Archaeological Computing in Canada: The First (and Last) 25 Years

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Abstract

The use of computers by archaeologists in Canada is best understood in relation to the general history of computing and the recent history of Canadian archaeology. We use computers to solve research problems which are similar to those in other countries but regional, cultural, linguistic and historical differences have produced a unique pattern of research dispersed through a variety of jurisdictions and institutions. I review this situation and summarize a history of computer use by archaeologists from the last three decades of Canadian Archaeological Association meeting programs and abstracts.

1 Introduction

I presented a history of Canadian archaeological computing at CAA97 in the session, "25 Years of CAA ", as a contrast to archaeological computing in Britain and Europe. Research on the topic is by no means straightforward and this short note is only a "work in progress". As in my original presentation I first introduce the problems of geography and politics within which Canadian archaeologists must work, with or without computers. Rather than summarizing current research, I present a preliminary history of computer applications from the annual meeting programs of the Canadian Archaeological Association. Although still incomplete, this summary provides a better context for the development of archaeological computing in Canada better than an overview of the current situation.

2 The Context of Canadian Archaeology

To understand Canadian archaeology, one must first review the problems posed by our unique geography and cultures. Consider the problem of scale. The land spans about 5300 km from East to West (St John's, Newfoundland is closer to the UK than Victoria, British Columbia) and 4300 km north to south. In this 10 million square kilometres is a population of only 30 million people, most of whom are unevenly distributed in widely dispersed urban centres within 300 km of our southern border with the United States.

The government of Canada directs federal activities across the entire country from the capital in Ottawa. There are ten provinces and three northern territories and within many provinces there are regional jurisdictions. Below that level are municipal governments of various sizes, most of them small compared to Europe.

Federal archaeology is dircted by two ministries: The Secretary of State and Canadian Heritage. The former oversees the Canadian Museum of Civilization (CMC) including the Archaeological Survey of Canada (ASC), which was traditionally responsible for investigating prehistoric aboriginal sites across the country. More recently its activities have been drastically cut back and most field activities restricted to federal lands other than national parks, some First Nations and northern territories.

The Social Sciences and Humanities Research Council (SSHRC) also falls within this Secretariat. It funds university-based research, including archaeology, across Canada and outside our borders. In the North American anthropological tradition, archaeology is viewed as a social science and in Canada at least, it receives little support from science ministries. As a national learned society, the Canadian Archaeological Association, (also called CAA!), receives SSHRC support for meetings and publications.

The other ministry, Canadian Heritage, directs Parks Canada and the Canadian Heritage Information Network (CHIN). The former is responsible for the archaeology of marine sites and national parks in both the provinces and northern territories. It previously concentrated on historic European sites but increased its prehistoric research activity as new 'wilderness parks' were established in the far north. CHIN developed and maintains national site and collections databases but its future responsibility for them is being phased out. Archaeological collections and site databases will soon become a provincial responsibility.

Except for clearly-defined federal lands, cultural resources in Canada are a provincial or territorial responsibility. Most regional or municipal governments provide little or no support to archaeological research Archaeological sites, designated or not, are administered by a variety of provincial ministries, usually tourism, culture or natural resources. Some provincial archaeologists do active field and laboratory research but many simply control or monitor the work conducted by academic, avocational and commercial practitioners. .

Provinces fund some non-government research on a modest scale. Provincial societies mainly run by avocational archaeologists get small grants for operations, education and research. Contract archaeologists provide their services to developers and government agencies, to fulfil the reporting requirements of provincial heritage and environmental impact legislation. Provincial governments support both museums and universities and most academic research is

conducted by the archaeologists employed by those institutions.

3 Archaeological Computing in Canada

I have found no published record of computer use by Canadian archaeologists in the 1960s. Reviews of Canadian archaeology published in the 1970's (Noble 1972, 1973; Trigger 1976) do not mention computers and there are few references in the literature until the mid 1980s. Only one paper appears in the journal of the Canadian Archaeological Association, *The Canadian Journal of Archaeology* (CJA) with the word computer (ordinateur, actually) in the title (Marois 1983). It reports on a survey of computer use in archaeology and ethnology by 18 member institutions of the Pan American Institute of History and Geography.

