

Engaging with Historical Complexity in the Virtual Environment: the South Seas Project

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South Seas Test site: <http://www.jcu.edu.au/aff/southseas/>

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It seems best to begin by explaining what the South Seas Project is about. The project is a research venture involving the Centre for Cross-Cultural Research, located at the Australian National University, the National Library of Australia, and, since late 2000, the Australian Science and Technology Heritage Centre at the University of Melbourne. A number of other cultural institutions are also participating in aspects of the project, such the State Library of New South Wales, and H-Net, the International On-Line Network for the Humanities and Social Sciences.

The South Seas Project will produce what could perhaps be described as a companion to James Cook's momentous first voyage of discovery of 1768-1771. Like the numerous print-based Oxford and Cambridge companions published over the last decade or so, our companion is in part a specialist encyclopaedic reference work. Where it differs is adapting and translating the organising principles of the companion genre to the virtual information landscape. We are employing softwares and programming techniques to present, interrelate and interpret various aspects of Cook's initial voyage of discovery, and the historical significance of European Pacific voyaging in the last four decades of the eighteenth century.

Like other recent companions, ours will be the product of several years' collaborative research and debate. However, the South Seas Project team is more diverse in disciplinary expertise from those generally gathered to work on companion volumes. It brings together a conventionally trained historian; a scholar of German literature and musicologist; a researcher trained in the theory and practice of virtual exhibition curation (with a background in educational information management and - of late - interests in geo-spatial representation of cultural information). The team also includes an archivist and three software programmers with differing expertise in software design that uses various proprietary and open-source programming languages. ²

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² Researchers participating in the South Seas Project at the Centre for Cross-Cultural Research

To date, companions - as the name suggests - have served as trusted guides, providing knowledge and critical reflections on original writings by significant figures in literature or philosophy, or on major works of a particular cultural epoch, or artistic movement. South Seas will likewise be a companion in this sense, though it will also give readers scholarly editions of the more important manuscripts, books and pamphlets relating to Cook's first voyage. It will include the complete text of the holograph manuscript of James Cook's Endeavour Journal, the journal kept by Joseph Banks on the voyage, now in the possession of the Mitchell Library, and the full text of all three volumes of John Hawkesworth's *Account of the Voyages undertaken...in the Southern Hemisphere...* (Hawkesworth et al. 1773). The project will also publish for the first time the complete text of Samuel Wallis' log of the 1766-8 Dolphin voyage, together with selected extracts from other journals relating to the first encounter between Europeans and the peoples of Tahiti. These texts will be presented on the web so that readers can discern, compare and contrast how occurrences on the voyage struck different participants. Readers will also be able to move with ease between these texts and explanatory commentaries, short articles and reflective essays in both written and hypermedia forms.

The case for a networked digital scholarly edition of the National Library of Australia's manuscript of the Cook Journal is especially compelling. The edition of Cook's journals published by J. C. Beaglehole remains a remarkable scholarly achievement (Cook, Beaglehole, and Skelton 1968). In his editorial commentaries and accompanying biography of Cook, Beaglehole patiently reconstructed and set in historical context many facets of the voyages. However, the costs involved in reprinting and marketing Beaglehole's edition of Cook's Endeavour Journal alone are now such that it can only be consulted by a very small fraction of the many people throughout the world fascinated by the navigator's achievements. Currently, the journal is only available in print as one of five volumes in a reprint of the Beaglehole edition, at a cost of \$A2000.

While time has not diminished Beaglehole's achievement, the concerns and interests of scholars of eighteenth century Pacific voyaging over the past four decades have nonetheless changed in important respects. So too has the outlook and expectations of their audience. For example, Beaglehole could presume his readers had an elementary acquaintance with the mechanics of sailing and navigation. Today far fewer readers know how a craft such as Endeavour was sailed, or easily comprehend the specialist terminology that commanders such as Cook and Wallis routinely employed in the course of their journals. Consequently, the interpretive apparatus of our editions of Cook's and other voyaging journals will include explanations of the sailing and navigational techniques of Cook's era. This will be done partly through providing short articles on nautical terms and techniques, but also by interrelating texts such as the Cook and Wallis journals to an on-line version of the full text of the revised 1780 edition of William Falconer's *Dictionary of the Marine* (Falconer 1780).

Scholars writing on voyaging moreover are now engaged a conversation in which the life-ways and peoples whom Cook and his companions encountered command much greater attention, and respect. George Forster, the Enlightenment naturalist, who sailed on Cook's second voyage (1772-1775), wrote that Cook's voyaging would

are: Paul Turnbull, Vanessa Agnew, Chris Blackall, and (until late 2000) Christine Winter. At the Australian Science and Technology: Joanne Evans, Gavan McCarthy and Robin Stephens.

