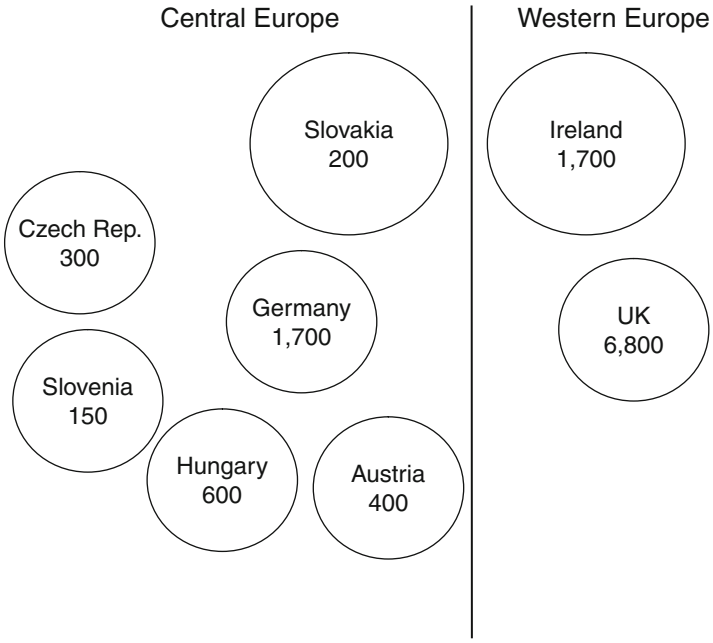

Fig. 15.4 Approximate numbers of archaeologists in selected countries in 2008 (numbers rounded to the nearest hundred, data derived from "Discovering the Archaeologists of Europe")

on the striped surface in contrast to practice in Slovakia, where everything is measured from the original (present-day) ground surface. All recognised features are sectioned, excavated and documented separately. This method requires a large team but at the end of the excavation it is possible to take a final post-excavation photograph at once.

The process of archaeological excavation in Slovakia has another different feature, the use of specialised machines to excavate large features (ditches), contrasting with the almost exclusive use of hand digging in Ireland (with the exception of topsoil stripping). Mostly, one person draws, another photographs, another documents, etc. opposite to practice in Ireland, where one person (or small crew) is responsible for one feature and all the work related to it from excavation till documentation.

Archaeological excavations in Slovakia are mostly related to the construction of buildings and other economic activities, which are very similar to Ireland. Preservation by record in advance of proposed constructions is the main feature of archaeology in both countries. Archaeological excavations carried out exclusively for scientific purposes are for this reason quite rare.

Documentation

Documentation is, certainly, integral to archaeological excavation and occurs simultaneously with excavation. Moreover, documentation is part of every step of archaeological research. It is important to document all relevant information from planning to final excavation report. Documentation (recording) is mostly the only remains of archaeological site, object or feature, because all excavation is destructive and not a repeatable process. Documentation becomes part of our heritage and the basis for any further analysis and research.

Documentation or recording of any archaeological excavation in Slovakia is prescribed by legislation. It is very clearly directed by Ministry of Culture of the Slovak Republic what archaeological documentation has to contain. In Ireland all recording is based on guidelines and recommendations. In broader view, documentation of archaeological excavation and whole research in Slovakia is more unique in comparison with Ireland where it depends on specific organisations.

As mentioned above, recording of archaeological features on site is more or less done by a technician or appointed person in Slovakia. Documentation sheets (cut and deposit) are unique for all archaeologists and mostly directly inputted into computer. Most of the documentation is done on site within archaeological excavation by archaeologist or technician. Drawing of archaeological features and profiles is nowadays not so common and digital photography in combination with adequate computer programs is preferred.

Irish practice on archaeological excavations still prefers hand-written documentation sheets mostly filled by the person who excavated the feature. Documentation sheets vary from organisation to organisation. Drawing (especially sections and profiles) is still quite common in combination with digital photography. All documents are revised and transferred into digital form after the archaeological excavation as part of the post-excavation process, which culminates in the completion of the final report.

There is at least one other big difference in relation to documentation: catalogue of artefacts. In Slovakia every artefact has to have a graphic depiction (drawing, photography or scan). This is applicable even on sites which contain many thousands of artefacts (especially pottery sherds). In Ireland only a limited range of discovered artefacts are illustrated despite the fact that artefacts are quite rare in comparison with Slovakia and other Central European countries. One of the conditions relating to archaeological excavation licences granted under the National Monuments Acts (1930–2004) is the production of detailed report suitably illustrated, so this term is possible to interpret very widely.

Analysis

Analysis follows the previous step of documentation. Analysis through archaeological research has a very specific outline. It is time consuming; some analysis is very expensive and it requires coordination and flexibility. It is focused on

quality and detail of all possible analysed samples or artefacts. Through various analyses it is possible to maximise information and facts from archaeological research.

Analysis in Slovakia almost always starts during archaeological excavation. Specialists are invited directly on site in case of specific finds which require special treatment (human remains, wood or other organic artefacts, etc.). They advice on what has to be done during the excavation and sometimes personally taking samples, recording or even excavate specific finds. Most of the analyses are conducted after excavation and precise documentation carried out in house (in the same organisation which provided excavation).

Irish practice is quite different. It is very rare that specialist is personally coming on excavation and taking samples or recording. Specialists in Ireland very often never see the excavated site and fully depend on documentation from archaeologist. Only a few archaeological organisations could undertake most of the analysis in house. There are a lot of independent specialists who are analysing only samples (or artefacts) and documentation received from archaeological excavation.

Other differences related to profession of specialist exist. They have deeper roots connected with diversity of education, research and science in Central and Western Europe. I would like to introduce one example. In Slovakia human remains are analysed by anthropologist and animal bones by archaeozoologist, whereas in Ireland an osteologist deals with all bones from archaeological excavation.

Radiocarbon dating and dendrochronological analyses are nowadays much expanded in archaeology. There are specific variations between both countries. Slovakia has no radiocarbon or dendrochronology laboratory. All samples for radiocarbon dating are mostly sent for analysis to Austria (Laboratorium Institut für Isotopenforschung und Kernphysik Universität Wien; Lab code VERA) and Germany (Physikalisches Institut Universität Erlangen-Nürnberg; Lab code Erl). Dendrochronological samples are analysed mostly in Germany (Deutsches Archäologisches Institut Berlin) and Austria (Universität für Bodenkultur Wien) (for information thanks to Dr Matej Ruttkay, director of the Institute of Archaeology of Slovak Academy of Sciences). Irish archaeology has one radiocarbon and dendrochronology laboratory in Northern Ireland at Queens University Belfast (The Chrono Centre for Climate, the Environment, and Chronology; Lab code UBA). Other radiocarbon laboratories often used by Irish archaeology are in Scotland (Scottish Universities Environmental Research Centre; Lab code SUERC), England (The Oxford Radiocarbon Accelerator Unit, University of Oxford; Lab code OxCal), the United States of America (Beta Analytic Radiocarbon Dating Laboratory, Miami, Florida; Lab code Beta) and New Zealand (The University of Waikato; Lab code Wk).

As mentioned above, it is clear that Slovak archaeology uses mostly radiocarbon and dendrochronology laboratories from geographically and culturally very close countries. It is important to mention that radiocarbon analyses are applied in Slovak archaeology quite rarely and are focused on only very specific features or artefacts. This is the result of the very high concentration of clearly datable artefacts (especially pottery sherds) from archaeological excavations and there is no

need for other chronological verification. Samples intended for dendrochronological analysis are even rarer because of different soil and climate conditions in Slovakia, resulting in the very low possibility of surviving wood residues or wooden artefacts. Archaeology in Ireland uses not only laboratories from nearby countries but also from USA and New Zealand. Overseas laboratories are used for the speedy delivery results and cost savings. Using of radiocarbon dates is very common in Ireland because of quite high number of archaeological sites and features without any datable artefacts. In contrast to Slovakia, Irish archaeology frequently uncovers wooden structures and finds. The Northern Ireland oak chronology goes back to 5452 BC (English Heritage 2004, 6) and is the second longest and one of the most sophisticated in Europe.

Interpretation

Interpretation is one of the most difficult steps in archaeological research. It is crucial and fully depends on all previous work. The main issues are synthesis (collection of all relevant analyses connected with creation of logical interpretation), restoration (the aim is mainly conservation through the protection and preservation of the remains) and reconstruction (usually a combination of preservation and presentation). Interpretation is the result of a long process of archaeological research. A perfect example of twenty-first century interpretation is the Bog Bodies Research Project, which is studying two individuals from Clonycavan, Co. Meath, and Oldcroghan, Co. Offaly. This project was established following the discovery of these bog bodies in 2003 to examine scientifically and document the human remains using a multidisciplinary team of international specialists. Some 35 specialists worked in conjunction with staff from the Irish Antiquities Division and Conservation Department of the National Museum of Ireland (Kingship & Sacrifice exhibition in National Museum of Ireland; Archaeology & History). A wide variety of analyses (35 types) were carried out on the bog bodies and their respective findspots and facilitating excellent interpretation. It includes age, anatomical structure of body, height, radiocarbon dating, cause of death, food composition, social position at those times and many others. Through numerous specialised analyses new facts and knowledge have been created.

The interpretative peak in archaeological point of view is final report. Final reports in Slovakia (so-called research documentation) are under strict supervision of The Monuments Board. Minimum requirements for any final report are stipulated by law, ministerial direction and Monuments Board instruction. The owner of land or archaeologist carrying out the archaeological excavation has to submit one free-of-charge copy of the research documentation (in Ireland so-called final report) to the Regional Monuments Board, no later than within a time period determined by the same authority. Normal practice is 60 days of the end of archaeological research (compare Article 39 of Act no 49/2002 and its Amendment Act no 208/2009).

Final reports in Irish archaeology have some differences in comparison with practice in Slovakia. Final reports are created following Department of Environment, Heritage and Local Government guidelines and generally there are few rules or directions. Irish final reports (and all research documentation) are quite variable and depend on the organisation the archaeologist is working for. Even within the same organisation there is strong individuality in the creation of final reports. Officially detailed report on the excavation should be submitted within 12 months of completion. In reality there is no time limit when final report should be submitted and this purely depends on contract conditions between the archaeological organisation and client. Normal practice is much longer than 1 year after the end of the archaeological excavation. One copy has to be sent to the Department of Environment, Heritage and Local Government and the National Museum of Ireland.

Other differences between both countries relate to archiving archaeological research documentation. In Slovakia it is very centralised. All research documentation from every archaeological excavation is sent to the Regional Monuments Board. The Institute of Archaeology of Slovak Academy of Sciences maintains central documentation of all archaeological sites in country, so it is the second place for archiving the research documentation.

As mentioned above, final reports in Ireland are sent to the Department of Environment, Heritage and Local Government and the National Museum of Ireland, but there is no central archive of archaeological research documentation from whole country. Archives are spread through various authorities, institutions, organisations and individuals.

Publication

Publication is the last step of archaeological research. It should be the peak of any archaeological work. It concludes of all previous steps of the process and is the realisation of archaeological research. Publication despite the language differences creates the bridge between author and other archaeologists and specialists all around the world. It ensures that archaeological results will be not lost. It creates knowledge about our archaeological heritage and shares it with public.

Basic publication of archaeological research in Slovakia is covered by Archeologické výskumy a nálezy na Slovensku (AVANS). It contains summaries of all archaeological excavations, surveys and discoveries within whole country for previous calendar year. There is another publication (Študijné Zvesti) which is focused on preliminary archaeological excavation analyses, methodologies and results. The most important results are published twice a year (Slovenská archeológia). This publication is dedicated to only the most important discoveries and studies related to Slovak and Central European archaeology. All three publications have a very long tradition with the aim of sharing information with all archaeological community (including other specialists related to archaeology) in Slovakia and Europe. All of them are published by Institute of Archaeology of Slovak Academy

of Sciences, which also publishes other periodicals and a monograph series. The Monuments Board and the Ministry of Culture of the Slovak Republic also support publication of archaeological research. There are plenty of other possibilities for publishing archaeological research through institutions, universities, National Museum, museums or private organisations. It is a common practice that most publications in Slovak language have German or English summary or even in some cases they are purely in German, English or French language to reach the widest dissemination within Central European archaeological community.

Summary accounts of archaeological excavations in Ireland are published in the annual Excavations Bulletin for the year in which the licence was valid. It is published with the support of the Office of Public Works and the Department of Environment, Heritage and Local Government (see http://www.excavations.ie). The Journal of Irish Archaeology publishes papers on all aspects of archaeology with a strong analytical component related to research, synthesis, excavation reports, surveys and scientific developments. It is the journal of the Institute of Archaeologists of Ireland. There are also plenty of monographs and studies published by government, various authorities, institutions, universities and even private companies. All publications are in English language and some especially supported by the state in Irish and English language.

A very specific feature of Irish archaeology in the last decade is the publication of archaeological results and research through non-technical language accessible not only for archaeologists and specialists but also for public. A lot of progress has been made in this matter by the NRA which has published information brochures, posters, its own archaeology magazine (*Seanda*), two monograph series and numerous archaeology exhibitions. All of this is directed at a popular audience (more info see on http://www.nra.ie/Archaeology/ or Archaeology Ireland magazine).

A second advantage of Irish archaeology publishing is more and more material on the internet. A lot of publications are available through various websites for free downloading. In Slovakia online access of full publication is very low and publication is still more orientated to hard copies. Also publishing in electronic forms is very often preferred especially ongoing to ecological, time, financial and technical advantages (Zak Matyasowszky 2008b, 92). Generally, the lack of archaeological publication is a problem of both countries. The rate of excavation to published results is much higher in Ireland than it is in Slovakia (Zak Matyasowszky 2008a, 41). It is important to mention that without proper publishing the improvement of archaeological research is delayed; information from excavations can be forgotten; all stages of archaeological research lose their significance; and, finally, society as a whole loses knowledge about archaeological heritage.

In a wider view, archaeological dissemination could be provided not only by printing and the internet but also by TV, various public lectures, seminars and many other forms. Public awareness is a very important element of transferring the most important and amazing discoveries from archaeological research to all people. It seems that repositioning archaeology into a knowledge society is a major task for both countries (see University College Dublin 2006). Public awareness of archaeology from primary school through every stage of life is one of the ways (Fig. 15.5).

Fig. 15.5 School children visiting an archaeological site in Ask townland, Co. Wexford, Ireland as part of N11 Gorey to Arklow Link (courtesy of Tramore House RDO)

Conclusion

This chapter presents a brief review which compares only the main aspects of Slovak and Irish archaeology. From all stages of archaeological research some differences are visible. Generally, Slovak and Irish archaeological practice have marked differences despite the fact that both countries adopted the same international and European legislation related to archaeological heritage. Legislation concerned with archaeology on a national level is based in Slovakia on one modern act amended only once, Irish legislation goes back to the 1930s and was amended numerous times. Slovak archaeology is more related to cultural heritage, whereas

Irish archaeology is more focused on the environment. Slovak archaeology is more centralised in contrast to Irish archaeology. Slovak archaeology is still mainly carried out by the state in comparison with leading Irish private and commercial archaeology sector. Slightly different methods and techniques of archaeological survey and excavation are adopted in Slovakia than in Ireland; it is the result of open fields with extensive agriculture on one side and large part of the country covered by high mountains and forests, compared to Irish countryside mostly with grass pastures for cattle and sheep. Open countryside creates easy access on archaeological sites, monuments and ruins of castles in Slovakia which are causing huge problem with amateur metal detectorists—treasure hunters, opposite the fencing system of countryside in Ireland where issue related to illegal metal detection is not so destructive. The definition of "archaeologist" in Slovakia is different than in Ireland leading to very different numbers of archaeologists being recorded in both countries. Archaeology in Slovakia is almost uniquely academic as opposed to the separation between the academic and development-led (commercial) sector in Ireland. Slovak archaeologists are almost all of Slovak origin as opposed to multinational archaeologists' spectrum in Irish archaeology. Archaeological process and realisation of all stages of archaeological research in Slovakia are regulated by directions and instructions; Irish are regulated mostly by guidelines and preferences of individual organisations or archaeologists. Slovak archaeology has no maritime archaeology but it is an important part of Irish archaeology and it is not comparable for obvious reasons. Slovak archaeology has central archiving of archaeological research documentation from whole country; as opposed to Ireland where there is no central archive and documentation is spread through numerous institutions, organisations and individuals.

