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Title
Pixels & Partnerships: digital publishing and co-operative scholarship in Australian and British imperial history.

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Abstract
The efforts of libraries and archival institutions in collecting and curating dispersed collections of original letters, journals, pictorial sources, and realia/artefacts are essential contributions towards research and scholarship. Recent technological advances in digitization offer important new possibilities in the reproduction of documents and images as well as enhanced access to dispersed institutional holdings.

The Lachlan & Elizabeth Macquarie Archive (LEMA) is a co-operative inter-institutional website project based at Macquarie University Library, in partnership with key Australian and UK institutions. The aim of the LEMA Project is to create a digital research gateway to the writings of the Lachlan Macquarie (1761-1824), governor of New South Wales from 1810-1821 and his wife Elizabeth (1778-1835), and thereby assist in the study and analysis of their place in Australian and imperial history. The LEMA framework is designed to explore the personal and global contexts of the Macquaries through the use of full-text transcriptions of documentary sources, as well as contributing towards the identification and digital repatriation of personal objects associated with their lives.

Pixels & Partnerships will discuss the history and infrastructure of the LEMA Project and examine how inter-institutional partnerships can be developed through reciprocity and resource sharing. It will assess the sustainability of such projects and discuss the viability and application of recent technologies in the development of digital research projects.

Main topic/key term: partnerships; scholarly publishing; digital repatriation; digital surrogacy

Pixels & Partnerships

"Our lives are a double helix of past and present. We are the language of our representations. We are caught in our webs of significance"

[Dening,1992 p.9]

Pixels

An implicit part of our modern culture is the understanding that a 'pixel' is the smallest element of resolution for reproducing a graphical image. It may be describing either printed dots on a page (dpi) or the digital values on a display device (ppi) such as a monitor screen or camera. The more pixels used to represent an image, the closer the result can resemble the original. How this is achieved is compounded by a mathematical world of 'bits', 'subpixels', and 'megapixels'. [Wikipedia: 'Pixel'; accessed 12 December 2007].

However it is the *granularity* of 'pixels' that I want to explore in this paper. By this term I mean the collective accretion of information in digital format – not the complex algorithms underpinning the rendering of images and text. Each small component makes an essential and vital contribution towards the presentation and rendering of a final image or text. Furthermore 'pixels' provide a useful metaphor for examining a number of digital projects that have been under development at Macquarie University Library since 1998. At their heart they are explorations into scholarly research and the contribution that librarians and archivists can make to increasing access to primary source materials. In particular, these projects are centred upon the historical legacy of the University's namesake: Lachlan Macquarie.

Who Was Lachlan Macquarie?

Lachlan Macquarie (1761-1824) was a Scottish career soldier born on the Isle of Mull, Scotland, who joined the British army in Canada at the age of 15, and who travelled extensively throughout North America, South Asia, China, the Middle East, Russia, South Africa, and Australia in the latter half of the C18th and the first two decades of the C19th. In 1810 he became governor of the penal settlements of New South Wales and Van Diemen's Land, and thereafter served with unique distinction in the development, discovery and governance of eastern Australia until November 1821. He and his family returned to Britain in 1822 and he died in London on 1 July 1824. He was subsequently buried on his estate on the Isle of Mull, Scotland, and was survived by his wife Elizabeth until 1835, and by his only son, Lachlan, who died without issue in 1845.

The legacy of his life and times is a strange amalgam of scholarly oversight in Britain and keen civic celebration and remembrance in Australia. His governorship of New South Wales (1810-1821) was a period of autocratic rule tempered by a benevolent paternalism, and involved an ambitious program of public works construction, educational and social welfare initiatives, and the promotion of organised commerce and finance. His administration was caught between the competing demands of a rapidly expanding convict population with a free settler population demanding greater autonomy and wealth. Macquarie transformed a distant penal settlement and outpost of British imperial ambition into a thriving commercial trading centre - with links to China, India, South Africa, Britain, and the Americas. The enigma of his life is that from lowly birth on an island of the west coast of Scotland Lachlan Macquarie rose to a position of prominence, having visited or served the British Empire on every habitable continent on earth. The 'accidental' survival of his personal writings provides a rich resource for scholars and researchers.