'strike deep roots and ...long have the most decisive influence on the activity of men (Bodi 1959).' Today Forster's words seem remarkably prescient, and especially so in view of the meanings that Cook has assumed within cultural debates in contemporary Australia, New Zealand. Scholars such as Beaglehole have come to be seen as heirs to a tradition of history writing that was overly teleological, and inherently Eurocentric. They are now seen as having taken for granted that imperial discourses were internally generated and hermetic, and as having relegated the world beyond Europe to the status of periphery. Predictably, they represented indigenous people relative to voyagers as exotic backdrops and objects of European initiatives. At best they allowed indigenous people the reflex agency of friendly or hostile savagery.

One telling illustration of this climate of revisionism is the nomination of the manuscript of the Cook Journal held by the National Library of Australia, together with the papers of Eddie Mabo, for inclusion in UNESCO's Register of the World's Memory. The pairing was deliberate, and the journal described in the course of nomination as follows:

This is the original document, in Cook's handwriting, of his first exploration voyage in the Pacific on HMS Endeavour in 1768-71. The first European charting of the east coast of Australia and the first circumnavigation of New Zealand took place on the voyage. This is the key document which foreshadows British colonization of Australia (which actually began in 1788) and presaged the tragic consequences for Australia's indigenous peoples - the oldest surviving culture on Earth - who, under British law, were effectively deemed not to exist (the 'terra nullius' doctrine).³

Both the nominations of the Cook journal and Mabo Papers for inclusion on UNESCO's Register of World Memory were successful. Further, they were rated more highly by in terms of significance for international understanding of world history and heritage than the key documents relating to the creation of the federated Commonwealth of Australia.

The shifting meanings and values attributed to Cook's first voyage in Australia's cultural history over the past two and a half centuries is a complex and fascinating subject. So much so, that even though the South Seas Project is generously supported by the National Library of Australia, and has secured funding through the Australian Research Council's industry linkage scheme for 2000-3, we can explore only some of the more salient historical contours of Cook's voyaging.

We have chosen to focus on how the achievements of the voyage were understood

³ http://www.unesco.org/webworld/mdm/2001/nominations_2001/australia/cook/

The Memory of the World register lists materials in the collections of libraries and archives which are considered to be documents of unique and irreplaceable world significance. It includes material which is considered to have had a major influence on the history of the world; or which transcends the boundaries of national culture; reflects a period of momentous change in world affairs; is about a person who, or a place which has made a crucial contribution to major developments in world history or culture; or has outstanding cultural, social and spiritual value which transcends a national culture. The Memory of the World register was established in 1992. It currently lists 48 collections drawn from 26 different countries.

within European, and indigenous Oceanic cultures, during the last four decades of the eighteenth century. However, even this presents formidable challenges. As Glyndwr Williams has shown, the Endeavour voyage was the outcome of a growing conviction by Britons that national destiny and fortune lay in the Pacific (Williams 1997). The achievements of Cook proved a catalyst for colonial ambition (Frost 1980), and provoked a fascination with indigenous life-ways and culture that Michelle Hetherington, in connection with her recent magnificent exhibition at the National Library of Australia, has aptly described as the 'Cult of the South Seas (Hetherington 2001)'. Publishers and booksellers capitalized on this hunger for voyaging narratives, producing numerous editions of accounts by Cook and those who sailed with him on his first and subsequent voyages. Perhaps one of the best illustrations of contemporary demand for voyaging narratives is the first volume of the new *Hawaiian National Bibliography*, covering the years 1780 to 1990. Nearly half of the works listed relate to the Cook voyages (Forbes 1998).

Accounts of the exploits of Cook and those who sailed with him generated interest in other voyages to the Pacific, both real and imaginary. The social diversity of readers enthralled by the South Seas was remarkable, and was reflected in the wide variation in production quality and price of these works (Anderson 1784, This collected edition of Cook's three voyages, for example, was published in eighty sixpenny parts, was reprinted several times before 1795).

