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Indigenous people in cyberspace

Adam Robert Lucas

University of Wollongong, alucas@uow.edu.au

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Indigenous people in cyberspace

Abstract

Although computing and telecommunications technologies are becoming increasingly integral to the work practices and everyday lives of indigenous people, these activities remain relatively unpublicized and untheorized. The author discusses a variety of computing and electronic networking projects undertaken by Australian Aboriginal and Native American people that address issues of central importance to all indigenous people - i.e. education, cultural development and self-determination. The aim of this paper is to draw attention to the diversity of projects now underway and to discuss how these may be used as models for others indigenous communities wishing to undertake similar projects.

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Indigenous People in Cyberspace

Adam Lucas

With the proliferation of new computing and telecommunications technologies (telematics) throughout the industrialized world, questions of access and equity are often pushed into the background of public discourse in favor of the rhetoric of "market forces" and other economic imperatives. At the same time, the speed of innovations and their social and economic effects have made it difficult for both theorists and governments to develop considered responses to these changes.

Although most Western governments have attempted to address issues of social justice and equity in their planning debates about the new information infrastructures and the "content" industries that will accompany them, it is perhaps not surprising, given the record of colonialism in those advanced industrialized nations with indigenous populations, that issues of telematics access and equity for native people have largely been neglected.

Of those advanced industrialized nations with indigenous populations—i.e. the United States, Canada, Australia, Japan and Finland—only three (the United States, Canada and Australia) appear to have developed any policy initiatives relating to indigenous people's access to new media technologies [1]. Even in these cases, there continues to be a significant gap between policy and action. While government policies do not provide a guarantee of their translation into action, they do provide some leverage for social change based on a set of transparent principles that are open to modification and public debate.

Government policy failure for indigenous people in a general sense can be attributed to institutionalized corruption, government inaction, inappropriate bureaucratic intervention, industry ignorance or non-compliance, and culturally imperialistic assumptions about indigenous cultures. These obstacles to the formulation and realization of equitable policies for indigenous people have resulted in the continued subversion of their basic human rights.

Whether the issue is Aboriginal or Native American affairs or racial or sexual discrimination, any social policy aimed at reform must of necessity recognize the constraints upon "real world" development in different local contexts, including a sensitivity to cultural and gender differences that relate to social organization. It must also provide staged goals and a firm basis for the negotiation of the ongoing financial and resource commitments that are required to reach these goals. Independent monitoring of policy implementation must be

integral to overall development guidelines. And, finally, those who are responsible for administering such policies must be prepared to reform the administrative, legal, and/or political systems if this proves necessary.

In recent years, most of the more extensive forays into telematics for indigenous people have been initiated by individuals and organizations that are independent of government organizations. Although many of them have received some form of financial assistance from government departments at the federal or national level, this financial assistance remains largely *ad hoc*.

Those projects that have already been implemented can generally be attributed to the initiative shown by small groups of indigenous and non-indigenous people working together

ABSTRACT

Although computing and telecommunications technologies are becoming increasingly integral to the work practices and everyday lives of indigenous people, these activities remain relatively unpublicized and untheorized. The author discusses a variety of computing and electronic networking projects undertaken by Australian Aboriginal and Native American people that address issues of central importance to all indigenous people—i.e. education, cultural development and self-determination. The aim of this paper is to draw attention to the diversity of projects now underway and to discuss how these may be used as models for other indigenous communities wishing to undertake similar projects.

Fig. 1. Rea Saunders, *Look Who's Calling the Kettle Black*—Lubra, Colour Studio software on color laser copy paper on board, each 250 × 22 mm, 1993. Reproduced with permission of the artist. One of a series of 10 images of different domestic appliances that incorporate photographic images of young Aboriginal women taken from their families to be trained as domestic servants at the Cootamundra Mission in western New South Wales during the 1930s. All of the appliances are "unplugged," metaphorically suggesting that, depending on the cultural "power source" to which the different appliances are "connected," different interpretations and conclusions about their "utility" can be drawn.

Adam Lucas (writer, educator), P.O. Box 3126, Bellevue Hill, New South Wales, Australia, 2031.