Context

Macquarie University, Sydney was founded in 1965 and opened for teaching in 1967 [Mansfield and Hutchinson, c1992]. At the time of its foundation the new University acquired by gift and donation several objects whose provenance could be traced directly to Lachlan

and Elizabeth Macquarie.

Firstly, there was the gift of the complete timber interior of the parlour room (walls, windows, doors, fireplace etc.) from Gruline House, the Macquaries' home on the Isle of Mull, Scotland. It was given to the University in 1966 having been removed and shipped to Australia in 1967, with financial assistance from the Bank of NSW (now Westpac). Eventually these items were reassembled and installed in a purpose-built space within the University Library (in 1978) – and re-named 'The Lachlan Macquarie Room'. Thereafter a small display and exhibition space was developed in an adjacent area, describing the history of the original house and the Macquarie estate on the Isle of Mull.

Secondly, a direct descendant of Charles Macquarie, Lachlan's younger brother, gifted to the University – also in the year 1967 – an early Australian colonial armchair, which had been commissioned by Macquarie in 1820-1821, using convict artisans. This chair is one of the earliest provenanced pieces of furniture from early Australian colonial history. It is the companion chair to another held by the Powerhouse Museum, Sydney. Full details of the history of parlour room and the chair can be viewed on the Macquarie University Library website at: www.lib.mq.edu.au/lmr

History of The Lachlan & Elizabeth Macquarie Archive (LEMA) Project
In 1997-1998 a joint digitisation initiative was established between Macquarie University and the State Library of NSW known as the Access to Lifelong Learning (ALL) Project. It aimed to increase community access to university-based teaching materials via the WorldWideWeb and maximise the facilities of the public libraries network of NSW. Macquarie University Library undertook to prepare full-text transcripts of all the twelve (12) travel journals of Lachlan and Elizabeth Macquarie in NSW and Van Diemen's Land in the period 1809-1821 [Walsh, 1999 pp.35-44]. The original manuscripts are held within the Mitchell Library, State Library of NSW. The specific project was entitled "Journeys in Time 1809-1821" and it provided not only transcriptions of the original documents but also included biographical profiles, gazetteers, and associated research notes. This content is still available and has been progressively added to as new information has become available:

www.lib.mq.edu.au/all/journeys/menu.html

The ALL Project ceased as a joint initiative between Macquarie University and the State Library of NSW in 2002, however its success encouraged Macquarie University Library to undertake additional digital projects based upon various field study trips and library-based research undertaken by staff member Robin Walsh in Australia, Britain, India, Sri Lanka, Russia, Macao, and South Africa in the period 1999-2005. In each instance the individual projects began as public exhibitions and/or websites that investigated Macquarie's travels and writings in the period 1787-1824:

Seringapatam 1799: Lachlan Macquarie and the British in India.
http:// www.lib.mq.edu.au/digital/seringapatam

Under A Tropical Sun: Lachlan Macquarie & the 73rd Regiment in Sri Lanka 1796-1821.
http://www.lib.mq.edu.au/digital/under

Imperial Eyes 1807: Lachlan Macquarie's travels in the Ottoman, Persian & Russian Empires.
http://www.lib.mq.edu.au/digital/imperialeyes

These individual research activities have now been incorporated within a broader digital research framework entitled **The Lachlan & Elizabeth Macquarie Archive (LEMA):**

www.lib.mq.edu.au/digital/lema

The LEMA Project is an inter-institutional research partnership based at Macquarie University Library with assistance from the State Library of NSW, and State Records NSW. Negotiations with the National Library of Scotland commenced in 2003 and were affirmed in 2005. This led in 2006 to the provision of digital images of Scotland by the noted British landscape artist

William Daniell (1769-1837) as well microfilm copies of key Macquarie manuscripts held in their collection. The Daniell images have been added to the LEMA website and transcription of the documents is well advanced.