Voyaging narratives were only one part of this rich cultural legacy. Integral to the romance of the South Seas in Enlightenment culture was the desire to see this world and the many curiosities of material culture with which the voyagers returned. Images of voyaging and encounter with the indigenous peoples of Oceania were avidly collected, examined and admired by different but often overlapping metropolitan communities of curiosi, virtuosi and savants. A thriving popular market for South Sea scenes and artifacts emerged. Images initially engraved for inclusion in published accounts of voyages were widely reproduced for a large and socially diverse audience. This visual record and the many items of material culture procured during the Cook voyages inspired poetry. It also inspired theatrical works and what, in their day, were experiments in multimedia, such as the highly popular pantomime of 1785-9, *Omai; or, a Trip round the World*, which featured dazzling scene designs and costumes by the celebrated painter and stage illusionist, Jacques Phillippe de Louthembourg (McCalman 2001, 9-14). The visual record of the Cook voyages was also to assume critical importance in the evolution of late eighteenth-century anthropological thought, and, by the end of the century, of ideas of racial difference.

Much as in print-based works like the recent *Age of Revolution and Romanticism: an Oxford Companion*, the South Seas Project will offer a range of essays and short articles (McCalman 1999). Many will seek to explicate the meanings and values Cook's first voyage assumed in eighteenth-century European culture; although there will be some exploration of the more influential or interesting ways in which Cook's achievements have been interpreted and represented in the subsequent course of Australian history.

Cross-Cultural History in Hypermedia: New Partnerships and Challenges

In focusing on the cultural legacies of the first Cook voyage, we are particularly concerned to build upon research over the past decade that has sought to redress the failure of earlier scholarship on Cook and contemporary European voyagers in one particular respect. This, as previously mentioned, is in its failure to explore the actual extent of indigenous agency in shaping European perceptions and subsequent discourses on the life-ways and cultures of the peoples of Oceania.

As Bernard Smith, Greg Denning, Anne Salmond and Nicholas Thomas have shown, there is still much to learn about the complexity of cross-cultural interactions in Oceania during the second half of the eighteenth century (Salmond 1991; Smith 1985; Smith 1992; Thomas 1991; Thomas 1994; Thomas 1997). Drawing on Bernard Smith's pioneering study of how the wealth of visual imagery produced by late eighteenth-century European voyagers shaped European perceptions of Indigenous Australian and Oceanic societies, Salmond and Thomas have written compelling studies of the cross-cultural interactions that occurred during Cook's voyaging. They have shown in particular how the lives of indigenous peoples and Europeans were changed through the play of complex, fluid and sometimes extremely localized cultural forces.

In the process, Salmond and Thomas have highlighted the conceptual limitations of relying solely on the printed word to explain the actions and likely intentions of indigenous peoples as recorded by voyagers (Thomas 1997).

Over the past decade, a small number of historians in Australia and the Pacific have begun exploring whether visual and sonic softwares can simulate the cognitive weight that oral, visual and kinesthetic modes of communication have in representing the past. Some have sought to assess whether these new tools can be employed in ways that explain histories of cross-cultural interaction with greater accuracy than print-based narration allows (Goodall 1997).

In the South Seas Project, we are similarly engaged in exploring whether hypermedia can be a means of transcending the conceptual limitations of working purely with words. Our sense is that the cheap and 'user-friendly' tools now available for interrelating text, vision and sound offer great potential for representing the historical intricacies of cross-cultural interaction, and for doing so in ways that elucidate the historical significance of visual sources and items of material culture. They appear to offer greater potential for strengthening indigenous interpretations of past events, and for illuminating hitherto overlooked signs of indigenous agency in determining what occurred.

However, at this stage of the project, we can speak only of the *potential* of hypermedia.

One lesson to be drawn from the works of historians and philosophers of science over the past two decades is that the knowledge produced through the employment of a specific technology is also the product of the cultural resources to hand. Indeed, the history of the biomedical sciences in Australia and Oceania in the century after 1840 is characterized by numerous disturbing examples of where regimes of measurement and analytical techniques deemed entirely free of subjectivity fabricated 'truths' of indigenous inferiority. Before assessing the potential of hypermedia, our aims and assumptions need to be scrutinized by indigenous

colleagues and knowledge custodians. The burden of our colonial past requires that we resolve to everyone's satisfaction how these resources will be created, and what cultural protocols and agreements in respect of intellectual property will determine how be presented by the web to a large and culturally diverse audience.

Conversations we have so far had with indigenous colleagues and knowledge custodians suggest that we would do well to draw on the experiences of those researchers who of late have been involved in recuperative community histories. Like these projects, South Seas will need to ensure not only that indigenous participants have ownership and control of the resources we produce, but also that we produce information resources that fulfil community expectations in respect of heritage and culture. This could well mean the 'repatriation' of information in digital formats for use in cultural centres. It might involve the production of materials for use in school curricula and cultural tourism initiatives.