Archaeology is very dynamic and what was thought to be best practice 20 years ago is now not acceptable. What is best practice now may not be after 20 years. Archaeology in both countries has the same goal—protect archaeological heritage in accordance with best scientific knowledge. It is clear that each country has some advantages and disadvantages in relation to archaeological research. At last archaeology in Slovakia has a lot of new challenges and is still working on better archaeological practice and trying to evaluate new negative impacts of development and construction. Ireland is also on the way to change nowadays archaeological practice significantly, not only caused by enormous slowing of development-led archaeology, but also as it is proposed by Department of Environment, Heritage and Local Government by absolutely new legislation.

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Chapter 16
The Management of Archaeology on National Road Projects in the Republic of Ireland

James Eogan

Introduction

Until the late twentieth century, Ireland had a largely rural character, a low population density and an economy based for the most part on the export of primary agricultural products, principally meat and dairy products. The form of agriculture practised was low intensity and did not require large-scale mechanisation. Apart from the construction of canals and railways and some limited industrialisation, Ireland was not generally affected by the nineteenth century industrial revolution. Neither was Ireland physically affected by mechanised warfare in the twentieth century. These factors have led to the survival of an estimated 100,000 archaeological sites spanning 10,000 years of recorded human settlement in the Irish landscape.

For approximately 15 years between 1993 and 2008, the Republic of Ireland enjoyed levels of economic growth that were unprecedented historically and unparalleled in any other developed western economy, this led to Ireland being dubbed the *Celtic Tiger*. This economic growth enabled the state to make significant investments in transport infrastructure, in particular the construction of an 800 km motorway network between the capital city, Dublin, and the four major regional cities, Galway, Limerick, Cork and Waterford and to Belfast in Northern Ireland.

Road construction on this scale had not previously been undertaken and new methodologies and structures were created for managing the assessment and mitigation of the archaeological impact of these projects and for disseminating the results of the ensuing archaeological research.

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Table 16.1 Comparison between the management of archaeology on national road schemes in the Republic of Ireland before and after the agreement of the Code of Practice

Project phase	Pre-Code of Practice	Post-Code of Practice
EIS	Walkover	Walkover and geophysical survey
Statutory approval phase	–	Preparation of contract documentation and commencement of tendering
Construction documents and procurement	Limited test excavation	Extensive test excavation and planned mitigation excavations
Construction	Monitoring of topsoil strip and reactive rescue excavation	Limited monitoring Post-excavation analysis and reporting
Post-construction	Post-excavation analysis and reporting	Publication

Archaeology and Roads the Early Days

The rest of this chapter details the structures that were established for managing the archaeological aspects of national road construction. These structures emerged from ad hoc arrangements that evolved in the mid to late 1990s. The early days of archaeology and national roads were typified by a lack of long-term strategic planning and an absence of structured project management. Typically the Environmental Impact Statement (EIS) prepared for a proposed road scheme contained an assessment of the impact of the project on the known archaeological heritage. These assessments generally included specific proposals for the appropriate mitigation, generally full excavation, of individual sites, and recommended that the stripping of topsoil from the rest of the proposed route be archaeologically monitored during construction to identify previously undocumented sites (see Table 16.1). This approach yielded significant archaeological results; however, in the late 1990s it became apparent that it was not ideal as there was potential for significant delays to construction programmes (and consequential significant additional costs) arising from the identification of previously unknown archaeological sites. Associated issues regarding the cost estimation and management of expenditure in relation to the completion of archaeological works also arose and caused difficulties for the authorities managing the construction projects (O'Rourke 2003). Archaeologically many of these excavations took place in less than ideal conditions and in many cases the archaeological contractor undertook the excavations within the framework of an inadequate contract.

By the late 1990s, contracting authorities, the funding agencies and the bodies with statutory responsibility for archaeological heritage recognised that the existing situation was neither effective, from an archaeological and construction management perspective, nor an efficient use of public funds and created the conditions where significant delays could be caused to an ambitious programme of road construction then being proposed. Consequently, the minister with statutory responsibility for archaeological heritage was instructed to agree a Code of Practice with the statutory body with responsibility for national roads. This brought about the current approach to the management of archaeology in the context of national road construction which is outlined below.

Legislation and Regulation

Archaeological heritage in the Republic of Ireland is protected through the provisions of the National Monuments Act (1930–2004) (Government of Ireland 1999, 35 ff.). The National Monuments Acts afford a basic level of protection to documented archaeological remains listed on the Record of Monuments and Places (RMP) maintained by the Minister for Arts, Heritage & the Gaeltacht (MAHG). The acts provide for the control of excavation for archaeological purposes through a system of licensing of archaeological excavation. The carrying out of geophysical surveying is also controlled through a system of licences. The legislation also makes provision for the control of the alteration (including conservation and scientific sampling) and export of archaeological objects. Under the legislation there is a wide definition of archaeological object which not only includes typical objects but also botanical and faunal remains, human skeletal material and fossils. The National Monuments (amendment) Act (2004) makes specific provision for the control and oversight of archaeological works on national roads projects by the MAHG.

The planning and construction of national roads (long distance through routes linking the major urban centres and transport hubs in Ireland) in Ireland is carried out under the ambit of the Roads Act (1993) and the Planning & Development Act (2000). The Roads Act makes provision for the planning, design, construction and maintenance of the national road network. It also established the National Roads Authority (NRA) whose primary objective is the "securing the provision of a safe and efficient network of national roads"; it is important to note that the Authority is not a national authority for roads but has responsibility over that part of the network classified as national roads. The Roads Act requires that all national road projects be subject to an environmental assessment in accordance with the European Union Environmental Impact Assessment directive (85/337/EC and 97/11/EC). The Planning and Development Act makes provision for the holding of public enquiries into the proposals for the construction of new national roads by an independent statutory authority, An Bord Pleanála.

Administration

The Department of Arts, Heritage and the Gaeltacht (DAHG) is the principal statutory authority in relation to the protection of the archaeological heritage; in relation to archaeology its principal functions are carried out through the National Monuments Service (NMS). The NMS has one archaeologist dealing with national roads projects on a full-time basis. Under the legislation the minister must consult with the director of the National Museum of Ireland (NMI); the staff of the Irish Antiquities Division of the NMI advise the director.

Policies for the protection of the archaeological heritage and the conduct of archaeological excavation have been published (Government of Ireland 1999a, b).

In the context of development works, the NMS operates a policy that any linear development greater than 1 km in length must be subject to an archaeological evaluation.

The NRA has overall responsibility for the planning and supervision of construction and maintenance of the national road network (approximately 5,500 km of roads). It has a wide remit and its functions include:

- Preparing, or arranging for the preparation of road designs, maintenance programmes and schemes for the provision of traffic signs on national roads
- Securing the carrying out of construction, improvement and maintenance works on national roads
- Allocating and paying grants for national roads
- Training, research or testing activities in relation to any of its functions

The NRA employs a wide range of professionals including engineers, archaeologists, economists, procurement specialists, planners, environmental scientists and specialists in land valuation. In relation to the planning and supervision of construction and maintenance of national roads, the NRA works in partnership with the 34 local authorities (county and city councils) in the Republic of Ireland. This is achieved through a network of 11 National Road Design Offices (NRDO); the staff employed in the NRDOs is responsible for the project management of these schemes. These offices are staffed by local authority employees and are fully funded by the NRA. The NRA is empowered (where it considers it would be more convenient, expeditious, effective or economical to do so) to carry out such functions directly.

Code of Practice

Since 1989 planning for the development of the national road network has taken place in the context of National Development Plans (NDP) which set out programmes for investment of public, private and EU funds over a defined period. In the late 1990s it was recognised that the development of the national road network proposed in the NDP 2000–2006 would have a significant impact on the archaeological heritage. It was also recognised that without proper management the discovery of archaeological remains during the construction programme could significantly impact on the programme for completion of these projects and that these delays could add considerably the cost of completion of these contracts.

In 2000 a Code of Practice was agreed between and Minister for Arts, Heritage, Gaeltacht & the Islands (responsibility for archaeological heritage was transferred to the Minister for Environment, Heritage & Local Government in 2002 and to the Minister for Arts, Heritage and the Gaeltacht in 2011) and the NRA. This agreement established the framework for the management of archaeological works on national roads projects "The purpose of the Code is to provide a framework within existing legislation and policies to enable the NRA to progress with its programme

of work within the timescale of the NDP 2000–2006, whilst carrying appropriate archaeological mitigation having regard to a set of principles and actions agreed by both parties" (DAHGI & NRA 2000, 2; O'Rourke 2007).

The Code of Practice sets out a framework for achieving an appropriate balance between the state's requirement for improved national road infrastructure and its responsibility to protect the archaeological heritage. The application of the Code of Practice is underpinned by the concept of partnership and co-operation and it committed the NRA to finance a balanced and cost-effective approach to archaeological investigation, excavation and mitigation on the basis of the developer pays principle. Subsequently, similar Codes of Practice have been agreed with a variety of commercial and non-commercial state bodies and some private sector bodies.

Following the agreement of the code, the NRA arranged for the appointment of Project Archaeologists (and Assistant Archaeologists) to each of the NRDOs by each of the relevant local authorities. The role of the Project Archaeologist as envisaged in the Code of Practice was to

- Work closely with the project design team to ensure that full weight is given to the archaeological implications of the project and to seek to minimise the impact on known archaeological sites or areas of significant archaeological potential
- Prepare specifications for the consultant archaeologist and ensure that all work is of the highest standard
- Determine the level of archaeological excavations
- Ensure that all mitigation is carried out satisfactorily
- Certify archaeological costs
- Ensure that the nature and quality of excavation reports are of the highest quality

The agreement of the Code of Practice led directly to the involvement of archaeologists as members of the road design teams. The practical effect of this was that from 2001 archaeologists were actively involved in the decision-making process from the earliest planning stages. The work of the Project Archaeologists then followed through to the procurement, management and supervision of on-site archaeological works and subsequent post-excavation works (Hanley 2003) (Fig. 16.1).

In 2007 as part of an organisational reorganisation that the NRA assumed direct responsibility for the employment of the Project Archaeologists; currently, the NRA employs 16 archaeologists who continue to implement the principles contained within the Code of Practice.

The Private Sector

In the Republic of Ireland archaeological services to the public and private sectors are generally provided by commercial companies. The services provided by these companies generally include archaeological assessment and evaluation, archaeological excavation and post-excavation services. Research carried out by the

Fig. 16.1 Bronze Age barrow and later medieval enclosure excavated on the M9/N10 road scheme beside the River Nore at Bennettsbridge, Co. Kilkenny (AirShots Ltd)

Discovering the Archaeologists of Europe (DISCO) project in 2007 showed that commercial archaeological companies employed 974 staff in the Republic of Ireland (McDermott and La Piscopia 2008, 20 ff.).

The emergence of a private sector in Irish archaeology was not the result of an explicit policy but was a response to the need, initially of the public sector agencies and later private sector developers, for archaeological advice and excavation services in the late 1980s. Its emergence was stimulated by a general reluctance of state bodies or universities to get involved in the direct provision of archaeological services to mitigate the archaeological impact of proposed developments and the insistence by the relevant statutory bodies of the application of the "polluter pays" principle. These actions (or inactions), the transposition of the EIA directive into Irish law in 1989 and the placing of the Record of Monuments and Places on a statutory footing in 1994 effectively created a market for archaeological services. Individual archaeologists met this market need by selling their archaeological expertise, initially as sole traders but as time went on many formed companies or partnerships in accordance with Irish company law.

Sixteen of these companies have won contracts on national road schemes in the last 15 years. There is no statistical survey of the "archaeological industry"; however, data submitted as part of tender submissions reveals aspects of the structure of

these companies. Between 1999 and 2006 the self-reported levels of employment in companies tendering for projects in the southeastern region rose from an average of 84 to 161. In the corresponding period, average annual turnover increased from 0.81 to 6.94 million €. At face value these figures suggest steady growth in terms of employment and revenues. However, the figures only tell part of the story as an examination of the employment statistics at a company level shows that there were large annual fluctuations. Similarly, analysis of the turnover figures shows that companies experienced large fluctuations in the order of −40 to +200% year on year. These figures reveal that for companies tendering for road schemes the archaeological industry is a challenging one where on-going commercial viability is dependant on winning at least one large contract on an annual basis.

Since 2007, as a result of the completion of many of the significant motorway projects and global economic downturn, there has been significant reduction of employment levels in the private sector (Eogan and Sullivan 2009); at least three companies have been wound up.

Archaeological Impact Assessment on National Roads Projects

National roads projects progress through series of defined stages (NRA 2010). Prior to the agreement of the Code of Practice and the employment of Project Archaeologists there was variability between the assessments of the archaeological impact of individual schemes. Since the publication of *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes* (NRA 2006) a standard methodology and vocabulary has been adopted.

In accordance with national policy, the policy adopted is to ensure as far as is practicable the preservation of documented archaeological sites in situ by avoidance of construction impacts.

Constraints study. Desktop study to collate baseline data on archaeological heritage within the study area based on an examination of accessible sources of information of the archaeological heritage in the area, principally the RMP and county archaeological inventories.

Route selection. Further documentary research including NMI topographic files, historic mapping, other documentary sources, aerial photographic coverage and "windshield surveys" and targeted site inspections to verify the extent and location of documented sites.

Environmental impact assessment. Detailed evaluation of the anticipated archaeological impact of the proposed route. This includes a full archaeological walkover; it may also include the commissioning of low-altitude oblique aerial photography, geophysical survey, geodetic surveying and occasionally archaeological test excavations. Where the principle of preservation in situ cannot be achieved the Environmental Impact Statement contains recommendations for the mitigation of any archaeological impacts.

Procurement of Archaeological Services

The rules for the procurement of goods and services by public bodies in the Republic of Ireland are set out in the *Public Procurement Guidelines* (DOF 2009). The basic principle that is applied is that any project being publically funded should be procured through a competitive tendering process based on a written specification and contract and, in accordance with the relevant EU public procurement directive (2004/18/EC), when the estimated tender value exceeds 193,000 €. In practice the value of the majority of archaeological tenders on road projects exceeds this threshold and accordingly they are advertised on the online Supplement to the Official Journal of the European Union (http://ted.europa.eu).