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to achieve goals driven by the needs and aspirations of indigenous communities. Some of these projects have evolved within urban communities located in the cities and towns of Australia and North America, others have been developed within traditional communities that live closer to the land. Projects such as these can provide guidance for government policy formation, as well as inspiration for the development of similar projects in other regions.

COLONIZATION AND THE DISRUPTION OF THE INDIGENOUS LIFEWORLD

It is now fairly well acknowledged throughout the industrialized nations that indigenous cultures around the world are under increasing threat of annihilation from the pressures of "syphilization" [2]. With this knowledge comes a painful awareness of the deterioration in the cultural practices of indigenous people, as the attractions and the glamour of Western lifestyles continue to undermine faith in traditional ways of life.

The threats to the indigenous lifeworld [3] are many and varied, but they can nevertheless be identified in a fairly straightforward manner. They include

- pressures from commercial and corporate interests to exploit indigenous people's natural resources, with promises made of considerable profits; in reality this usually translates into a degraded environment and a consequent displacement of native populations as traditional forms of land usage become unsustainable [4]
- population pressures attributable to decreased mortality rates and increased birth rates due to the introduction of Western medicine combined with insufficient emphasis on birth control and contraception, which leads to further pressures on the land [5]
- the introduction of the mass media and advertising into indigenous communities; these media generally present a fantasy world of commodity fetishism that either misrepresents or ignores indigenous cultures and appeals particularly to the young [6]
- the efforts of some Christian missionaries to convert indigenous people from their "heathen ways" and thus abandon their traditional cultural practices [7]
- the introduction of alcohol and fast foods into indigenous communities, which has had a devastating effect on family relations and general standards of health and well-being [8].

Although some may regard this situation as a sad but inevitable process, such a conclusion should be resisted and identified as technologically deterministic and therefore suspect because of its tacit acceptance of Western cultural imperialism as a "natural" state of affairs. On the contrary, such a state of affairs is humanly constructed.

If the impoverishment of human culture by the processes of instrumental rationalization [9] is to be resisted, then it should be acknowledged that there is an urgent need for concerted efforts on the part of artists, educators and administrative and community workers to help indigenous people preserve and develop their own cultures on their own terms, with indigenous communities as the source of initiators and facilitators of locally developed projects. Because it is educators and administrators who are usually responsible for introducing these technologies into indigenous communities, it would appear that a strengthening of policy initiatives in education, community arts and adminis-

tration can provide a platform upon which it is possible to build reforms.

TOWARDS A CULTURAL FUTURE

With the growth of environmental awareness over the last few decades, most Westerners have come to accept the need to preserve native and endangered species and habitats, both for pragmatic and ethical reasons. But this awareness does not yet seem to extend to the preservation of native and endangered cultures and languages.

While threats to the planet's biological diversity remain acute, conservative estimates indicate that half of the world's 6000 languages will become extinct within the next hundred years [10]. Of the 250 Aboriginal languages thought to have existed in Australia when the English first colonized the continent in 1788, only 90 languages have survived, while 70 of those are in danger of extinction [11]. If serious efforts are not made to preserve and develop global cultural diversity as a top priority, we and our contemporaries are likely to be held responsible by future generations for our appallingly short-sighted and selfish behavior.

Fig. 2. Illustration from resource list in the "Land Rights" topic on the *Indigenous Australians: An Aboriginal Community Focus* CD-ROM, produced by Herb Peppard and Ralph Wayment in collaboration with Chris Knowles and a board of Aboriginal educators, 1995. Shown is one of the almost 1,000 mixed-media resources used to support each of the 21 topics. This image, in the "Land Rights" section of the CD, shows a land rights protest march in Canberra in 1988, the year of the Australian Bicentennial (from a photograph by Alana Harris).

Fig. 3. Still from the "Spirituality" topic on the *Indigenous Australians: An Aboriginal Community Focus* CD-ROM, produced by Herb Peppard and Ralph Wayment in collaboration with Chris Knowles and a board of Aboriginal educators, 1995. Photograph by Thomas Dick (c. 1910–1923) showing people from Port Macquarie, New South Wales, flaking and grinding stone.