Indigenous control and ownership of information raises further questions. Irrespective of the specific nature of the information appearing on the web, there will be a lot of information. This means developing a content management and publication system that can automate much of the routine work involved in the creation, storage and presentation of a large number of different kinds of digital objects. Several researchers on the project have a long history of involvement in the construction of heritage and historical web-sites. They know from experience that automating the more mundane tasks of creating and managing web-based resources can allow time and energy to be focused on ensuring the coherence and accuracy of the information presented. Further, what is produced must comply with, and in some respects be designed to anticipate, emerging standards for creating and describing networked information resources. Otherwise what is produced will neither be found easily, nor will it enable the kind of informed and reflective discussion we hope South Seas will encourage.

At the same time, information management needs must not compromise the intellectual and cultural integrity of the information being offered.

In thinking about how to ensure the intellectual and cultural integrity, the disciplines ethnographic filmmaking and oral history obviously afford valuable lessons, given that objects presenting indigenous perspectives on the past are likely to be streaming video clips or blends of sound and still images. There is also possibly much to learn from indigenous knowledge systems. For example, in the knowledge system of the Yarralin people of the Victoria River district of Australia's Northern Territory is underwritten by the presumption that all sentient beings are not just created by ancestral spirits, but are the living embodiment of those creative entities. Each being moreover is conscious of its place and purpose within the schema of ancestral creation, and communicates aspects of that knowledge to other beings. Hence the investigation and appraisal of phenomena is a process of learning what things say about themselves and other beings. As Deborah Bird Rose writes of the Yarralin that they see their country as 'alive with information for those who have learned to understand':

Crocodiles (*Crocodylus johnstoni*), for instance, only lay their eggs at one time of the year. Yarralin people know that it is time to hunt for crocodile eggs when the black march flies start biting. These annoying flies carry a message: 'the March flies are telling you the eggs are ready.' This sort of knowledge is accurate. If we know that crocodiles lay their eggs toward the end of the dry season, the calendar can tell

us that they will probably start sometime in September or October. March flies tell us exactly.

Yarralin do not understand this relationship, as western observers would, in terms of cause and effect, as Bird explains:

No one tells the March flies to bite because the crocodiles are laying eggs. Rather, the big river country where Yarralin is located, March flies know when it is time to hatch and forage. Their time is also crocodile time. Neither causes the other, nor is caused by an external other. In following their own Laws they communicate themselves; those who know the interconnections find information in their actions (Rose 1984, 225).

To the outsider, the attributes of fellow beings discernible to Yarralin clearly reflect a specific cultural geography. So too does the knowledge they acquire from studying the relations between beings. This is not to suggest that western science has managed to avoid precipitating into its practices and intellectual products the wider cultural forces in which it is located. As much recent historical research has demonstrated, western science equally has a cultural history. Where western knowledge systems differ from indigenous ways of knowing is in how they speak about our fundamental relations to objects.

It has been helpful to think of the character of knowledge systems such as that of the Yarralin when conceptualizing our requirements for a content management and publication system. It has led us to think of a system in which the burden of interpretation rests with those involved in the creation of specific digital objects, or the design user interfaces through which these objects may be accessed. We want to ensure that objects reside within an information framework that enables them to 'tell things about themselves', while conveying what they say in ways that ensure they are easily discovered, archived and capable of being interrelated with additional objects situated within other virtual resources.

To this end, the project team spent several weeks in September 2000 thinking about the essential categories in which eighteenth-century European, Maohi and indigenous Australian societies understood the world.

Importantly, this exercise took place some weeks after a chance conversation with Gavan McCarthy, Director of the Australian Science and Technology Heritage Centre. From Gavan we learnt about two tools developed by the Centre: the On-Line Heritage Resource Manager (OHRM) and the Web Academic Resource Publisher (WARP).⁴

When we took up comparing European, Oceanic and indigenous Australian classificatory systems, the logic and functionality of the OHRM and WARP provided us with a valuable guide. It enabled us to experiment with distilling the complexities of these classificatory schemas into a typology that preserved, and extended without undue complication, the descriptive schema currently employed within the international archival community to organise presentation of heritage and historical information by the web.

The results of this exercise were far from perfect and, at the time, provoked dissent

⁴ For more information on these tools, see <http://www.austehc.unimelb.edu.au/>

within the project team. For example, what Europeans ordinarily take to be a natural phenomenon was understood within the traditional Maohi cosmology as a manifestation of one or more of the gods. However, after engaging the problem over several weeks, it became clear that describing the entities likely to be encountered in the course of the project beyond place, time, people, organisations, natural phenomena, cultural artefacts and concepts risked introducing too much complexity into the system. Also, it struck us that most necessary distinctions in how entities were perceived in different cultural contexts could be acknowledged and explored within interpretive texts, video and other objects. By keeping the number of entity types small to gain efficiencies of information management, it should be possible to ensure easy discovery of objects within a complex web of interrelationships while minimising the interpretive function of hyperlinks.