The NRA and its partner local authorities use standard forms of contract documents for archaeological works on national roads projects. The conditions of contract are standard but the specification is particular to circumstances of each scheme. It has been found that the management stage of a contract is where value for money is realised. A contract needs to be effectively managed by the contracting authority, not just left to the service supplier and proactive involvement in the management of the contract is essential to maximise the value of the public expenditure. In practice archaeological contracts are managed by partnership between the engineer who has responsibility for management of the overall road project and the Project Archaeologist who has specific responsibility for the management of the archaeological aspects; however, successful outcomes also rely on the active co-operation of the archaeological contractor and their staff.

Post-approval Archaeological Assessment

Once a proposal to construct a new section of national road has received the necessary statutory approval the local authority submits an application for ministerial directions from the Department of Arts, Heritage and the Gaeltacht in accordance with section 14A(2) of the National Monuments Acts (1930–2004). This process requires the local authority to submit a method statement that sets out the scope, extent and duration of the proposed archaeological works, including as necessary test excavation, geophysical surveying, building surveys and sub-aqua archaeological survey.

In the 1990s only limited test excavation was carried out generally at locations of previously documented archaeologically sites and the identification of previously undocumented archaeological remains came about during the archaeological monitoring of the construction topsoil strip (O'Rourke 2003, 21–2). Current practice is to make much greater use of the period between the approval of the scheme and the award of the contract for construction to undertake geophysical surveys and extensive test excavations along the approved route.

Test trenching is generally carried out using tracked mechanical excavators. In recent years, the aim has been to excavate test trenches equivalent in area to 12% of the land acquired for construction of the new road; this is done so that it can be demonstrated that the archaeological impact of the scheme has been adequately evaluated and also to minimise the risk to the construction programme of the discovery of significant archaeological remains. The trenches are generally excavated according to an agreed layout. The archaeologist directing the works is expected to excavate additional trenches in order to fully identify the horizontal extent any suspected archaeological remains.

The frequency of archaeological sites on national road projects in southeast Ireland has been found to be variable (Eogan 2009); averaging one previously undocumented archaeological site every half kilometre of new road. The frequency of archaeological sites is affected by topography, soils and drainage and historical agricultural practices.

Excavation

In the situation where identified archaeological remains cannot be preserved in situ national policy requires total excavation to ensure preservation by record. The local authority must submit a further application for ministerial directions; the application must be supported by a method statement that sets out the scope, extent and duration of the proposed excavations. Method statements for each individual excavation must also be submitted to the NMS with an application for an excavation registration number. This mechanism ensures that the statutory authorities have full knowledge of the scope of each proposed excavation being undertaken to mitigate the archaeological impact of road schemes.

From a sample of 22 road schemes on which archaeological excavations have been completed since 2001 the average area subject to full excavation ranges from 1 to 29% of the land acquired for construction, with an average of 7%. Data collected on six road projects in south-east Ireland shows that the area excavated ranges from 100 m^2 to 3.8 ha with an averaging of 2,800 m^2.

With this level of archaeological excavation and the expenditure of significant amounts of public money it is critical that quality control of archaeological excavations is a central concern of everyone involved in the projects. On these projects quality control is assured in the following ways. Excavations must be directed by a person deemed eligible by the NMS. Excavation works must be carried out according to the conditions of the contract and the contract specification and the approved method statement. There is close supervision of the progress of the contract by the contracting authority. Excavations are inspected by Project Archaeologist and by the statutory authorities. Quality depends on the professional and ethical culture in the company and on the excavation; ultimately peer review of reports and publications is the most effective guarantee of quality.

Post-excavation and Dissemination

Analysis of data from a number of contracts undertaken in southeast Ireland indicates that historically the post-excavation phase of these projects has accounted for between 20 and 30% of overall costs. The practice of the majority of archaeological companies in the Republic of Ireland is to employ their own staff to compile the archive documentation and reports required to be submitted, in accordance with the ministerial directions and the conditions of contract, and to have the environmental and artefactual specialist analysis carried out by self-employed sub-contractors. This approach has not necessarily been the most efficient way of undertaking this phase of the works and there have been difficulties with completion of the necessary final reports. Recent changes to

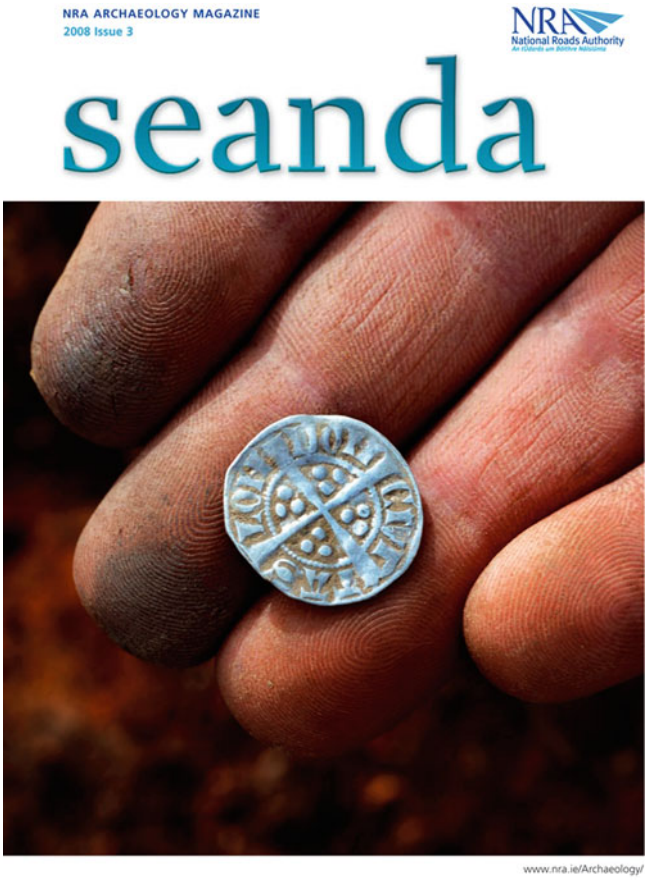

Fig. 16.2 NRA archaeology magazine *Seanda* (http://www.nra.ie/Archaeology/Seanda-NRA ArchaeologyMagazine/)

procurement practices has incentivised the archaeological companies to complete much of the basic archival and processing works during the site works phase. Some companies also employ post-excavation specialists in-house which gives these companies greater levels of management control over the completion of this aspect of the project.

The NRA encourages the widespread dissemination of the results of archaeological investigations on national roads projects to the widest possible audience as it recognises that this is one of the principal ways that value for money can be demonstrated to the general public. The NRA organises an annual seminar at which papers dealing with different aspects of archaeological research undertaken as a result of national roads projects are presented to the public. The papers from these seminars are published the following year. A free on-line magazine *Seanda* is published once a year, it contains short articles written in an accessible style for the general reader (Fig. 16.2). NRA staff have also been involved in radio programmes and organising temporary exhibitions in regional museums and facilitating site visits.

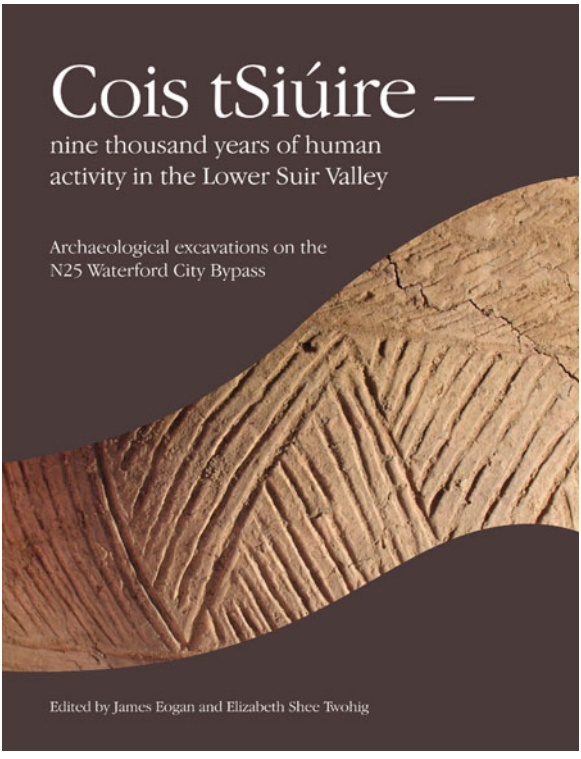

Fig. 16.3 N25 Waterford City Bypass monograph

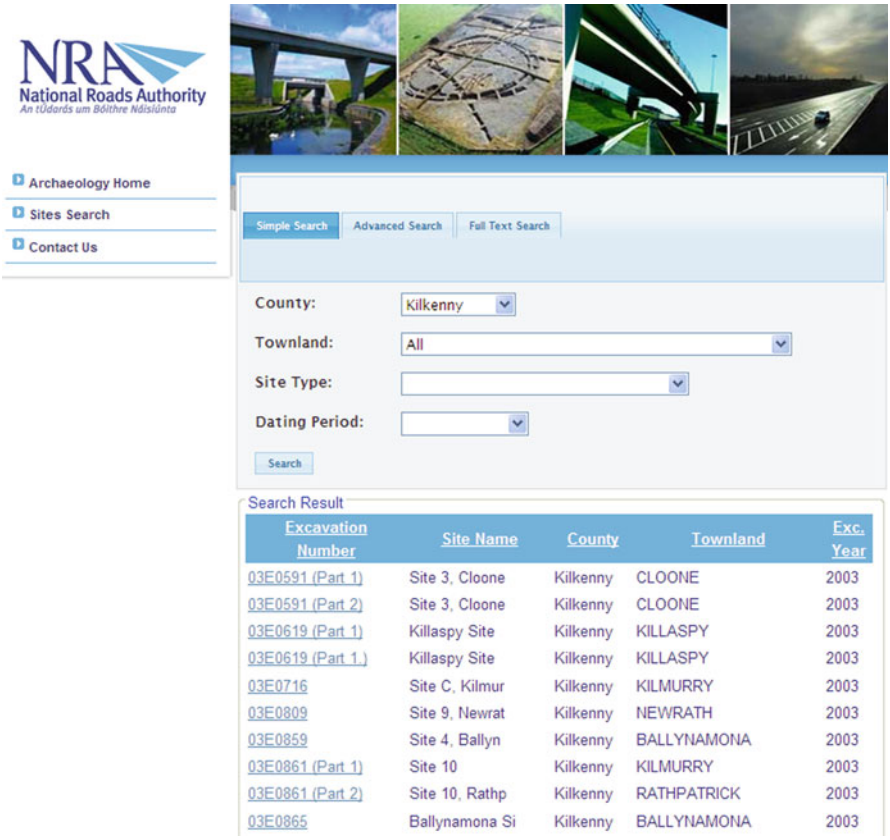

Fig. 16.4 NRA Archaeological database

Detailed accounts of the excavations completed are published in scheme monographs. The NRA has published 10 scheme monographs to date, there are currently up to 12 more monographs in preparation (Fig. 16.3). Accounts of some small schemes or significant individual sites have also been published in local and national archaeological journals.

The NRA Archaeological database (http://archaeology.nra.ie/Default.aspx) contains more than 800 entries for sites excavated on national road projects in the last 10 years (Fig. 16.4). The database is being continuously updated and it is planned to make the final reports for the sites listed on the database available to download so that researchers can have access to the fullest information possible.

NRA staff and the staff of the archaeological companies are encouraged to deliver papers to local archaeological and historical societies; numerous papers have also been delivered at national and international conferences and congresses.

Discussion

The management of archaeology on road schemes in the Republic of Ireland is underpinned by a number of key principles:

- Competitive public procurement based on standard tender documentation and comprehensive specifications
- Structured and systematic procedures for management at all stages of the project
- A focus on risk minimisation
- A partnership approach
- Wide dissemination of the results of the archaeological works

The structures put in place over the last 10 years have re-focussed archaeological work on major roads projects from the construction phase to the pre-construction phase (see Table 16.1).

Pre-Code of Practice the archaeological response to mitigating the archaeological impact on the archaeological heritage was reactive; in the decade since its agreement the management of archaeology on these projects has been proactive. Formerly archaeology was regarded by the engineers managing these projects as a significant unquantifiable risk; now they perceive it as a risk to be managed through the structures that have been established and the professional staff that have been employed. This change in approach has had obvious benefits for the smooth running of the construction projects by minimising the risk of the discovery of significant archaeological remains during the construction phase. Archaeologically the approach has also paid significant dividends, prior to the Code of Practice data collected from 11 schemes show that the estimated average frequency of sites excavated was one archaeological site every 1.7 km; analysis of seven contracts along the M8 road project has shown that on average one archaeological site has been excavated every 0.6 km (Eogan 2009, Table 2). Accessibility to the data generated by all this archaeological work, for both the general public and researchers, has also improved significantly as a result of the structures and staff put in place following agreement of the Code of Practice.

Conclusion

The employment of archaeologists in multi-disciplinary road design teams has given archaeologists and engineers a much clearer understanding of the ways in which archaeology can be managed on these projects to ensure appropriate archaeological outcomes without detriment to the progress and completion of the project as a whole. This provides tangible archaeological and community benefits in terms of minimising the impact of these major construction projects on the documented archaeological heritage (Table 16.2). The development of systematic

Table 16.2 Summary of positive outcomes for various stakeholders resulting from the approach to the management of archaeology on national road schemes

Stakeholder	Outcomes
Government/NRA/project manager/ construction company	Efficient, cost-effective risk minimisation and mitigation of archaeological impacts
Archaeological profession	Access to new data collected in a systematic way, funding, employment and research opportunities
General public	New road infrastructure; high quality archaeological data and knowledge of archaeological discoveries, local pride

approaches to the assessment of the impact of these road projects on the previously undocumented archaeological heritage and the development of strategies to ensure the mitigation of those impacts have brought to light significant new archaeological data that is transforming our knowledge of the past and will make a ongoing positive contribution to Irish and European archaeological narratives.

Acknowledgments I wish to dedicate this paper to the memory of a valued friend and colleague Dáire O'Rourke who died in April 2010. Dáire, as the first Head of Archaeology in the National Roads Authority, was responsible more than anyone else for ensuring that the "vision" of the Code of Practice became reality in the structures that have been established and the staff that were employed over the past 10 years.

I am grateful to many NRA colleagues who have provided access to data and have engaged in stimulating discussions. In particular I would like to thank Rónán Swan, (acting) Head of Archaeology; Ken Hanley, Cork NRDO; Ed Danaher, Bernice Kelly and Mairead McLaughlin, Tramore House RDO.

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Chapter 17
Archaeology and Development in a Maritime Context, Highlighting Drogheda and the Boyne Estuary as a Case Study

Niall Brady and Edward Pollard

Background

The archaeology of the coastal zone has emerged as a recognised area of research that informs an understanding of cultural heritage with a particular focus on maritime culture (O'Sullivan 2001; McErlean et al. 2002; O'Sullivan and Breen 2007). Ireland's island entity presents an ideal opportunity to engage with this study. Significant progress has been made over the last two decades as researchers have become increasingly aware of the dynamic nature of the littoral landscape. Attention has concentrated on issues relating to changes in the natural environment. Geological processes relating to isostatic response and geomorphological processes of erosion and deposition are being considered in terms of how they might affect the surviving archaeological record (Bell et al. 2006; Edwards and O'Sullivan 2007). It is a subject area that is growing alongside global realisations of climate change and rising sea levels. One area that awaits assessment is the impact of development activities on the coastal environment (Williams 2002).