In September 2006 the Historic Houses Trust of NSW also agreed to become a partner in the LEMA Project. This cultural heritage organization is an important custodian of objects and historical properties associated with the history of early colonial New South Wales. The LEMA partnership with the Historic House Trust of NSW was launched on 31 January 2007 to coincide with the 246th anniversary of the birth of Lachlan Macquarie. Amongst the items owned by the Historic Houses Trust of New South Wales are a c.1805 mahogany campaign desk used by Macquarie during his travels, and a violoncello alleged to have belonged to Elizabeth Macquarie. Photographs and interpretive details of these items now form an integral part of the LEMA Project. They are presented along with other Macquarie memorabilia as 'digital surrogates' with their own unique stories to be told. These include an ornamental carved armchair made by convict artisans for Governor Macquarie and a large Staffordshire china meat platter [probably Derby porcelain] from a dinner service belonging to the Macquaries and used by them in Sydney. Negotiations in relation to other personal objects are currently under discussion. This broadening of the scope of the LEMA project is an important aspect in its development by providing a new opportunity to increase the interpretive framework: www.library.mq.edu.au/digital/lema/artefacts.html

LEMA Framework
The primary aim of the LEMA project is to provide full-text transcripts of the writings of Lachlan & Elizabeth Macquarie and make them (and associated historical research notes) readily available via the Internet. The transcription of all of Lachlan and Elizabeth Macquarie's journals 1787-1824 has now been completed with the exception of 1801-1802 (military campaigning in Egypt), and 1822-1823 (travels in France, Italy & Switzerland). These will be added in the 2008-2010. This is the first time that such an extensive range of Macquarie journals has ever been publicly available – in print or digital format (approx. 4,000 manuscript pages). However, although the central core of the LEMA Project is the extensive corpus of transcripts, the real potential of this content will be revealed through the associated research notes. This includes biographical profiles, glossaries, shipping lists, maps, contemporary images, photographs and historical notes, as well as bibliographic listings.

LEMA is designed to create new opportunities for collaborative partnerships between Macquarie University and relevant local, national and international institutions that have holdings of Macquarie-related materials. It also aims to provide a scholarly foundation for bicentenary civic celebrations planned for 2010 that will commemorate the history of the Macquaries in Australia.

The strategic focus is directed at all times towards ensuring that the University's namesake is fully acknowledged and that there is a clear understanding of the social and historical significance of the Macquaries in the development of Australia.

Currently the LEMA Project is based upon the in-kind exchange of content and images. There is no direct financial obligation or any request for a monetary commitment from any participating partner institution. Macquarie University Library undertakes to create, host, develop and maintain the website. Specific images always remain the property of the contributing partner, and all individual rights are preserved and cannot be made available to a third party for commercial purposes without permission. LEMA does not provide any commercial advantage to the participants nor does it involve the abrogation of any individual copyright or ownership rights. Consequently the LEMA partnership framework is voluntary and non-binding. It relies upon mutual sharing and reciprocity.

The value and importance of digital projects such as LEMA lies in seeking to craft a fresh vocabulary and mechanism with which to read the past. Digital technologies offer the promise of greater aggregation of content coupled with ease of access. At times this may appear to be more a chimera of promise than a tangible reality. However, there is already clear evidence that the scholarly exchange of information has accelerated access to dispersed collections.

Among some of the more noteworthy examples within the Australian context are:

The Sydney Electronic Text and Image Service (SETIS)
This initiative based at the University of Sydney offers within its broad framework of electronic publishing facsimile reproductions and SGML-encoded texts (converted on the fly to HTML for display) of key Australian historical source materials. The State Library of NSW is also a key partner organization involved in the activities of SETIS, and jointly they have made available a selection of primary source materials relating to early Australian colonial history: The First Fleet and Early Settlement Documents. This will be enhanced in the future with a new digital project funded by the Australian Research Council (ARC) and by the National Funds for Scientific Research (Fonds National de la Recherche Scientifique, [FNRS]) in Belgium entitled "The Baudin Legacy: A New History of the French Scientific Voyage to Australia (1800-1804)."

setis.library.usyd.edu.au/oztexts

There are two complementary websites relating to the navigator Matthew Flinders (1774-1814), and based upon the holdings of the Mitchell Library, Sydney, and the National Maritime Museum, Greenwich.