Enhancing discovery will also help prevent the infringement of rights in respect of indigenous knowledge if and when such knowledge is offered in connection with the project. In contemporary Australia, infringements of indigenous intellectual and cultural rights in print rarely happen, and when they do are relatively easily discovered. They now rarely happen because non-indigenous authors generally behave with 'good manners' in dealing with matters of religious or cultural significance. Infringement of rights are relatively easily discovered because of the existence of bibliographic standards and systems enabling the efficient and accurate retrieval of print-based information sources, be they scholarly books, popular magazines or newspaper articles. We need similar mechanisms for encouraging 'good manners' in the networked information landscape.

Over the next year we will be engaged in developing and refining a content management and publication system, based on the OHRM and WARP developed by the Australian Science and Technology Heritage Centre. At the same time, we will complete the editions of the journals and other historical documents that lie at the core of this networked digital companion, together with annotations, commentaries and a range of interpretive essays. When these tasks are substantially completed, we hope to turn our attention to exploring the potential of hypermedia as a medium for cross-cultural history.

South Seas and the National Library

South Seas, as mentioned above, is supported by the Australian Research Council's industry linkage program. It is one of a small number of research projects involving humanities scholars currently funded by the program, and like a number of these projects involves scholars and staff of a major cultural institution researching issues of mutual interest.

In our partnership with the National Library of Australia, we are particularly concerned to identify solutions for making a greater proportion of the Library's wealth of documentary and visual resources relating to European Pacific and cross-cultural encounter in the eighteenth century Pacific widely available in useful, electronic forms.

The National Library is determined to ensure all Australians have access to the historical record of Australia and, as far as possible, that of our region. In fact, since its foundation in 1901, the Library has placed a high priority on preserving our cultural memory as a source of vicarious knowledge by which we might realistically envisage the future. In common with other major cultural institutions, over the past

decade, the Library has sought to improve access to historical information illuminating our cultural diversity and the evolution of our social institutions.

The Library's collections tell many stories about us, as individuals, communities and as a nation. However, in common with other cultural institutions, the Library is conscious how much more could be learnt if it were possible to transcend the physical and funding constraints on its desires to bring its collections to a much wider audience.

As I have recently argued elsewhere, the National Library has a long history of identifying and exploiting the potential of new information technologies that goes back to the early 1950s, and the then Director-General Harold White's championing of microfilm, electrostatic copying and teletext (Turnbull 2001, 261). Since the late 1970s, much of the research and development work undertaken within the National Library has been directed towards creating systems for meeting the information needs of readers who may rarely or perhaps never visit the Library. With the rapid integration of networked digital technologies into the fabric of everyday life since the mid-1990s, the Library has invested heavily in the development of digital services and networked information resources.

The National Library has been particularly concerned to address growing demand on the part of schools and many younger Australians for on-line access to historical information resources. However, the costs of digitally reproducing documents and visual sources are such that, for the foreseeable future, only a minute fraction of what the Library holds can be reproduced in digital forms. Acknowledging that it must necessarily be highly selective in what it offers virtually, the Library has sought to identify items in its collections that currently interest Australian researchers, educators and the general public.

One collection in particular has attracted literary scholars and historians since its purchase in the early 1960s. This is the 15,000 rare and important maps, manuscripts, prints, paintings and books relating to Australian and Pacific exploration collected by Rex Nan Kivell.⁵ Scholarly interest in the Nan Kivell has moreover been heightened over the past six or so years by the Library's sponsorship of the David Nichol Smith Conference, at which the history of Pacific voyaging and cross-cultural encounter in the long eighteenth century have been major themes.

The South Seas Project has selected for digitisation by the Library some of the more historically significant items in the Nan Kivell collection, supplemented by materials in other collections such as the manuscript of the Cook journal. In our choice of materials, and in accompanying articles and essays, we hope to stimulate new avenues of historical inquiry, and ideally encourage other scholars of voyaging to contribute to the project.

However, this raises the question of how hypermedia can best be integrated into conventional history practice.

