

Centering Women in the Landscape

**Edited by
Daniela Stehlik**



**Centre for
Social Science
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&
Women in
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**Margaret Hornagold, Kristen Lyons, Marianne Gosztonyi Ainley,
Glenice Hancock, Leonie Daws, Daniela Stehlik.**

Acknowledgements

Our thanks to the Centre for Social Science Research, particularly, Ms Sheree Tait. Also to Melissa Myers who helped with the organising of the Workshop. Financial support for Professor Ainley's visit came from Women in Research at CQU, and from the Faculty of Arts, Health and Science and the School of Psychology and Social Sciences. Finally, this project would not have come to completion without Gayle Burling's tireless energy, professionalism and business-like approach to editing.

Daniela Stehlik

Welcome

Glenice Hancock, Professor
Vice Chancellor,
Central Queensland University

When I looked at the program for today, I couldn't be other than struck by the richness you are going to experience. A morning of sharing the achievements and contributions the four women are making to research as well as an afternoon of fascinating field trips. I would do anything to be able to spend this rich day with you. I am pleased that I am going to be able to stay for Marika's address. I am very sad I am not able to stay for the other addresses this morning or the field trips this afternoon.

I am very happy that Dani asked me to be here today. Just like you in whatever you are doing, I find I am quite fraught at the moment with a million different issues running that I am trying to juggle and that's just part of being alive and being interested at the beginning of the 21st Century. There is nothing unusual about that, but what is unusual in my life and I am telling myself that I need to make more opportunities for it, is to step outside my daily routine and to join with people of like interest and to explore ideas. If we lose our capacity to do that then the 21st Century is not going to be nearly as wonderful as we might hope it would be. I see today's program as being just that – an opportunity for people to stop the clock of their normal routine and to share knowledge and ideas. The result of this can only come really positive benefits for every individual here but also for every group that you work with, whether it be in the University or the larger community.

You are certainly going to have the opportunity today to centre yourselves in the landscape. The heavy sea fog marking our landscape here this morning, from Keppel Bay, has been a kind of poetic backdrop to the colloquium this morning. The fog has lifted as we have moved here this morning and it has almost gone, although I can't guarantee that it will not roll back momentarily and then disappear again. As that fog continues to lift this morning, so too I believe that many of you who may be feeling a little foggy about the directions and developments of your own research will start to get thoroughly focused again as you share the achievements of these four remarkable women researchers this morning.

We are indeed honoured to have Professor Marika Gosztonyi Ainley working with us at the moment. As the Visiting Distinguished Scholar this year, co-sponsored by the Centre for Social Science Research and the CQU Women in Research program, Marika's experiences as a committed scholar in various studies, a whole range of issues and First Nations history are indeed inspiring. I had the privilege, a week or so ago, of having about

half-an-hour of totally uninterrupted time, just sitting talking with her and that's been one of the shots in the arm of intellectual adrenalin for me over the last couple of weeks.

Dr. Leonie Daws, who I have also met before and found equally inspiring with her scholarly interest and experience in the area of Information Technology and Women in Regional and Rural Environments, will add another dimension to your conversations. May I say that I am particularly delighted and proud that we have two of our own CQU graduate students presenting today: Margaret Hornagold and Kristin Lyons. They will be sharing their research with us. Margaret, an Indigenous Elder from our region, will add a most important focus in the area of knowing our country and Kristin, who has just completed her Ph.D. - congratulations Kristin - will focus on women in agriculture, organics and the social and environmental impacts of science and technology.

CQU is a place that encourages women to develop and if Dani and I and the rest of you have anything to do with it, it will be a place that increasingly encourages women to develop across all areas of scholarly activity. So I am delighted that we have the opportunity to have this colloquium this morning and I want you all to become ambassadors. I am sure you all are ambassadors for CQU, encouraging women to join us as undergraduate students, as graduate and post graduate students and as members of staff, because we have the most unique contribution to make to the shape of higher education in the 21st Century. I am looking forward to sharing Marika's understanding this morning.

Thank you.

The Landscape – An Introduction¹

Associate Professor Daniela Stehlik PhD
Associate Dean (Research) &
Key Researcher,
Centre for Social Science Research
Faculty of Arts, Health and Sciences
Central Queensland University

The Central Queensland region stretches from the islands of the Great Barrier Reef in the east inland to Emerald and beyond in the west, north to Mackay and south to Bundaberg and the Wide Bay. It is home to the second largest river catchment in Australia – the Fitzroy. As a large, diverse and often challenging, ecosystem it can be seen as a microcosm of Queensland - and perhaps regional Australia - as a whole, particularly as we explore its historical landscape. Only settled by Europeans from the mid 19th century, this ancient environment has been country to generations of Indigenous Australians, and witness to their increasing dispossession over that time. Its more recent historical memory also includes indentured Kanaka labour in its sugar industry; the birth of the fledging Australian Labor party in its rural heartland; gold mining and great wealth, now depleted, in its coastal hinterland; the creation of vast agricultural enterprises, modelled originally on California, using precious water resources, moulded through great dams; and the clearing and husbanding of large tracts of land – brigalow country – for cattle grazing.

Industries in the early 21st century in Central Queensland now include tourism, cattle grazing, coal mining, horticulture, and sugar. Its large cities – Rockhampton, Mackay, Gladstone and Bundaberg are situated near its eastern coastline; offering their residents an urban lifestyle, but priding themselves in being ‘regional communities’ by comparing themselves more favourably to the large, urban centres to the south. As the regional ‘footprint’ of Central Queensland University, this landscape is home to many of our students; whose attendance at a regional University, located on their ‘doorstep’ in these regional centres, is an historical and cultural shift. In the past, they would have had to leave the region, perhaps for good, to seek an education in southern cities – now they study here, and, as I will discuss presently, find work and lifestyle here also. For many of our mature-aged women students, this opportunity opens up their possibilities, and changes their internal landscapes forever.

Central Queensland is a landscape not to be taken lightly, as it offers constant challenges its inhabitants. It is also a fragile eco-system, one that we are only now beginning to understand and attempting to manage in more sustainable ways. During the decade of the 1990s, most of it was suffering a long and severe drought that many believed would result in the collapse of the cattle industry – and thus, by extension, its regional

¹ Based on an informal presentation given at the Colloquium.

centres. As I write now, in 2001, that industry has recovered, cattle are once again to be found in the thousands in the landscape, and cattle prices are booming.

It is a landscape now criss-crossed (but not 'tamed') with major, sealed roads, enabling transport between centres, with the movement of people over vast distances in relative comfort. This has become both an advantage and disadvantage, as trends are showing that the large regional centres are acting as 'sponges' – soaking up the services once offered in smaller towns and hamlets. Where once the landscape may have appeared more populated, there are now settlements that are much smaller than they once were, or have all but vanished. To balance this, population growth has been around its coastline – from Hervey Bay to the south, to the northern beaches of Mackay in the north – where the landscape offers what many Australians seek – a place to call home near the beach.

Telecommunications have also taken up the challenge of the tyranny of distance the landscape offers. Central Queensland University has always made its courses available to the region through distance education. Now it also does so through on-line teaching and learning programs. The diffusion of computer technologies throughout Central Queensland homes is increasing as the telemetry underpinning it becomes more accessible. With the 'global' and the 'local' now truly intertwined through the harnessing of temporal and spatial 'communities', and regional populations are taking up the resultant new challenges.

Women in the Landscape

Since coming to Central Queensland in the mid 1990s, I have criss-crossed the region, travelling along its roads, visiting its industries and communities, and teaching students at our regional University. Most recently, I have spent time undertaking research in the Australian sugar industry – an industry that stretches from northern New South Wales to the wet tropics at Mossman – and one whose history is intertwined with the history of Queensland and Australia. It is an industry that, increasingly, is employing the female graduates of Universities such as Central Queensland. This is worth stating, as it is something very new and very exciting to be observed in our landscape, and the sugar industry offers an immediate example of this paradigm shift.

Working as scientists and engineers, as extension officers and as environmental officers and rangers, as community and economic developers, as Landcare and WaterWatch staff – these young women are taking up the challenges of living and working in the public domain and in industries which, traditionally, excluded women or in new 'industries' which, as a result of a shift in the way we view the landscape, have been created. The sugar industry, for example, while it employed its first woman chemist in the 1930s, has tended to remain a male dominated environment, where the relationship between the land and the science needed to farm it, was seen as the preserve of men.

More recently, as technologies and farm practices change, women are demanding a place at the decision making table in the sugar industry, as they are in all agricultural sectors. Their public involvement is changing the nature of their industries and communities, and in turn better preparing our whole society for the challenges of the 21st century. Information technology has become more than a toy for children, for many farm families it has become the crucial factor between being viable and going under. In the sugar industry, it is women who are taking up the diffusion of new technologies, and by doing so, establishing their right to a place in the public world of decision-making.

CENTERING WOMEN IN THE LANDSCAPE: A COLLOQUIUM ON GENDER, SCIENCE & ENVIRONMENT

This publication emerged from my reflection on the changing nature of women's roles in Central Queensland and the impending visit to the University in June/July 2000 of Professor Marianne Gosztonyi Ainley. In contemplating how we could celebrate Professor Ainley's visit, and enable her to share her research and views on women in Canadian history with us, it became clear that the link was the environment, and the changing roles of women, both in Canada and Australia. This focus then enabled me to invite three other women speakers to the colloquium, who each encapsulate one aspect of this changing role.

The colloquium was held in Yeppoon, on the Capricorn Coast, on Friday, June 23, 2000. Invitations were sent, through informal and formal networks, to women in Central Queensland. The Colloquium was also advertised in the local media. The day was divided in two parts – the first, held at the Keppel Bay Sailing Club, overlooking the beautiful waters of Keppel Bay, and with the Keppel Islands on the horizon, consisted of each of the four speakers presenting her research – their papers form the basis of this monograph. After lunch, participants were taken, by bus, to visit sites in the area where women were working in the landscape. These field trips enabled informal discussion between participants and speakers and enriched the overall experience for everyone.

The speakers

The celebration of women in the landscape needs to be seen historically. Of course, women have always been in the landscape. Even in the sugar industry – while the public domain may have had less women – women were working in the private domain, and their labour and efforts contributed to the overall success of industry. Reflections of our history enable a more informed view of the present. In that context, the historical research conducted by Professor Gosztonyi Ainley in Canada, challenges those of us in Australia to begin to seek out our own antecedents. Marika is currently Professor of Women's Studies at the University of Northern British Columbia, Prince George. Prince George, a community of roughly the size of Rockhampton, is similar in other ways to our regional centre. It also

houses a regional university, it has a similar sized population – about 70,000. It is also about the same distance from a major city – Vancouver – and it is the regional centre of an agricultural heartland – not cattle, but forestry. It also has its landscape challenges – not heat, but cold – not savannahs, but mountains. It has a similar Indigenous history, and as we shall read, a similar colonial past. Marika's presentation included a number of photographs – and they have been reproduced here to illustrate her paper.

. Women have always taken up the challenges of change – particularly the challenges of new forms of technology. Historically, as domestic technologies became more available to women, we eagerly sought them out as opportunities to release us from the drudgery of household chores. Australians as a nation have a high take up rate of new technologies – perhaps our 'pioneering' spirit now emerges in the excitement with which we embrace mobile phones, DVDs etc. In agriculture, new technologies have long been the key difference between remaining viable and going under. Now, in the 21st century, it is information technologies that provide this link. The empowerment of women through technology becomes one theme of this colloquium.

The other three speakers all live and work in Queensland. The paper presented by Leonie Daws explores the diffusion of new technologies in Queensland and their take up by women in regional and rural landscapes. However, her paper describes more than just the technologies and their take up, it also describes how this has impacted on women's lives, on their sense of self, and their place in their landscape.

Margaret Hornagold is an Indigenous Australian, who is currently a Masters student at Central Queensland University. In that sense, Margaret exemplifies the changing landscape for Indigenous women in Central Queensland in the 21st century. In her paper, Margaret reflects on the impact of European settlement of her ancestors' landscape, and on her own family in particular. She outlines how she and her family are working towards a Native Title claim – a formal process of re-establishing their legal connection to the land for which they have always accepted custodial responsibilities. Margaret also outlines the meaning this landscape has for her, and her concern for its long-term sustainability.

Sustainability is a theme of Kristen Lyons' paper also – albeit from another perspective. Kristen undertook her postgraduate studies at Central Queensland University. In researching the growth of the organic food industry in Australia, Kristen began to explore the role of women in that industry, and began thinking about the relationship between gender and agricultural practice. In particular, she began to explore with women and men in the organic food industry, their reasons for farming organically, their reasons

for rejecting more traditional forms of farming, and their relationships with the multinational companies that are now making organic products 'marketable'. In these 'situated knowledges' of the industry, Kristen begins to explore some important questions of gender and power, and the challenges that face those who confront change.

The centering of women in our (metaphoric) and (real) landscape is therefore linked to education, to history, to communities and to families.

I hope that you enjoy reading the papers, and encourage you all to consider the issues raised in them.

Daniela Stehlik

Re-centering women in the landscape: A post-colonial feminist historian looks at gender, science and the environment in Canada².

Marianne Gosztonyi Ainley, Professor,
Women/Gender Studies and History
University of Northern British Columbia
Visiting Distinguished Scholar,
Central Queensland University.

What do gender, science and the environment have to do with each other? How and why should we centre women in the landscape? And what do we mean by "landscape"?

Landscape is a western concept that originated in 15th century Italian art and, since that time, has acquired various meanings. The American heritage dictionary defines landscape as an "expanse of scenery that can be seen in a single view [or]...an extensive mental view; [it is also] an interior prospect." The term "landscape" is used in nature, art, and geographical studies. In western art, landscape is meaningful as a way of seeing and this way of seeing is bound in class relations. Landscape is also visual ideology because it "represents only a partial world view."¹ In geography the term refers to the "relation between the natural environment and human society."² It is worth noting here, that in Amerindian languages there is no word for landscape in general³ because for the aboriginal people of North America places have to be identifiable.⁴ Thus to "American Indian artists, the land is a dynamic and integrating force connecting religious beliefs and daily activities and the raw materials that become art. Landscape and the life in it are analogous to the life of the individual and the community."⁵ And because women have had central roles in Amerindian communities they formed a central part of identifiable places, of what we would refer to as landscapes.

