# PRAIRIE PERSPECTIVES:
## GEOGRAPHICAL ESSAYS

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# Preface

It has become a PCAG tradition that the annual conference is held in a variety of prairie locations, incorporating many of the diverse rural landscapes that characterize the region.  In keeping with that tradition, the 27th annual meeting of the Prairie Division, Canadian Association of Geographers was held at a few kilometers north of Gimli, Manitoba at Misty Lake Lodge from September 26 to 28, 2003.

Over three days, more than one hundred delegates attended the conference hosted by the University of Winnipeg's Department of Geography. In total, presenters delivered thirty-nine papers in nine sessions. A separate session included the display of eleven poster papers on a variety of topics. In addition to these presentations, attendees enjoyed a field trip examining rural settlement and recreational development along the east shore of lake Winnipeg. The conference ended with a keynote address by Dr. Harvey Thorleifson, Professor at the University of Minnesota, Minnesota State Geologist, and Director of the Minnesota Geological Survey.  Overall, the conference attracted a solid contingent of attendees from all prairie departments.

Of the 50 conference papers presented, eighteen were accepted for publication in this volume of *Prairie Perspectives*. Seventeen are included in print, and an additional paper whose format does not conform to the printed journal requirements is included in a CD version. As a whole, these papers are representative of the scope of themes and breadth of subject matter offered at the annual meeting. As has been the case in past years, several of the papers in this volume were authored or coauthored by undergraduate and graduate students.

All papers submitted for publication in this edition of *Prairie Perspectives* were subject a double-blind peer-review process with referees drawn from a number of academic disciplines. Editors were able to solicit reviews from referees at universities throughout North America and from as far away as Sri Lanka and Australia. The diversity of papers submitted necessitated us calling on the expertise of scholars from not only geography, but a wide array of academic departments. To all those who generously gave of their time and expertise by consenting to act as referees, we offer heartfelt thanks.

The papers included in this volume well illustrate the eclectic interests of prairie geographers, from music to Mongolian ice sheets.  The first grouping of papers is strongly oriented to the arts.  Kuly's begins with bluegrass music

and an examination of how a musical form combats placelessness by connecting with listeners through the complexities of place. The theme of music continues in the second paper, where Lehr, Tabvahtah, and Bartlett offer their thoughts on the evolution of contemporary Inuit music in the Canadian Arctic. Venturing into the ties between visual art and community development, Cardona-Claros and Engbrecht consider new models of mural development occurring in Winnipeg's West End and the resulting impact on community participation.

Similarly, Gaudry is also concerned with how people interact with their environments. In her paper, she uses Manitoba's Red Coat Trail to describe the conflict between tourism and heritage interests in evaluating the authenticity of trail user experience.

The second grouping of papers share the themes of urban form and economy, and are representative of the remarkable diversity of approaches within the field, from public spaces, to wandering Dadaists. Everitt and Massam present an empirical evaluation of four plazas in Puerto Vallarta that informs our understanding of public space and place-making, particularly with respect to quality of life issues for local populations. Taking a broader view that incorporates public and private space, Kennedy-Pruehs, Bell, and Martz also discuss urban form. Their analysis of mapping exercises undertaken in two rural towns reveals striking differences in how and why community was valued in two seemingly similar locations. Moving two provinces east, Eberts continues this focus on the urban periphery, comparing the organization and economic restructuring of craft production in southwest Manitoba to that of heartland manufacturing regions. With their paper on inner city commerce, Selwood and Kohm shift our gaze yet again from geographic to social marginality as they analyze the social forces that combine to locate marginal businesses, such as massage parlours and pawn shops, in the inner city. In their analysis they consider the interaction between policy makers, business and consumer interests, and the public in this difficult debate. Finally, Vachon's consideration of the flaneur in reinterpreting the city gives us a more cerebral and enlightened understanding of urban planning.

Gibson and Eberts' paper on is the first of a series that bridge both human and physical geography. Their surveys of Taiwainese youth in downtown Taipei, reveals the Internet may be an important tool for the diffusion of the English language and other elements of Western non-material culture. Hansen examines the movement of people, not just ideas, to a new location using the example of Bosnian immigrants in North Dakota. The results of surveys and interviews reveal the considerable socio-economic resettlement challenges of this group. Using a quantitative analysis, Hathout examines the issue of migration from the opposite perspective. He investigates the reasons behind doctor resignation and emigration in South Africa,

incorporating statistics from receiving countries, specifically Canada. The last two papers in this group also incorporate both physical and cultural perspectives. Scott's exploration of cattle production in Amazonian Peru includes an evaluation of the introduction of exotic forage species and the resulting impact on cattle production, and sustainable agricultural practice. Jago and Malcolm report on the preliminary stages of a study that is taking place in Brandon, Manitoba. They explore the exploitation leisure activity – birding – in the creation of an education program to increase environmental awareness and action in the area.