Today a growing number of projects serve to demonstrate that networked hypermedia can be used to enrich history teaching and learning, and as media not simply for the dissemination of research outcomes, but also for undertaking research. The criticisms that historians wanting to work in hypermedia regularly confronted in departmental seminars and at conferences in the early days of the web

⁵ <http://www.nla.gov.au/ms/findaids/4000.html>

are rarely if ever heard these days. Prejudice remains, though these days it tends to be confined to conservative colleagues championing the book as the only medium allowing the past to be reconstructed, in all its richness and complexity, in promotion committees and when anonymous refereeing research applications. South Seas encountered the latter in late 2000, incidentally, when first applying to the Australian Research Council's Industry Partnership Research Scheme. The project was damned by one referee as 'not research' on the grounds that we were foolish enough to believe it necessary and possible to establish standards for ensuring the discovery, on-going management and archiving of historical information in digital forms.

Even though a growing number of historians are investing time and intellectual energy in the creation of hypermedia, there are problems to be resolved before it can be said that it is possible to engage in the same, or analogous, practices in hypermedia that have traditionally been sustained by printed-based communication.

Consider how the cycle of creation, reception and revision of historical knowledge sustained by print-based publication routinely occurs. Drawing on another researcher's work, whether for the purpose of validation, revision or pointing out inaccuracies or incompleteness, involves the employment of various technical conventions, the most obvious being quotation and referencing the work in question. Writing a history book or journal article moreover rarely involves quotation or referencing the work of one or two scholars. Books dealing with major themes in nineteenth-century Australian history, for example, can make to over five hundred other books and articles - and contain equally as many references to unpublished archival sources.

History students quickly learn that accuracy in citation is paramount. But in the routine ebb and flow of debate between historians, the accuracy or otherwise of quotations or references are questioned only when by virtue of close acquaintance with a particular book or archival source a researcher senses that something is wrong. Scholarly discourse ordinarily proceeds on trust. We accept that work published by scholarly presses has been scrutinised by experts. In course of reading the work we may note the publication details or location of a source that has been used. Rarely if ever do we take the work to an archive or library and systematically assess the accuracy or otherwise of the references it contains. If we did historical discourse would grind to a halt.

Looking at the conventions within print that sustain historical practice in this way serves to highlight what is arguably the greatest challenge confronting historians wanting to use hypermedia as a research medium: persistence. Currently we cannot be sure on-line digital materials continue to exist, or be sure that if they do, they can easily be found and used.

In the virtual realm, we as yet have only rudimentary mechanisms for sustaining the conditions of trust enabling the repertoire of practices employed in print-based historical scholarship. Consider the case of the South Seas 'companion'. Quotation and references to print-based or archival resources poses no problem. But how do we create a work in which complex interrelationships are drawn between digital objects that reside within the project, or are located elsewhere in the virtual information landscape? With print-based monographs, the matrix of information in which the book is anchored, and which underpins the determination of its significance, meaning and trustworthiness is stable, and will remain so. Indeed, it is likely to become more secure by virtue of bibliographical software and on-line

resource finding aids making it easier for writers of books and paper-based journals to provide accurate references to print-based materials.

By way of contrast, the apparatus sustaining hypermedia-based scholarship currently has the stability of a house of cards.⁶ The matrix in which it is located is easily broken or fractured as web-sites are re-designed, or moved to new domains – the phenomenon sceptics call of ‘link rot’. Compounding the problem is the growing use by cultural institutions of dynamic databases, from which web pages are generated on the basis of user-queries. This may make sense for internal information management purposes, but dynamic rendering makes it difficult, and often impossible, for others to create hypermedia resources that rely upon being able to make persistent and citable links to specific pieces of information.

In order to resolve the latter problem, our decision has been to embrace the approach to content management and web publication exemplified by ORHM and WARP. This approach involves employing a system wherein there is clear separation of content from HTML/XML output. In other words, the journals, essays and other core texts of South Seas will be rendered as static HTML pages. Links within South Seas will never unintentionally change name nor break.

However, this approach, coupled with providing detailed metadata in each page of the site, is only a partial solution for stabilising discovery and use of South Seas Project resources. As the National Library has maintained for several years, what is needed to achieve stability in the ever-changing virtual landscape is the employment by creators of information of a reliable and widely endorsed scheme for persistent identification and permanent naming of Internet resources.

Recently, the Library commissioned a detailed study of the strengths and weaknesses of various identification systems.⁷ It is now in the process of refining a scheme, which South Seas Project will employ in order to test how well it allows the creation of resources which refer to objects in various Library information resources, such as the on-line map collection, and the Images One pictorial database. In fact, in a distinguishing feature of South Seas will be that visual images and maps being digitised for the project will not actually reside in the same digital repository as the project’s editions of voyaging accounts and accompanying essays, articles and hyper-media resources. Images and maps will be added to existing digital repositories and linked to the project through the Library’s persistent identification scheme. This we hope will contribute to the refinement of the Library’s approach to making the web a more stable and durable information landscape. At the same time, we expect to gain a clearer understanding of the kinds of information management procedures and standards that historians need to adopt if they want to use the web as medium for the exchange and critical appraisal of information about the past.