So, landscape is a form of representation, "a way of seeing which we learn."⁶ As such, it should be a useful concept in environmental history and, as we shall see, in feminist post-colonial science studies. For the purposes of my own research I define landscape as a set of complex relationships consisting of people's power relations to the environment and within it to each other.

Canada is a huge country, with large tracts of forest, snow-capped mountains, long seashores, extensive and varied prairie region, as well as fragile sub-arctic and arctic environments. Distances are immense, as they are in Australia, and there are major differences

² Professor Ainley illustrated her presentation with slides and photographs. Some of these are reproduced here.
We apologise for poor reproduction, as some of the material is sourced from old historical archives.

in climate, soil, and resources from one bioregion to another. The impact of the various landscapes on settler society has been an integral part of Canadian literature -- and Canadian writers and literary theorists have seen the landscape as a dominant, and often negative, force.

While the landscape has "played a central role in the unfolding drama of Canadian experience ... historians have shown little interest in developing a more challenging and rigorous theory of its role in the past." ⁷ It was not until the early 1990s, with a growing interest in environmental studies, including environmental history, that historians have defined the landscape/environment as "an integrated human and non-human context within which all thought and activity must be situated."⁸ The new Canadian environmental history has been influenced by ecofeminism and integrates "processes such as class, gender, ethnicity, [and] setting..." ⁹ Despite the use of "landscape" in many other disciplines, the terms "landbase" or "environment" may be more useful for a historian. Landbase is "the interwoven aspects of place, history, culture, philosophy, a people and their sense of themselves and their spirituality, and how the characteristics of the place are all part of a fabric." ¹⁰ Environment is all of the above but we can broaden it to include spacescapes and seascapes as well as landscapes. For the purposes of this talk I will use the two terms -- landscape and the environment -- interchangeably. I would also like to point out that the landscape and/or the environment, have not been widely considered by historians of science. Some historians of the field-oriented sciences, such as natural history, ornithology, and ecology, have already dealt with particular environments as habitat, territory, or ecosystem and people's relationship with them. Those working on scientific institutions have rarely used, however, the term institutional landscapes, to describe the setting, people, and power relations found in the institutions where, for more than a century, modern scientific research has been carried out. Clearly, a lot of work needs to be done in this area. So it is imperative that feminist historians of science should ask where women and their knowledge have been located in the various scientific landscapes. And while many of us have already studied how women are represented in the histories of scientific disciplines or in institutional histories of universities, government research institutes, and industries, we have not necessarily considered these as parts of the institutional, or more broadly defined scientific, landscapes.¹¹

As a feminist historian of science, I analyse gender and other power relations in science. I can do this by regarding landscapes as a place of complex power relations between the human and non-human constituents of environments, as ever changing processes. That is I look at both the external ("natural") and the scientific landscapes as active forces. No landscape is never static, but keeps changing due to natural and human-made causes and this affects women and men's ongoing relationships to particular environments and to each other.

What does it mean that a landscape or environment is never static? Think about the changes throughout the earth's history caused by magnetic storms in the solar system, or the ice

ages, meteorites and volcanic eruptions, or natural fires and floods -- all of which have had local or global impacts on the earth and its inhabitants. Human factors have also contributed to environmental changes. Among these were the development of large-scale agriculture in various parts of the world, wars, plagues and other epidemics. In addition, major human migrations, such as those from the far east to Europe from 10,000 BC to 1000 AD, from the far east to Polynesia and the southern hemisphere, the Northern Circumpolar migrations from Asia to the Americas and, more recently, colonial expansion from western Europe to various areas of the world, contributed to environmental changes. Humans altered the early landscapes first by building roads and dams, cutting down forests, and establishing new settlements. In Europe, at least, this was followed by urbanization, industrial development, and pollution.

Women were central to the pre-contact landscapes of North America, Australia, and New Zealand as important members of aboriginal societies. Women were also central to the activities of agricultural societies in various parts of the world. It is difficult to realize this now, given that the western practices of history and archaeology (both of which were studied, written, and interpreted by men for men) have long ignored and excluded women and their activities from the historical record. Written documentation, landscape paintings, and photographs have reflected existing gender and other power relations such as race and class. But what has been excluded from the documentation is as revealing as what has been included. The exclusion of women and others from written, painted, and photographed landscapes resulted in what I will call gynopic landscapes – landscapes, which represented a reality perceived by those in power. According to the American sociologist Shulamit Reinharz, gynopia is the "inability to perceive women or to perceive them in undistorted ways" ¹² and we can see that most western books, articles, and visual art have excluded women from the centre by marginalizing and trivializing their activities and accomplishments. In other words, historical, geographical, literary, and artistic landscapes have long featured men in dominant and women in supporting roles.

All this has begun to change during the past forty years. Since the Second Women's Movement of the 1960s, feminist historians, writers, and artists have attempted to re-center women into re-configured historical landscapes. They have begun to restore women to history and their history to women, and question the historical interpretations that have privileged men.¹³ In the process, they have increasingly de-centred men as the heroes and protagonists of history and opened the way for alternative feminist post-colonial readings of our past.

One may ask but why do we need to re-centre women into the landscape? Weren't they always there? After all women have been part of the ever changing landscapes of human "herstory" as mothers, homemakers, healers, shamans, and story tellers. They were the keepers of knowledge about life, the land, the seasons, and human relationships; they wove their life-experience into tapestries, rugs, decorated their potteries, and told and wrote fables and stories.

Women around the world were integral parts of the various landscapes, of the environments where lived. We must consider, however, that "issues of place and landscape are closely linked to ideas of nature"¹⁴ This means that, for more than two thousand years, European ideas about nature and women have led to the domination of both.¹⁵ This has had implications for western science and the state of the environment and led to asymmetrical power relations with the result that women and their knowledge have been written out of the centre.

I must stress here that as a feminist historian of science I look at gender, science, and the environment in a different way from geographers and literary scholars and also from my more traditional colleagues. Historians of science have concentrated on theories, experiments, scientific institutions, issues of funding, as well as the discoveries, by (mostly) western European scientists (all men), rather than the details and environmental contexts, of the above. Not surprisingly, their works have rarely touched on the realities of people's lives.

It is revealing to recall one of my earliest experiences as a middle-aged graduate student who returned to an academic environment after a dozen years of doing double duty as a mother and an invisible chemist in a variety of institutional settings. During the second half of this period, I had taken the opportunity to learn about the ecosystems (and hidden landscapes) of Montreal, Quebec, where I then lived. While many of the natural landscapes (themselves the results of ecological succession) disappeared during the 1960s and 70s, small pockets of woods, field, and wetlands survived due to the efforts of local conservation associations. One could walk, sit quietly and listen to bird-song in these natural areas; one could also learn about their ecosystems, such as the climax hardwood forest with its canopy of maple and oak trees and an under-storey of wild plants which, in the spring and early Canadian summer months include blood root, Dutchman's britches, trout lily, white and red trillium, pink lady-slipper, several kind of violets, sarsaparilla, wild ginger, and dozens of other plants. By talking to other like-minded people and searching through field guides and handbooks, I learned about the properties of medicinal and food plants, the previously widespread habitat, and the life history and behaviour of many animals. I could look at seemingly featureless and barren, snow-covered, winter landscapes and imagine the active and complex lives of organisms that live below several metres of snow including the beaver, muskrat, and field-mice. For me, both visible and invisible landscapes have acquired other dimensions.

I took this new learning with me when I entered the *Institute d'histoire et de sociopolitique des sciences* at the University of Montreal in January 1977. Imagine my surprise when I found that none of my learned professors knew about the various plants, animals, and their ecological relationship, which had been "discovered" for western science since the 16th century in the geographical area now known as Canada. As graduate students we learned about the natural history studies of Michel Sarrazin (1659-1734), the French king's physician in early 18th century Canada, who sent plants for the *Jardin du Roi* (the King's Garden) in Paris, but no

one was interested in the habitat, appearance, life cycle or medicinal use of *Sarracenia purpurea*, the spectacular pitcher plant, which had been named after Sarrazin. It took me another dozen years to find out that we should have also discussed Sarrazin's contemporary, Cathérine Jérémie (1664-1744). She was well known to her contemporaries as a midwife and herbalist who collected and used native medicinal plants. She was also a western-style plant collector, who provided careful description of the use and effects of the native medicinal plants, which she sent to the *Jardin du Roi* along with the appropriate plant specimens.

Finally, I overcame my initial graduate student timidity and took along my plant and animal guides to show my learned professors what the 'discoveries' actually looked like. Their reaction amazed me because I did not realize that I have just encountered academics wearing blinkers. My professors discussed the history of Canadian science, then an area of scholarship very much in its infancy, but did not ground their knowledge in reality. At the time, research and writing in the history of science were conventional. In the literature available on the subject, science (to be considered science) had to be European its origins, practised by white men, and mostly in the laboratory. Aboriginal knowledge, like women's knowledge and contributions, was excluded from the new histories of science, despite the fact that the original 16-18th century sources gave considerable emphasis to the environmental and medicinal knowledge of Amerindians. So, while my professors were polite, they did not think it important to find out about the organisms and environments we discussed and did not change their ways of seeing.

According to art historian John Berger, the "way we see things is affected by what we know and what we believe... We only see what we look at. To look is an act of choice... We never look at just one thing, we are always looking at the relations between things and ourselves."¹⁶ My professors, like many other historians trained in the western tradition, chose to look at texts, and perhaps some images, but ignored their relations to the landscape, the environment. This raises the question, what do we find in the written and visual historical material about women, nature, and science? And what can I do, as a feminist postcolonial historian of science, to counteract the de-centering of women and others from landscapes, from written and visual documentation, from history, and the history of science?

As I mentioned before, I look at gender, landscape, nature, the environment, history, and science as processes. Like other feminist historians, I ask what does the absence from the historical record of women, aboriginal peoples, and non-British immigrants to former British colonies mean in how we look at the past? Since I began my research on the history of Canadian science, twenty years ago, I have been often struck by the fact that women and aboriginal people rarely figured explicitly in the secondary historical literature on science. I also learned that they could be rendered visible by searching through previously published texts and unpublished archival material. Until relatively recently, in Canada, most of the historical

literature was about who had contributed to Canadian science -- namely white men. There was little written about women's contributions, and almost nothing about aboriginal peoples, even though they had been mentioned in the letters and journals of 16th to 20th century explorers, missionaries, Hudson's Bay company fur-trade personnel and members of early settler society.

How did I go about re-centering women into the Canadian landscape of science? During my initial search, in 1984, of the scientific literature published in Canada and the U.S., I found that a) there have been many more Canadian women scientists than we have ever heard of, b) women scientists published articles in prestigious scientific journals and c) they were members of the various scientific associations, d) many of them were given awards and other honours by their respective scientific communities. In the following years, funded first by a post-doctoral fellowship, and later by a series of government research grants, I began investigating women in science. As part of my background research, I read the new feminist literature on women and postcolonial literature on aboriginal people and colonial expansion. This led to my questioning theories regarding colonial science, and I developed a broad interdisciplinary perspective on science. My definition of what constitutes science has changed to include aboriginal environmental knowledge, women's contributions, and the applied and social sciences, in addition to the "basic" sciences of physics, chemistry, and biology.

During this research process, I asked a series of interrelated questions, the following of which are relevant to the topic of this paper:

- Who really were the contributors to 17th, 18th, and 19th-century natural history studies in what is now Canada?
- Did women go out into the field?
- What were women's contributions to the study of Canada's varied environment?
- What were the roles and experiences of 17th-19th-century white women "colonizers" in Canadian science?
- What were the gender implications of different scientific fields at different historical periods?
- How did family life influence women's experiences in science?

After several years of research I accumulated sufficient data to be able re-interpret our scientific past and challenge mainstream/ malestream histories of Canadian science. What did I challenge and how did I do that? Briefly, my findings challenged a history of Canadian science that accepted a theory represented by George Basalla as a model of the "Spread of western science," published in Science in 1967. The Basalla paper presents the underlying assumptions of most historians of science regarding science in the former European colonies, including Canada and Australia.¹⁷ Basalla was particularly interested in the process of diffusion of western science, from western Europe to other parts of the world and thought that this occurred through direct contact with a Western European country, because through military conquest,

colonization, imperial influence, commercial, and political relations, and missionary activity, the nations of Western Europe were in a position to pass on their scientific heritage to a wider world.¹⁸ He identified the "carriers of western science... [and asked] by what means is a flourishing scientific tradition fully recreated within societies outside of Western Europe?"¹⁹ He then constructed a three-phase model based on publications regarding the diffusion of western science. Phase one of the model represented the period, during which "the non-scientific society or nation provide[d] a source for European science" (the term 'nonscientific' here means the 'absence of Western science'); phase two was a period of colonial (in the sense of dependent) science and phase three completed "the process of transplantation with a struggle to achieve an independent scientific tradition (or culture)."²⁰ The above model has generated much debate concerning its applicability to particular countries and historical periods. In 1978, there was a conference in Melbourne on "Scientific Colonialism." In 1985, there was another one, in New Delhi, on "Science and Empire." Several other conferences in the 1990s focused on science and empires. The published proceedings of these international conferences indicate that although scholars from a number of countries, such as India, Sri Lanka, Turkey, Australia, and Canada critiqued Basalla's model they did so from a male-centred, or androcentric perspective.²¹ Other presentations were given from both androcentric and eurocentric perspectives. Only D.J. Mulvaney and Gail Avrith-Wakeam dealt with issues of race, and at least mentioned women, at a 1990 'workshop,' in their discussions of Australian and Canadian anthropology, respectively.²²

I have found this lack of gender and race analysis quite disturbing. I felt that by the late 20th century historians of science should have learned enough from more than a decade of post-colonial studies, aboriginal studies, and women/gender studies not to perpetuate Basalla's eurocentric and androcentric language and assumptions. There are many new studies and approaches that look at European expansion and European/native encounters in a variety of different, and increasingly more symmetrical, ways, which contribute significantly to our understanding of the complexity and specificity of the impact of western science on the various European colonies. The combination of new perspectives and new methods have already led to more finely nuanced studies of American, Canadian, and Australian histories (including women's history), the histories of particular scientific fields, and the creation of new histories of science in various non-European countries. The new story-telling/ history includes more than missionaries, rugged European explorers, navigators, army surgeons, and their successors the modern specialists -- stereotypic white men in white lab-coats who work in laboratories. We are discovering that the phases of this history were not necessary clear-cut and that not all the contributors to science were part of the dominant western culture, or of the dominant gender.²³

How does all this relate to my research? Recent works on Canadian history, women scientists, and aboriginal environmental knowledge demonstrate that both European and First Nations (or aboriginal or native --and I will use these terms interchangeably!) women have

contributed substantially to western-style natural history explorations and investigations in what is now Canada. These new accounts, combined with a reinterpretation of the early evidence, help us realize the changing nature and complexity of Canada's 17th-20th century scientific communities and enable us to challenge malestream histories of Canadian science.