The Matthew Flinders Project
This Project celebrates the bicentenary of Matthew Flinders' epic circumnavigation of Australia in the ship *Investigator* in 1801-1803. On this voyage the shape of the Australian continent was defined and Flinders became an advocate for the name 'Australia' to be applied to the whole continent. The Matthew Flinders Project is based at the Mitchell Library, State Library of New South Wales and is an electronic archive of the personal papers of Matthew Flinders - his journals, letters, diary and memorabilia - with archival material presented to the Mitchell Library by the famous Egyptologist Sir W. M. Flinders Petrie, Flinders' grandson. Also included are images of various artefacts [Flinders' maps and uniforms] as well as biographies of Matthew Flinders (1774-1814), Sir Joseph Banks (1743-1820), and Bungaree (d.1830), a Sydney Aboriginal who accompanied Flinders on his circumnavigation of Australia:

www.sl.nsw.gov.au/flinders/

Flinders Papers: letters and papers about the explorer Matthew Flinders (1774-1814)
The Flinders Papers form part of the National Maritime Museum's website. It includes transcripts of 150 documents relating to the life and work of Flinders. The material includes: letters, journals, legal and naval papers, receipts, and inscriptions. The documents include the major events in Flinders' travels surveying the Australian coastline in the *Investigator* (1801-3), as well as his subsequent imprisonment in Mauritius by the French government (1803-10):

www.nmm.ac.uk/flinders

Wellington Valley Project: Papers Relating to the Church Missionary Society Mission to Wellington Valley, New South Wales, 1830-1842
This Project was developed at the University of Newcastle and is a full critical electronic edition of transcripts from 915 pages of journals and letters written by Christian missionaries working at the outermost limits of European settlement in NSW. They include considerable information about the pattern of occupation, but more importantly, they provide a record of indigenous Wiradjuri society at the point immediately before the destruction of their full ceremonial life:

www.newcastle.edu.au/centre/wvp/group/amrhd/wvp/index.html

Ways of Seeing
Textual transcription and reproduction of original manuscripts and pictures can offer new ways of examining historical personalities and events. There is, however, another area of

custodial responsibility for librarians, archivists and curators that has been less readily addressed. For many institutions have objects such as military weapons, jewellery, musical instruments, decorative pieces, textiles and garments, furniture items, sacred objects or cultural artefacts. These are items whose particular frame of reference may have been borrowed, usurped, transformed or acquired by others. The possibility now exists for its original meaning to be restored by through diligent research, resource sharing, or advances in technology.

In his pioneering work, *Ways of Seeing* [1972], John Berger examined how the invention of the camera altered the way in which time and place were perceived. There was no longer a central viewpoint. Individual objects and paintings lost their unique value through endless reproduction – via film or television. Most importantly, because of the camera, the painting now travelled to the spectator rather than the spectator to the painting. In its travels, its meaning was diversified [Berger, 1972 p.20].

This is precisely why digitisation can be such a powerful tool for interpretation and information exchange. It is no longer necessary for an individual or researcher to examine the original in an institutional repository or private collection – or to be reliant upon a reproduction in a book (or in microform). Scanning technologies allow a document or image to be copied and exchanged with minimal mediation or time delay. It is a process that accelerates the opportunity for scholarly analysis; and through the social networking ethos of the web it inherently encourages greater exchanges of information. This distributed value enhances the immediacy of the testimony found in historical documents, as well as increasing the visual representation of the world – from before and after the invention of the camera.

Cultural restitution can take many forms. An exciting example of how a digital project within an indigenous community can be used to preserve and make accessible cultural heritage materials has been developed in Victoria, Australia. The Koorie Heritage Archive helps to rebuild oral histories and kinship laws, as well as promote traditional dance, language and lore [Huebner and Cooper, 2007].