Indigenous cultures around the world have a profound and sophisticated knowledge of native species and habitats within their domains, knowledge of which Western science continues to remain largely ignorant. But in the case of languages and the oral traditions conveyed by them, their preservation is particularly important because, once the last person with detailed knowledge of that tradition dies, it can survive subsequently only in a desiccated form. Analogous examples from European culture, which relate to the Gnostic and Celtic traditions respectively, are Valentine's Day and May Day. Once an oral tradition is extinguished, its physical remains and oral fragments are the only thing left from which it is possible to reconstruct some kind of understanding.

This does not mean, however, that wealthier nations should try to "fossilize" indigenous cultures, but rather that considerable efforts need to be made to ensure the continued development and evolution of traditional beliefs and ways of life. New computing and telecommunications technologies offer exciting possibilities for indigenous people to preserve and develop their own cultures on their own terms.

The late Eric Michaels examined some of the issues relating to indigenous people's use of recording technology in his book *For a Cultural Future* [12], which describes the use of video and television by the Warlpiri people of Yuendumu in Central Australia. The Warlpiri have integrated these technologies into their cultural practices in such a way as to preserve their sacred Law, or Dreaming (*Jukurrpa*). Michaels describes how these new technologies can serve to empower indigenous people if long-term strategies are put into place and bureaucratization of the funding, training and development process is scrupulously avoided [13].

The experience of the Warlpiri demonstrates that many of the perceived problems associated with the recording of oral cultures by Western technologies can be solved through self-documentation by the appropriate tribal members and peer negotiation between the custodians of the Law. Access to this recorded knowledge is then restricted to those who would traditionally have access to the corresponding oral forms. The problem is not therefore one of recording knowledge that was not meant to be recorded, but of the custodians of oral lore being given the opportunity to develop

protocols, customs and conventions for recording and disseminating oral knowledge in a way that is consistent with local traditions and community desires.

CULTURAL DEVELOPMENT AND EDUCATION

Most indigenous people have been politically disenfranchised since their lands were first colonized and have only recently started to gain equal access to Western educational facilities. Although computing and networking technologies may initially seem like "inappropriate" tools for indigenous people to be using ("like introducing the DNA of industrial societies into indigenous communities," as one academic recently expressed her concerns to the author), a growing body of research clearly demonstrates the advantages for learning and communication that these technologies present for indigenous people.

The earliest use of computers by indigenous people seems to have been in the United States. A number of pioneering projects in the early 1980s aimed at introducing computers to Native American children in the classroom to assist in the teaching of basic skills, including English, reading and mathematics [14].

Fig. 4. Faith Saunders, "Personal Questions" choice screen from the *Indigenous Australians: An Aboriginal Community Focus* CD-ROM, produced by Herb Peppard and Ralph Wayment in collaboration with Chris Knowles and a board of Aboriginal educators, 1995. Faith Saunders's personal screen with design based on her family totem, the possum. The screen displays the list of personal questions that the user can ask Faith.

The educators who initiated these projects have stressed that computer-assisted learning in the classroom is a culturally appropriate model for the teaching of indigenous children, for several reasons. For one, children brought up in a traditional community receive instructions and knowledge from a number of different people and sources, not just from one person, as in the traditional Western classroom. Because computer-assisted learning offers the potential to draw from any number of authoritative sources and obliges the teacher to take on the role of coordinator and facilitator, rather than authority figure, this kind of atmosphere appears to be more conducive to learning for indigenous children. Similarly, learning in a traditional society is predicated upon active exploration on the part of the individual (rather than simply rote learning), with visual and tactile feedback acting as the basis for this exploration. These factors are also known to play an important role in the computer learning experience [15].

Research such as that cited here indicates that the results of these projects have been positive, but as far as subsequent journal literature on the subject is concerned, articles and papers have been sporadic. Similar projects have

been undertaken by Australian educators in remote Aboriginal schools from the mid-1980s onwards [16]. The results of these projects have been similarly encouraging [17].