My closer reading of the correspondence of 19th century Hudson Bay Fur-Trade Company employees (many of whom married native women), and of American naturalists in the Canadian Arctic (who were funded by the Smithsonian Institution in Washington, D.C.,) revealed their reliance on the participation of aboriginal peoples in natural history work, such as the collection and preparation of geological, botanical and zoological specimens. The letters also documented the environmental knowledge of native women and men.

Reading between the lines of 18th and 19th century published and unpublished scientific texts, diaries, and letters provides numerous other references to aboriginal contributions to science. The search is difficult using conventional historical records because western-trained scientists and people of the First Nations have different conceptual frameworks and this has resulted in western scientists discrediting all other knowledge systems and rarely, if ever, acknowledging the scientific contributions of others. Consequently, until recently, aboriginal people, like women, were written out of histories of science. We can create, however, more symmetry by broadening our framework, and doing interdisciplinary research, which incorporates the oral accounts of aboriginal people to obtain their perspectives on the past. These oral histories produced by the collaboration of Canadian anthropologists and native elders, such as Julie Cruikshank, *Life Lived Like a Story: Life Stories of Three Yukon Elders* (1990), contain numerous references to environmental knowledge and native-white encounters. In addition, the re-evaluation of the importance of women among the different First Nations prior to the 20th century helps us realize how central they were to various parts of the Canadian landscape.²⁴

Some of us have used a combinations of archival and oral history research to study the role of women, and of gender and other power relations, in Canadian science, for nearly two decades.²⁵ Oral histories done with women who, until a decade ago, were excluded from the historical literature, have provided new perspectives on the composition and practices of the Canadian scientific community. Re-reading the written, and re-interpreting the visual, evidence from feminist/post-colonial perspectives and combining these with data from other sources leads to new historical interpretation of Canadian science and further challenge mainstream historical research in several interconnected ways by:

- 1) Clarifying the relationship of the various sciences and their practitioners in Canada to European and American science,
- 2) Modifying earlier theories (including Basalla's) about the development of Canadian science,

- 3) Introducing gender, race, and class into our studies of the professionalization of various scientific fields and the functioning of our scientific institutions.

While I will not have the time to go into much detail, it is now evident that the diffusion of European science to Canada and the collection of specimens for European scientists during phase one of Basalla's model, was not done entirely by white men trained in the European scientific tradition. White women, such as the French Ursuline nun, Marie de l'Incarnation (1599-1672), and the abovementioned Catherine Jérémie, as well as First Nations women and men, also contributed to western science for over 300 years. In the past their names were rarely noted, while their contributions were taken for granted and hardly ever acknowledged. In Canada, during phase two, or colonial science dependent on European theories and institutions, was not only done by, male scientists with European training. Basalla, like many of his contemporaries, used the term scientist to refer to white men. There is considerable evidence that in Canada, the United States and Australia, by the early 19th century, white women were also active in, and very much part of, colonial science,²⁶ and that in Canada, by the mid-19th century, the centre of science has begun to shift from Britain to the United States.

What did settler-women do in the pre-professional period - that is during a time when science was practised more in the field than in laboratories attached to scientific institutions; at a time when there were few people who had made a living from doing science. My answer is-- that they did quite a lot. I already mentioned women who were part of the French settler culture. Later, Anglo/Celtic upper-class women, such as Lady Dalhousie (1786-1839), Anne-Marie Perceval (1790-1876), and Harriet Sheppard (d. 1837) -- British-born and educated wives and mothers -- were, in 1824, among the founders of Canada's first scientific institution, the Literary and Historical Society of Quebec. They conducted extensive fieldwork and published articles on botany, zoology, and ethnography in the Society's *Transactions*. The three women belonged to an international network of scientific exchange and correspondence and while their male contemporaries continued to regard Britain as their scientific centre, the Lady Dalhousie circle had already established an additional network within the U.S. The involvement of the Dalhousie circle in a second, American, scientific, network demonstrates that by the 1830s science in Canada depended less on British influence and support than we would have thought twenty years ago and that early 19th century upper-class women were far from marginal in an emerging Canadian scientific community.

According to Basalla, during phase three -- the development of a national scientific tradition -- scientists establish major ties within their own country, receive most of their training there, gain respect and earn their living as scientists, find intellectual stimulation, publish in their own journals, and obtain rewards. From my historical research it has become evident that these scientists were not all white men. In fact, I can document that women already contributed to Canadian science education and research throughout the 19th century.

From the mid-1830s to the early 1900s educated white Anglo-Canadian women, such as Catharine Parr Traill (1802-1899), Annie Jack (1839-1912), and Eliza Jones (d. 1903) carried out botanical, zoological and agricultural studies in the field, published popular works on botany and agriculture and, at a time when few men in Canada received pay for their scientific work, these women were paid for their science writing.²⁷ Their works were widely read and praised in England, Canada and the United States. As popular science educators, they influenced three generations of immigrant and Canadian-born readers. In addition, First Nations women and men continued to provide environmental knowledge to western scientists well into the 20th century. During the 1832-1899 period, Catharine Parr Traill [1] referred to native women's knowledge and use of plants in a variety of publications.²⁸ In 1908, Roderick Macfarlane, a high level employee of the Hudson's Bay Company wrote about the zoological collections made and sent to the U.S. by the Cree naturalist Charlotte Flett King.²⁹ From the 1920s to the mid-1950s University of Alberta zoologist, Dr. William Rowan sought and obtained data on the cyclic fluctuation of fur bearing animals and game birds from native hunters and trappers.³⁰ During the 1930s, the anthropologist Ruth Landes developed a symbiotic relationship with Ojibwa ethnographer and medicine woman Maggie Wilson,³¹ [2] while in the 1950s McMaster University botanist Lulu Odell Gaiser's worked closely with Mrs. Pennance, an Ojibwa botanist and medicine woman.³²

What about white women of the Anglo/Celtic and French settler cultures? What were their roles in late 19th century and in 20th century science? We now know that the institutionalization and professionalization of science in Canada took place in the late 1800s and early 1900s. At this time western science was undergoing major changes, becoming more narrowly focused, and more specialized. This meant, that trained scientists conducted detailed investigations of nature in laboratories attached to the universities or government research institutions. Laboratory experiments supplanted field studies in many areas, while in other sciences laboratory and field investigations became integrated. Combined with the trend towards specialization was an improvement in women's educational opportunities. By the 1890s, better economic conditions made higher education available for more people than ever before. Anglo-Canadian middle-class women studied science at a number of Canadian universities, and a few of them even found faculty positions, but their advancement suffered because they were women. Nevertheless, in English-speaking Canada by the early 20th century, science became a career option for both men and women. While neither the availability of professional positions nor the possibility of career advancement were as good for women as they were for men, many women science graduates found employment at private and public schools, universities, and the federal government and industry. Others did scientific field or laboratory work as volunteer investigators -- that is they did science, but did not get paid for their work.



Catherine Parr Traill [1]

Maggie Wilson [2]



In Quebec, French women's education lagged behind the rest of Canada. Catholic nuns taught science to girls and also pursued botanical fieldwork. That is they collected plants both for their own interest and for other, male, botanist. But, in contrast to Anglo-Canadian women who studied science and obtained graduate degrees at most Canadian universities after World War I, few French-Canadian women pursued science and even fewer obtained graduate degrees until the second half of the twentieth century. There were, however, women undergraduates at the Université de Montréal, where, beginning in the mid-1920s, they enrolled predominantly into the departments of nursing and public health and to a lesser extent into botany, zoology, and chemistry. After graduation most of them performed "women's work"--either in the health sciences as nurses or hospital laboratory technicians, or as laboratory technicians in the pharmaceutical and chemical industry. My attempts to obtain systematic information on women working in hospital and industrial laboratories were largely unsuccessful because hospitals keep staff files for about fifteen years, and industry only for seven. Based on my personal experience as a laboratory technician at Imperial Tobacco Company, 1959-1963, and the Queen Mary Veteran's Hospital, 1964-66, (both in Montreal), I know that there were many French-Canadian, and a few aboriginal, women who performed industrial quality-control laboratory work, and routine medical laboratory tests -- both of which can be considered low status "women's work" -- work that leads to invisibility in the institutional landscape of science.

What about Anglo-Canadian women? My initial research revealed that beginning in the 1890s, they worked at universities as well as at various government institutions: some of them did field work, though most of them conducted laboratory investigation. Because of *gynopia*, many of them remained invisible to male historians, even though women scientists achieved recognition in their respective scientific communities (e.g. geology, zoology, botany, astronomy, chemistry, and physics). I was determined to right the record. After all, I had first hand experience in science: twenty years in various laboratories as an invisible chemist, and fifteen years in the field as a volunteer investigator in ornithology. So I knew that there had been many women in the Canadian scientific community and I had to do something to re-centre them into the scientific landscape.

Non-historians may not realize that historical research is both labour-intensive and expensive. With the help of several research grants (mentioned above) I was able to embark on a long-term research program, the first phase of which was on women in the field oriented, and the second phase on the laboratory based and social sciences. For this work I conducted archival research at the National Archives of Canada, the National Research Council, several provincial archives, astronomical observatories, natural history museums and at more than twenty Canadian universities. This work resulted in relatively detailed institutional and personal information on the working lives of nearly three hundred women scientists who had been employed in science or science related occupations since the 1880s. In addition, I

obtained some basic information on hundreds of other women who worked, albeit for relatively short periods of time, in a variety of low-level positions in science. I also collected interviews with, or about, one hundred women scientists who studied science between 1890-1970. Fifty of them taught at universities, many others worked at government research institutes and a few made their mark on science as volunteer investigators. In ten years I acquired a large database for a comparative study of gender, science, and environments in Canada. There was already available detailed information on many hundreds of male scientists.

The search was not quite as straightforward as it seems when I talk about it. I spent many hundreds of hours in dusty archives seeking and finding evidence -- even though I was often told that there was nothing there about women. Nevertheless, I found references about women, in the field and in the lab -- among the papers of male scientists. Two of the early 20th century women in the field whom I "discovered" this way were Dorothy Mitchell [3] and Elsie Cassels (18). The former was the daughter of H.H. Mitchell, naturalist/collector at the Saskatchewan Museum of Natural History. In a letter he wrote to J. H. Fleming, a wealthy Ontario naturalist/ornithologist³³ Mitchell mentioned that he had hired his daughter Dorothy as zoology field assistant and that she worked both as a camp cook and collector of bird and mammal specimens. At the time Dorothy was a student at the University of Saskatchewan, but there are no records there about these summer activities. The *Annual Reports* of the Saskatchewan Natural History Museum for 1922-25, mention only a "field assistant" was hired by Mitchell not that this was his own daughter.³⁴ Perhaps they did not know, or, if they did, it was not publicized because anti-nepotism rules were often used as an excuse to keep women scientists out of the laboratory and the field.

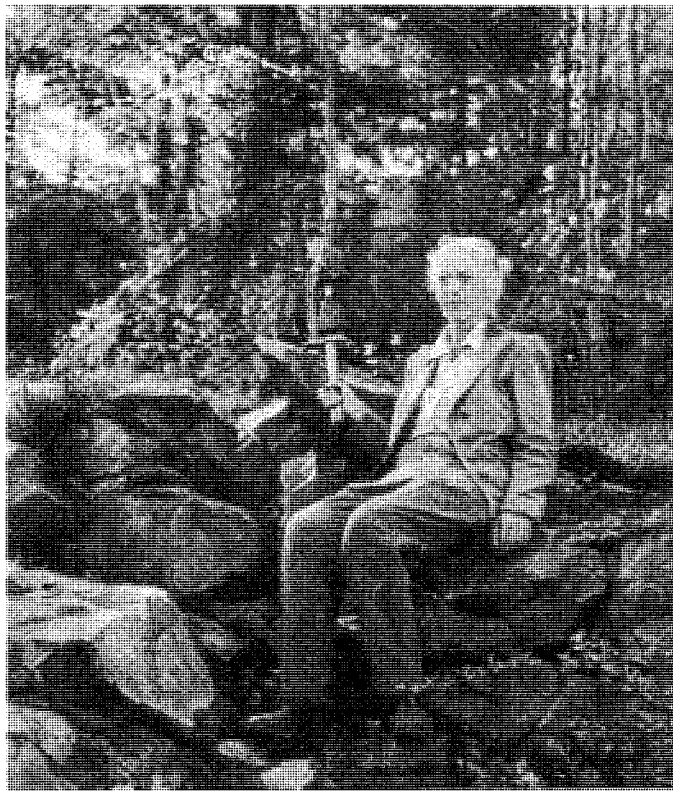
I found Elsie Cassels in a similar way in the National Museum of Science archives, in the correspondence of Percy A. Taverner, the museum ornithologist with Dr. William Rowan, a professor of zoology at the University of Alberta. The extensive archival holdings of Rowan at the University of Alberta provided more detail and even some photos of this Scottish-born settler on the western prairie who, in 1917, in Alberta, was the first woman to become the Vice President of a Canadian natural history society.