The last group of papers included in this volume reveal some fascinating new facets in physical geographical research. McGinn and Zaniewski present some preliminary sedimentalogical and physiographic research from the Upper Rolling River Spillway that supports the occurrence of a late, possibly outburst, Wisconsinan flood. They posit further that paleocurrent indicators may suggest a reversal in the supraglaical flow in the spillway. Ke and Dale's paper outlines some groundbreaking work in geomorphology as documents a series of glacial-associated landforms that support what he calls a "Mongolian Ice Sheet" in the Chifeng region, on the eastern Mongolian Plateau. Ke and Dale hypothesize that the ice sheet was part of an existing ice sheet during the late Quaternary, and that the pattern of landforms echo those created by the Laurentide ice sheet in North America. Finally, Noble and Macharia address current deficits in follow-up environmental assessment practices through an evaluation of Canadian examples. They go on to develop a 'best practice' framework to guide approaches to project feedback. Finally, in a paper that is included only on the CD version of this issue of *Prairie Perspectives*, Brian McGregor, Weldon Hiebert and John Lehr map the diffusion of the colonies of all three Hutterite leutes in North America.

After a year of collection, review, editing and production, we are thrilled to bring you this volume of *Prairie Perspectives*. We would like to thank everyone involved in the organization of the conference and production of the journal. We would also like to thank all the authors for their professionalism and patience during this process. Finally, this volume could not have been produced without the able assistance of Weldon Hiebert, the University of Winnipeg geography department cartographer,. Weldon oversaw the entire design, layout and production of the journal. He facilitated figure and graphic reproduction for our authors and tirelessly accommodated late editorial revisions.

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# Bluegrass in an ephemeral world: personal reflections on a musical form

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*Abstract:* Bluegrass is a musical form that grew out of Appalachian culture, but surprisingly this genre has had a wide geographic appeal. Time and distance separate the hearth area from the prairie audience but the psychological and symbolic elements of place as represented in music of the American South resonate with the Canadian prairie audience. Canadian listeners respond to a nostalgic longing for the past, as bluegrass combats the anomie of "placelessness" by establishing connections with the past and to the complexities of place. Nostalgic associations offer the security and assurance that our fragmented and "placeless' society cannot.

## Introduction

> Blue moon of Kentucky keep on shining
> Shine on the one that's gone and proved untrue
> Blue moon of Kentucky keep on shining
> Shine on the one that's gone and left me blue
> It was on a moonlight night the stars were shining bright
> When they whispered from on high your love has said good-bye
> Blue moon of Kentucky keep on shining
> Shine on the one that's gone and said good-bye
> (Munroe, *Blue Moon of Kentucky*)

On the Canadian prairies, the Winnipeg Folk Festival is a showcase of folk music from across the country, continent and the world. For four days every July, more than 30,000 people immerse themselves in this musical event. In the evening, after a long day of concerts and workshops, festival goers can be found sitting around a campfire in the nearby campground plucking out simple melodies on a guitar and singing soulful harmonies. On these nights, the blue moon of Kentucky and the cotton

fields of Louisiana become more than places in a song; on these nights the images resonate with the players and singers who repeat each refrain, and the music and lyrics embody the very values we have come to associate with the South. It might seem contradictory that people would find meaning in this music on the Canadian prairies, a region so far removed geographically and ideologically from the Deep South of the United States. How then, does an urban Canadian middleclass find resonance in century-old music of mountain dwellers?

To answer this question, I will explore several aspects of music geography, a subfield of cultural geography first explored over thirty years ago by Peter Nash (1968) in *Music Regions and Regional Music*. Since then, the geographical study of music and musical phenomena has grown into a diverse field that includes various approaches and themes of study. In *Music Geography*, Carney (1999) describes the field as being comprised of ten general taxonomies (para. 5). The approaches employed in the following discussion align themselves with the fifth and eighth of Carney's classifications which identify the symbolic elements of place, or a sense of place or place consciousness as interpreted through musical means, and the relationship between these place perceptions and the natural environment as valuable areas of study within the field of music geography. Specifically, this discussion will delve into the psychological and symbolic elements of place as represented in music of the American South and how it unites cultures and regions by responding to a nostalgic longing for the past. In order to understand these connections, it is first necessary to consider the nature of bluegrass music itself.