The ‘distributed’ nature of South Seas will mean that, in the future, it should be relatively easy by means of metadata to use specialist software applications to discover not only South Seas content, but also related digital information resources held within other national and overseas cultural institutions. For example, a wealth of nautical charts, sketches, cultural artefacts, biological and zoological drawings and specimens gathered during the course of the three Cook voyages exist in museums and libraries throughout the world. As cultural institutions are gradually making

⁶ A point vividly made by Lorcan Dempsey in his article, ‘Scientific, Industrial and Cultural Heritage: a shared Approach’, <http://www.ariadne.ac.uk/issue22/dempsey/>

⁷ See <http://www.nla.gov.au/initiatives/persistence/PIcontents.html>

information about these materials accessible through the web, it becomes possible to bring this information together virtually in historically meaningful ways.

Historians and the Emerging Virtual Historical Landscape

A further goal of the project is to work in collaboration with the Australian Science and Technology Heritage Centre to develop a content management and publication system that caters for more than just the particular needs of the South Seas Project. Our goal is to produce a system that can be freely given to any organisation or individual wanting to publish heritage or historical information on the web, and which allows their information to be manageable, have persistence and be easily discovered.

The migration of historical practice into the networked environment is underway. So far it has largely been a response by professional historians to the steadily worsening economics of print-based scholarly publication. However, a growing number of historians are alert to the fact that widespread social application of networked communication has, among many other things, disposed Australians to want historical information in digital forms. As I argued in a recent article for *Public History Review*, we have got to the stage where Australian historians not only need to go public but also cannot afford to ignore engaging with new on-line audiences (Turnbull 2000). The recent National Inquiry into School History Teaching has likewise concluded that the history profession needs to explore the implications of increased use of information technology in history teaching and learning.

My own sense is that we will see increasing demand not just for digital history, but for on-line resources that encourage interactivity. Much like the practice of public history is centered on encouraging community participation in critically knowing the past, hypermedia history is likely to evolve in ways that facilitate public discovery and active participation in reinterpreting the past.

As familiarity with technology becomes more widespread, what seems likely to emerge is an information landscape comprised of resources created by individuals, community organizations, schools and local cultural institutions.

The challenge for historians will be to encourage the creation of resources that encourage a rich sense of historical consciousness and minimizes the tendency of history to evaporate in the play of technocultural discourse associated with the web. Together with digital librarians, they will also need to encourage the creation of resources that incorporate standards for information discovery, use and preservation. If an historically informed and stable landscape emerges, exciting things will be possible, such as the creation of software applications that aggregate, interrogate and interpret large amounts of content – to generate and share new insights into our history and cultural heritage.

However, on-line resources that aim to represent the past in its richness and complexity are necessarily complex artifacts in information management terms. They require tasks such as accurate meta-description, indexing of content, and management of hyper-relationships between digital objects to be automated where possible. Content management and publication systems that alleviate these burdens and allow concentration to be focused on the intellectual worth of what is being prepared for on-line publication are beyond the budget of even medium sized

cultural institutions, and likely to remain so. Indeed, the capacity of universities, public cultural institutions and organizations to buy commercial systems for creating networked historical information resources is limited, and the economics of using such systems to produce resources are even less attractive to commercial publishers than the production of conventional historical books.

Consequently, in August 2001, South Seas and the Australian Science and Technology Heritage Centre began work on developing a system that serves more than just the project's needs. We are aiming by early 2003 to have built a system that can be distributed under open license to historical researchers, heritage specialists, teachers, students, family historians - in short anyone who has historical information that they wish to make available and easily discoverable on the world-wide-web.

These days, there is much talk within higher education circles about the critical importance of enhancing the speed and accessibility of expert knowledge to new technology-based industries. The rapid circulation of knowledge through networked digital media is seen as essential to technological innovation and economic growth in the post-industrial era.⁸ However, innovation is generally imagined in abstract, theoretical terms - as if it were something immune from contingencies of history and culture. In judging what is good science or technology we do so by criteria that are historically and culturally determined.

The humanities consequently have a critical role to play in enhancing public judgement of the likely outcomes and value of innovation. And this involves changing not what we do by way of research and teaching, but how we communicate and engage with society. The South Seas Project is a modest attempt to broaden understanding of remarkable occurrences over two centuries ago - events that have made the world that we now know. In the process, we hope to make some new discoveries, particularly about what successful communication in networked digital media involves.