Further research revealed that Canadian women had been involved in the early conservation movement. They were active members of the Ottawa Field Naturalists Club since the 1880s, and in 1917 founded the Province of Quebec Society for Protection of Birds (PQSPB). They carried out fieldwork and functioned in a variety of roles in Canadian habitat and wildlife protection as volunteer scientists and, beginning, in the 1960s, also as rangers, park naturalists and government scientists. Women worked in marine biology since the end of the 19th century but it was mainly as volunteer investigators. Paid positions became available in the late 1940s, but these were mostly in the laboratory at the Atlantic and Pacific biological stations respectively. The situation was different in geology and the plant sciences.



Dorothy Mitchell [3]

Alice Wilson [4]



Women studied since the second decade of the 20th century at several Canadian universities but most of them found actual scientific positions only after 1950. Even then, most of them performed "women's work" in the geology laboratory, but few conducted fieldwork.³⁵

Dr Madeleine Fritz (1896-1990) at the Royal Ontario Museum and the University of Toronto, and Dr Alice Wilson (1881-1964) [4] at the GSC in Ottawa went out into the field, in spite of the male geologists' objections to such activities. Because Alice Wilson's story documents the difficulties women faced in a very macho, typically male, field oriented science, namely geology, I will go into some detail.

Born at Coburg, Ontario in 1881, Alice Wilson came from an educated family that spent much time in the outdoors. Officially, she studied history and languages at Victoria College in Coburg (part of the University of Toronto), unofficially she attended numerous science lectures, especially in geology and palaeontology, but because of an illness did not graduate. Instead, she worked for two years as a clerk at the Royal Ontario Museum of Palaeontology (1907-09). In 1909, she passed her civil service examinations in German, Latin, and stenography, and was hired as a clerk in the Geological Survey Museum in Ottawa to perform the routine work of cleaning and classifying palaeontological specimens. Her superior, the invertebrate palaeontologist Percy Raymond encouraged her scientific interest, "told her that without a degree she'd always be a clerk," and arranged for a paid official leave to finish her degree.³⁶ Alice Wilson, B.A. was thirty years old when she became a full-time museum assistant. She liked museum work but "longed to go on field trips, as the men did." ³⁷ Percy Raymond was supportive, but the survey administration was not.

Long expeditions were out of the question, since it would have been considered scandalous, in 1913, for a woman to camp out with a group of men. Having convinced the survey that it would cost little to send her on short trips, Alice [Wilson] chose ... The relatively unexplored Ottawa-St. Lawrence valley. This area of about 10,000 square miles is of great interest to geologists because it has a wide range of fossils from the Ordovician era.³⁸

Survey officials used various strategies to keep this tall, slim, adventurous woman in her place. For instance, they allowed her to go into the field, on her own, but would not give her "a car for field work when they were being issued to all the men. They gave her a bicycle." So she "bought a Model T Ford," and her superiors could not understand how she could cover so much ground. ³⁹ Alice Wilson was certainly highly visible in the field. She wore a specially made Cossack hiking suit and knee-high boots, "chipped fossils from the sedimentary rock, scrambling down quarries" or hiking up steep hillsides. On a "preliminary survey" for the US and Canadian governments "for a St. Lawrence valley deep water way and electric power project" she was lowered in a basket down one of the probing shafts to examine the strata. ⁴⁰

Doing fieldwork alone was liberating, but lonely. The Survey still would not allow her to camp out with men but her work in the "Ottawa valley whetted her desire to explore other areas rich in Ordovician fossils" such as "the west shore of Lake Winnipeg in Manitoba." Alice Wilson invited Madeleine A. Fritz, a young teacher, to accompany her on a fossil collecting expedition.⁴¹ Later Madeleine Fritz studied palaeontology and had a relatively good career for a woman. As the head of the Royal Ontario museum of Palaeontology, she often went into the field. The adventurous six-week trip prompted Madeleine Fritz to enrol in the doctoral program at the University of Toronto. She obtained her Ph.D. in 1926.⁴²

In addition to gaining more field experience, Alice Wilson wanted more formal training. She had already worked on the comparative anatomy of marine organisms at the Cold Spring Harbor Marine Biological Station on Long Island in 1915 and she wished to pursue graduate studies. But, while men had been granted paid leave to do so, Alice Wilson's applications for graduate study leave were regularly rejected. She was well aware that she was refused because of her gender.

After an absence of nearly two years because of illness, in 1924, she once again asked for permission to do post graduate studies. Knowing that fieldwork would be an issue, she wrote I have done field work in connection with most of these problems and with reference to further field work of the more strenuous type I would like to point out that while not heavily built I am muscularly very strong, and from earliest childhood have been accustomed to an out-of-door life both with canoe and tramping...⁴³

Kindle, by then chief of the palaeontology division, supported her request. Dr. W.H. Collins, director of the GSC, had other ideas. He replied: In all other instances the individual concerned [wishing to have a study leave] was a field officer regularly and independently occupied with field investigations, and post-graduate studies were regarded as a means of increasing his usefulness to the geological survey. Since geological field work in Canada is practicable for women only under exceptional conditions, your work has consequently been mainly in the laboratory ... It is not clear to me, therefore, that your usefulness to the Survey will be increased in the same measure as if you were a field officer or, indeed, that any advantage commensurate with the outlay would be derived.⁴⁴

Thus Collins would not recommend leave with pay and did not even allow her to apply to the Canadian Federation of University Women (CFUW) for a scholarship. Finally, in January 1926, she obtained permission from the Survey to apply to the CFUW, received the \$1 000 scholarship, but was then still refused a six-month leave without pay. She realized that she could either return the scholarship or resign her position with the Survey in order to complete her doctorate. The executive of the Canadian Federation of University women then contacted Sir Robert Falconer, President of the University of Toronto, to apply political

pressure on the case. Falconer promptly "telegraphed the prime minister and the minister of mines, asking that study leave be granted to Alice Wilson." ⁴⁵ Finally, despite Collins' continued opposition, the minister of mines granted "Miss Wilson" the study leave.

She entered the University of Chicago in 1926 and in December 1929, at age 48, she received her PhD. But "her doctorate made no difference to her status or remuneration at the survey." ⁴⁶ Kindle, previously so supportive, now wanted to retain her in the museum, because he was short-staffed and Collins, never supportive, maintained that she would be overpaid as an associate geologist because "as a woman she would be unable to do field work!" ⁴⁷

After she was invited to join the Geological Association of America, in 1936, the GSC changed her classification to assistant geologist. This was a lateral move, however, as the pay increase was minimal (\$60 per year). In 1940 she became associate geologist and in 1945, one year before her retirement -- geologist.

Alice Wilson never gave up fieldwork. Officially or unofficially, on paid time or on her own, she studied the palaeontology of the Ottawa Valley. After retirement she taught at Carleton University for ten years (1948-1958) and regularly took her students on field trip. "The energy and enthusiasm of this white-haired, frail-looking professor made an unforgettable impression on her young students." ⁴⁸ For Alice Wilson, life was "an adventure..." ⁴⁹ Although she had to fight the male establishment in the GSC for privileges that came easily to men, she obtained several honours. In 1935 she was awarded the Order of the British Empire and in 1938 she was the first woman scientist to be elected Fellow of the Royal Society of Canada. Late in life she felt that "the privilege of working in an area that fascinated her and the knowledge that her efforts helped open the field to other women made it all worth while." ⁵⁰

The career of Dr Helen Belyea (1913-86), PhD 1939, had a different path. Originally underemployed at the GSC, she benefited from the expansion of soft-rock geology, was sent to Calgary in 1950, where she became the only woman employed in a senior scientific post, doing both high status field work and interpretive office work (evaluating the results of geological field work). Belyea did not work in the laboratory and did not take on administrative responsibilities. She was an expert of the Devonian system (the rocks in which oil was discovered), a successful scientist, paid as much as any men of the same rank, and was often honoured for her accomplishments. She received the Barlow Memorial Medal of the Canadian Institute of Mining and Metallurgy in 1956; was elected Fellow of the Royal Society of Canada in 1964, and Officer of the Order of Canada in 1976.⁵¹

Alice Wilson's experiences document the male attitude entrenched in the GSC. But Calgary is about 3000 km west of Ottawa, Helen Belyea [5] worked in an emerging area of geology, she was and looked physically fit, and could not be prevented from accompanying



Helen Belyea [5]

Alice Payne [6]



Irene Mounce [7]



men on field excursions. Did it help that working in the field was accepted for women settlers in Alberta and British Columbia? Or that from the late 19th century women explorers have climbed peaks in the Canadian Rockies? While I found no correspondence concerning Belyea's fieldwork, her grant applications, scientific publications, several articles about her, as well as my interviews with her colleagues, provide information on her field activities. She was in all respects a "field geologist of considerable ability, and looked at rocks wherever she could find them, from the tops of mountains to the bottom of oil wells."⁵² She walked, climbed and rode a horse while doing fieldwork in the foothills and peaks of the Rocky Mountains of Alberta and British Columbia, as well as the Great Slave Lake area of the Northwest Territories. She benefited from the expansion of soft rock geology, was paid the same as any man of the same rank and maintained a comfortable lifestyle (she owned a summer cottage, a motor boat, and a horse).

What about other women geologists? Some, such as Alice Payne [6], the daughter of a northern prospector, conducted considerable fieldwork, whereas others remained confined to laboratory work. With the development of the computer industry in the 1960s, a new hierarchy developed within soft-rock geology. Fieldwork became less important, done either by prospectors or contractors with huge, expensive equipment, instead of senior male geologists. While the PhD has not been necessary for either men or women petroleum geologists, women remained confined to laboratory work, preparing and studying core samples of microscopic organisms. Only very rarely has a woman achieved senior status as a scientist, or manager. In oil-geology, laboratory work is considered technical that is low-status work; therefore male geologists rarely work in the laboratory. Evidently, high status fieldwork and interpretive office work have been replaced by high status computer-based interpretive work done by male geologists --in an office setting. Now women geologists with graduate degrees provide the laboratory data to men who interpret them in the office-cum-computer lab, where the important work of soft-rock geology is done.⁵³ This rendered most women geologists invisible in the institutional landscape of science.

The situation has been different in the plant sciences, part of agricultural research, which grew out of applied botany and entomology that were previously subsumed under natural history. Western women have contributed to the discovery and classification of the varied plant life of Canada since at least the 17th century. By the end of the 19th century, botany had become a diversified science that included plant anatomy, pathology, mycology, cytology and genetics. Dr. Clara W. Fritz (1889-1974), PhD 1924, became Canada's first timber pathologist in 1925; she worked for the Forest Products Laboratory, an organization sponsored by government, industry, and McGill University and spent much of her time in the field. Irene Mounce (1894-1987) [7], PhD 1929, was employed at the central, Ottawa, laboratory of the Department of Agriculture, but conducted her fieldwork in British Columbia where she investigated the decays of *sitka* spruce. Although she was recognized for her outstanding investigations of the

sexuality and cultural characteristics of wood decaying fungi, her career ended in 1945, when she married and was forced to resign because of the government's anti-nepotism regulations.

Given widespread *gynopia*, it is interesting to see how women were represented in historical works on geology and plant pathology. The official history of the Geological Survey, published in 1975, rarely mentions women's scientific work, and while it includes photographs of women secretaries and librarians, there are no photos of women scientists. By contrast, the centennial history of the Ottawa based research branch of the Department of Agriculture cites the names and scientific accomplishments of many women.

Documenting the experiences of women in the scientific landscape reveals their very existence at various levels of the scientific community. It clarifies gender and other power relations in science and influences how we see science and scientific landscapes. By providing historical data and role models, a feminist history of science should have an impact on future generations of science students and teachers, lead to curriculum and science policy changes and influence the future of gender, science, and environments. Research on Canadian women in the landscape of science has certainly redressed the historical record and counteracted *gynopia*. It has already resulted in education, science and workplace policy changes and helped re-center women into the institutional landscape of science.

What about the future? At this historical moment, there are more women studying science and finishing their graduate degrees, more at the work place, and more in the higher echelons of the Canadian scientific community. The same can be said of women in other part of the western world, while women in Asia and Africa increasingly obtain science education and find paid employment in science.

We cannot be too complacent, however. In order to change science and scientific institutions from the inside, it is not enough to have more women in science. In order to ensure that women will have a say in how science is being produced and used --we need to have a better understanding of past and current issues, and have more women and men in powerful positions who are willing to work for change.

The question is where do we go from here in terms of science and gender studies? What can we do to re-center women in the landscape? Among feminist scholars, it is recognized that there is a "need for deeper analytical studies, for broad-based comparative work, for more reflexive conceptual work, for accounts that problematize early generalizations without discounting pioneering investigations, for studies of rhetoric and cognitive authority, for sensitive reports about the complexity of individual experiences within and because of science, and for reconceptualizations of science and technology themselves."⁵⁴

It is also clear, that we need to broaden our definitions of science, technology, and the environment and look at the gendered study of nature both historically and cross-culturally. We need more feminist researchers to do the work and we will continue to rely on women's studies programs to train new researchers. We must ensure the continued existence of older institutions, such as the Simone de Beauvoir Institute at Concordia University in Montreal, Canada, and emerging "Women in Research" groups, such as the ones at Central Queensland University. We must create new research institutes on women/gender, to provide challenging, interdisciplinary feminist spaces for our research.

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Notes

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3. Nancy Parezo et al. "The Mind_ Road: Southwestern Indian Women's Art," in *The Desert is No Lady*, ed. Vera Norwood and Janice Monk (New Haven: Yale University Press, 1997), 159.
4. Ibid., 160.
5. Ibid., 172.
6. Ibid., 194.
7. Jason Patrick Bennett, "Apple of the Empire: Landscape and Imperial Identity in Turn-of-the-Century British Columbia," *Journal of the Canadian Historical Association* NS 9 (1998): 63.
8. Chad Gaffield and Pam Gaffield, "Introduction," in *Consuming Canada: Readings in Environmental History*, ed. Chad Gaffield and Pam Gaffield (Toronto: Cop Clark Ltd., 1995), 3.
9. Ibid., 5.
10. Parezo, quoting George Longfish and Joan Randall. Ibid., 160.