## Bluegrass: A Brief Definition

Sometimes called "'mountain soul music', 'old time pickin' and singin',' and 'folk music in overdrive'" (Carney, 1987, 160), bluegrass music has its origins "in the rural upland South [of the United States], particularly the Appalachians" (Rosenberg, 1985, p. 6). The 1940's saw the rise of this organic music with Bill Monroe and the Blue Grass Boys, generally thought to be the founders of the genre. Bluegrass grew out of the hillbilly tradition, and is wholly acoustic, performed on string instruments, usually including a bass, guitar(s), mandolin, and banjo and is characterized by a nasal, high-pitched singing. The authentic Bluegrass sound is enhanced by vocals that are often described as the high lonesome sound, incorporating up to five-part harmonies. These harmonies are so ingrained in the genre that unison singing is rarely found in bluegrass music at all (Rosenberg, 1985, 7). The lyrical themes of bluegrass revolve

around the depiction and description of place, which evoke feelings associated with representations of "downhome country" where *country* refers to a physical place, a rural landscape with a handful of people, and *downhome* refers to a spirit, a sense of place evoked by a style of music (Titon, 1994, p. xv). References to family, the old home and a simpler, happier time and place reinforce this place consciousness and the nostalgic undertones readily found in both the lyrical and musical content of bluegrass music. Although more than one-half of all music geography focuses on various aspects of American country music (Carney, 1999, para. 4), a lyrical analysis reveals that unlike other forms of country music, bluegrass largely avoids themes and images of adultery, divorce, trucks, and alcohol. Instead of directly addressing these concerns, the lyrical content of bluegrass most often reflects contrasting images and themes symbolic of down home and simpler times. Although bluegrass portrays themes and images that are distinctly Appalachian in origin, their symbolic nature ensures that they are more widely accessible to people from very different cultural environments who relate to bluegrass as art, or, a musical form, much like they would to a Viennese waltz or New Orleans jazz riff (Rosenberg, 1985, p. 8).

During the formative years of bluegrass, audiences who easily identified with the "down home" themes and sound were "blue-collar workers, farm families, and other working–class people of rural origin" (Rosenberg, 1985, 6). Malone (1979) further pointed out that this audience was not representative of a particular race, but that there existed "a folk pool shared by both blacks and white…as long as poor blacks and whites shared a milieu that was rural, agricultural, and southern…the two groups…often overlapped" (p. 5). At the turn of the 21st Century, the symbolic content and authentic feel of southern music has found resonance with an entirely new audience, one far removed in time and place from life in the American South.


## Values Statements in the Bluegrass Form

In order to understand why bluegrass music appeals to a new cohort of listeners unfamiliar with the land, social class and life that gave rise to this southern musical form, a summation of the values and attitudes characterized by the lyrics and music of "The South" is useful. As previously mentioned, images of "down home" pervade the simple melodies of bluegrass music. In secular bluegrass music, these images evoke feelings of nostalgia for the known, the secure, and the unchanging nature of the past.

> Back in the days of my childhood
> In the evening when everything was still
> I used to sit and listen to the fox hounds
> With my dad in the old Kentucky hills
>         (Munroe, *I'm on My Way Back to the Old Home*)

In Munroe's *I'm on My Way Back to the Old Home*, Kentucky is associated with a working class view of childhood, with calm, peace, and family. These images shape a listener's perception of the south, regardless of the validity of the images; Kentucky becomes a slow, rural southern place with strong ties to the land and family. The listener associates these perceived southern values with an authentic Kentucky scene.

Religious themes are also found in bluegrass music, from old spirituals to more recent gospel music. Interestingly, the lyrical content more often depicts a persistent spirit or simple heavenly rewards rather than lofty aspirations to glory.

> Each day I'll do (each day I'll do)
> A golden deed (a golden deed)
> By helping those (by helping those)
> Who are in need (who are in need)
> My life on earth (my life on earth)
> Is but a span (is but a span)
> And so I'll do (and so I'll do the best I can)
>         (Munroe, *A Beautiful Life*)

If the lyrics of bluegrass music typically depict a sense of simplicity and steadiness in life, its rhythms, melodies and harmonies serve to reinforce these sentiments. The un-electrified nature of the music suggests an organic, grassroots origin from a time and place where such characteristics were valued. Indeed, the rigid, established tradition of the genre has set bluegrass apart and through bluegrass music, audiences have come to an understanding of the American South. In sum, bluegrass embodies values of stability, hope, persistence and order, values that by extension, its audience assigns to the geographical region in which bluegrass originated.