Fresh Insights
In recent *textual analysis* of C18th contact history in the Pacific region it has been demonstrated how fresh and perceptive insights can still be extracted from well-known historical incidents and chronologies. For example, Salmond (2003) in her analysis of the massacre of crewmen from HMS *Adventure* by Maori warriors at Whareunga Bay or Grass Cove, New Zealand, on 17 December 1773 reveals a new dimension to the familiar tale of Cook in New Zealand. She demonstrates how four years after the original massacre the crew of HMS *Resolution* expressed their dissatisfaction with Cook's failure to avenge the deaths of their fellow sailors through a mock trial that resulted in the conviction, execution and consumption of a sailor's dog 'for cannibalistic tendencies'. This action had a potent subtext of mutiny and emasculation. The men of the lower deck were venting their frustration with naval authority, denigrating their captain, as well as asserting their masculinity in the complex arena of C18th Pacific contact history.

Similarly Inga Clendinnin in her ethnographic examination of the encounters between Indigenous Australians and white Europeans at Port Jackson between 1788-1792 reconstructs the complex path to friendship and reconciliation pursued by Governor Arthur Phillip with the Eora people of the Sydney region, and, in particular, with Bennelong (Baneelon) [Clendinnin, 2003].

To date there has not been a comparable examination of Macquarie's relationship with Bungaree (Boongaree) who had accompanied Matthew Flinders on the *Investigator* during the circumnavigation of Australia in 1801-1803. In 1815 Bungaree, along with sixteen families identified as the remnants of the Broken Bay 'tribe' were given a gift of land at Georges Head, Sydney, as well as agricultural implements, clothing and fishing equipment. Prior to his departure in February 1822 Macquarie presented Bungaree with 'an old suit of general's uniform to dress him out as chief' [cited in Cleary, 1993 p.10]. The complexity of Macquarie's policy of paternalism, punishment and reconciliation with the Aboriginal tribes of New South Wales needs new appraisal and assessment.

There is also an intrinsic power in the meaning and value of *objects as historical talismen or cultural ciphers*. For example, in the past decade new understanding has emerged in the interpretation of a family keepsake that had remained the property of the Blackburn family in Britain for two hundred years. David Blackburn was the ship's Master on HMS *Supply* in the First Fleet at Sydney in the period 1787-1791. Philip Jones, a curator and historian based at the South Australian Museum, has recently re-examined the history and context of a hand-made C18th naval whip [cat-and-nine tails]. He has revealed how, in fact, it was originally an Australian Aboriginal wooden club that was adapted by Blackburn as his own instrument of discipline and punishment. This object is the only documented wooden artefact surviving from the encounter of white Europeans with Aboriginal peoples in the first years of settlement in Sydney. It was placed on public auction for the first time in 1999 at Christies in London and subsequently acquired by purchase by the Museum of South Australia in 2002. [Jones, 2007 pp.9-49].

The digital repatriation of historically dispersed objects can be an important objective as well as a consequence of C21st technology. The opportunity or likelihood of physically reassembling dispersed items in one place again is always difficult. In some cases it may be culturally impossible to repatriate items that have been acquired by conquest, opportunism, theft or subterfuge - as evidenced in the controversy between the British Museum and the Greek government regarding the ownership of the Elgin Marbles from the Acropolis in Athens. In the case of Lachlan Macquarie there are comparable examples involving the dispersed treasure/booty looted by British soldiers after the siege and capture of Seringapatam, the capital of Mysore, India in May 1799 [Moienuddin, 2000; Davis, 1997 pp.143-157; Sotheby's Catalogue, May 2005].