11. The exception is Londa Schiebinger, who uses the term "institutional landscape" to describe universities, Parisian salons, and scientific academies in *The Mind Has No Sex? Women in the Origins of Modern Science* (Cambridge, Mass: Harvard University Press, 1989).
12. Shulamit Reinharz, *Feminist Methods in Social Research* (New York: Oxford University Press, 1992), 168.
13. Joan Kelly Gadol and Gerda Lerner were among those pioneering feminist historians who drew attention to ways that men excluded women from the historical record. See for instance Joan Kelly, *Women, History and Theory: The Essays of Joan Kelly* (Chicago: University of Chicago Press), 1984; Gerda Lerner, *The Creation of Patriarchy* (New York: Oxford University Press, 1986).
14. Catherine Nash, "Remapping the Body/Land: New Cartographies of Identity, Gender, and Landscape in Ireland," in *Writing Women and Space: Colonial and Postcolonial Geographies*, ed. Alison Blunt and Gillian Rose (New York: The Guildford Press, 1994), 238.
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20. Ibid.
21. See the following publications, Nathan Reingold and Marc Rothenberg, *Scientific Colonialism: A Cross-cultural Comparison* (Washington, D.C.: Smithsonian Institution Press, 1987); Patrick Petitjean et al, eds. *Science and Empires: Historical Studies about Scientific Development and European Expansion* (Dordrecht: Kluwer Academic Publishers, 1992); David Philip Miller and Peter Hans Reill, *Visions of Empire: Voyages, Botany and Representations of Nature* (Cambridge: Cambridge University Press, 1996); Hermann Hiery and John Mackenzie, eds. *European Impact and Pacific Influence: British and German Colonial Policy in the Pacific Islands and Indigenous Response* (London: Tauris Academic Studies, 1997).
22. *Dominions Apart: Reflections on the Culture of Science and Technology in Canada and Australia 1950-1945*, ed. Roy MacLeod and Richard Jarrel, *Scientia Canadensis* 17, 1 and 2 (1994)
23. See my "Despite the Odds Revisited: Reflections on Canadian Women and Science," *Simone de Beauvoir Institute Review* 18/19 (1999/2000): 85-100.
24. For an up-to-date review of the literature on Aboriginal women see Jo-Anne Fiske, "By, For, or About?: Shifting Directions in the Representations of Aboriginal Women," in a special issue on feminism and Canadian history in *Atlantis: A Women's Studies Journal* 25, 1 (Fall 2000): 11-27.

25. See the essays by Marianne G. Ainley, Susan Hoecker-Drysdale, Barbara Meadowcroft, Marelene and Geoffrey Rayner-Canham, and Joan Pinner Scott in M. G. Ainley, ed. *Despite the Odds: Essays on Canadian Women and Science* (Montreal: Vehicule Press, 1990), and my earlier articles, such as "A Select Few: Women and the National Research Council of Canada" in *Building Canadian Science: The Role of the National Research Council*, ed. Richard Jarrel and Yves Gingras, *Scientia Canadensis* 15, 2 (1991):105-116; and "Women's Work in Geology: A Historical Perspective on Gender Division in Canadian Science," *Geoscience Canada* 21, 3 (1994): 140-42. The following scientific biographies are also useful, Marelene and Geoffrey Rayner-Canham, *Harriet Brooks: Pioneer Nuclear Scientist* (Montreal: McGill University Press, 1992), and Marianne G. Ainley, *Restless Energy: A Biography of William Rowan, 1891-1957* (Montreal: Vehicule Press, 1993).
26. See works by Margaret Rossiter, for the U.S., M. G. Ainley for Canada, and Farley Kelly ed., for Australia.
27. Like the Dalhousie circle, these women were also wives and mothers. Clearly, throughout most of the 19th century, family life and scientific work were not considered mutually exclusive.
28. See my Science in the Backwoods: Catharine Parr Traill in *Natural Eloquence: Women Reinscribe Science*, ed. Barbara T. Gates and Ann B. Shteir (Madison: University of Wisconsin Press, 1997), 79-97.
29. R. Macfarlane, "Notes on the Mammals and Birds of Northern Canada," in *Through the Mackenzie Basin: A Narrative of the Athabasca and Peace River Treaty Expedition of 1899*, ed. Charles Mair (Toronto: William Briggs, 1908), 153-448.
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31. Sally Cole, 'Dear Ruth: This is the Story of Maggie Wilson, Ojibwa Ethnologist,' in *Great Dames*, ed. Elspeth Cameron and Janice Dickin (Toronto: University of Toronto Press, 1997), 75-96.
32. Ainley, research notes.
33. H. H. Mitchell to J. H. Fleming, 20 September 1921, J. H. Fleming Papers, Royal Ontario Museum Archives.
34. Fred Bradshaw, Annual Report of the Game Commissioner, Department of Agriculture, Province of Saskatchewan, 1922, 57.
35. Women were first employed by the GSC in the 1880s; Appendix II, Zaslow, *Readings the Rocks* (Toronto:Macmillan, 1974), 555-64; Ainley, research notes; Anne Montagnes, "Alice Wilson, 1881-1964," in *The Clear Spirit: Twenty Canadian Women and their Times*, ed. Mary Quale Innis (University of Toronto Press, 1966), 260-78; Barbara Meadowcroft, "Alice Wilson, 1881-1964: Explorer of the Earth Beneath Her Feet," in M. G. Ainley, ed. *Despite the Odds*, 204-19.
36. Meadowcroft, *Ibid.*, 208.
37. *Ibid.*
38. *Ibid.*

39. Montagnes, *Ibid.*, 270.
40. *Ibid.*, 270-71.
41. She was hired by the GSC as "cook and canoeman." Meadowcroft, *Ibid.*, 210.
42. Meadowcroft, *Ibid.*, 209; Fritz, pers. com.
43. A.E. Wilson to W.H. Collins, 7 November 1924. *Records of the Geological Survey of Canada*, RG 32, C2, vol. 358. (hereafter Wilson papers.)
44. W.H. Collins to A.E. Wilson, 29 December 1924, National Archives of Canada, Wilson papers.
45. Meadowcroft, *Ibid.*, 213.
46. *Ibid.*, 215.
47. To avoid promoting her to the vacant position of associate, they created a new position instead, that of "associate curator of palaeontology" and gave her a raise of \$500 per year. *Ibid.*, 216.
48. *Ibid.*, 217.
49. Interview with Kay Rex, *The Globe and Mail*, 25 February 1960, cited in Meadowcroft, 218.
50. *Ibid.*, 219.
51. Ainley, 1994, 141.
52. Digby McLaren, "Helen Belyea 1913-1986. Transactions of the Royal Society of Canada, series V, Volume II, 1987, 199.
53. Ainley, 1994, 141.
54. Sally Gregory Kohlstedt and Helen Longino, "The Women, Gender and Science Question: What Do Research on Women in Science and Research on Gender and science Have to Do With Each Other?" *Osiris* 12 (1997): 11

Who are we? Rural and urban women (and Mick) explore common interests and diversity in a virtual landscape

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Introduction

First, let me explain that the title for this address “Who are we?” comes from a message sent by one of the women to an email discussion forum (Women’s Electronic Link or *welink*) established for rural women as part of our research project. I describe the project below. This question is typical of the way in which the participants in this forum have used it to investigate their identities, who they are and where they are located in the geographical and social landscapes. It is through explorations such as this, I will argue, that these women have created a virtual landscape occupied by *welinkers*, as they have called themselves.

I also have to explain about Mick. Mick is a great character who lives in north Queensland. *Welink* was not exclusively a women’s list; it included a small group of men who for various reasons to do with the positions they held were included. Mick was one of those men. He is a regular contributor to *welink* in a way that no other men who have taken part in the list have been. He always has a good joke to share and is well accepted by the women. At one stage a relative newcomer to the list wrote asking, “Who is this mythical Mick?” Back came a message from Mick himself, saying that he was really an invention of a bunch of feminist researchers down in Brisbane whose research list would not be complete without a mythical male. I can’t talk about *welink* without acknowledging Mick’s presence.

In the context of the overall theme of centring women in the landscape, this paper briefly explores the ways in which new communication technologies have opened up a new landscape, a virtual landscape, to these women. I will argue that this has not just opened up that landscape to women, but through those technologies, have made those women’s real landscapes accessible to others who could otherwise only begin to imagine, in a limited way, what their lives are like. These are the two themes that I will explore.

About the research projects

The research projects that inform this paper are part of a program of research that my colleagues and I have been engaged in since 1994. The first project resulted in a publication titled "Working and Networking: Women's Voices from Elsewhere (Grace, et al. 1996). Working and Networking was an exploration of women's roles in using communication technologies in rural communities. What came through most clearly in that project was that women are the social hub of those communities. They keep the communities alive and they use communication technologies to do that. When we started the study in 1994 it predated the movement of Internet service providers into rural communities. So the kinds of communication we were talking about then were telephone, fax, some teleconferencing and a very limited amount of videoconferencing.

We set up a small email trial consisting of just ten women. Of those, only six were able to get on line and just four were able to use email consistently. Limitations of infrastructure, the absence of service providers and the lack of access to technical support and training all constituted barriers which, for some, were quite insurmountable. The degree to which they persevered to overcome those barriers astounded us. We asked some of the women to keep journals. Their stories reflect a history of struggling against all kinds of odds, with great cheerfulness and perseverance.

In the first project we simply documented women's involvement with communication technologies. In the second project, undertaken in 1996-1997 (Rural Women and ICTS Research Team 1999), we adopted an action research methodology to investigate women's use of computer mediated communication and other interactive communication technologies. We used a process of workshopping, in nine regions across Queensland, with women from all walks of life within those communities, to raise awareness of the new technologies and explore the women's visions of how these might be used in their lives. One of the things they talked about was their interest in email, which was only just becoming available to them. The focus of our research project was to study the range of uses that they made of the technology. We established the discussion list, gave it to the women and said, "This is yours, do with it what you will". The resulting discussions are the major source of data for this paper.

Since 1998 we have been involved in a continuing project, Creating Rural Connections, investigating two communities. This project broadened from looking specifically at the role of women in the use of these technologies to looking at the whole of community usage. The two communities are the Central West based on Longreach and the Atherton Tablelands. A report on this project will be forthcoming late in 2001.

A virtual community: centering women in the landscape

In this paper I will focus on the contribution of the Internet, through *welink*, as a virtual community, to centring women in the landscape. First, the Internet has become a medium for women to investigate their identities and locate themselves and each other in these landscapes, virtual and real (Harcourt 1999). Much of the discussion on *welink* has been about who we are. Second, the Internet has become a vehicle to allow those women to become more visible beyond their immediate landscape, to become visible across national and international landscapes. It is in fact allowing women to be seen in the centre of the landscape. They have always been present there, but we have not been so readily able to see them. Now they have access to the Internet they can get right to your front door, especially to the doors of the politicians.

The Internet as a medium for women investigating their identities and locating themselves in the landscape

The following message, received on *welink* in March 2000, gave me the title for this paper:

Subject: Who are we?

Date: Sun, 26 Mar 2000

I joined *welink* because in February I was sent a message re GM (genetically modified) food and I thought *welink* was a specialist group concerned with GM food! Now I know better! I'm very concerned about GM food - especially for the future of my as yet unthought of grandchildren and their children - and I'm trying to do something about it (I sent out an attached petition a few weeks ago in the hope that some welinkers might find time to collect a few signatures).

To my delight *welink* has opened up a whole world of warmth, sharing and caring and does much to restore my faith in fellow humans despite the horrors being foisted upon us, such as the threat posed by Canadian salmon, GM food, the whole WTO (World Trade Organisation) scene, corporate inertia over taking strong measures re pollution and loss of species, the fixation on profits at all cost and greed everywhere etc etc.

Also, having lived in the country for some time in my childhood, it is really heart warming to hear everyone's concerns and thoughts...

The message came through posing the question "Who are we?" because its author had mistakenly joined *welink* believing it was a discussion list devoted to the topic of genetically modified food. Instead she found herself part of a community with much broader interests and wanted to learn more about the members of that community. The following list illustrates the diversity of interests explored by the women on *welink*. This is only a sample of the topics canvassed over the past three months.

- The GST
- The Fiji crisis
- DNA testing in Wee Waa
- Meeting of cultures
- Mechanical cats
- Chain mail and jokes
- Aging
- Menopause
- Money making ideas
- Internet service providers
- Building web sites
- Computer software issues
- Sending attachments

The Goods and Services Tax (GST) was a popular topic during this period immediately prior to its implementation in Australia. The women reflected on the likely impact of the GST on their rural landscape. Many of the women are also the bookkeepers for their family business – the farm or other business – and therefore responsible for the record keeping demanded by the introduction of the GST, so discussion also ran to sharing practical advice on how to implement the new tax system.

The Fiji crisis and DNA testing in Wee Waa are examples of topics sparked by a very immediate concern of a particular member. One member had family in Fiji at the time when the Fijian prime minister was taken hostage. Another member who is part of the Wee Waa community reported regularly to *welink* on the local community's response during the lead up to and aftermath of this controversial crime detection initiative.

The meeting of cultures has been a recurring theme on *welink*. The list started out with a membership derived from women who had participated in workshops during our research project in 1996-1997. We linked these women with women in government departments because we wanted to create opportunities for direct communication between government and people in rural communities. The list also drew members from the academic community and from others, women and men including Mick, who are involved in rural community development. As it has grown, the list has incorporated members from around Australia and also a small number of overseas members from Canada, the United States and Ireland.

The women have delighted in exploring those cultural exchanges derived from their experiences of their own landscapes. For example, in the lead up to Christmas one Queenslander commented on how unbearably hot it was at 44 degrees with an impending

dust storm. Back came a message from Canada relating how they were currently engaged in harvesting which meant working at night in below freezing temperatures because once it started to warm up the stalks of the crop they were harvesting thawed and became mushy, jamming the harvester. The effect of such exchanges has been to broaden the horizons of the women's landscapes beyond the relatively narrow geographical community within which it was previously possible to communicate because of restrictions of technology, cost and time. Now they have access to this virtual landscape occupied by people from other parts of the world, other times of the day and night, other seasons of the year, other climates and other political cultures. The result has been a deliberate and enthusiastic investigation of those differences.