While indigenous children and their teachers face problems similar to those of Native American children and their teachers, communication between teachers of indigenous children in Australia and North American has so far been fairly limited—a point that highlights a more general problem. Since the early 1990s, Aboriginal and Native American educators and community leaders have started to communicate regularly with one another, and there is already evidence of cooperation and collaboration between the two cultures in the form of arts, educational and cultural exchanges, as well as the adaptation of educational materials from one cultural context to the other. For example, Nick Thieberger of the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) in Canberra has adapted software originally developed by Randy Valentine for computer-based story-telling of Native American folk history and mythology to Warnman stories from the Pilbara region of Western Australia [18]. No doubt other projects along similar lines will be developed in future.

NETWORKING THE NATIONS

Because of the size of the Australian and North American continents and the fact that a large number of indigenous people live in remote communities, communication within and between these dispersed populations has, until recently, been difficult. While the use of video, faxes and telephones is now fairly widespread in Aboriginal and Native American communities, there is a growing recognition by community leaders in Australia and North America that computer networking and video conferencing can further enhance communications within and between communities [19]. Indigenous communities throughout the world already share many things in common. Networking within and between indigenous communities internationally would make it much easier for them to compare and contrast their respective social, cultural and political situations. However, the expense and difficulty of obtaining equipment and training people in its use has limited these efforts so far. There are, however, a number of networking projects underway and a number of different ways in which computers are being integrated into indigenous people's everyday activities.

Since 1987, the Navajo Nation has made extensive use of computing technology for the management of its own sovereign government and industry. It has been using computers for administration, finances, resource management and nationwide elections, as well as for offering advice to, and providing technical support for, other Native American tribes in the U.S. and Canada [20].

A major development in more recent times has been the creation of Native-L, an international electronic network connected to the Internet that deals exclusively with issues relevant to the world's indigenous people. Native-L is a cooperative network run by Native Americans in Banff, Canada. Native-L provides information on conferences, festivals and special events relevant to indigenous communities; details of Native American studies courses offered at North American universities; as well as news groups and on-line newspapers and journals produced by Native American tribes from various parts of the United States and Canada [21].

Another locally developed Native American project is the Russell Country Bulletin Board System (BBS) run out of Hobson, Montana. Set up in 1990 with the help of Dave Hughes from Old Colorado City Communications Company, the BBS includes the Native American Share Art Gallery, whose purpose is, according to system operator and local teacher Cynthia Denton, "to promote and preserve the culture of Native Americans and the heritage of the American West" [22]. Seven Native American artists from five different tribes have created object-oriented graphic artwork for the Share Art Gallery, using NAPLPS (North American Presentation Level Protocol Syntax) software. If users want to download artwork, they simply purchase the work on-line. Eighty-five percent of the proceeds go to the artist. Visitors can also communicate with the artists through electronic mail (e-mail) via the BBS. The artists' tribes include the Assiniboine, Chippewa-Cree, Crow, Navajo and Sioux.

In the Tanamai region of Central Australia, another locally initiated project involves the use of video conferencing to keep elders of the Pitjanjajara tribe in contact with one another and also allows members of the community to stay in touch with loved ones who are presently incarcerated in White jails. Plans are currently being developed for extending the network to other regional centers.

Another Australian project called WESTNET, which I helped to initiate, consists of community organizations and non-government agencies in Western Sydney. It includes local Aboriginal community groups among its participants, and the project coordinators hope eventually to extend its user-base beyond the Sydney region.

The WESTNET project has been running since late 1994. It provides on-line resumes of the participating organizations and information about the services that they provide, as well as newsletters posted by arts organizations in the region and information about employment opportunities in Western Sydney. WESTNET also provides e-mail for its users and the opportunity to initiate news and discussion groups within WESTNET, as well as Internet access through the University of Western Sydney at Nepean.

The construction of on-line and off-line information databases is another form of networking activity that has been going on in Australia. For example, there are a number of computer database projects being undertaken in some of the remote Aboriginal schools of the Northern Territory. Graeme Sawyer and Bill Shuring recently initiated the NT Animals Database, which aims at compiling traditional Aboriginal knowledge of Northern Territory animals, including data on their behavior and habitats. The project began at one school that acted as the model for compiling the information. The database is now being extended by other schools, which are drawing on their own local knowledge. A similar project has been initiated by Jeremy Russell-Smith in the Palmerton region for the compilation of Aboriginal knowledge about Northern Territory plants.