Having discussed the musical genre and the fundamental values it has come to represent, we return to the question at hand. How is it that a Canadian urban sophisticate is attracted to the mountain music of the uneducated working class of the Deep South?

## An Ephemeral Context

In a society where "meaning making" has become fragmented and where tradition is no longer communicated or maintained across generations, people have lost vital connections to place and the past. Technology and communication are moving forward with such speed that the traditional means of attaching significance to experiences, institutions and practices are no longer functional. Whereas fifty years ago the norms of the time would have dictated that a community, neighbourhood, or family would function as a unit, today such norms have been altered, and in some cases extinguished; they are now being replaced by a fragmented conceptualization of space and identity that has change society's relationships to place and each other. In Winnipeg, for example, it is no longer necessary for children to attend school within their own community; instead, they may choose to travel to a more prestigious school across the city. This is just one local example of the increasing globalization of life in the 21st Century, where a communication of choice outranks a communication of tradition.

Along with this communication of choice has come a reordering of society's normal connections to space and place. With communication tools that expose us to images, information and resources simultaneously around the world, our perceptions of home as a constant, identifiable place begin to lose meaning. Home, and the way we construct our experiences, and ourselves becomes the synthesis of a much more involved process.

In the first half of the 20th century, people were more likely to define themselves in terms of their family, their neighbourhood, their work, and their land, aspects of their lives that directly influenced their person. Mahyar (1999) explained this "'rootedness' as the most natural, pristine, unmediated kind of people-place tie." He further pointed to Tuan's (1980) explanation of "'rootedness [as] an unselfconscious, unreflectively secure and comfortable state of being in a locality - so much so that one's immersion in place is such that one is not even conscious of the flow of time, nor of the world beyond one's immediate surroundings'" (1999). Today, a throwaway society has changed our process of self-definition. Every aspect of present western society has become disposable; from plastic lawn chairs to food storage containers, products we use every day are designed to be thrown out. As a disposable society becomes the present reality, how do people attach meaning to the world around them, to place, to themselves? When post-modern fragmentation disrupts the natural process of attaching meaning to that which surrounds us, we feel a sense of what Relph (1976) called "placelessness." To deal with a loss of meaning in the present, we often turn to the past.

Conveniently, the rapid pace of change driving our throwaway society provides an endless supply of nostalgia for the past. The power of reinvention in advertising and marketing has meant that virtually anything can be subject to nostalgia. Examples abound in every day transactions: a paper coffee cup at Tim Horton's on one day, might feature a different graphic or promotion the next; McDonald's "Spell to Win" Scrabble becomes a nostalgic event as soon the next Disney-endorsed marketing campaign begins; or a Top 40 radio song heard at the beach in August strikes a chord when shovelling the walk in December. Similarly, events of global scale – the war in Afghanistan, famine in Sudan, and the SARS virus epidemic - filter in and out of our consciousness at an increasingly rapid pace. Just as the world around us is constantly redefining its terms, so too, people can redefine themselves on a daily basis. It becomes possible to discard ways of being in the belief that it is possible to recreate yourself in any terms you choose. In today's society, longstanding norms that have previously provided the means by which we can establish self-identity have been uprooted and replaced by a norm of change. Where it was previously possible to take comfort in those unchanging standards and norms, society today has only the assurance of certain change.

Though the promise of change can bring a measure of comfort, I would assert it is in the nostalgic associations with the past that security and assurance is found. With constant change comes the anxiety that nothing is stable, nothing is secure. "Mistrust of the future…fuels today's nostalgia. [O]ur misgivings about what may come are…grave" (Lowenthal, 1985, 11). The threat that any place, thing or concept with which we attempt to create meaningful bonds in the present will undeniably change, forces us to look for those connections in the past. As we will see, those connections are found through mediums like bluegrass music.

## Using the Past

The concept of "inventing tradition" or finding "usable pasts" has been widely discussed and debated. In *The Invention of Tradition*, Hobsbawm & Ranger (1983) posit "[it is] the contrast between the constant change and innovation of the modern world and the attempt to structure at least some parts of social life within it as unchanging and invariant, that [results] in the 'invention of tradition'" (p. 2). In *Usable Pasts*, Tuleja (1997) referred to Michael Kammen's observation that "traditions are commonly relied upon [to invoke] the legitimacy of an artificially constructed past in order to buttress presentist assumptions and the authority of a regime" (p. 1). In this context, the authority of a regime can be

considered to be the societal norm of change. Individuals "invent tradition" and create "usable pasts" to address their individual sense of placelessness and loss of meaning. By extension, we can understand how middle class Winnipeggers appropriate the values embodied by bluegrass music in an attempt to construct a "private heritage" of meaning to establish security and a lasting and usable identity. But with this construction comes a question. How can this manufacturing of tradition or heritage be authentic?