Mechanical cats was a topic initiated by a teacher reporting on an engineering exercise she had given the children in her class which challenged them to create a mechanical cat. Others demanded instructions so they could try it out on their children. Another common use of this and other email discussion lists is to forward on the inevitable jokes that circulate but the women do specialize in finding jokes that are directly relevant to the rural landscape. Most recently this has been a series of jokes about farmers, which provoked a sharing of the ridiculous situations they find themselves in from time to time.

Other topics include those directly affecting the lives of the women themselves such as menopause and aging - particularly caring for aging parents in rural and remote contexts. There was also a series of topics about engaging with the Internet itself – how to find and keep an appropriate Internet service provider, how to build websites and what role they might play in rural businesses, advice about software and the very practical advice on how to send attachments.

The next message gives us something of the flavour of the conversations that take place.

Date: Sat, 10 Jun 2000

Subject: farming life

hi everyone,

i'm supposed to be busy but am taking a quiet moment to catch up with you all. I still have 44 *welink* emails to read!

this morning I went for my 6km walk and 8 cotton trucks (semis) passed me in 15 minutes. It was just terrible with so much dust & stones flying in my face. I didn't think the main road would be so busy on the long weekend. I'm not going that way again until the cotton season has finished. Anyway I detoured back across my neighbour's paddock as I saw mum, dad & their teenage daughter all rugged up battling with a mob of cattle. They were vaccinating & tagging them etc. It looked like a

happy family snap! I think that is one advantage of farm life - you spend so much time working with your family that you feel very much part of the "team".

last week I helped my husband yard & draft sheep etc & then came home & paid a heap of bills electronically, checked my emails, did some surfing etc. It felt good to be involved in a mix of the hands on fresh outdoors lifestyle (despite the dust, having my feet trodden on & being shoved around generally) but later I was in another world if you know what I mean. I like the mix.

This illustrates the way in which women talk about their daily lives, giving us insights into the landscapes that they inhabit and contributing to broadening all of our landscapes. The next message came through some time ago.

Date: Fri, 14 Aug 1998

Subject: Don't you get bored living out here?

I had to laugh the other day. I had two Telecom men here for about 6 hours checking all of our equipment. One of them was from Cairns and had a young baby a bit younger than my son. We got talking about babies etc and out of the blue he said "don't you get bored living out here? I just laughed and told him that I wish I had time to get bored! It never ceases to amaze me how people like him have no idea about our lives. They don't realise that to just get a few groceries takes almost a whole day out of our week and to get the mail from our mailbox takes one hour a week. Simple things like this that only take a few minutes for city folk are much more time consuming for us. He was absolutely shocked that we only got mail twice a week and that our mailbox was 20 km away. I consider myself to not be very geographically isolated. He thought that I lived in the middle of nowhere!

Just the amazed looks on his face gave me my giggle for the week!

This illustrates the interchange about landscape and demonstrates how the landscapes of these women are not familiar to the broader urban- based population. This is particularly true of Australia, which has such a high percentage of urban dwellers.

Next is an example of how the Internet is being deliberately used to convey landscape:

Subject: kate's garden

Date: Sun, 26 Mar 2000

You wrote:

<<i don't think you were online when kate shared her website with us. is it up & running again kate or not ? you'd love to visit her garden (among other things)>>

Funny you should mention this because I spent all day yesterday trying to rebuild the website at my local server and had just done, but not sent, a post advising of the new address. (To follow.)

I have rebuilt all the Travels pages and started on the Where is She Now? So there's a few pix of current garden on there but not quite finished. Haven't developed or scanned any recent pix of the garden anyway. There's a link to The Rough Trade Cafe pages which are still on the old site and show some of my previous house and garden.

Kate

Here we see a specific project setting out to portray the local landscape visually in the virtual landscape of the Internet. The writer had recently returned from a *welink* tour in which she visited and stayed with a range of people whom she had befriended through *welink*. As she travelled she photographed each site and posted the pictures on the web for all of us to share. In this way she undertook a real tour of the *welink* landscape, inviting us to join her through a virtual tour. It should be noted that many members of *welink* have never met face to face.

The next message elaborates on this theme of blending the real and the virtual landscapes inhabited by members of *welink*. It reflects on the choices in sending mail to the list or to an individual.

Date: Wed, 24 May 2000

Subject: RE: side e-talk

interesting thought-trains here, and you know me....i can't resist a good academic debate! Speaking personally, sometimes I just want to jot something quickly to the writer personally, and don't think my comment is important enough or common enough to many members' experience or conversely may be too technical for the average reader. sometimes I just hit the single reply icon as its easier. sometimes i just want a private short conversation or an e-hug. (speaking of which, Debbie, where are you???? everything OK?)

Actually spent a wicked morning speaking in voice with Steve today...absolute indulgence!!!!!! What a beautifully rich and musical voice!!!!!! And my husband told someone else later in the day, not only were we chatting like old friends, but it was like old friends living next door to each other, not a whole (well, OK, half) a country away!!!!!!

This time the relationship has moved into telephone conversation as well as email conversation but you can hear from the description of Steve's voice that these two women have not met in person. It illustrates the way in which *welink* has broken down the barriers of physical distance to create a virtual community sharing many of the features of the face to face communities we inhabit – the concern for an absent friend, the need for an e-hug –

but enhanced by the reign it gives our imagination to picture the person at the other end of that rich and musical voice.

From time to time the list conducts its own research on itself. This is very nice for us as researchers. The question below came from a list member who was taking part in a conference addressing online communities and what makes them effective. She invited *welinkers* to talk about their experience of the community and what they perceived as contributing to its effectiveness. These were among the responses:

Date: Sun, 26 Mar 2000

Subject: Re: What 'sustains' an online community?

Good luck with the forum. Whilst I can't compare welink with anything else, I think it is successful because the people in this list seem to have a genuine desire to share their lives with others and are incredibly supportive & friendly. They go out of their way to show they care about someone else by providing information and/ or by just sending a positive message. Newbies are welcomed & offered assistance if required. Perhaps our common rural backgrounds or the fact that many of us live in isolated areas engenders a common feeling of "togetherness"

I am fascinated by the wide variety of threads & I "hear" about things I would never otherwise know ie all the personal anecdotes are really special - the fact that Welinkers are so open & honest about their lives. It is just a really unique feeling to know that across the miles and different cultures we can share so much & come to a greater understanding of our similarities & differences. I really like to "connect" with people in real life but this of course does not always happen in the true sense of the word but welink has broadened my horizons & has allowed me to feel "connected" with so many of you at some point in time. I love hearing about everyone's activities, visiting websites they recommend etc. I could go on but then I'm addicted to welink....

Subject: Re: What 'sustains' an online community?

Date: Sat, 25 Mar 2000

I think that the welink gives us an insight to other peoples lives in many different ways. Just think of the amount of time that we have all spent talking about the weather. Although weather in itself is a fairly mundane thing it suddenly comes to life when we put the human aspect of it in focus. We have talked about the rain and floods, snow and snowdrifts, hot and cold. Suddenly, that weather on the other side of the world has taken on a human face.

Subject: RE: What 'sustains' an online community?

Date: Sun, 26 Mar 2000

The suggestions that have been posted have all been great, but as well as the 'family' feeling, isn't there a degree of anonymity as well - it's as though we can be part of the whole, but also very much an individual and lots of times when things are 'crook' it can be a great distracter/ counter

irritant/ helpful supporter / confidante... what ever applies at the time. There are so many times that not only does provide information and current topics, but also can make a bod exercise the grey-matter a bit harder. We can all try walking in somebody else's shoes!

Subject: Re: What 'sustains' an online community?

Date: Sun, 26 Mar 2000

For me it is the sense of community. In my mind's eye Welink is the backyard fence or the Village Pump/Well. It is also the respect we all have for one another's opinions - its the new ideas, the help when you ask for it - it offers companionship, humour, and compassion. Finally the diverse contacts we have all made throughout Australia and OS. Welink is a living, growing group of people - the first commonality being our rural backgrounds on interest in things rural.

What strikes me here is the equation between the virtual landscape of an international email discussion list and the village pump. Some women will talk about how they sit down at the end of the day with a glass of red wine, finally having the computer and time for themselves, read their messages from their friends and then write their replies and send them off. Clearly for these women *welink* may exist through the medium of virtual communication but is it very much a real community with its own landscape.

The role of the Internet in allowing women to be visible in the centre of the landscape

There are two ways in which the Internet may be seen as contributing to putting women more firmly in the centre of the landscape. First, the Internet has enhanced rural women's access to opportunities for participating and becoming visible in a broader range of rural community activities. The following message was contributed by a government representative, who is also a *welink* member. It calls for expressions of interest in nominating for membership of one or another of the various government sponsored industry boards and corporations, thus opening up opportunities for participation in rural affairs beyond the levels traditionally available to rural women.

Subject: Re: Women on Boards

Thought some welinkers might be interested in this

This is a special email to let you know about some board opportunities, which are coming up. Please spread the message to anyone you think may be interested. This is an opportunity for you to encourage and assist experienced women and younger people into high level, decision-making so that the whole agricultural sector can benefit from their perspective, skills and energy.

1. The Grape and Wine R&D Corporation is seeking applications for 6 part time Directors. (Remuneration is presently \$25,600 pa). Closing date is Friday 12 MAY 2000

2. DPI's Institute Boards have completed their term and an advertisement for people interested in applying for the vacancies will appear in the weekend papers (Courier Mail and Australian) this weekend (13 May 2000) and in other newsletters etc.

Would you please circulate this information widely as DPI would like to see greater representation of women on Boards and Councils. Obtain an information package from DPI's Call Centre 13 24 23 (cost of a local call) after the advertisement appears.

Government information coming directly to the list in this fashion enhances women's capacity to take advantage of those opportunities that can make them central in the landscape. And they do take them up. At the same time, having access to this virtual community and its daily conversation has taken rural women's agendas into the seat of government through the participation of government representatives in the virtual community. Government representatives comment on the strengthened position they feel themselves to be in as a result of being privy to daily illustrations of the achievements and challenges experienced by those in rural communities.

Subject: Re: What 'sustains' an online community?

Date: Mon, 27 Mar 2000 10:22:23 +1000

I am also mainly a lurker, only putting about 1 message a fortnight. As a public servant, I feel that welink" keeps me honest"- as I get a feeling for what my clients are feeling, thinking about and discussing. Rural women are often not on the official sounding boards of govt departments so I feel that welink helps make up for it. From a personal viewpoint, I spend all day at mainly all male meetings and welink helps me keep in balance and gives me support as a woman in a male dominated profession/ industries and department.

The writer's final point gives a clue to what really makes this work; that is the conjunction of personal engagement with professional interests. The following response from another government representative reinforces this:

Date: Mon, 27 Mar 2000

Subject: Re: What 'sustains' an online community?

Now, seriously, what sustains an online community for me is

a. the level of disclosure of people as themselves (which I know I am not good at myself - there, at least I have started!). People on this list are so brave, and go headlong into life every day.

b. the speed and crossflow and interweaving of the messages - a true verbal quilt being woven with electronic threads.

- c. the 'additional' information - webpages, photos, attachments, newspaper articles, even meeting the occasional person in the flesh, which all make the list contributors seem more real
- d. the mutual interest which can be derived from the variety of the topics. I can lock into some, stay out of others (although that is often determined more by my lack of time than lack of interest or concern)
- e. the tolerance of the amount of traffic on the list and the joy of sharing a wide selection of humour (I am on other lists where I would be scared to post anything frivolous for fear of recrimination)
- f. the diversity of age ranges, family, work and life experiences
- g. the lateral and innovative thinking and actions of list members, and
- h. the sheer wisdom which is drawn out by all of the above

The following message, contributed by an expatriate Australian now living in the United States to the same thread on what sustains online communities, illustrates the way in which welink has brought the reality of rural women's landscapes into the lives of urban dwellers.

Date: Sun, 26 Mar 2000

Subject: Re: What 'sustains' an online community?

I find myself in agreement with the comments about ourwelink community - and I really think it is a community. While we are so diverse, we all have some connection with Australia - somehow. Though I have always lived in a large city, I really find my knowledge base broadened by the rural-oriented topics/comments.

Purely selfishly, I use welink as a well-needed link to home (think of the Peter Allen song playing softly in the background), keeping up with news (sadly lacking in our local rag), and often find myself laughing at some of the lingo I have forgotten about.

In the same way that this email forum has brought closer links between rural and urban women, it has also increased knowledge and understanding across international landscapes. There is conscious reflection on cultural differences across the continents as women write of their daily lives and quiz one another about unfamiliar rituals and events. As some of the women travel and take up speaking engagements or make presentations to international conferences, this broadening of the landscape moves beyond the boundaries of the membership of *welink*. One such traveller writes:

Subject: Fw: from China

Date: Wed, 29 Mar 2000

I thought some of you may be interested in this message from Liz – Hi everyone in furthest southern hemisphere and Queensland in particular.

Sorry not to be keeping in contact. I've been away in southern China doing my crazy fieldwork on what I have decided to call 'deathscapes' (the important issue of the infrastructure and landscapes and festivals to do with death, very important in Confucian cultures). Anyway this isn't what I wanted to tell you, which is that (long story) I met before Christmas the representative of a Korean University - a woman sociologist. She was fascinated by the women's rural networks in Oz and read some QRWN messages (I am not logged on to welink or awia while in HK) on my screen here. She used to do some rural sociology work but it is very unfashionable now (most Korean rural towns and villages seem to be in the same plight as those in Oz and N America). However she emailed me yesterday to say that the Korean Women Farmers Association had invited her to give a speech at their bi-annual round-table discussion 'for proposing women-friendly policies'. She now has a data set on information (don't know what exactly) that the KWFA collected in Feb and is thinking of writing it up for an international journal (I'm on its editorial board). So we might learn something about the Korean situation before too long. If so I'll keep you informed. She told them all about youse all so to speak!!