The Aboriginal Visual Artists' Biographical Database is currently being developed by researchers Belinda Scott and Jane Dickens at the Australian Institute of Aboriginal and Torres Strait Islander Studies in Canberra. The database will consist of Aboriginal artists' names and addresses, some biographical information, collections in which their work is held, lists of exhibitions, awards, prizes and commissions received by the artist, any published references to their work and (once copyright problems are sorted out) an example of each artist's work. This project was originally initiated by Luke Taylor in 1988, in collaboration with the Institute of Aboriginal and Islander Studies and the Aboriginal

and Torres Strait Islander Commission in Canberra.

ABORIGINAL ARTISTS AND NEW TECHNOLOGY

There are a number of urban Aboriginal artists currently working with digital media in the Sydney region. Four of these artists are Rea Saunders, Geoff Ryan, Jason Mumbulla and Peter McKenzie. The works in Fig. 1 and Color Plate B No. 3 are by Rea Saunders from a series titled *Look Who's Calling the Kettle Black*. The photographic images incorporated into this work are from the 1930s and are of young Aboriginal women who were taken from their families as children and trained as domestic servants at the Cootamundra Mission in western New South Wales. The following is a quote from Rea's catalogue statement in a 1994 exhibition called "In Visible" by Aboriginal students at the College of Fine Art, University of New South Wales:

I feel that society traps black women in roles such as domestics, servants, slaves, etc. These images are about the structured environment men have created for women, which is kitchens, households, etc. It's a piece about oppression of women and how everything that happens to women or against women is trivialized. Even though most of the themes of my work are seen as quite political, I try to work with a sense of humour and enlightenment [23].

Some Aboriginal community groups and art and cultural centers, such as Murramai Aboriginal Graphics and Community Arts at Emerton in Western Sydney, use computers for the promotion of community-based art and social issues. Aboriginal artist Geoff Ryan acts as artistic coordinator for such projects at Murramai, using the skills of local artists for making basic designs on the computer. These designs are subsequently incorporated into posters. The artists are then reconsulted and the posters printed. Similar strategies are being used by other urban and traditional Aboriginal communities throughout Australia.

THE ENCYCLOPAEDIA OF ABORIGINAL AUSTRALIA INTERACTIVE CD PROJECT

Aboriginal activist and social theorist Marcia Langton has identified three different cultural approaches for understanding the intersubjective construction of "aboriginality" [24]. The first involves self-documentation by Aborigi-

nal people. The second involves racist and colonialist representations by non-Aboriginal people who are not familiar with Aboriginal people or practices [25]. The third involves collaborative work between Aboriginal and non-Aboriginal people in the process of cultural representation of Aboriginal issues. The Encyclopaedia of Aboriginal Australia Interactive CD Project is an example of the third approach to representing aboriginality. Feedback from the Aboriginal communities involved in the two parts of this project indicates that the models that were developed to produce these CDs demonstrate a sensitivity to Aboriginal concerns. This has ensured ongoing support from the individuals and communities involved.

This is the most ambitious Aboriginal multimedia project ever to have been undertaken and completed. Coordinated by Bill Jones at the Australian Institute of Aboriginal and Torres Strait Islander Studies (TAFE), the interactive part of the project was funded by the Australian federal government's Tertiary and Further Education Scheme and the New South Wales government's Department of School Education Board of Studies.

The project began by looking at the feasibility of using multimedia as applied to educational coursework for Ab-

original students. A prototype recordable video disc was produced in 1992 using HyperCard as a platform by Herb Peppard at Monitor Information Systems in Sydney and Chris Knowles, an Aboriginal multimedia worker and Regional Aboriginal Coordinator at Wollongong TAFE College. It was decided to use the CD-ROM format because 50% of secondary schools in New South Wales already possess CD-ROM technology, so there is a ready market for the finished product.