It is more than ten years since the State required development projects at and below the waterline to include archaeological assessment and mitigation strategies similar to those that exist on fully terrestrial sites (Dúchas 1998). A body of data now exists from such licensed, development-led work around the Irish coast, along its navigable rivers and across its inland waters. The Irish National Strategic

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Fig. 17.1 Detail of the Irish Sea region showing Ireland's east coast and highlighting the study area of the Littoral Archaeology Project, 2008

Archaeological Research (INSTAR) programme funded a scoping study in 2008 to assess the potential to be gained from the so-called "grey literature" associated with maritime archaeology in Ireland (Brady and Pollard 2008). The Littoral Archaeology Project (LAP) consisted of a desktop review of existing archaeological data for a study area that runs from Carlingford Lough, Co. Louth, to Carnsore Point, Co. Wexford (Fig. 17.1).

It is a dynamic coastal area that has experienced coastal retreat as well as deposition, and is experiencing development. The archaeological study focused

on a corridor along the coastline that extended 1-km inland and included the navigable portions of major rivers up to the High Water Mark. What follows is an extract from that study that focuses on the lower reaches of the River Boyne and the town of Drogheda through which the Boyne flows. The chapter presents an overview of the archaeological potential from existing sources; it describes the range of information that exists at the heart of the project; and it makes a preliminary statement on the cultural heritage attaching to the foreshore of the Boyne estuary.

An assessment of the medieval coastal environment in the Dublin region conducted by the Discovery Programme's Medieval Rural Settlement Project presented an opportunity to identify the primary challenges which LAP seeks to illuminate (Brady 2009). There was an absence of any real interrogation of the maritime heritage associated with the country's medieval capital city and its hinterland. Despite the fact that Dublin was a port of critical importance in the Irish Sea region throughout the later middle ages, there had only been limited examination of sources and material that exists for the area outside the city, while consideration of the results arising from the urban excavations understandably focused on the remains of former quaysides and revetments associated with the growing town. It was apparent that much of what was accepted about the wider region was not based on archaeological investigation, and there was little obvious consciousness of the potential for the foreshore to yield significant insight. The absence of such archaeological curiosity was reflected in studies of the period before the twelfth century, as well of those of the early modern and more recent times. LAP extended the area of consideration north and south along Ireland's east coast and observed a similar pattern, where the potential archaeological returns of the maritime zone were not being pursued by researchers.

The foreshore area represents a narrow belt of land between the spring-tides High Water Mark (HWM) and Low Water Mark (LWM), where the former represents the highest reach of the sea inland during a lunar climax, and the latter represents the lowest or most removed extent of the sea during these lunar cycles which occur every fortnight or so (Fig. 17.2). The foreshore remains a relatively narrow belt of land along the coastline that extends upriver in tidal estuaries. It is a zone of archaeological potential that has only recently become the subject of sustained study. The Discovery Programme's study of the Shannon estuary in Cos. Limerick and Clare and the University of Ulster at Coleraine's study of Strangford Lough have served as the baseline studies in Ireland and abroad (O'Sullivan 2001; McErlean et al. 2002; Davidson 2002). Yet this zone is not a defined archaeological landscape in its own right. The coastline retreats and also grows by natural forces of erosion and deposition and is in a state of constant change. Reclamation works, in turn, tend to bury former shorelines and to extend current shorelines seawards. The 1-km zone inland identified for the study would frame the immediate interest in the present-day littoral by providing the broader archaeological context on either side of it.

Fig. 17.2 Trinity Wharf, Wexford town. View looking East across intertidal foreshore on an ebb tide, showing the stem post (bow section) of a timber shipwreck that lies partly buried in the sands. Courtesy of the Archaeological Diving Company Ltd.

Sources

The primary archaeological resource examined was the archaeological licensing record at the Department of the Environment, Heritage and Local Government. This resource is primarily made up of licensed excavation work. Since it is necessary for the inspection of underwater locations to be authorised by the Department, there is also an archive of non-disturbance dive and detection device assessments across Ireland to draw upon. Within the study area, 1,242 licensing events have occurred between c. 1995 and 2004 (2004 serves as the cut-off point for examination of licensed work as this reflected the availability of records in 2008, when LAP was completed). Of these, 103 have been granted for underwater work. As will be described below, the contribution of terrestrial archaeology to exposing the former maritime landscape is significant and serves to expand the opportunities by more than twofold.

Consideration was given to Environmental Impact Statements (EIS), where an archaeological study may have been completed in combination with geotechnical and related engineering detail for proposed development projects along the foreshore area. A shortlist of 62 EISs was drawn up, where the development was located either on or immediately adjacent to the foreshore area, or was based at sea. In general, these documents which date to 1998 and earlier will not include reference to maritime archaeology as their compilation predates the Department's

requirement to include underwater assessment at part of the cultural heritage brief. However, the purpose of studying EIS documents was to identify engineering and related data that can inform a sense of coastal erosion processes and the manner in which local authority and state bodies are addressing the archaeological environment affected by the developments. The EIS for Greystones Harbour Development, Co. Wicklow, for instance, drew attention to the fact that the coastline which is adjacent to a known archaeological complex associated with later medieval Gaelic estate of the Mac Gilla MoCholmoc is presently eroding at a rate of 1 m per annum (Wicklow County Council 2004). The proposals advanced in the EIS called for coastal defence work to stabilise the cliff face, and the impact that such works would have on potential archaeological levels could be considered.

Local Authority and Port Authority development plans were also consulted, to understand the degree to which there is an awareness of the cultural heritage importance of our maritime archaeology. There is a clear awareness of the environmental heritage of the coastal area, and there is a growing awareness of the archaeological maritime heritage. Louth County Council identifies Dundalk Bay and the tidal mudflats as a special protection area and a special area of conservation, respectively (Louth County Development Plan, 2003–2009). The more recent plans include more direct reference to the archaeology of the coastal zone. Meath Heritage Plan, which seeks to compliment the County Development Plan, recognises the definition of heritage contained in the Heritage Act 1995, to include seascapes and wrecks (Draft County Meath Heritage Plan 2007–2011). The Drogheda Docklands Plan is based on a close reading of the town's archaeological potential and emphasises the river's and quayside potential for further discoveries (Drogheda Borough Council 2007). The plan is the strongest statement among the local authority documents, and this is perhaps explained by the exceptionally rich context locally. The Wexford County Development Plan is the most current and includes a statement on Underwater Archaeology as a sub-section, and identifies a specific underwater policy which is to assess planning applications with a view to potential impacts on riverine, lacustrine, inter- and sub-tidal environments (Wexford County Development Plan, 2007–2013).

In general there is due care and attention paid in development plans to the protection and enhancement of the built environment from an archaeological perspective. Despite Drogheda and Wexford, the consciousness with regard to the archaeological potential of the coastline is less clear, but appears to be improving. The appreciation of the environmental heritage of the coastline is evident where natural assets such as marine and coastal wetlands and habitats are given proper attention. There is, however, no clear statement on the archaeology of the littoral area. Much of the archaeological "signature" of the coastal zone is humble and hard to "see". The intertidal surveys of the Shannon estuary and of Strangford Lough reveal just how ephemeral in appearance many of these features are. This is an apparent gap in local authority planning perspectives that should be filled, to help safeguard a heritage which archaeologists are themselves only becoming aware of. The role of the Heritage Council in raising public awareness is a key

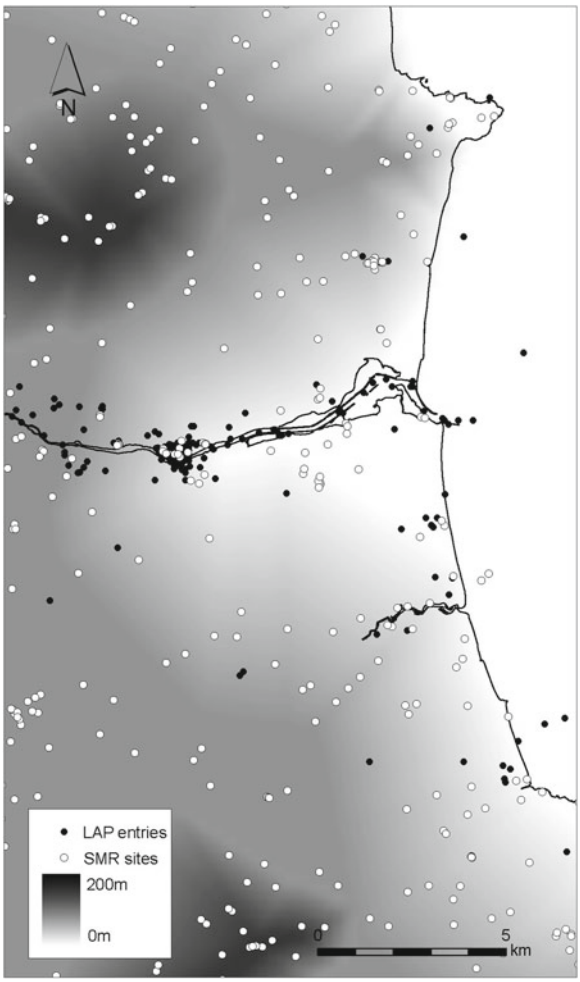

Fig. 17.3 Map showing Ireland's east coast from Clogherhead, Co. Louth, in the north to Gormanston, Co. Meath, in the south, with the Boyne estuary in the middle, highlighting the numbers of recorded archaeological monuments (SMR) and the entries for licensed archaeological work derived from the Littoral Archaeology Project (LAP) database

asset, and recent publications suggest the growing return on the establishment of the marine and coastal committee by the Council (Cummins et al. no date; Kelly and Stack 2009).

Overall Patterns

The archaeological wealth of Ireland's east coast is manifest in any distribution of monuments. The profusion of sites is supported by the pattern of licensing along the littoral, and that of shipwrecks offshore (Fig. 17.3). Licences issued for archaeological purposes along the east coast include dive survey and detection device licences granted to sports-diving groups. The greater majority of licensing has been

to facilitate archaeological resolution in development projects. There are only two licensing events recorded along the littoral that were for research purposes. The particular focus of licensing in urban areas is a feature of the concentration of excavation in these locations. The wider spread along the coastline reflects foreshore development and nearshore infrastructural programmes, such as offshore wind farms and subsea interconnectors.

In the period between 1994 and 2004, a total of 103 licences were granted and reported for dive survey and associated detection device work along the east coast. No licences are reported for the years 1994–1997, and it is only in 1998 that the process gets underway. This can be interpreted to be a direct result of the Department's memorandum issued that year to recognise that the underwater environment was subject to the same level of archaeological regulatory measures that apply to the mitigation of terrestrial sites. The numbers of licences remain small until 2001–2003, when 20 licences are granted each year in 2001 and 2002, and 21 licences in 2003. It represents a highpoint in activity along the east coast, and in the ensuing years the numbers have dropped back to single digits. This pattern of activity compares favourably with national trends in archaeological licensing (University College Dublin 2006, 15). The smaller numbers reflect the niche sector of maritime archaeology.

The nature of maritime archaeology dictates that it should not be divorced from terrestrial archaeology. The water is merely an extension into which the human footprint has trodden, and it is the challenge of working beneath the water column that distinguishes underwater archaeology from work on land. The rationale for combining approaches is indicated when one considers areas of coastal erosion, where sites of settlement and burial now occur in exposed foreshore locations and the seabed may retain scattered remnants of those sites. This is the case at Bremore, to the south of the Boyne estuary, where an important sequence of Neolithic period burial tombs occupies a coastal promontory and extends northwards to Gormanston, straddling the mouth of the River Delvin (which later became the county boundary). Large numbers of stone tools of Neolithic date have been identified during field-walking around Bremore close to the shore (Cooney 2007). Bremore was used for burial during the subsequent Bronze Age, and the discovery of a 7-m-long dugout canoe, or logboat, dating to this period during marine dredging *c.* 500 m offshore reinforces the need to consider the marine and terrestrial environments in unison (Brady 2002a, b). It is also the case that old shorelines now lie buried beneath generations of reclamation works, most of which occur within towns. This pattern is seen in all of the east coast towns, from Dundalk, Co. Louth, in the north, to Wexford in the south. The distribution of reclamation events reported during excavations in Wexford town, for instance, follows a very distinct and straight line that defines the medieval shoreline beneath the modern town's waterfront.

The investment in maritime archaeology has generated a useful set of new data in its own right (Table 7.1, Fig. 17.4). In addition to the reclamation observations, which in urban developments are largely a by-product of terrestrial archaeology, intertidal and underwater survey work is producing measured surveys of piers and quayside structures as the need arises. There is also the accumulation of new arte-

Table 17.1 Summary statement on archaeological return from Dive and Detection Devices issued on Ireland's east coast to 1998–2004

Significant artefact assemblages	Stray ships' timbers	Boat- and shipwrecks	Quay/pier surveys	Buildings/other structures surveys
1	4	4	7	2

Source: LAP database

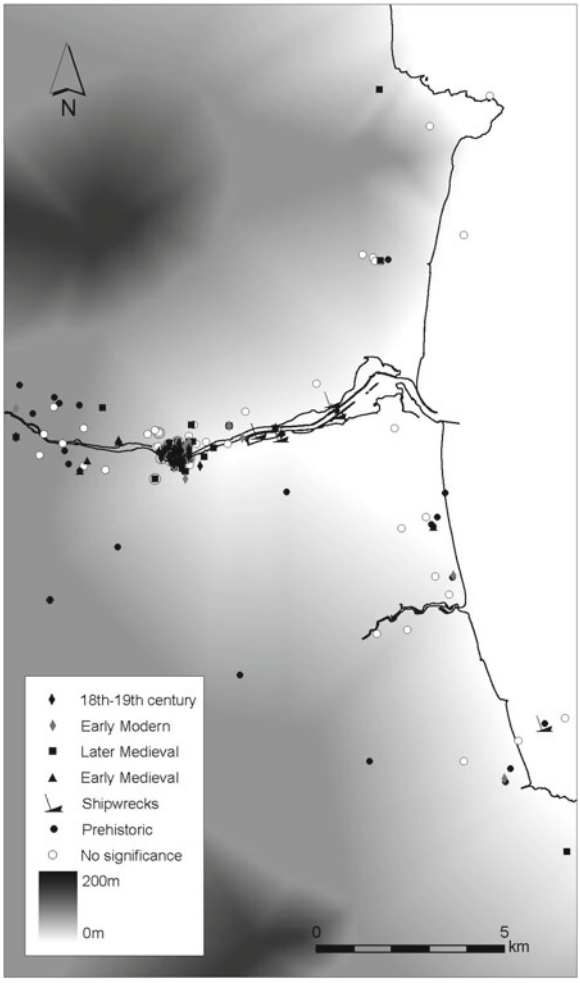

Fig. 17.4 Map showing Ireland's east coast from Clogherhead, Co. Louth, in the north to Gormanston, Co. Meath, in the south, with the Boyne estuary in the middle, highlighting the result of the LAP database entries in terms of the distribution of chronological information being generated from the licensed archaeological work. When combined with a distribution of monument types, this information will form the basis of a cultural narrative on the development of the maritime zone

facts and pieces of wreckage that emerge through the monitoring of dredging projects. Boat- and shipwrecks have been observed and in part recovered. A timber shipwreck found off the North Bull island in Dublin as part of the Dublin Bay pipeline project, and referred to as the "Sutton wreck", is the primary discovery from a project that recovered several lesser timbers across the bay (Dunne 2003, 2004;

Brady 2004, 2008, 240–241 W01142). The Sutton wreck was a medium-sized trading vessel perhaps of late seventeenth century date with a beam or width of 6.5 m and a possible length of *c*. 23 m. It is the most significantly intact wreck so far located close to the mouth of the Liffey.