Thus we can see that access to this technology has enhanced women's opportunities for participating more fully in the broader life of the community by contributing directly to the formation of government perception and policy at local, state and national levels. They have been able to do this both by providing information that might not otherwise be accessible by government personnel, and by taking up the opportunity to occupy positions on key advisory bodies and in essential working parties. Participation in this virtual community is changing our understanding of landscape from the local geographical locality to a much broader setting, enabling women to explore the diversity of their experiences across national and international boundaries.

Key features in the success of the Internet in centering rural women in the landscape

The Internet would not have been so accessible to rural women in Queensland, and its benefits therefore not so readily available, without the following programs. The Commonwealth Government's rural telecommunications infrastructure program, Networking the Nation, has been important in fostering awareness of the Internet and encouraging the necessary improvements to infrastructure that determine the level of access available in the various communities.

The Queensland Rural Women's Network's BridgIT program, funded by Networking the Nation, has made training accessible to women in rural communities. Getting and staying online are the first prerequisites for entering the virtual landscape and

training that is accessible and affordable is vital for success. Increasing numbers of women are gaining this necessary experience through BridgIT because it offers training at times and in locations that rural women can access, including in their own homes using their own computers, and because its training is relevant to rural interests and not overlaid with alienating jargon and technical knowledge.

Welink has been important in allowing women to experiment with what the Internet can do for them. One of the interesting things about *welink* is that its membership stays at around a hundred and twenty but it rolls over. Some who were very active in the early years of *welink* are no longer active but we know they are making a variety of other uses of the Internet now, including obtaining employment as teleworkers and conducting business online. They no longer need *welink* as a home base to do this. But there are always newcomers coming online and using *welink* as a safe learning place. *Welink* continues to provide an alternative landscape in which women occupy the central position.

What is most pervasive in this experience is the presence of women, taking control of the technology, using it for their purposes and using it in ways that make them central to the rural landscape, raising issues important to the continued survival of rural communities, particularly through political forums, and exploring their own identities thus centring themselves more fully in their landscape.

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Indigenous Landscapes – A Personal Journey

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Introducing my place in the Aboriginal landscape

My name is Margaret Hornagold and I am a Barada woman on my paternal grandmother's side. Our country is north of the MacKenzie River (and for those who know Central Queensland) is bounded by the Broadsound Range in the east and the Connors River/Lotus Creek junction to the north. Cockatoo Creek and Roper Creeks are our western boundaries and the MacKenzie River is our southern boundary. My totems are the Emu or '*gundaloo*' and the Eaglehawk or '*gooriethulla*'.

I am still researching my mother's family links and my mother, Mrs Elaine Yates, is present today. My grandmother was born at Morven and my great-great grandmother was from St George. My grandfather was born at Windorah in 1900 and by the time he was 5, he and his family had been moved to Purga Mission near Ipswich, which is where my mother was born.

In introducing myself in this way, I am presenting myself within an Indigenous landscape, which is important for all of us to do. One of the first questions asked by Indigenous people when they meet is "Who is your mob?" and, "Where do you come from?"

For many of us today in contemporary Australia and particularly here in Central Queensland, it is important to know these things and to know where we do come from, and be able to speak proudly and openly about it because for so long the information was kept from us. It is only recently that archival records have been opened up and Indigenous people have been able to track their origins and to determine where it is that they come from.

One of the other things I would like to do, which I should have done before I began, is to acknowledge the traditional owners of the country where we meet today; and they are the Darumbal people. As you look across the water to Great Keppel Island, there was another group of people called the Woopaburra people who were the traditional custodians.

This is part of what I find exciting and fascinating in Central Queensland, and that is the changing Indigenous landscape where the original peoples are being acknowledged and recognised, and that the descendants of the first peoples survive in our communities today.

When I travel around Central Queensland, it is with pride that I can pass through centres such as Springsure, Rolleston, Emerald and Taroom and identify the Aboriginal groups who are the traditional people for those communities. I grew up in and around Rockhampton and for the early part of my life I was unaware of this rich tapestry, which was always there.

Imposed landscapes

My mother's family were 'under the Act' which meant that the government kept a dossier on all their movements and activities. Their lives were dictated by the rule of the government or church directed officials. But because there was so much information gathered and collected about Aboriginal people during this time, these records and archives are now being used by Aboriginal people to trace their family lineage and to find their place and identity.

My father's people were exempted from the Act and to do this they had to adapt to a Western framework and a white landscape. That has been a tearful and a very sad part of our history. To gain exemption, Aboriginal people had to prove to the white authorities that they could adapt to the rules and laws of the dominant society, but to do this they had to surrender their association with other family members. My father's family comprised 16 children and my grandparents did what they believed to be best for the welfare and unity of their family. It is amazing that this family was not separated and the children placed on reserves, missions, or with other people to work as stockmen or domestics. They were able to remain as a family and to stay in their traditional country. This was the result of the sacrifice made by the older people when they applied for exemption.

So much of our research and landscape definition has come from our Elders and, in my case, from my uncle who is 79 years of age. He told me that up until he was 15 he spoke his Aboriginal tongue and it was only when he went out to work that his mother told him to learn the white man's ways and to speak their language. My father's situation was similar to this.

I would like to make a point that language was a part of the landscape and it connects with what the former speaker, Leonie Daws, has just described. I noticed that a language pattern was coming through whereby people were designing new words, buzz words etc, but were creating a new language as well by way of the electronic mail and new technologies. So the maintenance of traditional language systems (Aboriginal languages) and the development of new forms of communication (email) are important considerations in emerging landscapes.

Native Title – Changing the landscape

In talking about my father's family, I said that he had come from a family of 16 – 12 girls and 4 boys. There was a female dominance in that household but they still observed the traditional customs and practices in deferring to older brothers and sisters as well. I want to talk a little about our work within the Native Title regime and similar to experiences in Canada with the First Nations people, Indigenous people in Central Queensland are moving to reclaim country. It is really a case of people creating history as they are going through it here and now and in the pursuit of autonomy.

My aunts and I started work on Native Title in 1997 and with the support of our male Elders we had to present our case to white Land Council delegates, white male anthropologists and male bureaucrats who treated us with contempt and ridicule. The attitudes of a range of parties in believing that all they had to do was bring out the coloured beads and we would sign on the dotted line made for fiery and aggressive debate. Words such as stirrers, agitators, spoilers etc had been labeled against us for our stance on achieving Native Title in our way and with our vision and philosophy. Our catch-cry has always been 'We know who we are and where we come from', and we have not been diverted from this position.

There are other groups pursuing Native Title here in Central Queensland and I am very pleased to have Ms Lisa Stjammeda here with me today and she might say a few words later about some of the things in which she has been involved with her grandmother. Whilst there are a number of Aboriginal women at the helm representing their people's interests there is also an informal network that exists between us. There is an understanding of the dilemmas, which continue to confront us and the obstacles that are duly placed in our path, and the barrage of criticism which we all endure as outspoken, Aboriginal women. When we come together it is our Murri humour that comes to the fore and that has assisted us to get together, compare our experiences and to revitalise our efforts to continue.

One of the things that I would like to see as a result of this workshop is that a process of dialogue be commenced between Women In Research and those Aboriginal women working within the Native Title movement. This could lead to research projects, which capture the role of Indigenous women in land management and land custodianship. I am also involved with an Aboriginal group called the Fitzroy Basin Elders Committee and a number of Aboriginal senior women are part of that committee. It is a coalition of some 40 Aboriginal clan groups across the Fitzroy Basin catchment area in Central Queensland, and it is a group, which has achieved several major milestones.

Aboriginal Elders have taken up the cry for cleaner rivers and waterways and their work is centered round a number of major rivers in Central Queensland. They are working

quite strongly with a number of government agencies and land care groups to bring Aboriginal knowledge and respect for country into the strategies and policies. A number of Aboriginal women are actively involved in sustainability and they see it as an investment for the future for their children and generations to come.

Cultural heritage forming the landscape

An issue, which has been raised in Central Queensland, is the location and protection of Aboriginal women's sites. There has been little work done on identifying and preserving specific Aboriginal sites and this has been due in part to government agencies such as the Environmental Protection Agency and the Department of Natural Resources engaging males to work in these agencies and that the focus of their negotiations have been with Aboriginal men. There is one site in our local region, which is reported to be a birthing place for Aboriginal women, across that particular area, and this is supported by the size of handprints on the rocks. The site is on a pastoral lease and there has been ongoing debate between agencies about this site but to date little engagement with Aboriginal women has occurred. If research has been carried out in relation to women's sites then it has yet to see the light of day and the women I have spoken to know little about any documented work.

I think that the publicity arising from the Hindmarsh Island affair has made women wary of proclaiming these sites. There is no doubt that Aboriginal women's sites exist here in Central Queensland as in other parts of Australia and these sites formed part 'women's business' in terms of the social, cultural and spiritual landscape which exists for Aboriginal women.

I think for all the Murri people here in Australia and Indigenous people worldwide, it is the internal and spiritual landscape that is very much a part of what we talk about; it is our country and what we see there. It is the features that are inherent within the physical landscape – the mountains, the rivers, the creeks and the trees. Yes, we see those as external features but there are stories that are contained within these physical objects and we see those features as well. They would have been acknowledged and respected by both Aboriginal women and men since they form the whole of Murri country and as such maintained the traditional ceremonies and spiritual rites which were the subject of and essential to the rules of the particular group or clan.

Many early writers and some more recent have claimed that Aboriginal women's role in traditional society was one of submission to their men and that Native Title and land matters are 'men's business'. Boyle (1978) argued that like their menfolk, the women had their part to play within their society and without their important economic role the society would have not been able to survive.

Within my family, the Barada lineage is descended from my grandmother's line and my aunts can report stories that were told to them by their mother and sisters. These stories were not told to their brothers. Kabalbara is descended from my grandfather's line and since it is the traditional hunting grounds, it is the responsibility of the male members of the family.

I am fortunate in that I have been given a special status by my eldest Uncle to talk for Kabalbara country. My father is deceased and I have been bestowed the right to talk for his place in his country. I am very aware of the sensitivities and cultural protocols in doing this, and all of this carries authority as well. Traditionally, young boys and girls had patterns of behaviour and laws to guide their conduct and ceremonial rites were carried out to assist them to know and respect their roles and status within their community. In today's society, the Elders are judging their families and kin to see who is the right one to carry out business and to speak for them and to bring information back. In contemporary society, this role is not gender specific.

More often than not, it is Aboriginal women who have picked up the challenge, and who want to pass country matters onto their children and that is what has been noticed in Central Queensland.

So there are a range of opportunities for working with Aboriginal women to identify and name places for their connection with country and for community participation and education. The identification of sites at the moment is shrouded by certain pieces of legislation. Aboriginal people know of sites that have been bulldozed and destroyed against the will of the people.

However many sites have been safeguarded because they sit on pastoral leases and while it is a double-edged sword in that Aboriginal people cannot gain access to these sites they have been maintained in their original condition.

There are continuing arguments and disputes about who can speak for country and this is between Aboriginal people themselves. So it is important to understand the processes and legacy of colonisation and its impact upon groups; upon those who were taken away and those who stayed, upon those who were dislocated to government reserves and those who gained exemption. It has been a real struggle at times for people to be able to sit together in a sharing and trusting way and to be open about their exchanges in relation to country.

One of the things that I find positive is that when women come together to work and move projects along, they do move. The key issues of respecting country and passing on

knowledge to children as well as preserving special places is at the heart of what we are about. The role that the Elders play in all of this is very important.

I am thankful that Nulloo Yumbah at Central Queensland University and people like Lisa Stjaameda here today are recording the history of the Elders in Central Queensland. It is important to get a picture of the landscape from the Elders and frame it in a contemporary setting. Elders are an inspiration to our people. They are the ones who have walked the hard roads; they are our pioneers; they are the battlers and survivors. Elders are the first to engage in reconciliation and to put their hand out to help others understand more about Aboriginal lifestyles and ways.

It can become depressing at times to have to see our Elders continuing to negotiate with governments regarding funding and resourcing of projects and important works. I would like to think that after the contribution that they have made that their life becomes easier. There is an Aboriginal elder at Springsure who travels around the community attending meetings on a range of issues relating to sustainability, and despite his lack of education, he talks from lived experience. These Elders have the will, the enthusiasm, the motivation and most of all the skills, the knowledge and the spirit in heart to continue to work for their people.

In Central Queensland, the University has extended the landscape for Indigenous people and Aboriginal and Torres Strait Islander people have registered an indigenous presence in the University's landscape.

So in closing today, I would like to think that I have extended your landscape and your range of knowledge of Aboriginal people here in Central Queensland. I am sure that Ms Lisa Stjaameda will do the same when she speaks to you in a moment.

In our landscape there are a range of voices, of stories and of experiences. This is reflected in our caring for our traditional country and the things that we see in that landscape that go beyond the physical and the external. Take the time to talk with us and especially our Elders and you might start to see the internal landscape of our country as well.

I would like to leave you with a message called Dadirri: Listening To One Another.

Thank you.

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Profile

Margaret Hornagold is a Barada/Kabalbara woman from Central Queensland. She is completing a Masters in Research at Central Queensland University. Her involvement with Aboriginal issues extends over some 30 years. She has worked across government at both the Federal and State levels and has been involved in Aboriginal community-based organisations for some time. She has an active interest in Indigenous health being a board member of the Bidjerdii Aboriginal Medical Service in Rockhampton for 5 years. She is also supportive of youth issues with specific reference to homeless youth where she is a board member for the Darumbal Community Youth Service. Margaret has been involved with the Fitzroy Basin Elders Committee, a coalition of Aboriginal clan groups comprising members aged 60 years and older. She has assisted members of the committee to develop particular strategies including the 'Returning To Country' project, which will develop rural training skills. She has been an ATSIC Regional Councillor and has represented the region on various government boards. She is married with two children.