The *Oxford Dictionary of Current English* defines "authentic" as: genuine, of legitimate or undisputed origin (Allen, 1984). Here lies an interesting juxtaposition. We choose to identify with the values represented in a musical form like bluegrass because the stability of those images appeals to us in a changing society; but we also choose to identify with bluegrass because it does not form any part of our actual or un-imagined identity. Because we are removed from the place and time that shaped the musical form, and which the form had a hand in shaping, we feel free to romanticize the place, time and values we draw from the music. In other words, the physical and psychological divide that separates middle class urban dwellers on the prairies from the original audiences in the hearth area, is doubly significant. The physical and symbolic detachment allows people otherwise removed from the experience of the music to accept the authenticity of the form and content of bluegrass as fixed, or definite; the same geographic and cultural barriers mean they lack the contextual indicators to disprove the image of the south that bluegrass creates. In fact, new audiences feel free to embrace the music and the images even more as an outsider than those who have lived it do, the latter having a framework from which to judge the music's authenticity. It follows then, that the construction of an imagined heritage through bluegrass music is no less valid or compelling than any "real tradition" of the past. Tuleja (1997) notes that "if Faulkner was right that the past is neither dead nor past…making histories means making them up, recasting the lines (or lyings) as we go along" (p. 12).

## Availability of Traditions

"Yet we can no more slip back to the past than leap forward to the future. Save imaginative reconstruction, yesterday is forever barred to us…in recent years such nostalgic dreams have become almost habitual, if not epidemic" (Lowenthal, 1985, p. 4).

As Lowenthal relates, nostalgia has become such a consuming passion of present society that it is a consumer product. The capitalist spirit that invented a throwaway culture and massive communication networks has

managed to commodify and market our search for meaning, for place and for identity.  Etching out an identity is a complicated progression; it evolves in response to these external societal pressures, which in turn mediate the process of self-ascription and tradition (Tuleja, 1997, p. 6).

Through self-ascription, bluegrass music becomes available to middle class urban sophisticates as a means of appropriating the stability and order of a time and place through the simple exchange of money.  In the new system of consumer capitalism, currency has replaced tangible experience, so that the means of production, the sweat, effort and process that formerly asserted ownership, is now equated with dollars.  This system has led to the commodification of everything from quality of experience to quality of tradition or heritage.  As Lowenthal (1985) states, "the remembrance of times past is a burgeoning business" (p. 6).

Perhaps surprisingly, society does not protest the influence of the mass media and mass consumerist culture on its interpretation and manipulation of place, of the past, of their identity.  "[Society] use 'spurious' and 'capitalist' resources with the same delight as 'genuine' and 'resistant' ones in the creative reconstitution of their … expressions" (Tuleja, 1997, 11).  North American society is content to leave matters of authenticity to scholars while they put their Bill Munroe bluegrass CD on the shelf next to the Beastie Boys – an instantly accessible nostalgia to be employed as needed.

## Conclusion

> We were waltzin' that night in Kentucky
> 'Neath the beautiful harvest moon
> I was the boy who was lucky
> But it all ended too soon
> As I sit here alone in the moonlight
> I can see your smiling face
> And I long once more for your embrace
> In that beautiful Kentucky waltz
> (Munroe, *Kentucky Waltz*)

The genre of bluegrass music has proven resilient over the last half century, despite its rigid rejection of advances in musical technology.  As such, it stands as a metaphor for the past society longs for, a time and a place where longstanding norms of family, hard work, and "down home" still exist. The present fragmentation of meaning making wrought by the rapid pace of a society exercising a communication of choice in place of a communication of tradition, has made the organic, authentic feel of

bluegrass music even more evocative, as anxiety regarding the uncertainty of anything but change takes hold. Bluegrass is, in part, nostalgia for the certainty of the past, and a yearning for the simplicity, stability and hope represented in the lyrical descriptions and un-electrified music of the South.

The study of place, its perception, and the accessibility of the perceived values and experience exemplified in bluegrass music is only one example of how the interdisciplinary approach of music geography reveals insightful cultural phenomena indicative of a changing fragmented society. Other musical forms offer equally valid responses to, and criticisms of, social life and societal crisis in various geographical and cultural contexts. Carney (1999) asserts, "music is a significant surrogate measure of culture and, therefore, is of importance to cultural geographers" (para. 16). Slowly, music geography is being acknowledged for its contributions in this regard, with each investigation into the reciprocal relationship between music and various cultures a step towards a better appreciation for this important geographic tool.