The project database allows for some level of chronological analysis, 969 entries retain dating evidence, excluding shipwrecks. Prehistoric sites account for 118 of the datable total. Given the obvious points of coastal erosion on the east coast, the recovery of worked flint nodules on the Arklow bank during dredging activities, for instance, reinforces the suggestion that the ancient coastline has long since disappeared into the sea in places. The distribution of prehistoric sites along the littoral may then not entirely represent the location of maritime communities but rather the now-exposed fringes of more inland settlements. It is not surprising that the later medieval, early modern and more recent sites are focused on the urban locations, and account for the majority of datable entries in the database (313, 304 and 299, respectively). Yet it is perhaps worth noting that early medieval sites account for only 35 entries in the database, and are invariably situated from Dublin northwards.

It is also worth observing that there are 400 entries which are considered to be "not of archaeological significance". The entry is often made if archaeological testing is restricted in depth to what are modern levels, or where previous development on the site has removed all cultural levels down to natural. Yet this category does include locations for which there is simply no obvious archaeology to be seen.

Drogheda and the Boyne Estuary, a Case Study

The estuary of the River Boyne presents a useful case study in which to consider the role of maritime archaeology and modern development (Figs. 17.5, 17.6, and 17.7). The archaeological potential of the Boyne requires no introduction in an Irish context. It represents a river that has served as the backdrop to many of Ireland's iconic archaeological sites. Within 14 km of its estuary lies *Brú na Bóinne*—the Bend of the Boyne, an archaeological landscape that has been recognised by UNESCO as a World Heritage site. The natural meander of the river helps to frame an area whose most important monuments are the complex of Neolithic period megalithic tomb cemeteries that focus on the principal sites of Knowth, Newgrange and Dowth. The tidal reach of the Boyne extends to the eastern edge of *Brú na Bóinne*, at Oldbridge, which is famous in its own right for the central role it served in the much later Battle of the Boyne in AD 1690. Archaeological research is being conducted across *Brú na Bóinne*, on land and within the river channel, which will inform a series of detailed studies in their own right (Smyth 2009). The lowest reaches of the Boyne as it flows east of Oldbridge, however, lies outside the *Brú na Bóinne* study area (Fig. 17.6). The river passes through Drogheda town and empties into the Irish Sea to the north of Bettystown, Co. Meath. Bettystown is associated with the find-place of the Tara Brooch, which was reported to have been found in 1850 along the shore (Whitfield 1974). Significant development has taken place along Drogheda's

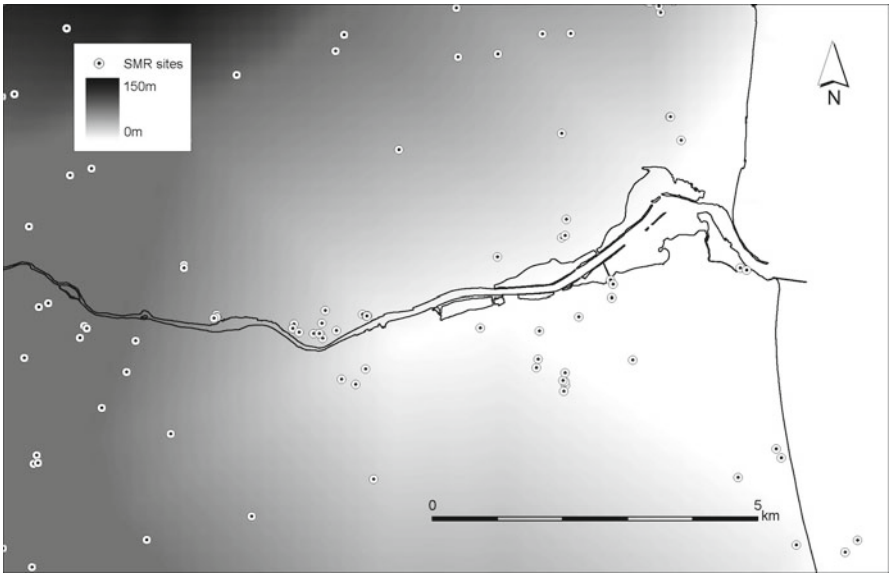

Fig. 17.5 Map of the River Boyne estuary showing the natural topography in shaded relief with distribution of recorded archaeological monuments

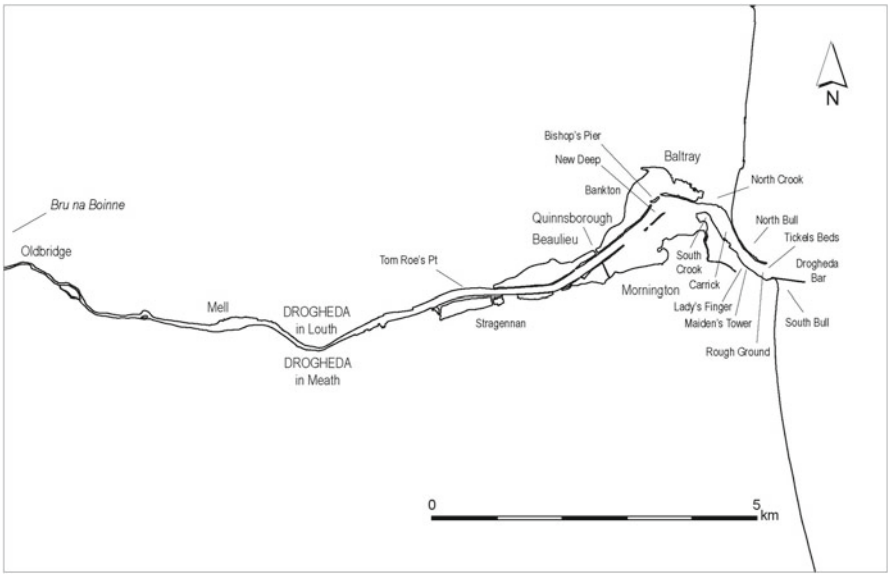

Fig. 17.6 Map of the River Boyne estuary showing places mentioned in the text

riverfront and through the tidal mudflats downstream (Fig. 17.3). The purpose of the present essay is to introduce the range of material that has been generated in the recent past and to offer a maritime archaeological perspective on its interpretation.

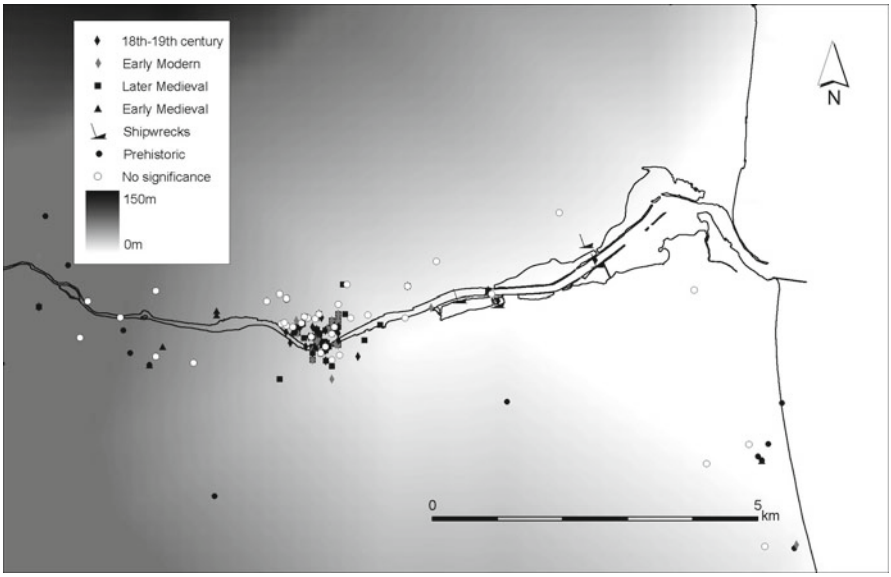

Fig. 17.7 Map of the River Boyne estuary showing the range of material, largely separated by date, arising from the licensed archaeological work conducted between 1998 and 2004. *Source*: LAP database

The lowest reaches of the Boyne from its tidal extent at Oldbridge to where it empties into the Irish Sea is characterised as a gently flowing river which occupies a relatively narrow channel that retains a sequence of mudflat islets until it passes below Drogheda town. At that point, some 7 km from where the river issues into the sea, the channel widens into a sand-filled estuary that reaches almost 2 km in width between Baltray, Co. Louth and Mornington, Co. Meath. The estuary is defined in part by a narrow promontory to the south (South Crook) which extends northwards towards Baltray to offer only a narrow opening for the river to pass through to the sea. In physical terms, the topography of the Boyne's lowest reaches recalls those of the Ward River and Broadmeadow River to the north of Dublin, which empty into the wide sand-filled Malahide estuary that is retained within a sandy promontory. A similar geography is repeated on Rogerstown estuary to the north, while in former times, and on a much larger scale, this pattern would also have been seen at the mouth of the River Liffey in Dublin. At a point that lies slightly downstream of where Dublin city was founded, the foreshore opened out into a wide estuary and was confined in part by a promontory of land extending north along Sandymount to Ringsend (DeCourcy 1984). The estuary of the Boyne, like Malahide estuary and Rogerstown estuary, presents an opportunity to consider the archaeological potential of the lowest reaches of tidal rivers on Ireland's east coast that have been important routeways and resource catchments since earliest times.

The Lower Boyne in Prehistory

The first indication of human activity surviving from the lower Boyne area must be the Palaeolithic stone tool recovered from the surface of glacial deposits at Mell, just upstream of Drogheda and c. 250 m north of the present-day river channel (Mitchell and de Sieveking 1972). The *c.* 400,000-year-old "Clactonian" flake would not have been in its original context, however, and the gravels are thought to have originated in what is now the Irish Sea basin, having been subsequently glacially dumped at Mell. Prehistoric information from this part of the Boyne was generally absent until recently, when a major river dredging project was undertaken below Drogheda. In contrast to the very rich monumental remains of burial tombs at *Brú na Bóinne* upstream, there was little else to provide tangible insight to activity at the entrance to the Boyne. A cist burial site and the adjacent remains of a standing stone complex located on a ridge that overlooks a raised beach on the north side of the estuary at Baltray represent the clearest indication of activity, some 500 m from the estuarine sands (Buckley and Sweetman 1991, 63, 75). The stones are the same type of rock as are found on the kerbstones at Knowth; namely a Greywacke whose origin appears to lie further north along the coast in Clogherhead, Co. Louth, which suggests that the standing stones may have served as guides to mariners wishing to gain access to the estuary (George Sevastopulo pers. comm., 2011). The stones are also marked on a nineteenth century Admiralty Chart, indicating their relevance to navigation into the recent past (Frazer et al. 1852). Despite significant dredging activity since the nineteenth century to improve navigation to Drogheda from the sea, only a small number of artefacts have been reported as being from the Boyne. These include a stone axe head from the River Boyne at Shop Street, which is now part of the collections of the Old Drogheda Society, a bronze dagger (National Museum of Ireland [NMI] 1978:337, IA/110/1979), three flat bronze axe heads (NMI 1968:297, 1978:336, IA/110/1979), a "bronze celt with stone ridges" (Merseyside County Museum M7171) and an iron cleaver (NMI 1976:222A) (Bradley no date, 67, 116). Two penannular brooches are provenanced to Drogheda (British Museum 1054.7.14.139 and 140, Kilbride Jones 1980, 99.49), and a series of pins recovered during the 1852–1853 dredging operations now form part of the collections of the Royal Ontario Museum. The pins comprise a double spiral-headed pin, perhaps of seventh to eighth century date and five bronze stick pins of tenth to twelfth century date (Nos. 8, 25, 39, 43, 59, 78, Pryor 1976, 85–87).

The small numbers of finds from the Boyne contrast sharply with early dredging projects on other rivers around Ireland, some of which produced very significant assemblages of prehistoric and later artefacts. The NMI's artefact register lists many hundreds of stone axe heads, along with a rich collection of bronze artefacts recovered during dredging operations of the Shannon at Killaloe/Ballina, Co. Tipperary in the 1930s, and a similarly large collection of finds was recovered during dredging activities in the Barrow in the 1920s–1930s. The pattern on the Boyne was to change in 1998–1999, when archaeological monitoring was required of a dredging project

between Tom Roe's Point and Mornington and the river mouth. The dredging of the river channel recovered 3,688 pieces of flint and a series of later artefacts (Whitaker 2000a, b). Analysis of the assemblage indicates that only a small percentage of the flint is artefactual (Peter Woodman, pers. comm., 2010).

The 1998–1999 work prompts a consideration of the context of the lithics assemblage. Located well within the broadening estuary of the Boyne at this point, there is little suggestion of any settlement site, though the channel may have moved in the sandy low-lying environment. Earlier dredging may also have removed some of the evidence. Records survive from the nineteenth century dredging schemes which were undertaken to improve navigation to the town, and Tom Roe's Point was known as one of three fords east of Drogheda. Despite extensive works to deepen and straighten the channel here and at other locations along the river between 1817 and 1852, there is an absence of records observing the discovery of archaeological finds. A drainage report from 1835 notes that "the first object with regard to the improvement of the Harbour of Drogheda has been to remove all the bars of shingle and gravel which were and are to be found in the channel thereby increasing the depth of water for ships of a larger class" (National Archives (NA) OPW 8/120/3, and below). The works allowed for a larger volume of sea water to flow up-channel, thereby enabling greater scouring power which in turn increased the depth of water within the navigation channel. Steam vessels of the first class were then able to sail regularly from Drogheda to Liverpool with cattle, and the merchants of Drogheda engaged in trade with Glasgow (OPW 8/120/1). The drainage reports record the removal of Tom Roe's Point, Queensborough Ford and Banktown Ford downstream of Drogheda (OPW 8/120/3). The location of the Queensborough Ford can be presumed to have linked the villages of Queensborough (now known as Quinnsborough) on the north bank and Mornington on the south bank.

Trial grab-dredging in the vicinity of Mornington recently found a dense sand-gravel bed that was particularly hard to penetrate (Boland 1998), while an underwater geophysical survey from Tom Roe's Point to the Boyne Mouth revealed the bed of the River Boyne to be dominated by a uniform muddy substrate which grades progressively coarser (from fine sand to gravel) towards the mouth of the river (Quinn and Gault 1998). As Whitaker's monitoring of the dredging activities in the same area has revealed, however, it should not be anticipated that earlier dredging projects have removed archaeological deposits entirely. New dredging schemes may seek to reduce the bed level further and therefore can undertake excavations into previously undredged strata. This is known as "capital dredging".