After the prototype disc was completed, it was decided that the project should be split in half with two complementary discs. The first disc, the *Encyclopaedia of Aboriginal Australia CD-ROM*, consists of 2,000 text-based articles from the print version of the Encyclopaedia, which is a two-volume hardcover work edited by David Horton from the Australian Institute of Aboriginal and Torres Strait Islander Studies and which was first published in 1994. Most of the CD-ROM articles are about 150 words long, but a cross-referencing function provides information on further readings both within and outside the CD. Each Aboriginal tribal group has at least one article about them in the text-based part of the Encyclopaedia for cross-referencing purposes. Approximately one-third

of the authors of the text material are Aboriginal. David Horton, Robyn Bancroft and Kim McKenzie from the Australian Institute of Aboriginal and Torres Strait Islander Studies in Canberra were the main researchers involved in this part of the project.

Users are able to choose a map of each regional area, which shows tribal boundaries as well as the Aboriginal language groups in the area. The maps also show major rivers and the modern state and political boundaries. It is hoped that in later editions of the CD the superimposition of Aboriginal place names over the English ones in each region will be added. It has also been suggested that it would be possible to work out family trees for each tribal region, which could be incorporated into future maps that would eventually cover the whole country.

The CD incorporates 1,000 still images, as well as graphics, audio and video. A search function allows the user to view the contents by place, event, person, tribe, language or "other." Printouts from the disk are not possible due to copyright restrictions imposed by the Aboriginal people and communities involved. Permission for reproduction of images for the print and CD versions of the Encyclopaedia were complicated by

Fig. 5. Opening screen from the "Community Section" topic on the *Indigenous Australians: An Aboriginal Community Focus* CD-ROM, showing Faith Saunders's relationships, etc.; produced by Herb Peppard and Ralph Wayment in collaboration with Chris Knowles and a board of Aboriginal educators, 1995. Screen showing the 22 participating members from the Taree community, identifying the immediate family relationships existing in the group.

a general distrust of the new CD technology and a belief that high-quality reproductions were possible from a CD, which is not actually the case with the existing technology. This CD has been commercially available since late 1994.

The second disc, now titled *Indigenous Australians: An Aboriginal Community Focus*, was produced by Herb Peppard and Ralph Wayment at Monitor Information Systems in collaboration with Chris Knowles and a board of Aboriginal educators. The original proposal for this disc was that it would consist of four different Aboriginal communities telling their stories. Two of the communities were to be in urban parts of Sydney—i.e. Eora in Redfern, and Tranby in Glebe. The other two communities were to be Burke in the outback, and Taree on the north coast of New South Wales. Of the four communities, Taree ended up being the only community to be documented in this way due to the financial restrictions imposed upon the project. Digital video footage of the Taree community was shot for the CD-ROM, and the disc was put together using Macromedia Director, a Macintosh-based multimedia authoring program.

The overall philosophy of the project was to let Aboriginal people express their perspectives on Aboriginal and non-Aboriginal history and society. The issues dealt with include the Arts and Cultural Issues, Employment, Health, Land Rights (Fig. 2), the Law, Spirituality (Fig. 3) and Racism. This information is person-oriented; informal group discussions of people from different age groups is coordinated by a host from the community, with close-up shots of each speaker. The host introduces issues discussed by the community and makes comparisons between them, as well as providing prompts to search elsewhere (Fig. 4).

Menus are limited to one main screen for ease of exploration. The family structure of the community is built in, as well as the occupation and relationships between different members (Fig. 5). Additional information on the community is drawn from primary sources and includes shots of the local landscape, newspaper articles, historical information on the establishment of "native institutions," as well as flyers and artwork from the region. The disc also includes a number of interviews with local artist Russell Saunders, whose artwork provides the basis for the different backgrounds used for menu screens.

There is also a timeline available, which gives a chronological context for

major historical occurrences in the Taree region. This includes landmark political and global events as well as newspaper articles, audio tapes, television clips and stills about the community over the years. A "magnify" option allows the viewer to get more detail on specific time periods.