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# Identity and environment in contemporary Inuit music

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*Abstract:* The music of the indigenous peoples of North America was profoundly affected by European contact. In Canada's Arctic, external influences upon the Inuit reflected the history of contact with Europeans. Whalers from northwest Europe introduced the fiddle, jigs and reels; the missionaries who followed promoted hymns and gospel music. The penetration of radio in the 1960s gave access to the mass media of southern Canada and the United States and exposure to a wider variety of musical genres. The introduction of tape recorders, computers and jet travel all contributed to the evolution of modern Inuit music. Embracing a variety of genres ranging from heavy metal to country and gospel it is distinguished by its lyrical content, use of Inuktitut and frequently by a unique fusion of Inuit traditional elements with introduced styles. As elsewhere, music has become a vehicle for cultural and political expression. Issues of Inuit identity, cultural and political survival, and the relationship of the people to the land are commonly addressed by contemporary Inuit musicians.

Music and dance are an integral part of Inuit knowledge and heritage. Before contact with Europeans the Inuit of Canada's North (Fig. 1), as elsewhere in the circumpolar region, had a unique repertoire of songs and dances that in their lyrical content and instrumentation reflected an intimate relationship with the arctic environment.

The two principal traditional forms of Inuit music were the drum dance and throat singing. Neither technique is unique to Inuit culture as variants are found in other cultures around the world, but the way in which both are performed is unique to the Inuit.

The drum dance was played on a small hand-held round drum built on a wooden frame that is covered with part of a caribou skin. The side of

**Figure 1:** *Canada's North.*

the drum, not the skin, is struck with a small wooden stick. Drum dancing
played a role in almost every Inuit gathering whether for the celebration
of a birth, marriage, a successful hunt or to honour a person who had died
(Serkoak, Hanson and Ernerk). It was enjoyed by people of all ages. The
drum dance singers, who were usually women, sat in a circle, waiting
until a male volunteered to be the first dancer. If nobody volunteered the
women would begin singing a *pisiq* (or plural *pisiit*) – a personal song of
a man in attendance, who would then feel challenged to dance. Almost
every adult had his or her own *pisiq*. There were many types of *pisiit*:
songs of contest, of satire, humorous songs with obscene lyrics, songs that
dealt with the range of human emotions: love, hate, happiness, loneliness
and despair (Serkoak, Hanson and Ernerk). In Greenland and the Baffin
Island area *pisiit* were used to settle arguments with the wittiest *pisiq* being
chosen as the winner. The traditional *pisiq* declined in popularity as a
result of the introduction of European instruments. *Pisiit* eventually died

out in parts of the eastern Arctic where Inuit had been exposed to European culture for a longer period.

Throat singing was common to most but not all areas of Inuit culture and was widely practiced by the Inuit in Canada's Arctic. Usually performed by two women, the singers stand face to face each repeating a low-pitched sound in a fast rhythm. These sounds represent the sounds made by various birds and animals.

Contact with Europeans in the seventeenth century introduced new musical genres and instruments to the Inuit, some of which were adopted by them and integrated into their evolving culture. Whalers from northwest Europe penetrated into Inuit territory bringing the mouth organ, violin, push-button accordion and the mouth harp with them. They introduced the population to new dance rhythms: the jigs and reels of the Scottish Isles and Highlands and the polkas of continental Europe. These new musical forms were so widely adopted that many Inuit came to regard them as traditional forms of Inuit music (Powell 3). Throat singer Madeleine Allakariallak explained that when she was a child in the north:

> Traditional music to me was the accordion, fiddle and mouth harp, only because I saw my grandma playing both the fiddle and mouth harp, and my uncle was an amazing accordion player. My grandma throat sang *Inaquuyit,* or lullabies, to all her kids, to calm them down from crying or even to put them to sleep. I never questioned whether throat singing was a part of my tradition because it was a normal part of everyday life. (Allakariallak, pers. comm.)

In the mid nineteenth century, hard on the heels of the whalers, came missionaries, who introduced European values, along with hymns, gospel music and written forms of Inuktitut. Churches, like all bureaucracies, function best when operating among geographically static populations, and so encouraged the development of permanent Inuit settlements and the abandonment of their nomadic way of life. There was no desire by Europeans to take land for agriculture so the Inuit were never confined to specific areas on Reserves, as were the First Nations to the south, but they were still affected by European colonial demands for control of resources and territory. Education, the promotion of English, and the inculcation of Canadian values depended on fixed populations or the establishment of residential schools at central points to serve a scattered and mobile population. As the population became less mobile, the replacement of the tent and snow house with houses based on southern-Canadian designs contributed to the high incidence of introduced European diseases such as tuberculosis among the Inuit population. The consequences were profound,

leading to an erosion of traditions and an acceleration of the degree of exposure to southern Canadian ways.