The limited number of artefacts recovered from the dredging activity reported in 1998–1999 reveals a prehistoric stratum downstream of Tom Roe's Point, which is in all likelihood associated with the former fords that crossed the lower reaches of the Boyne in these locations (Fig. 17.8). The centurion stature of the standing stone complex at Baltray should not go unnoticed, overlooking the river mouth. The information provides new insight to the prehistoric usage of the tidal mudflat areas, and one can only wonder if other features that are typically observed in such locations may also have been used, such as fishtraps and weirs to capture the fish

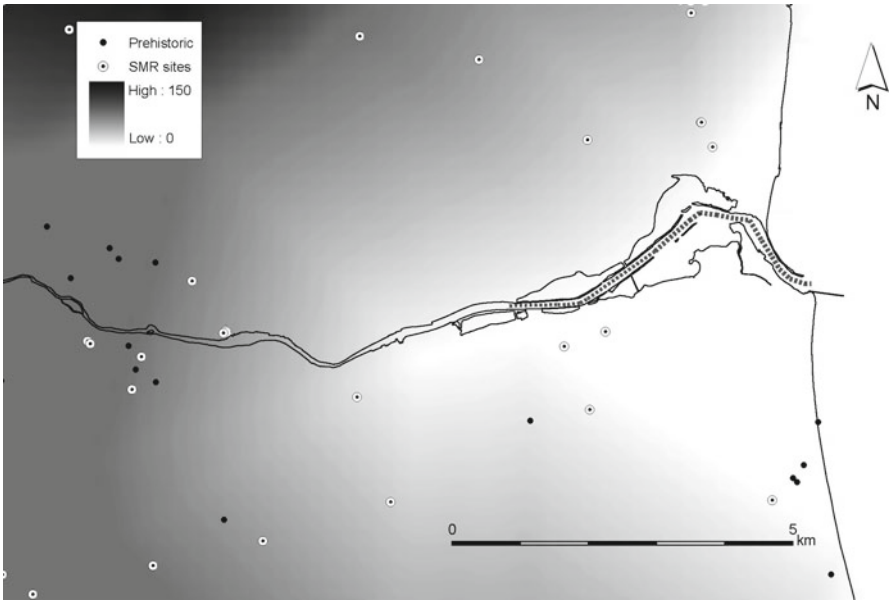

Fig. 17.8 Map of River Boyne estuary showing monuments of prehistoric date and locations of prehistoric material identified in the LAP database. The river dredging downstream of Tom Roe's Point is highlighted as a *dashed line*

that would have moved up the estuary with the filling tide. Formal weirs and fishtraps are known upstream in the *Brú na Bóinne* area, and it is tempting to consider that some of those sites may have been associated with the Cistercian grange at Knowth and other later medieval interests. The abbot of Mellifont, for example, was sent to prison in 1358 for erecting a weir on the Boyne at Oldbridge, because the new work impinged on boats travelling from Drogheda to Trim (O'Keeffe and Simington 1991, 51). In contrast, the exploitation of the estuarine marshes further downstream remains an unexplored question. The first tangible evidence has now been provided by compliance-driven archaeology, and it remains to be seen what impact this new body of information will have. It is clear that a lot of information will have been lost because of the various improvement works associated with deepening and widening the navigation channel. It may seem too much to expect future research to discover medieval fishtraps, but the possibility for prehistoric activity is clear.

The river fords across the lower reaches of the Boyne were not restricted to the river mouth area. The place name Drogheda, *Droichead Atha*—"ford of the bridge"—originally applied to Oldbridge (Bradley no date, 67), where a ford is recorded on the 1852 Admiralty Chart near Grove Island (Frazer et al. 1852), and where investigations have revealed a remarkable depth of cultivation soil, indicating a programme of progressive reclamation from the mid-eighteenth century, which may have affected the position of the original ford (Byrnes et al. 2003; Cooney et al.

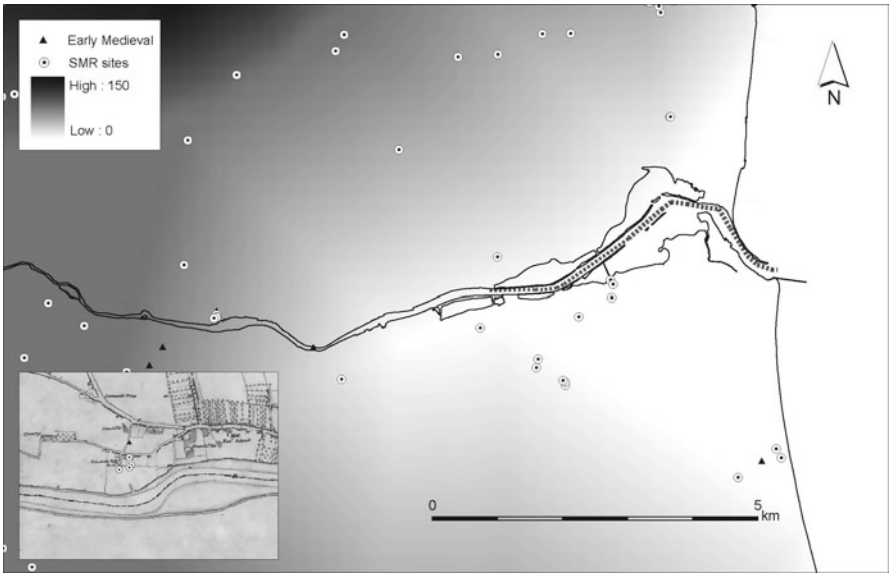

Fig. 17.9 Map of River Boyne estuary showing monuments of early medieval date and locations of early medieval material identified in the LAP uncovered a range of material and is more highlighted as a *dashed line*. The *inset* is an abstract from the OS first edition map showing Mell

2002). By the end of the twelfth century, however, the place name Drogheda had become associated with the new town that was founded by Hugh de Lacy, Lord of Meath, shortly before his death in 1186 (Bradley 1978, 105). A ford appears to have existed here as a river crossing point, and this is indicated by dredging works in 1835 to deepen the river channel below St. Mary's Bridge, which revealed large stones and shingles that would have served most usefully as a natural core to a ford (OPW 8/120/3, and below).

The Lower Boyne in the Early Medieval Period

Students of the early medieval period will be drawn to the complex at Mell as the principal site on the lower reaches of the Boyne (SMR LH024-012001-4) (Fig. 17.9). A sequence of sacred wells and a bullaun stone highlight an ecclesiastical context. The discovery during pipe-laying work of an enclosure that was *c.* 50 m in diameter and which retained a souterrain in two sections and a small cemetery provides supporting evidence for a larger settlement area (Buckley and Sweetman 1991, 130.364, 269.1025). Some comparison with the Liffey and Dublin is possible in that the positioning of a complex which lent itself to settlement is located close to the navigable river. Mell is at some remove upstream from the fording point that was to serve the later medieval town, but the early medieval site is directly beside an abrupt bend in

the river that today has developed into a sequence of islets through which the river has cut a series of channels; it may well have presented a suitable crossing point in antiquity. Unfortunately there is no record of archaeological work being conducted at Mell or in its immediate vicinity that would further inform a maritime cultural narrative. It is curious that the only other site of probable early medieval date directly adjacent to this section of the Boyne was an ecclesiastical foundation at Mornington, close to the river mouth, at the confluence of the Maman River with the Boyne and beside the former Quinnsborough ford. St. Columcille is said to have founded a church here, which was later called *Villa Maris*, but there is no visible trace of the early remains today (Gwynn and Hadcock 1970, 399; Moore 1987, 140.1460).

The absence of obvious settlement from the early medieval period more generally in close proximity to the river echoes a pattern observed in the Littoral Archaeology Project, where only 35 early medieval observations were made from the total of 842 observations that provided dating evidence arising from licensed archaeological work along the east coast. The presence of ecclesiastical sites adjacent to the river in the Boyne study area in turn calls to mind observations arising from the Strangford Lough study where church lands occupied large areas of the foreshore (McErlean et al. 2002, 73–78). It is the Church which appears to have controlled the majority of the fishtraps and weirs on the Lough, and it is the Church which built and used a complex watermill at Nendrum. It may be useful to pursue an enquiry into the wider land ownership of the lower reaches of the Boyne during the early medieval period. It would also be useful to consider the potential of the riverine islets at Mell to service milling in addition to their more obvious usage as a crossing point.

Twelfth Century Transformations, the Development of Drogheda

The foundation of the town of Drogheda transformed the manner in which the lower reaches of the Boyne were exploited. The river had been defined as the boundary between the dioceses of Armagh and Meath at the Synod of Kells in 1152, and this might explain why Drogheda was originally founded as two separate towns in two separate parishes on both sides of the river, Drogheda-in-Meath and Drogheda-in-Louth, respectively (Bradley 1978, 105). De Lacy's new town quickly became an important market and port, and it served as a major artery for trade on Ireland's east coast and across the Irish Sea. The usual interpretation of the customs returns between 1276 and 1333 shows Drogheda coming in closely behind New Ross, Waterford and Cork as the most important ports in high medieval Ireland, and was even ahead of Dublin in terms of trade, although this latter point attracts a different view (Graham 1977, 41; Down 1978, 482; Friel 2003, 74). Salt, iron and wine were imported to Drogheda, along with coal from the fourteenth century (Bradley 1978, 27; O'Neill 1987, 85–87; Galloway 2003, 12–14). Drogheda was also a key port in the Irish Sea fish trade, and herring was managed by various Irish fish merchants operating between Drogheda, Rush, Malahide, Howth and Dublin (O'Neill 1987, 31). Agricultural produce, most notably grain, along with hides and wool, were

exported from Drogheda (Galloway 2003, 7–12). Drogheda's trade extended to other Irish coastal ports and across the Irish Sea to Chester and Bristol, but it also reached ports on both sides of the English Channel, and further south to La Rochelle, Bordeaux and Lisbon, and also north to Iceland. In 1606, it was reported that a merchant could hire a ship at Drogheda to sail to Lisbon and back for 50s a ton, while the journey to Malaga cost £5 a ton (Appleby 1992, 110–111).

To accommodate and promote this trade, Drogheda was equipped with a series of quays and was known for its ship-building. The thirteenth century saw royal commands to build galleys—swift-travelling 40- and 60-oared vessels to assist in the protection of shipping from the King's enemies, and a murage grant of 1296 to Drogheda-in-Meath mentions large boards, masts, rigging ropes and canvas for ships (Bradley 1978, 123; O'Neill 1987, 112). It may be no coincidence that the shallow drafted galleys would be built in Drogheda where low water depths prevailed. Bradley describes how quays existed on both sides of the town's bridge, and that the present-day North Quay, Mall and South Quay functioned since the late twelfth century (Bradley no date, 79). Archaeologically, certain components of the maritime trade have been revealed. Pre-development investigations immediately upstream of and adjacent to the bridge revealed evidence for a thirteenth century timber-revetted quayside on the north bank at Shop Street, some 8 m inland of the current quay (Sweetman 1984). The early material was exposed at a depth of *c.* 3 m. It lay beneath later debris that was dumped in an area subsequently used to construct a stone quayside in the seventeenth century. It was not possible to excavate to depth since the lowest levels (observed to reach 5 m in places) reached below the waterline and beyond the reach of the land-based excavation. A similar front-braced vertical waterfront revetment was exposed on the south bank when works for the replacement bridge revealed many timbers of early thirteenth century date (Campbell 1987). To the west and upstream of St Mary's Bridge, on the north side of the river along Dyer Street, development-led urban excavations revealed several phases of late medieval waterfront construction and phases of progressive reclamation where the town extended into the former river channel (Conway 2002, 217–220). A burgage plot lying beneath thirteenth to fourteenth century reclamation deposits was defined by two low wattle walls, a series of plank and post timbers forming a wharf, a jetty and a metalled slipway. The slipway was defined by thin wooden planks held in place by wooden posts. A double setting of wooden posts ran east to a jetty, which consisted of a linear arrangement of timber piles that would have supported a planked surface over water. This had been identified as a possible timber platform used to hoist cargo and goods from riverboats and barges (Conway 2002, 217–218). Other waterfront structures include a thirteenth century timber revetment associated with a masonry structure, interpreted as either a crane, mast or tower base; masonry quay walls of undressed and unmortared limestone slabs, blocks and stone; and a small dock or boathouse (Conway 2002, 218; see also http://d28272.n32.morsolutions.net/cms/publish/article_14.shtml).

To the east and downstream of St. Mary's Bridge, excavations for the Drogheda Main Drainage and Waste Water Disposal Scheme have extended the focus of the river frontage. In the vicinity of the junction with Mayoralty Street, the precinct wall

for the Franciscan Friary was revealed on North Quay and the Mall below the bridge, while the remains of a stone quay were seen to underlie the existing quay (Murphy 1998b). A probable wooden revetment was also identified further south towards the river beneath the existing quay. On Bessexwell Lane, lying immediately north of the present-day North Quay, twelfth to thirteenth century domestic deposits overlay later medieval river silt and contained evidence of a wattle fence that suggested the riverbed was being reclaimed at this period (Meenan 1998, 125; 2000a, 141–142; 2000b, 142). The same levels were subsequently buried below a phase of post-medieval reclamation (Murphy 1998a; Campbell 1997, 74–75). Further east of Bessexwell Lane at North Strand, a series of ditch and bank deposits were exposed with finds of Saintonge and Cheshire wares (Murphy 1997a). The name "strand" suggests that this was previously a beach or sandy foreshore. The sum of the evidence would appear to indicate that the former waterfront associated with the medieval town originally lay some 50 m back from the present quayside. This ground was progressively reclaimed. A petition to the King in 1306 by the burgesses for permission to build a tower, "on the water of the Boygn next to the wall of the close of the friar's minor", may relate to St. Catherine's tower (the tower which defines the southeast limit of Drogheda-in Louth) (Bradley no date, 94). It suggests that the riverside defences are later than the main circuit of town wall, the earliest reference to which is to the East (St. Laurence's) Gate in 1206. Reclamations were undertaken on a larger scale during the eighteenth and nineteenth centuries. It is suggested that the curvature of Dyer Street may recall the original shoreline, and that this continued eastwards down Bessexwell Lane and along North Strand.

Bradley notes that in 1340 the burgesses received a grant of quayage (the right to collect taxes in order to build quays) which was to be expended on repairing the quays and towers of the town wall (Bradley no date, 79 citing the *Calendar of Patent Rolls 1338–40*, 544). The grant suggests that at least some of the quayside was built with stone. On the south side of the river, intertidal inspection of the existing quay wall that occurred in advance of the redevelopment of the Lakelands Dairy/Scotch Hall site, observed that the present-day quay is made up of largely modern works, but retains two episodes of previously unrecorded medieval stonework. The quayside at St. Mary's Bridge and extending 90 m downstream was constructed in the nineteenth century using cut stone blocks. The quayside then merges with the remains of a late medieval riverfront building on the upstream side of Graves Lane (Brady 2001, 2003b; McCullough 2004). The building continues along the riverfront for 20.5 m (Fig. 17.10). The upper portions of the building were reworked for use as work buildings in the nineteenth to twentieth centuries but much of the lower elements survive intact, and the building has been preserved as part of the new development on site. The medieval structure is built using squared and rectangular-shaped limestone blocks measuring 50–70 cm wide, 30–40 cm high and 30–40 cm deep, where exposed. It retains a distinctive basal batter in excess of 3 m high and with a splay approximately 60 cm wide. Portions of a formal plinth are exposed in places at the base of the wall, and it appears that a more informal plinth of rubble extends from the wall base for *c.* 80 cm before dropping away below the LWM. The batter reaches above the HWM. Along its length, the batter retains a series of openings on the upstream and the downstream ends of the

Fig. 17.10 Riverfront house, South Quay, Drogheda—a medieval merchant's residence, showing archaeological survey in progress. Courtesy of the Archaeological Diving Company Ltd.

building. There are two culvert outlets for mural garderobes in each corner and the outfall points lie below the HWM, which permits the chutes to be flushed out naturally twice a day by the tide. A squared timber drain (30×30 cm) was observed at the base of the wall, extending *c.* 1 m from within the wall to a point that ran out onto the narrow rocky foreshore. A centrally located doorway with a segmental arch is positioned just above the HWM, some 3 m above the foreshore, providing access to the riverfront.