Bibliography

- Anderson, George William. 1784. *A New, authentic and complete collection of voyages round the world, undertaken and performed by royal authority : ... Captain Cook's first, second, third and last voyages ... for making new discoveries in geography, navigation, astronomy &c in the southern and northern hemispheres &c. &c. &c., and successively performed in the years 1768 ... 1780 : ... Together with a narrative of Capt. Furneaux's proceedings in the Adventure during the separation of the ships in the second voyage during which period several of his people were destroyed by the natives of Queen Charlotte's Sound.* London: Printed for Alex Hogg.
- Bodi, Leslie. 1959. Georg Forster: the 'Pacific Expert' of Eighteenth-Century Germany. *Historical Studies: Australia and New Zealand* 8 (32):345-363.

⁸ For the theory and practice of innovation systems, see http://www.oecd.org/dsti/sti/s_t/inte/prod/nispub.htm For Australia, see <http://www.isr.gov.au/industry/kbe/importance/>

- Cook, James, J. C. Beaglehole, and R. A. Skelton. 1968. *The Journals of Captain James Cook on his voyages of discovery*. Repr. with addenda and corrigenda. ed, *Works ; Extra ser., no. 34-37*. Cambridge: Published for the Hakluyt Society at the University Press.
- Falconer, William. 1780. *An universal dictionary of the marine: or, A copious explanation of the technical terms and phrases employed in the construction, equipment, furniture, machinery, movements, and military operations of a ship*. New , cor. ed. London,: Printed for T. Cadell.
- Forbes, David W. 1998. *Hawaiian national bibliography, 1780-1900*. Honolulu: University of Hawai'i Press.
- Frost, Alan. 1980. *Convicts and empire : a naval question, 1776-1811*. Melbourne: Oxford University Press.
- Goodall, Heather. 1997. Aboriginal History, Narration and New Media. *History and Computing [Great Britain]* 9 (1-3):134-143.
- Hawkesworth, John, James Cook, Joseph Banks, Philip Carteret, John Byron, Samuel Wallis, T. Cadell (Bookseller), and W. Strahan (Bookseller). 1773. *An account of the voyages undertaken by the order of His present Majesty, for making discoveries in the southern hemisphere, and successively performed by Commodore Byron, Captain Wallis, Captain Carteret, and Captain Cook, in the Dolphin, the Swallow, and the Endeavour : drawn up from the journals which were kept by the several commanders and from the papers of Joseph Banks, Esq.* London: Printed for W. Strahan and T. Cadell ...
- Hetherington, Michelle, ed. 2001. *Cook & Omai : the Cult of the South Seas*. Parkes, A.C.T.: National Library of Australia.
- McCalman, Iain. 1999. *An Oxford companion to the Romantic Age : British culture, 1776-1832*. Oxford ; New York: Oxford University Press.
- McCalman, Iain. 2001. Spectacles of Knowledge. Omai as Ethnographic Travelogue. In *Cook & Omai: the Cult of the South Seas*, edited by M. Hetherington. Canberra: National Library of Australia.
- Rose, Deborah Bird. 1984. Dingo makes us human : being and purpose in Australian Aboriginal culture.
- Salmond, Anne. 1991. *Two worlds : first meetings between Maori and Europeans, 1642-1772*. Auckland, N.Z: Viking.
- Smith, Bernard. 1985. *European vision and the South Pacific*. 2nd ed. Sydney: Harper & Row.
- Smith, Bernard. 1992. *Imagining the Pacific : in the wake of the Cook voyages*. New Haven: Yale University Press.
- Thomas, Nicholas. 1991. *Entangled objects : exchange, material culture, and colonialism in the Pacific*. Cambridge, Mass: Harvard University Press.
- Thomas, Nicholas. 1994. *Colonialism's culture : anthropology, travel and government*. Oxford: Polity Press.
- Thomas, Nicholas. 1997. In *Oceania : visions, artifacts, histories*. Durham, NC: Duke University Press.
- Turnbull, Paul. 2000. Australian History, Hypermedia and the World Wide Web. *Public History Review* 8:44-75.
- Turnbull, Paul. 2001. The Network and the Nation: the Development of National Bibliographical Resources. In *Remarkable occurrences : the National Library of Australia's first 100 years 1901-2001*, edited by P. Cochrane. Canberra: National Library of Australia.
- Williams, Glyndwr. 1997. *The great South Sea : English voyages and encounters, 1570-1750*. New Haven: Yale University Press.