Charlie Panigoniak from Arviat and Rankin Inlet (Fig. 1), the first Inuk to record a song, was first exposed to the guitar and country music by First Nations patients at the sanatorium at Ninette, Manitoba, in the 1960s when, like many other Inuit tuberculosis patients, he was sent there for treatment:

> When I was growing up I would listen to my father play what I thought was a guitar but was in fact an old hot chocolate tin and I would copy him and learned to play too. In the sixties when Inuit were sick with TB I was sent down to Ninette, Manitoba, this is where I learned to play guitar and sing. I couldn't speak English and I couldn't play guitar, but those Indians could play and sing so well, I had to learn too. I was so amazed at their guitar, I grew up with the hot chocolate tin thinking it was a real guitar and to see a real guitar was something else. Because I could hardly speak English, let alone understand it, I never knew what the Indians were singing, English or not. Eventually, I too learned to play [the guitar]. Boy, those Indians could sing. (Panigoniak, pers. comm)

For most Inuit, exposure to southern music came via church and schools until radio became widely accessible to northern communities. Country and gospel music were the most popular genres. Gospel music was obviously favoured by the churches but the reasons for the popularity of country music are less clear. The late 1950s and early 1960s were a time when country music was enjoying great popularity in the south and some of the more southerly northern communities were able to receive American country music stations broadcasting on clear bands. It has also been suggested that the northern missionary churches were more tolerant of country music because it was seen as a morally more acceptable alternative to rock and roll and because of country music's association with square dancing, a form that was not only compatible with the jigs and reels of the new "traditional" music but which did not involve bodily contact between the dancers. Perhaps, as Nick Hornby (2003, 142) noted, "country music is too embarrassingly sincere, too respectful of the past," to be appropriated by the ruling commercial establishment. It was, and largely remains, the music of alienation and anomie. Whatever the reason, country music became ubiquitous in the north, and as Mark (1988) has shown, musical taste is largely determined by the frequency of exposure to a particular genre.

During the 1960s radio diffused rapidly through northern communities. Inuit singer Madeleine Allakariallak commented that:

> As a kid, growing up with my grandmother [in Resolute Bay on Cornwallis Island] we had the radio turned on all the time because of how isolated we were from everything. Our way of connection to the rest of the world was mostly through radio. And the radio played country music. (Allakariallak, pers. comm.)

However, it was not until the early 1970s that Cree and Inuktitut language programming was introduced by the Canadian Broadcasting Corporation's Northern shortwave radio service. Shortly thereafter cassette tape recorders became available, a technological innovation that allowed Inuit musicians to record their music and submit it to the CBC Northern service Inuktitut program for airplay. Elijah Menarik, host of CBC's "Isumavut" program received submissions from throughout the north. Most were poorly recorded with just a single voice and guitar. It was difficult to broadcast cassette tape recordings, as most northern program facilities were equipped only with reel-to-reel tape and turntable playback equipment. The solution was to produce a series of seven inch extended play 45 rpm discs in the CBC Arviat facility. Charlie Panigoniak was the artist featured on the first two Inuktitut recordings issued in 1973. About 500 discs were produced of each recording all of which were distributed to North American radio stations. During the 1980s this initiative continued, broadening to include production of 35 12 inch LP records, many of which were made commercially available. These albums embraced a variety of Inuit musical genres ranging from pre-contact traditional style music, from the fiddle music common to festivals and community dances to contemporary North American music blended with Inuit lyrics (Lintel).

During the 1990s, the advent of computers, improved home recording equipment and access to the Internet again revolutionized Inuit music. Improved communications and the introduction of jet service to some regional centers contributed to the ability of Inuit musicians to share their music throughout the north and to bring their talent to southern markets. The spread of television and the official encouragement of multiculturalism and increasing acceptance of artistic contributions from minority cultures by the mainstream Canadian community certainly played a role. Most important, though, was the spread of English through Inuit communities, which enabled Inuit artists such as Susan Aglukark and Lucy Idlout to reach beyond the northern market and to achieve recognition and acceptance on the world stage (Idlout, pers. comm.).