Excavation conducted within the interior of the building has revealed the fuller ground plan (Breen 2004). The building measured 7.5 m wide and was aligned along the quayside. The north or riverfront wall is intact internally to a height of up to 1.68 m above the present ground surface. A number of putlog holes were visible, and one of the stone corbels which would have held the sole-plates for the floor above survived. The interior of the house was excavated and revealed the foundations of two internal walls aligned either side of the riverfront central doorway, and in places there were remains of a floor consisting of cobbles with a thin plaster or mortar layer over it which appeared to be contemporary with the doorway. Under the front or south wall of the house, a deeper north–south wall was found. As this was below the HWM, it may have been an earlier quay wall or harbour structure.

Downstream of the medieval waterfront building, the modern quayside is constituted from a mixture of rough stonework on the lower sections and concrete slab above that is of no antiquity, except for a single narrow section of stonework which

is in line with the riverside termination of the town wall. The excavations conducted for the wider Lakelands Dairy/Scotch Hall site extended back from the current riverfront to Marsh Road, and included the line of the town wall which would have run from St. James's Gate to the river. The mural tower that marked the northeastern extent of the town towards the river was demolished in 1850, but the Lakelands Dairy excavation re-established the line of the wall and exposed the ruined foundations of the mural tower (Breen 2004). The tower lay at a remove from the current quayside, but there was an extension of the wall towards the river, and this extension represents the second section of medieval masonry observed in the modern quay that is in line with the town wall.

The South Quay area is thought to have been the most logical location for the bulk of the ship-building that is known to have occurred within the walled town (Bradley no date, 79). The excavations conducted in this area for the Lakelands Dairy/Scotch Hall development focused on the future pile bases for the new development and as such the work represented pin-hole excavation rather than open-plan area excavation as had occurred on the north bank in Dyer Street. However, there was little to indicate a distinctive line of medieval waterfront at the Lakelands Dairy site, which further supports the possibility that it was recessed from the riverfront.

Some indication of the vessels that serviced Drogheda is provided in the written sources. In 1384, a group of Drogheda merchants had loaded 12,225 hides onto three ships for export. Sailors from two of the ships, from Gdansk and Flanders, respectively, expelled the Drogheda men, robbed the third ship, from Bristol, and sailed away (O'Neill 1987, 79 and note 5). In 1435 another group of Drogheda merchants helped to secure a permit to bring eight 200-ton ships from Brittany with cargoes of salt, iron and other goods (O'Neill 1987, 86). The sea voyages were not always without incident. In December 1590, the *Mary Bonaventure* of Drogheda set sail for La Rochelle or St Jean de Luz with a cargo assembled by local merchants comprising 1,800 wet cow hides, 600 dry cow hides, 14 tons of beef, 10 tons of tallow, 3 barrels of butter, 400 lb of wax and 4 or 5 fardels of linen cloth. On 20 January 1591 while at sea the ship was taken by a French ship of war, and Richard Brady, master of the *Mary Bonaventure*, and ten others were put out of the ship into their boat and committed to the sea. The remaining crew of the Drogheda vessel won back their ship from the French prize crew while the French ship was diverted to chase down another potential prize. The tide of events took another turn when an English vessel, the *Black Boat* commanded by George Sidenham met the *Mary Bonaventure* and seized her, carrying the ship to Padstow and Helford in England where Sidenham sold the cargo at his pleasure (Appleby 1992, 65, 73–75).

It is generally considered that the fleet of Irish shipping was small, in the order of 130 vessels operating in the Irish Sea in the 1480s, and that the vessels were modest in size, carrying cargoes of *c.* 90 tons and less (Friel 2003, 75). Early maps of Drogheda support this view (reproduced in Bradley 1978 and Brady 2003a). Goche's map of Drogheda dated 1574 shows a variety of sea-going vessels along the quays, but it is interesting to observe that the heavier three-masted vessels are positioned on the downstream side of the town. The same image of more deeply draft shipping

being located to the east of the town is repeated in Newcomen's map of Drogheda dated 1657, while Samuel Bouie's map of Morningtown, Donneygarney, Betaghstown, Mintstown and Ninch, dated 1771, only shows large sea-going vessels far downstream of the town, inside the mouth of the river. The incident of 1358 which saw the abbot of Mellifont being sent to prison for erecting a weir at Oldbridge and inhibiting the progress of boat traffic upriver, goes on to note that "boats called corraghs with timber for building and flotes had liberty to pass constantly from Drogheda to the bridge of Trim" (McClintock 1928, 262; O'Keeffe and Simington 1991, 151). If Oldbridge represents the tidal extent of the Boyne, Drogheda town was the upper limit to which deeper sea-going craft could reach, and even this was problematic. For the onward journeys upriver, light craft were required, and these would have included the traditional Boyne coracles and other small vessels.

The observation of the riverside doorway in the medieval building on South Quay offers further insight to the logistics of shipping. Positioned 3 m above the foreshore, the tidal reach in this location is still greater because a 1 m wide strip of foreshore is revealed at Low Water. Vessels could only be loaded/unloaded comfortably at mid-water and high tide, and presumably used some form of winch extending from the building. At Low Water the vessels would have to be moored in mid-channel and unloading directly into the building would not have been feasible.

Shipwrecks

Modern dredging 2 km downstream of the town exposed a clinker vessel of sixteenth century date (Schweitzer 2007, 2010). So-called the "Drogheda boat", this two-masted craft lay on its keel athwart a slight mud bank at a depth of 1 and 5.5 m, and its partially buried status ensured its survival. Despite being positioned in what is today an active port, the vessel was remarkably well preserved, and measured *c*. 9 m in length and *c*. 3 m in width. Part of a cargo of wooden barrels was preserved in the wreck. A small wooden cup carved out of a piece of wood and a pulley block were also found. A date of *c*. AD 1520 has been provided through dendrochronology, and it is tempting to consider this as a sea-going vessel that would have carried cargoes to and from a merchant's house such as seen on South Quay. The boat suggests some comparison with the thirteenth century Magor Pill vessel in the Severn Estuary (Nayling 1998). These are not big boats, but they suit the relatively shallow estuarine and coastal waters that are experienced in both locations.

A dug-out canoe has been recovered close to Drogheda at Marshes Road, some 140 m south of the present river channel downstream of the town (http://www.acs-ltd.ie/project7.html). The vessel is flat-bottomed and retains a transom. It is thought to be medieval in date, and its shallow draft would have suited the marshy ground from which it was recovered.

It is perhaps useful to observe the continuation of clinker boat-building traditions on the Boyne to the present day (Mac Philib 2008). Flat-bottomed boats, or "canoes",

as they are referred to locally, are still used to fish for salmon and mussels in the estuary at Mornington. The boats are smaller than the Drogheda Boat and do not have mastheads; they are not for use on the open sea and their flat-bottomed hulls are specifically adapted for working on the tidal mudflats. These vessels vary in size from 14–16 ft long by 5 ft wide for the salmon boats, to 19–20 ft long by 6 ft 7 in. wide for the mussel boats. A small quarter deck serves to accommodate the fishing gear, and the boats can hold up to 2 tons weight of catch.

An intriguing shipwreck entry was recorded by L. S. Gogan in the *Irish Times* on 9/11/1929, at Colpa Creek, near the mouth of the River Boyne at Mornington. The approximate measurements of the vessel were 4.3 m in width and 15.2–18.3 m in length. It was probably carvel-built given the absence of iron nails. The fragmentary and incomplete evidence suggested to one observer that the vessel had similarities to the Als type of vessel (pre-fourth century AD), with features associated with the Nydam type (a fourth century AD warship found at Nydam, Schleswig). Unfortunately, further record of this discovery does not appear to have survived. Its dimensions indicate a much longer vessel than is known from any of the surviving wreck sites located on the Boyne and, if the observers' comments are valid, it would have proved to be of interest because it is thought that Nydam type vessels were what the Anglo-Saxons brought with them to England. The Northumbrian King Ecgfrith famously raided Brega in AD 684, and Adomnán of Iona travelled to Northumbria possibly in 686 to redeem sixty Irish hostages taken during the raid (Byrne 1973, 111–112; Lapidge 2007, 24). There is evidence for more a substantial Anglo-Saxon presence in Ireland during the seventh century, which is most usually represented archaeologically in burial remains. One of the key sites was discovered by excavations conducted 1.5 km southwest of Mornington and 1 km from the Boyne at the early medieval cemetery of Colp West 1 (Gowen 1989; O'Brien 1993; http://www.mappingdeathdb.ie). At the heart of a complex site was a small penannular enclosure that held a series of burials which have returned radiocarbon dates in the fifth to seventh centuries, with the most central burial belonging to the late sixth century. This form of burial is unusual in Ireland but is not uncommon in southeast England where it occurs in cemeteries of the early Anglo-Saxon period (O'Brien 2009, 148). The erstwhile antiquarian reference to the discovery of ship remains of Anglo-Saxon type at Mornington takes on new meaning in this wider context, serving once again to highlight the archaeological importance of the lower reaches of the Boyne.

More generally, there are some 210 boat- and shipwreck incidents recorded in the vicinity of the mouth of the Boyne, extending north to Dunany Point, Co. Louth, and south to Ben Head, north of Gormanston, Co. Meath. This is regarded as a high density of wrecking events (Brady 2008, 96; DeBuitléir et al. 2008, 581). The details of wrecking events are only recorded systematically from 1750, and the bulk of the data relating to the Boyne area is associated with nineteenth century and more recent wrecking, but it is logical to assume that the patterns identified reflect the difficulties facing shipping since antiquity. The majority of wrecks within the Boyne Estuary are recorded on Drogheda Bar, at the entrance to the river, and on the North and South Bull sand flats that have developed on either side of the river mouth. Wrecked

vessels are more rarely recorded within the river channel itself or upriver at Drogheda. It is not to suggest that the river channel was not treacherous to shipping. The wreck of the Drogheda Boat is testimony to this fact. A series of former work barges have also been identified during dredging-related schemes further downstream at Stragennan/Tom Roe's Point and at Quinnsborough, although these were probably abandoned rather than wrecked (Wrecks W00477-480 and W00292 respectively, in Brady 2008, 99–100, 122–124). However, the more general evidence suggests that the bulk of wreckage occurred as shipping came into difficulties off the Louth/Meath coast and were driven against Drogheda Bar and the North and South Bulls, or as they tried to negotiate access into the river channel itself.

Navigation

Access to the river and to the port is the legacy with which the study of the lower reaches of the Boyne closes. The survival of Drogheda as a port town is a story that can be retold for many ports and harbours in Ireland and around the world. The need to provide suitable access and loading/unloading facilities while also trying to grow a port facility is continually challenged by the perpetual processes of siltation and erosion on the one hand, and by the development of ever larger and more deeply drafted vessels which require deeper water to access still larger facilities on the other hand. Drogheda's particular history in this regard is well studied (McHugh 2006). From an archaeological perspective, the late eighteenth and early nineteenth century sources that cast light on the civil engineering works carried out to improve the navigability of the channel to the town inform aspects of Industrial Archaeology. They can also provide insight to the older topography of the river channel which in turn helps to explain the changing human imprint on the estuarine landscape.

To assist safe passage into the mouth of the Boyne from the sea, two navigation aids were constructed on the south side of the river east of Mornington. The Maiden's Tower (SMR ME 21-004) is a square-built masonry tower rising *c.* 16 m in height that tapers towards its top. A spiral staircase leads to a barrel vault which provides access to a parapet. The Lady's Finger (SMR ME 21-003) lies some 84 m to the west and is a masonry column built that rises *c.* 6 m in height over a squared base (Moore 1987, 184). The Tower is possibly Elizabethan in age; it appears to be named after the Virgin Queen (Wakeman 1885–1886). It is referred to in a 1582 document and is shown on Story's 1693 map of the Battle of the Boyne (DeCourcy 1996, 243; Cooney et al. 2002, 8). When the Lady's Finger obelisk is lined up directly behind the Maiden Tower, a vessel is on course to enter the estuary mouth in the centre of the channel.

The passage through the mouth must be accomplished with care. As recently as 1954, more deeply drafted vessels (12 ft) were required to proceed only after four hours of the flood or filling tide had commenced to ensure that they would be able to pass over the underlying bar (Day 1954, 160–161). The problems were even more acute in the eighteenth century. Drogheda Corporation petitioned Parliament in

1729 to have their port included in a countrywide bill for "cleansing the channels, harbours and rivers" of the many ports of Ireland. The petition was successful and an act passed in 1730 to this effect, placing the responsibility in the hands of the corporation (McHugh 2006, 170). In 1765, Samuel Bouie's map of the Boyne from Drogheda to the harbour mouth shows a long narrow passage past the bar with the North Bull on the east until the river veered westwards at North Crook (present day Crook Point), south of Baltray (McHugh 2006, 173 pl. 1.5). The river channel was then complicated by a series of sand-flat islets that provided awkward and very narrow access through the estuary past Mornington and onwards upstream to Tom Roe's Point. It is this series of natural ridges and bars that proved so difficult to navigate, and it is here that the three ancient fords of Bankton, Queensborough and Tom Roe's Point were located (Fig. 17.6). In 1775, it was reported that water levels in these locations were so shallow that ships exceeding 70 or 80 tons in weight had to lighten their loads by discharging some or all of their cargo into "lighters" at the New Deep, down-river from Quinnsborough (McHugh 2006, 175).

Attempts to improve navigation are noted in earnest at this time. Bouie's map of 1765, revealing the mudflats at low water, and a later one he made in 1771 showing the estuary at high water, indicates an existing effort to canalise the channel by rows of piles placed near the edges of the Low Water Mark parallel to the river channel marking it out for navigation. The piles extended on the south bank from a point downstream of Drogheda, perhaps in a location that is now occupied by the Boyne viaduct, to Stameen Point, and on the North bank from Goat's Point (Tom Roe's Point?) to Quinnsborough. As Bouie's 1765 map shows, the piles were directed across existing mudflats, and presumably represented attempts to prevent the further growth of the mudflats into the active channel. The piles are joined to the land by roughly perpendicular walls which may have used old piers, as is the case at Stameen Point and perhaps the ford on the north bank at Queensborough. In 1783, John Golborne of Chester, a distinguished engineer with a good portfolio of river dredging projects, supported the existing measures by recommending the use of longitudinal stone dykes to narrow the river channel to a width of *c*. 80 yards, coupled with a series of walls and jetties to direct the scour (Hoskyn 1866, 110; McHugh 2006, 179). The 1852 Admiralty chart shows that the guiding walls had been extended to the North and South Crooks.