Because the CD was constructed in a template format, this will allow other Aboriginal communities to add their own information to the CD in the future. All that is required to do this is a fairly high-powered Macintosh computer, a laser-scanner, a video camera and a digitizing board.

The whole project should be completed by February 1996, and the CD will then be available commercially. The response of the Aboriginal community involved in the production of the CD to its contents has apparently been very positive. The New South Wales Department of Tertiary and Further Education is now looking at instigating a multimedia course for Aboriginal students—most likely a multimedia programming course that would involve six students or so, who would then act as a bureau for encouraging other communities to participate and learn.

CONCLUSION

The traditional Aboriginal belief that movement through the land involves an intimate relationship between living beings and the environment, where the act of revisiting places is an act of reconstitution, of mutual healing and sustainment, is an appropriate one not only for understanding human relationships to the land, but for an understanding of the social and mental landscapes within which all human beings move. The struggle for social justice and human dignity means that the legal, political and economic bases for our relationships with one another and the land must be constantly revisited, in order both to sustain what we have already achieved and to renew and readjust those principles that are in need of attention.

It would appear that all of the projects outlined in relation to the development of indigenous telematics provide some cause for optimism. But there are a number of difficult issues surrounding these technologies for indigenous people which, although they have been resolved by some communities, need to be communicated about more widely in order for more people to benefit from

the knowledge that has already been gained. The opportunities now exist for the creation of global solidarity for indigenous people. The identification of common goals and the development of strategic alliances are the means by which this solidarity can continue to be strengthened in the future.

Acknowledgements

I thank Phillip George for his photography, Rea Saunders for permission to reproduce her work and Monitor Information Systems for permission to reproduce screens from *Indigenous Australians: An Aboriginal Community Focus*.

References and Notes

1. See Marcia Langton, "Well I Heard It on the Radio and I Saw It on the Television . . .": An Essay for the Australian Film Commission on the Politics and Aesthetics of Filmmaking by and about Aboriginal People and Things (Sydney, Australia: Australian Film Commission, 1993); A.J.S. Rayl, "New Technologies, Ancient Cultures: The Fate of Native American Tribes Depends on Preserving Past Traditions with Future Tools," *Omni* (August 1993) pp. 47–48, 80–81.
2. The word "syphilization," a play on the word "civilization," derives from the work of the French artist, poet, actor and playwright Antonin Artaud. The term refers to the disease and devastation wrought upon so-called "savages" by so-called "civilized" peoples in the process of colonization. See Antonin Artaud: *Collected Works*, Vol. 4, Victor Corti, trans. (London: Calder and Boyars, 1974).
3. "Lifeworld" is a term that derives from the German word *lebenswelt*, coined by the phenomenologist Edmund Husserl, and is used in sociology to refer to the rich fabric of everyday life, its beliefs and practices in different cultural contexts.
4. Witness, for example, the appalling exploitation by Australian, Korean, Malaysian and Japanese companies of forest, mineral and fishing resources belonging to the Pacific nations, or by U.S. and Canadian companies of traditional Native American lands.
5. See Grazia Borrini, "Health and Development—A Marriage of Heaven and Hell?" in A. Ugaldo, ed., *Studies in Third World Society* (Austin, TX: Univ. of Texas, 1986); John H. Bodley, *Victims of Progress* (Mountain View, CA: Mayfield Publishing, 1990).
6. See Edmund Carpenter, *Oh, What a Blow That Phantom Gave Me!* (St. Albans, Hertfordshire: Paladin, 1976); Eric Michaels, *For a Cultural Future: Francis Jupurrurla Makes TV at Yuendumu* (Melbourne, Australia: Art and Text Publications, 1989); Eric Michaels, *Bad Aboriginal Art: Tradition, Media, and Technological Horizons* (Sydney, Australia: Allen and Unwin, 1994).
7. See Angie Debo, *A History of the Indians of the United States* (Norman, OK: Univ. of Oklahoma Press, 1970); Clive Turnbull, *Black War* (London: Penguin, 1967).
8. So much has been written on this subject that it seems spurious to quote sources. More pertinent perhaps is the fact that indigenous people are taking these problems into their own hands, a case in point being the work of the Central Australian Aboriginal Alcohol Programmes Unit (CAAAPU), which provides men's and women's daycare, alcoholism counseling and treatment, and educational programs and organizes regional meetings and "sober houses"; the group has also been instrumental in the creation of so-called "Grog-free Zones" in Aboriginal communities in Central and Western Australia. Contact: CAAAPU, Congress Farm, Ragonesi Road, Alice Springs, Northern Territory.