Gendered Landscapes: Rural Women and Sustainable Agriculture

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Abstract

While a number of alternative agriculture movements – including organic and biodynamic farming – arose largely in opposition to conventional systems of food production, in recent years they have become increasingly integrated within those systems they sought to challenge. Central to this institutionalisation of alternative agriculture has been the development of discourses of “sustainability” within conventional agriculture, scientific research institutions, government departments and food processing companies. Within the masculinist culture of this institutional milieu, dominant discourses of sustainability tend to reflect the interests of a narrow range of actors engaged in the sustainability debate. In turn, such discourses have begun to play an integral role in shaping the trajectory of the alternative agriculture movement. This is no more evident than within the organic agriculture industry, where government, certification, and other regulatory organisations have a decisive role in defining ‘organic’ farming. Despite the increasing dominance of particular discourses of sustainability, interviews with organic producers in Australia and New Zealand indicate a more diverse understanding of this concept. Women and men’s diverse locations within organic farming lead them to have multiple, and often conflicting, understandings of what a sustainable agriculture might look like. The widespread exclusion of women, in particular, from agricultural research and regulatory organisations has restricted their ability to contribute to these discourses. Findings presented in this paper indicate that the inclusion of women’s (and men’s) situated knowledges both strengthens our understanding of sustainability, as well as challenging the set of understandings that privilege the agri-science agenda. This approach may, in turn, aid attempts to shift towards both socially and environmentally just systems of food provision.

Introduction

Traditional approaches to agriculture throughout Australia and worldwide have been based on input intensive scientific methods – including mechanical and chemical innovations, and most recently biotechnologies. The adoption of these methods have been heralded by government and other agencies as the way to ensure continued improvements in productivity rates, and to address social and environmental problems related to agriculture. Within this context, the evolution of sustainable agriculture discourses – emerging substantially since the “Earth Summit” held in Rio de Janeiro during 1992 –

including discourses on organics³, have been grounded within a scientific framework. For example, a recent government publication has indicated that the continued adoption of chemical applications will be integral to achieve a sustainable agriculture (see Lockie, forthcoming). These discourses are highly masculinised, reflecting their construction within male dominated fields, drawing from reductionist ways of understanding the physical environment, and reflecting, in large part, the concerns of men.

At the same time as these masculine discourses on sustainable agriculture have expanded, women have been an integral part of the environmental movement, and often drive these movements at the grass roots level. This is particularly evident in Australian agriculture, where women have begun to participate in farm organisations in ways not seen before. For example, women have been instrumental on many farms in conversion to organic practices (see Lyons, forthcoming), they have participated in Landcare in rates not witnessed in other aspects of agriculture (Alston, 1995; Lockie, 1997), and have become increasingly political through the Women in Agriculture movement (Liepins, 1998).

This paper examines the significance of women's knowledges of organic farming landscapes in shifting towards more environmentally responsible systems of agriculture, and the integral role of such knowledges in ensuring the long-term viability of the organic food and agriculture movement. While this paper emphasises the importance of women's knowledge claims – those most often excluded from sustainable agriculture debates – I draw from interviews undertaken with both women and men to highlight the significance of gender in shaping constructions of the landscape. This paper draws from research conducted throughout Australia and New Zealand.

Institutionalisation of Organic Agriculture

The organic agriculture industry has undergone substantial growth worldwide over the last few decades, and this has occurred alongside some substantial changes for those engaged in the industry (see Lyons, forthcoming). Within Australia, for example, the industry has expanded from an estimated A\$28 million in 1990 to A\$2000 by 1999, while the New Zealand industry has undergone similar rates of growth, increasing from A\$1.1 million in 1991 to A\$33.5 by 1997 (see Lyons, 1999). Throughout this period a range of actors previously involved in conventional systems of agriculture have found ways to enter the organic industry. For example throughout Australia and New Zealand government departments have become involved in the regulation of organic practices, certification organisations have formed to provide systems of regulation for organic producers, processors and retailers, supermarkets have begun to retail organic product lines; and food

³ Organic agriculture refers to systems of food and fibre production that avoid the use of artificial chemicals or genetic engineering techniques, while employing practices that sustain the soil, and treat animals humanely (see BFA, no date; NASAA, 1998).

processing firms have also begun to market a range of organic processed and packaged food products (see Lyons, 1999).

These changes reflect part of a broader process of institutionalisation of the organic agriculture industry, and such changes have had an array of impacts for women and men engaged throughout the industry, as well as encouraging a range of new participants to enter the industry. For example, many producers – particularly those located on large commercial farm operations – have entered the industry alongside its formalisation, and producers now engage in an array of relationships with certifiers, retailers, processors and others (Lyons and Lawrence, 1999). Such changes have in many instances shaped farming practices, and the ways in which farm families and businesses are organised.

Gendering the rural labour process

Women and men have been variously situated throughout these processes of institutionalisation – as producers, consumers, and retailers, as well as representatives from certification agencies, government departments, supermarkets and food processing firms. As an outcome of these diverse locations, they share multiple, and often contested understandings about what an organic farm should look like, and how the organic industry should proceed. Within the rural, and indeed the urban context, gender is arguably the most significant social indicator shaping the division of labour (Alston, 1995), and as a consequence, women and men often engage with the organic farming landscape in very different ways. As an outcome, women and men come to ‘know’ this landscape differently. Despite the significance of gender in shaping the rural division of labour and the knowledge claims arising from these social locations, studies of conventional and organic agriculture have largely overlooked this, and have thus trivialised and marginalised rural women’s lives and their contributions to the farm and rural communities (see Philo, 1992; Sachs, 1996). For example, research in rural communities commonly assumes the farmer to be male, and representations of rurality are often masculine, while women are represented in traditional female roles (see Sachs, 1996).

Alongside this literature however, many researchers have provided new ways of understanding rural women’s lives. Firstly, by redefining ‘work’ in ways that include the activities of women – which are often associated with non-financial remuneration (Gasson, 1980; Fink, 1992; Alston, 1995; Feldman and Welsh, 1995) – and secondly, by examining the experiences of women within rural organisations, and the significance of gender in shaping access, participation and employment opportunities in such organisations (Jennings & Stehlik, 1999; see Bailey, 2000). The outcomes of such research make paramount the importance of gender in structuring the rural division of labour, and illustrate that women and men occupy different spaces within the rural context.

The organic agriculture industry – gender and work

Throughout my research on the organic agriculture industries in Australia and New Zealand I interviewed 30 women and 43 men about their experiences living and working on organic farms, and their understandings of the changes occurring throughout the industry. Analysis of interviews illustrated that while women and men engaged in some similar work activities, they also participated in many different activities, and individual's gendered location played an important role in shaping the types of work they engaged in.

Both women and men stated that men participated more often than women in public forums – including field days and public meetings – and this was reflected in both attendance and participation in meetings. In the case of married and de facto relationships, men more frequently attended these meetings, and some of these men believed their female partners were not interested in participating in such events, or in the sorts of issues discussed at them. Men believed attendance at such meetings provided them the opportunity to communicate with organic producers, to learn about organic methods, and to keep up to date with the latest information related to the industry. Despite women's minimal presence at such forums, they were also very interested in networking with producers and staying informed about the industry, but more often relied on informal conversations with producers and reading newspapers and newsletters, rather than attending meetings. Participant observation at a range of industry meetings and field days revealed that while both women and men did attend such forums, most invited guest speakers, chair people and industry representatives were men, and men occupied more discussion time than women.

As an outcome of processes of institutionalisation, organic producers have formed relationships with representatives from certification organisations, industry organisations, contractors and food processing firms. In the majority of cases men took the lead in negotiations with these representatives. Similarly, the majority of representatives from the organic industry and food processing firms were men. There were also more men organic inspectors and regulators of the organic industry. As an outcome of this gendered structuring of the industry, men have contributed to the formulation and regulation of organic farming practices and standards, as well as decision-making related to the industry, in more direct ways than women.

The gendered division of labour on organic farms is also clearly evident in regard to work related to childcare. On organic farms where there were children, both women and men agreed that women undertook more responsibility for childcare, and invested more of their time than men, in the diversity of tasks associated with having children. In particular,

they identified women as taking responsibility for maintenance of the health of their family, preparing food and child minding.

This brief examination of aspects of the gendered division of labour on organic farms in many ways mirrors the division of labour on conventional farms (Alston, 1995; Sachs, 1996; Lockie and Lyons, forthcoming). While organic agriculture represents a departure from traditional farming methods, the results presented here suggest little difference in the gender relations underlying such practices – where men generally occupy public spaces and women private spaces.

While the organic farm represents a physical landscape – comprising an array of biological processes – it also represents a symbolic landscape, through which producers construct understandings of the land and themselves (Greider and Garkovich, 1994). The various symbolic meanings producers ascribe to landscapes arise from their particular angles of visions – or situatedness (Haraway, 1988). As an outcome of the diverse locations that women and men occupy across the organic farm, they come to engage with, and ‘know’ these landscapes in diverse ways. An analysis of producers’ knowledges of the organic farming landscape therefore provides an approach to examine the extent to which producers’ gendered social location shapes the production of knowledge claims. Concomitantly, the social construction of meanings of landscapes reflects producers’ social location (including their gender, ethnicity, socio-economic class), values and beliefs. Examining the gendered division of labour on organic farms is therefore an important step in identifying the diversity of locations in which knowledges arise. This approach also illustrates the sites of knowledge production – and the gender categories that occupy these – that are privileged above others in shaping the trajectory of the organic industry.

Constructions of organic landscapes

An analysis of the meanings women and men organic producers’ associated with their organic farm revealed constructions of landscapes were gendered. That is, while women and men shared many similar understandings of the organic agricultural environment, they also expressed many differences. While it is important to examine the similarities, this paper focuses on the differences between women’s and men’s understandings of the organic agricultural landscape, in order to highlight the significance of our location in gendered bodies in shaping the production of knowledge.

To begin, while many women and men constructed organic farming as “environmentally responsible”, they drew from various meanings to do this. For example, women and men described organic farming as “sustainable”, “good environmental management” and “farming with nature”. Men in particular drew on meanings underlying a “sustainability” discourse, and referred to the ability of organic systems to maintain the land

for future generations, providing long-term employment for families, and supporting the longevity of surrounding rural communities. While women described the organic landscape in similar ways, they rarely utilised the concept “sustainability”. “Sustainability”, “sustainable development” and “sustainable agriculture” have emerged as part of a language of environmental management throughout the last decade. These concepts have been readily adopted by government agencies and agricultural (and other) industries. Men’s use of such language to conceptualise the organic farm reflects, at least in part, their high rates of participation in the institutional milieu of the organic industry, where such language is produced and re-produced.

In addition to meanings associated with “environmental responsibility”, producers also constructed the organic farming landscape as “healthy”. While both women and men conceptualised their farm in this way, women more commonly referred to what they believed to be the risks of agri-chemical exposure and ill-health, and saw organic farming systems as a way of avoiding these risks. Many women traced what they believed to be the relationship between ill health experienced by themselves, their children, grandchildren, partners or animals, and exposure to agri-chemicals. Many producers – particularly women – also drew from secondary sources, including media reports, books and anecdotes from friends in constructing a connection between chemical exposure and ill-health. Women’s heightened concerns for their families’ health appears to be related to their location as the primary health care providers in their house. As an outcome of this position, they were more likely to notice health problems prior to other members in their household.

Both women and men also saw the organic landscape as a place in which they could live a “lifestyle” they believed was desirable. In particular, producers believed the “rural lifestyle” and the ability to “be one’s own boss” had shaped their decision to produce organically. In relation to the “rural lifestyle”, producers stated that by undertaking organic production they were able to live in the country, which provided a safe environment for their children to grow up in, and which also enabled them to be self-sufficient. Many women emphasised this meaning, and reiterated that it also provided them with the flexibility to meet childcare and family commitments for which they took primary responsibility within their household. In contrast, many men stated that that undertaking organic production enabled them to “be their own boss” – by maintaining control of their farm operations, and how they grew their crops and reared their livestock – which they valued highly.

Many producers also associated organic farming with “farming as a business”, including meanings such as “market access”, “financial viability” and “business sense”. Many of the producers who constructed organic production in these ways believed that legal definitions of organic production underpinned the success of organic agriculture as a

business enterprise. Amongst producers interviewed, men more commonly saw the organic farm as a financially viable farming system, which they believed would ensure their continued access to markets.

This overview of the meanings producers associated with the organic landscape indicate women and men share both similar and different knowledges about organic agriculture, and the extent of these differences illustrates that constructions of the landscape are gendered. Further, in many instances it is evident that such knowledge claims emerge from individuals' gendered locations⁴. The results discussed above illustrate women and men present both divergent and similar understandings of the organic farming landscape, and each of these knowledge claims – whilst emerging from diverse locations – are equally valid, and combined offer a comprehensive conceptualisation of the organic industry.

Conclusions

Knowledges emerge from complex and contested social locations. As an outcome of the diverse locations women and men occupy, they come to know the world in diverse ways. This is particularly evident in the case of organic agriculture, where a gendered division of labour structures the activities women and men engage in, thus shaping their knowledges of the organic farming landscape. The results presented in this paper illustrate the significance of women and men's social location in shaping their knowledge claims.

While knowledge claims emerge from many vantage points, dominant discourses of organic agriculture have traditionally emerged from those spaces men occupy. More specifically, while women express various understandings of the organic farming landscape, such knowledges – and the social locations from which such knowledges arise – are excluded from such discourses. As the industry undergoes processes of institutionalisation, knowledges emerging from various masculine institutional milieus are centralized. As a consequence, the masculine knowledge claims produced within these locations increasingly shape the trajectory of the organic industry.

In order to achieve a sustainable system of agriculture and food provision – both ecologically and socially – the organic industry must firstly recognise the diversity of knowledges amongst its members, and secondly, find new and exciting ways to include women's knowledges within discourses of organic agriculture. This will require a reformulation of gender relations in ways that enable women to enter traditionally male occupations – such as certification officers, scientists and agricultural consultants – as well as the inclusion of knowledge claims that emerge from the range of locations producers

⁴ Further analysis also indicates such knowledges are also spatially and temporally situated, and reflect an individual's social location. A discussion of these findings however, is beyond the scope of this paper.

occupy. Such changes will facilitate a shift towards more socially just and environmentally responsible agriculture.

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Further Information

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