Golborne (1724–1783) was renowned in Scotland for works he had supervised on the River Dee with responsibility for maintaining eight miles of ship canal. The Dee work was completed in 1740 and extended from Chester to Connay's Quay, and included land reclamation works in the upper part of the estuary. The ship canal was maintained by using dredging ploughs to ensure a water depth of *c.* 5 m (15 ft) at moderate spring tides, and the construction of groynes or "jetties" to prevent the channel spreading to a width of more than about 83 m (250 ft) at low water. The canal was by far the largest work of its kind in Britain in the eighteenth century. The reclamations were achieved by constructing very long banks that measured almost 5 km in length, were 3 m (12 ft) in height above ordinary spring tides, and 2 m (6 ft) wide on top, with sloping sides. The dykes could enclose blocks of slob-land that were from 350 to 1,600 acres in size. Golborne also worked

on an extension to the Newry canal in 1759. He deepened the River Clyde for a 14 mile stretch below Glasgow between 1770 and 1775. Using his Dee experience, his proposal was to remove the stone and hard gravel from the bed of the river where it was shallow, and to narrow the channel where it was worn too wide by building a series of jetties that effectively canalised the channel. Dredging was achieved using cast-iron bucket-scrapers, 4-ft long and 3-ft wide, which were dragged across the riverbed using capstans in punts moored on the banks (Skempton and Chrimes 2002, 258–261).

Although he remained an engineer of the Dee Company until his death, Golborne was free to take on other work. It is evident that his experiences on the Dee and the Clyde made him an admirable candidate to advise on the Boyne. However, this was to be his last consultation, which he conducted in May 1783. Work began but was not completed as he died five months later. Some jetties were built and the channel was deepened in several spots but the bar at the river mouth remained problematical.

The nineteenth century saw much greater effort expended on improving the navigation channel and the quays in Drogheda. The erection of a pier on the South Bull was proposed in 1824 when "a petition to the Commissioners for promoting the fisheries of Ireland" rejected the feasibility of a guiding light at the river mouth, but promoted the idea of erecting a pier and extending it to the site of the present guiding perch. The petition reported on the obstruction at the mouth of the Boyne where the river meets the sea. In the then unprotected state of the bar, it was stated that vessels used by fishermen of the villages of Baltray and Mornington at the mouth of the Boyne were unable to proceed to sea when the wind blew from any of the Eastern Points, and the town of Drogheda and the adjacent country was in consequence deprived of fresh fish. The petition considered that a pier would assist the current by concentrating its force thereby deepening the channel. It was further thought that a pier would promote a place of rendezvous for fishing vessels that would find supplies of salt and a ready market for their stock in the populous town of Drogheda (NA OPW 8/120/1).

The works that facilitated the construction of piers at the river mouth formed part of a larger integrated dredging project that extended from St. Mary's Bridge in Drogheda to the river mouth. Where before dredging was slow and imperfect, relying on ponts, dredging nets and manual labour, the Industrial Age brought improvement. John Grimshaw's application of a 4-hp Boulton and Watt beam engine to a bag-and-spoon dredger in the Port of Sunderland in 1798 is believed to be the first reported use of steam power for dredging. Five years later the first steam-driven bucket-ladder dredger started work at Deptford Dockyard on the Thames. It is reputed to have been able to dredge 120 tons of sand per hour from a depth of 5 m. It was the predecessor of a fleet of steam-powered bucket ladder dredgers that were found at work in virtually every British port by the mid-nineteenth century (Burt 2006, 105). The purchase of a steam dredger in 1827 by Drogheda Corporation to deepen the river represents the first such dredger to be used in Ireland (McHugh 2006). The dredger was capable of raising *c*. 400 tons a day. The work got underway in the 1830s and it was used most efficiently in the summer months. The material

raised was used to reclaim the slob-lands, or polders, on both sides of the river. The dredged spoil was placed on a fleet of punts/ponts which carried it away. By 1835 the channel had been deepened by 4 ft, and work was ongoing. Between 1833 and 1836, 409,660 tones were dredged (McHugh 2006, 183).

The engineers' reports provide some insight to the extent of the work that was completed, and the impact that this had on deposits which must have been archaeologically of high potential. A report by William Bald in January 1835 observed dredging of the fording points in the lower reaches:

> The first object with regard to the improvement of the Harbour of Drogheda has been to remove all the bars of shingle and gravel which were and are to be found in the channel thereby increasing the depth of water for ships of a larger class; secondly by deepening and widening the channel to let a greater volume of sea water flow up by which means a greater scouring power would be obtained; and the Estuary of the Boyne to be entirely kept free and exempt from any kind of embankment whatsoever.... By deepening and widening the channel not only will there be a greater flow of water in but high water will take place sooner at the quay than formerly and ships will come sooner up, which has already been found to be the case arising from the works already done by the ships' captains navigating the channel. The low small parallel rubble stone dykes are for the purpose of equalising the velocity of the water, and keeping the main run in the channel thereby tending to keep the bottom clean and clear from deposits of any kind. I have prepared to cut away a part of the point between the New Deep and the Swash, and may be done successively as represented in the chart, and the same in the Carrick; these changes can be readily effected without at all touching or changing the present navigation, and the channel I will then venture to say, will be more straight safe and easy, and will profess a greater radius of curvature at the turns than has yet been proposed by any plan of improvement that I have yet seen or heard of for Drogheda Harbour.... Originally the banks of gravel and small stones called the Rough Ground was extremely detrimental to the ship navigation[,] the deepest part over it being not more than 3ft and in many places not more than 1ft at low water; this Bar has been cleared away to a depth of 5ft and 45 yards wide. Tickels Bed has been cleared away nearly in a like manner. At the end of the Carrick the navigation was barred across by a ridge of heavy gravel which has been cut away to a depth of 3ft but this cut is narrow [and] it will require another summer's work to widen it to a sufficient breadth. At the point opposite to the New Deep the channel has been very much improved having been widened 30 yards and deepened to nearly 7ft at low water. From this point up to the bridge the bed of the channel of navigation has been generally cleared of any banks that had accumulated. In the channel opposite the quay wall 29,000 tons of gravel have been taken up. During fine weather the steam dredge generally works outside the North and South Crook, and during the periods of stormy weather, she works inside the Crook. (NA OPW 8/120/3)

John Young reported to the Office of Public Works in May 1835:

> Since my report of the 30th December last the steam dredge has been employed deepening the river immediately below [St. Mary's] bridge. This part of the river was formerly supposed to be rocks but so far as we have gone the dredge has found nothing but large stones and shingle which strains the machinery more than small materials. The river here has been deepened 4ft and 4,960 tons of stuff raised, opposite the Custom House 5,300 tons, and at the east end of the quay 2,540 tons and the river deepened considerably.… The works at the quarry is getting on well[,] from 600 to 700 tons of stones are sent down the river weekly on the ponts for the purpose of extending the parallel walls [of the navigation channel piers], the length of them on the south side of the river is 8,960 linear feet and on the north side 8,200ft. It is intended to back these walls with the gravel that will be raised in the ensuing season by the dredger, thus making them more permanent and solid. The walls now

> erected on the north side will be of great service to the channel in consequence (particularly in the winter season) of the sea washing all the gravel on the beach into the bed of the river. (NA OPW 8/120/3)

In 1837, Bald was able to note:

> I have carefully sounded across the mouth of the channel from the bar Perch but found no bar, the soundings being extremely uniform. A rubble stone dyke has been constructed along the North Bull, commencing at the North Crook, and ending opposite the Rough Ground; this work has been useful because it confines a portion of the tidal waters within the channel and affords shelter. The gravel banks called Tickel's Bed and the Rough Ground which formed bars in the channel, before the deepening movements commenced, and where the low water was originally 18in., it is now 5ft deep, those banks or bars offered serious obstacles to the free navigation of the channel; also the bar at the Rock Shod has been deepened, and the channel widened. (1837, 4–5)

The river works proved to be very successful, and in tandem with the dredging the town was able to extend onto the former marshy grounds outside the town walls by conducting reclamation works. This allowed for the extension of North Quay to accommodate the increased shipping. A specification to extend the North Quay from the bridge eastwards by 660 ft (201 m) with landing slips, mooring rings and flights of steps survives (NA OPW 8/120/1). By 1837 the quay had been deepened and extended a further 132 ft (40 m) to accommodate steamers from Liverpool (NAOPW 8/120/3).

The archaeological realisation of these improvements is evident within the town. Storehouses and warehouses, tannery areas, salt works, cobbled yards and a brick drain network have been recovered from both the North and South Quay areas as testimony to this economic expansion (Breen 2006, 329–331; Conway 2000a, 195–197; 2000b, 197–199; 2002, 217–220; Corlett 1998, 129; Meenan 2000c, 142; Murphy 1997b, 76; 2000, 146; 2003, 258–259; O'Donovan 2000, 143; Purcell 2002, 220). The Ordnance Survey mapping also records some elements of the various flow improvement schemes (Fig. 17.11). The short spurs, or small parallel rubble walls noted by John Young, are indicated on the First Edition six-inch maps between Tom Roe's Point and Quinnsborough, with a less intensive extension downstream to Bishop's Pier at Baltray (Fig. 17.9). Inter-tidal surveys in advance of the 1998–1999 dredging schemes recorded the remains of some of these features (Boland 1998). Investigations observed that they were constructed by placing a wattle brushwood mat on the soft inter-tidal mud as a working platform while erecting posts to prevent the stone blocks used in the construction from sinking into the mud (Boland and Campbell 2006; Campbell 2006). The recording of four barges on a mud bank on the south side of the Boyne, to the east of Stagrennan Polder, may represent some of the boats used in the nineteenth century operations (Tully and Moran 2000; Brady 2008, 122–124). The site probably functioned as a riverside harbour or loading area associated with the transportation of locally quarried stone used for the construction of the training walls and polders. Two of the wrecks have a distinct bow and were probably dumb barges, namely, barges with no means of propulsion to be towed by another vessel. The other two are rectangular box-size vessels and were obviously some type of work platform with stability offered by the amount of anchor points and chain remains detected on the vessels.

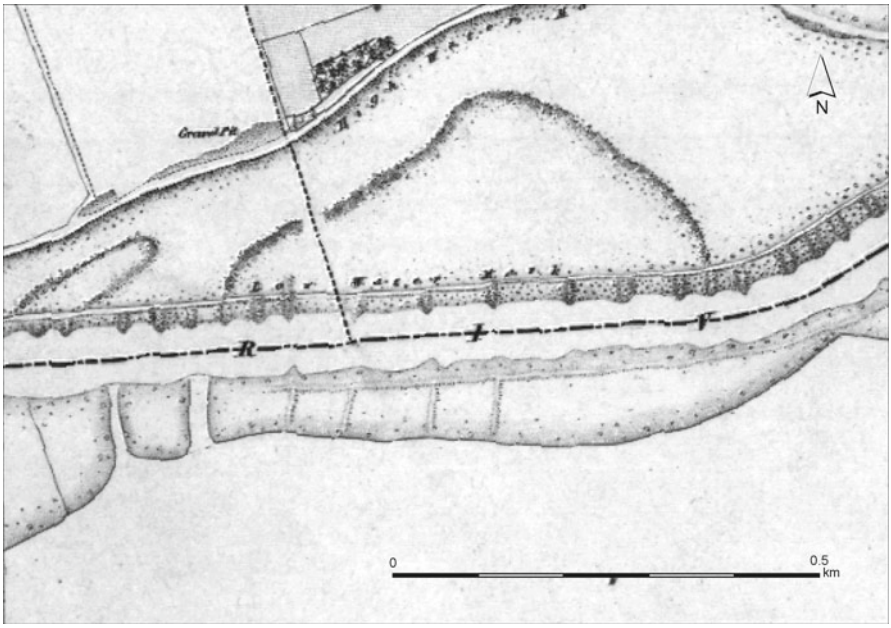

Fig. 17.11 Extract from Ordnance Survey First Edition six-inch series, Louth Sheet 25, showing the short jetties and groynes inserted to aid river scouring downstream of Tom Roe's Point

Despite the financial successes that resulted, the river works more generally ceased in the 1840s because of a financial crises within the harbour commissioners whose bills for this expensive capital investment project proved to be too great (McHugh 2006, 184–185). Throughout much of the rest of the nineteenth century, river works were restricted and mostly focused on trying to improve/maintain the quay areas. However, as John Young was to report in 1850 on removing stones from Mameen Pier to the North Bull, such reduced works were not insignificant in their own right:

> I calculate these remains at the pier about 700 tons of stone including a few of the longest stones, which I have kept apart to be used if necessary in the construction of a quay wall to extend eastward from the present terminus. (NA OPW 8/120/3)

The nineteenth century dredging was very successful; it allowed much greater access to the town, and the new North Quay facilitated the growth which resulted. Yet ship design also grew, and it was the case that the largest ships still had to stop short of the town because of riverbed impediments and the absence of a good South Quay for berthing. In many respects, the twentieth-century capital dredging downstream of Tom Roe's Point represents a further episode in the ongoing process of meeting the demands of shipping in the estuary. As noted above, the archaeological monitoring that took place in 1998–1999 as part of that project has provided fresh insight to the prehistoric exploitation of the estuary, despite the extensive dredging and reworking of the channel in previous centuries.

Concluding Remarks

As a portal onto Ireland's archaeology, attention on the Boyne has understandably focused on the rich assemblage of monuments and features associated with the *Brú na Bóinne* complex and with the medieval and post-medieval town of Drogheda. This essay has instead attempted to show the potential that remains to be examined in much greater detail throughout the lower reaches of the Boyne estuary, and how compliance-driven archaeology has done much to expose it. Far from being destroyed by later dredgings and related engineering works to facilitate navigation to the town, the estuary retains a wealth of information whose study is in its infancy. If dredging of the navigation channel has removed most of the archaeological potential, the discovery of the Boyne Boat (W00292) and the Drogheda Boat (W00473) demonstrates that there is the possibility for new discoveries, and one wonders where the remains of the possible Anglo-Saxon ship reported in 1929 might lie today. The recent deeper dredging of the fords in the lowest reaches of the river has also revealed an assemblage of lithics that must relate to the exploitation of the estuary since early prehistory. The creation of the polders across the marshes and mudflats has preserved *in situ* a vast area of inter-tidal foreshore that remains unstudied. Indeed, because the nineteenth century dredging affected to dump spoil onto the polders it suggests that strata remain preserved and largely undisturbed below. The possibility for identifying fish traps and small boat remains may not be singularly restricted to the more obvious locations of the former fording sites, and may yet be discovered with careful study of these polder areas, especially those in proximity to the tributary streams that snake through them.

If this essay has concentrated on the estuary below Drogheda, the observations made of the river channel upstream of the town are also worth pursuing. That Mell represented a substantial early medieval settlement focus, and one that appears to be largely ecclesiastical in nature, is perhaps given greater interest when it is viewed from the perspective of the river. The proximity of the complex to the river has gone largely unnoticed, and the detail of the river islets adjacent to the site presents an ideal laboratory for exploring the possibility of milling and other water-related activities. Finally, for those who may wonder at the apparent absence of later coastal defences to protect the important trade town of Drogheda, similar to the fortifications that envelope Dublin Bay to the south, it may be reported that this absence of archaeological features is genuine. The Boyne was not invested in eighteenth- and nineteenth-century coastal defensive works to ward off the threat of invasion. A Martello tower is built on top of the motte castle at Millmount in Drogheda. However, the lack of signal stations from Malin Head to Dublin reflected the opinion that invasion was unlikely on the north-east and along the east coast from Belfast to Drogheda (Kerrigan 1995, 247). There is a concrete pillbox situated on the river bank at Beaulieu that appears to relate to later coastal defence during the Emergency years of the Second World War. The pillbox is concealed from the roadway, but it retains a single gun aperture covering the road to the north, and two other openings which cover the river to the south (Kerrigan 1995, 269).

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