Australia. The problem of ensuring a balanced diet within indigenous communities of Central Australia is being addressed by the Aboriginal-run Imparja Television, through a long-standing campaign of community-service announcements on health and dietary issues to its Aboriginal viewers, which has been well-received and has made a considerable impact on eating habits in the area.

9. "Instrumental rationalization" is a term that derives from the Frankfurt School of sociology and in particular the work of Theodor Adorno and Max Horkheimer. It is identified with a form of rationality known as positivism. Deriving its *modus operandi* from the mechanistic worldview of the natural sciences, its systematic aim is the technical control and domination of nature (including human nature) expressed by capitalism in the ubiquity of commodity exchange and "a continually refined administration of human beings and their relations to each other by means of social organization." (J. Habermas, *Theory and Practice* [London: Heinemann, 1973] p. 254.)

10. Michael Walsh, "Indigenous Languages—Research, Training and Community Service," unpublished grant proposal (Sydney, Australia: Sydney University, 1993).

11. Walsh [10]

12. Michaels [6].

13. Michaels [6] p. 25.

14. See Rhett Diessner, Edwin E. Rousculp and Jacqueline L. Walker, "English Fluency via Comput-

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15. Ruth Sower, "Towards Achieving an Interactive Education Model for Special Needs Students: The Computer Writing Project for Native American Students," *Journal of American Indian Education* 27, No. 1, 30–38 (1987).

16. For example, Mark Fryer, "Computers and Aboriginal Students," *Unicorn* 13, No. 1, 54–55 (1987); Marilyn Fleer, "Introducing Computers to Schools with Aboriginal Students," *Unicorn* 13, No. 2, 115–116 (1987); Marilyn Fleer, "A Cross-Cultural Study of the Implementation of Microcomputers into Schools," *Australian Journal of Educational Technology* 5, No. 1, 1–13 (1988); Marilyn Fleer, "Is It Hands-On or Hands-Off? Research into the Availability and Accessibility of Micro-Computers for Aboriginal School Children," *Australian Aboriginal Studies*, No. 1 (1989) pp. 31–36; Ralph Czerniejewski, "Literacy Production in Bilingual Schools in Central Australia," *Unicorn* 15, No. 4, 216–220 (1989).

17. See Ref. [16].

18. Walsh [10].

19. See Patric Hedlund, "Virtual Reality Warriors:

Native American Culture in Cyberspace," *High Performance*, No. 57 (1992), pp. 31–35; Rayl [1].

20. Don Steinberg, "Navajo Indian Nation Works toward Tribal Connectivity: Computer Networks for Native American Communities," *PC Week* (27 January 1987) p. 1.

21. To join the e-mail discussion group, send a message to LISTSERV@TAMVMI.TAMU.EDU. Leave the subject line blank and type the message: SUBSCRIBE NATIVE-L your name (first name last name).

22. Cynthia Denton, "The American Indian Share-Art Gallery: Electronic Democracy," *Whole Earth Review* (Summer 1991) p. 36. Russell Country BBS, 201 Third Avenue East, Hobson, MT 59452, U.S.A.; tel: 406-423-5505, fax: 406-423-5617, modem: 406-423-5433.

23. For more information on Rea's work, see Elin Howe, "Postcolonial Currents: The Work of Rea," *Photofile*, No. 40 (November 1993) pp. 23–25.

24. Langton [1] pp. 32–35.

25. While Langton acknowledges that racist and colonialist representations of aboriginality may distort or misrepresent Aboriginal people, she feels that such representations are nevertheless vitally important for understanding how Aboriginal people are culturally constructed by non-Aborigines.

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