Alternatively objects may be dispersed through loss and/or private ownership, such as the Aboriginal brass breastplates introduced by Governor Macquarie in 1815. These unique items were largely created as tokens of recognition or as rewards for services rendered. Tania Cleary indicates that in the period 1815-1930 breastplates were issued to Aboriginal men and women for various acts of bravery, courage, service, memory, merit, and ironically, for being the last member of a tribe [Cleary, 1993 p.11]. It seems most likely that Macquarie's initiative was based upon his own experiences and observations in North America in 1776-1781 during the American War of Independence, as well as in India, where regimental Duty Officer's gorgets were given to indigenous tribesmen and allies for services rendered. In Australia these tokens became badges of distinction from one 'chief' to another. Macquarie used these pieces of writing engraved on metal as a means of endorsing as well as co-opting indigenous Australians to his notion of authority (Van Toorn, 2005 p.28). However their artificiality was clear. They represented an obvious attempt at social control, and although they were offered as a gift they remained an explicitly political statement of white dominance. Macquarie supplied Bungaree with a brass breastplate inscribed 'Boongaree Chief of the Broken Bay Tribe 1815'. Thereafter at least thirty-eight known chiefs were distinguished in this way by the governor in the period until November 1821 [Cleary, 2005 p.10].

Currently the LEMA Project can provide some of the source materials that document these cross-cultural exchanges, but *not* the visual representation of the original breastplates or other comparable artefacts of late C18th and early C19th imperial and colonial contact history. But the objective remains to include such objects. The current inclusion of examples of Macquarie-provenanced campaign furniture, musical instruments, porcelain and personal items is a small beginning. Who knows what additional partnerships, institutional or private, may be forged in the future?

Digital surrogacy offers a unique opportunity for scholarship and the 'virtual' repatriation of cultural heritage. It provides a dynamic framework for making available for closer scrutiny an extensive array of fragile and/or valuable objects that are currently dispersed by time and circumstance. As new communication networks emerge these will help to broaden the means available for the exchange of information.

Partnerships

The strength and viability of any partnership – whether personal or professional – is based upon issues of trust, commitment and honesty. If these elements are lacking the value of the partnership is diminished or compromised and what remains is more in the nature of a contractual arrangement. This does not necessarily invalidate the importance of the relationship – it simply places it upon a separate footing, with the greater likelihood that it will operate as a commercial transaction rather than as a contribution to the public good.

In essence partners establish a strategic alliance in which joint collaboration creates a synergy that is greater than the benefits derived from individual effort, expertise or resource management.

Librarians and information specialists have long understood the value of the co-operative sharing of information and resources, and in the digital world this has only reaffirmed how important is the custodial and cultural heritage role of libraries. Nevertheless, in forging any inter-institutional partnership it should be determined at the outset what will be the parameters for the exchange of information content. And if there is to be certainty and goodwill, there also needs to be provision for the cessation of future co-operation.

What Are Some of the Advantages of Digitisation?

> Showcasing
> - state of current knowledge
> - institutional acknowledgement
> - technological advancement
> - new scholarly directions and/or expertise
>
> Creation of Enriched Content

What Are Some of the Disadvantages of Digitisation?

> Excessive staff and resource commitment
>
> Technological obsolescence (equipment, software)
>
> Determination of Intellectual Property Rights at the termination of a project

Digital project development should be based upon some of the following key aspects:

Reciprocity
Inter-institutional partnerships need to be seen as a mechanism for the promotion of unique materials/archival holdings; as a means of ensuring the integrity of shared information; and as a vehicle for ongoing co-operation.

Accuracy
Content should be vetted and closely checked before going 'live'. The validity and usefulness of the endeavour hinges upon the degree of certainty that can be placed upon the information. It is also a reflection upon the integrity of the institution preparing and providing the content.

Reliability
Consistency should be constantly monitored. Editorial guidelines need to be developed, preferably supported by a style guide or manual.

Viability
Design costs, staff commitment, and content maintenance need to be understood from the outset. Staged development, modular arrangement of content, and the recognition of possible technological obsolescence, must all be factored into any long-term digital project planning.

Similarly, in co-operative ventures where the in-kind exchange of resources operates between institutions/organizations there needs to be a clear understanding as to where the boundaries lie between ownership and contribution. Shared expenses also imply shared risks, however this is somewhat less relevant in a non-commercial arrangement.