The Canadian Archaeological Association was formed in 1967 and held its first meeting in 1968. As the Archaeological Survey of Alberta archives in Edmonton has the only complete set of Canadian CAA programs and abstracts, the following is a summary of the computer-related meeting papers available to me. Length restrictions prevent giving a comprehensive bibliography of all relevant meeting abstracts and as these are not easily accessible even in Canada, I shall summarize session themes and cite only a few landmark papers.

There is no mention of computer use at the first two meetings in 1968 and 1969. I could find no programs or abstracts from 1970 to 1974 but computers do not appear in the association bulletins do not mention computers either. Thus, Michael Kelly may have delivered the first Canadian archaeological computing paper in 1975, "Cataloging in COBUL" [sic]. The unfortunate typo suggests that meeting organizers were not yet familiar with computer terms. In 1977, Jack Nance chaired a session on "Quantitative Methods in Archaeology" with six other contributors, most of whom used computers in their research. This may be the first Canadian CAA "computer session".

In 1980, there were only two papers on quantitative topics, with Ball and Bobrowsky (1980) and Howes (1980) reporting on computer-based research. Terrance Gibson (1982) may have presented the first report on Canadian computer use in the field, illustrated by a dramatic slide depicting data entry into a wind-powered Apple, on a barren ridge in the high Arctic twilight!

In 1983, using an Osborne II, I demonstrated a Basic program which converted Canadian site coordinates to their four letter Federal designation (Tamplin 1983) and this may have been the first computer demonstration during a meeting session. In 1984, Gibson, Finnigan and Klimko first reported on a Saskatchewan archaeological database which has been maintained to this day.

At the mid-decade 1985 Winnipeg meeting, computer applications dominated the program, with three sessions on these and related topics. Federal Data Co-ordinator Judy Marsh (1985a, b), organized a session, presented two papers on Data Recording Standards and Databases and chaired a panel discussion on the CHIN database. Gibson and Finnigan (1985) updated their Saskatchewan site database project.

Arnold (1986) may have presented the first Canadian CAA paper on Cluster Analysis in a lithic analysis session and in 1987, Stanley van Dyke organized the first Archaeology Microcomputer Workshop, with 10 participants demonstrating various software applications, at the University of Calgary's new microcomputer lab. Papers on computerized artifact databases, faunal analysis, and micro-mainframe statistical analysis were presented in a more formal session specifically called, for the first time, "Computer Applications" (Finnigan 1987; Tamplin 1987; Watson 1987). Gibson's 1988 paper may be the first report on visual database use in Canadian archaeology.

At the 1990 and 1991 meetings, Luke Dalla Bona organized symposia on Database Management GIS and Predictive Modelling. Gibson (1992) proposed integrating Canadian archaeological databases, continuing this ongoing theme from previous meetings. In 1993, Luke Dalla Bona and Pierre Desrochers combined databases and GIS in a bilingual session: "Archaeology at 1:125,000" with 10 participants including Kenneth Kvamme (1993) who is already familiar to participants at the "other" CAA meetings. Fiset (1993) and Innes (1993) reported two computer applications in a Cultural Resource Management session. In 1994, Dalla Bona organized a session, "Advances in Computer Applications in Archaeology" where Gibson and Tremayne (1994) also presented an application for cultural resource management.

In 1996, the annual meeting program first appeared on the Association's new web site, started and maintained by Dalla Bona. Only three computing-related papers appear: Lundrigen (1996), Summa (1996) and Turnbull and Keenlyside (1996). The latter may be the first report of a CD-ROM application, produced on Maliseet/Micmac Culture including ethnography and archaeology.

A month after Birmingham's computer CAA97, the 1997 Canadian CAA held two computer-related sessions at the annual meetings in Saskatoon. Gibson organized a discussion on, "The Forest Industry and Archaeological Resource Management", combining site potential mapping, predictive modelling and archaeological resource management. A general session on, "Computer Applications in Archaeology", organized by Nathan Frison, Michael Magee and Brad Himour addressed GIS, database and educational applications.

4 Conclusion

Certain people such as Gibson, Finnigan, Marsh, and Dalla Bona stand out both as pioneers and continuing contributors to Canadian archaeological computing but I cannot yet report the work of professionals and talented amateurs from proceedings of regional meetings, including francophone organizations. Unpublished reports and interviews with participants - the oral traditions - are another potentially rich, untapped resource. The search for these and other sources continues.

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