Continuity
The Project parameters need to be structured in such a way that any new content can be readily incorporated into the design framework. Similarly, any consideration of the question of developing a digital project needs to consider and address the important questions of authenticity, context, format, storage media, transience, standards, and ownership.

In particular, one of the key consequences of changing software and hardware developments is that there is a continual need to migrate digital data or to copy the content into new formats. This technological imperative means that the possibility of preserving the 'original' digital item or the new content for the long term is almost impossible. The sheer *volume* of material produced, as well as the wider question of the *quality* of the digital materials available, has produced a range of digital objects that are largely free from the constraints and quality control processes that are traditionally imposed on print materials by publishers. [Pymm, 2006 p.62].

The challenge for digital project developers and their partners is to ensure that the shared content can be readily validated, and that this process of authentication can be achieved without unnecessary duplication and wastage of staff time. The project management team needs to understand the nature of the materials that have been selected for digitization and has identified the benefits as well as the limitations of the original source materials. Unrealistic expectations of the content and/or the technology will only deflect time and energy away from the achievement of a satisfactory project outcome. The content needs to be scaleable as well as flexible so that component parts can be adapted to other purposes or made available for fresh content arrangement.

There are many examples of international digital partnerships, however one that offers an interesting template for the LEMA Project can be examined on the website entitled: TANAP: Towards A New Age of Partnerships in Dutch East India Company Archives and Research.

www.tanap.net

The TANAP Programme is administered by the Netherlands Organization for Scientific Research (NWO) and its primary aim is to preserve and promote the archives of the VOC (Verenigde Oost-Indische Compagnie) or the Dutch East India Company which was the largest and most impressive of the early modern European trading companies operating in Asia. Its activities straddled three continents, and in the period 1602 and 1796 almost a million Europeans were sent to work in the Asia trade on 4,785 ships. Twenty-five million pages of VOC records survive among the vast holdings of VOC repositories in South East Asia, Sri Lanka, India, South Africa and the Netherlands. The TANAP Programme seeks to facilitate an historical approach that blends the use of both VOC and local sources to inform upon a broad range of Asian and African subjects. This approach aims to create an international academic network: a new partnership between historians and universities from all those places involved in the VOC encounter. Through the use of information technology the VOC archives will become more readily available and accessible.

Hindsight
There is an implicit challenge in all our scholarly endeavours, whether they are digital or in print. For in many respects the challenges we face are not technological but our own cultural conditioning and perception of the past.

"Hindsight … reduces all possibilities in the past to one. Hindsight leaches out all our uncertainties, but not all the past's uncertainties. Hindsight closes down our imagination. In hindsight we do not see the past as it actually was, only as it would have been if all its

uncertainties were taken away. Hindsight freezes the frame of every pictures of the past. Hindsight removes all the processes of living. Makes the past our puppet." [Dening, 1998 pp.210-211]

We must constantly wrestle with a sense of the past that seems fixed and self-evident. Furthermore we need to confront those historical frameworks that are conditioned and conceptualized according to what happened on the provincial scale of Europe (often western Europe) and then imposed upon the rest of the world through various value-laden institutions and constructs. [Goody 2006 pp.13-21] The democratization of knowledge that is an implicit part of the new digital frontier of the C21st may offer a means for breaking down many of these cultural and perceptual boundaries.

Conclusion

One of the key objectives of the LEMA Project is to provide a scholarly framework for fresh investigations into the lives and times of the Macquaries. Greater ease of access to primary source materials, combined with recent interpretative details and biographical profiling, aims to facilitate a new generation of scholarship and understanding. The collective accretion of information underpinning LEMA will seek to create a unique blend of pixels and partnerships.

If there is validity in the observation by Dening [1992 p.9] that "our lives are a double helix of past and present" one of the key challenges facing librarians, archivists and curators in the C21st will be to explore and embrace emerging technologies in such a way as to ensure that they promote and preserve the vibrancy of the surviving historical record. The spiral of connectivity implicit within our shared histories requires ongoing investigation and interpretation. The legacy of human activity, achievement and failure becomes meaningless if we fail to provide the means to unravel its coded meanings. We must become communicators as well as custodians.

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