Contemporary Inuit music embraces virtually all genres that the Inuit have encountered.  Country and gospel continue to predominate but jigs and reels compete with pop, hard rock and heavy metal in popularity. This is evident, for example, on the Compact Disc *Aqpik Jam* '97 that features Inuit amateur musicians from the Arviat area of Nunavut performing in a variety of genres.  Inuit music thus cannot be identified by genre alone but it is possible to identify it through its lyrical content, because Inuit musicians, like their counterparts in other cultures, sing about what they know and what they have experienced.  The first song written by Charlie Panigoniak, "Sanatorium," for example, was about the TB sanatorium in Ninette, in southern Manitoba (Panigoniak, pers. comm.) This medical facility treated thousands of tuberculosis patients, many of whom were aboriginal or Inuit, until its closure in the 1970s.

Inuit society has experienced massive social, economic, and political change over the last century but its intimate relationship with a changing arctic environment remains strong. The Arctic environment is still the soul of Inuit culture despite the widespread adoption of technological innovations that have transformed traditional life in the north. The snowmobile has replaced the dogsled and the rifle has long replaced the spear and bow but even in modern northern communities the people still live close to the land, acutely aware of that the rhythm of life in the Arctic is set by nature, not people. As Madeleine Allakariallak commented: "In every sense and form, being Inuk and coming from the Arctic is who I am and what I write about in my songs . . . I want to sing about the beauty of the north, the people, the culture.  But you see, I have to translate these images from an Inuit perspective, and find the words in English to describe them . . . ." (Allakariallak, pers comm.)   This is exemplified in the song "Hear Me," where the English lyrics are followed by the Inuktitut equivalent:

> Rhythm of life, Innusivit
> Beat of my heart, Ummativut
> Whisper of wind, Anurialuk
> A cry in the dark, Qiajuruluk
>
> All the sounds that surround me are magic
> Casting spells on the way that I see
> All around there's a half hidden world
> And it's crying out, "Hear me."
>
> Ilainatuanga takunnaqpakkakku
> Ilainnanga tusaatsugu
> Qiajuq, Tusaaviit."

> Howl of a wolf, Amarualuk
> Cracking of ice, Sikugasit
> Song of a bird Qupanuallu
> Hiss of a knife, Natujunnaq.
>   (Park-Wheeler  and Allakariallak, 1995)

Even to the Inuit, whose culture is so closely adapted to the harsh northern environment, the Arctic can often be an inhospitable place. Nostalgia for the old days, a stock theme of the country genre, is tempered by a realization that technology made modern life in the Arctic a good deal easier than it had been for earlier generations. In 1980 Etulu Itidlui from Cape Dorset (Fig. 1), recorded  "Ajuqsanaqtuk" [hardships] with a theme that hardships, sickness, and starvation, often accompanied traditional life:

> You've never known a hard life, you're not like us [elders].
> Right now you're a child, so I'll tell you.
> Back when we had the proper things, we still had a hard life;
> We used to travel by walking and by dog team.
>
> Right now the young people don't know what it's like to
> live in hardship, because now they have warm houses to
> travel from.
>   (Translated from Inuktitut by Jeff Tabvahtah)

Everything comes at a price. Modernity and technological innovation did much to destroy the traditional Inuit way of life.  Economically, the north was treated like a colony.  It was exploited by southern corporations and ruled from Ottawa with the Inuit treated in a high-handed paternalistic fashion by federal bureaucrats.  Perhaps the most glaring example of this was the naming issue.

At the time of European contact Inuit did not have last names. Unwilling or unable to pronounce Inuit first names Ottawa solved the problem by issuing all Inuit with a dog tag that bore the number of the district in which they lived and a personal identification number that replaced their name. Inuit found this humiliating, a reaction made very clear by Susan Aglukark in her song E1-186 and Lucy Idlout in her composition, "E5-770 My Mother's Name."   E5-770 was the "disk number" assigned to an Inuk from the Number 5 district around Baffin Island in Nunavut.  E stood for Eskimo, 5 for the district and 770 was Idlout's mother's number.

The disk number was one of many humiliations borne by the Inuit. Their language and traditions were denigrated; their culture eroded by the incursions of modernity, and their way of life derided by outsiders with a colonialist mentality.

> You farmed my mother, E5-770
> You imposed your name number
> E5-770, my mother's name.
> Your tongue unfit, too frail to speak
> Identities of thousands cattled 'E'
> E5-770, my mother's name
>    (Idlout, E5-770 )

Both Susan Aglukark and Lucy Idlout have written and sung extensively about the social problems that have plagued Inuit society. Through their English language lyrics they brought some of these issues to national and even world attention. Earlier, in Inuktitut, singers had broached similar issues, such as suicide and the loss of loved ones. "Qatangutik" [Cousin,] for example, tackles the issue of high suicide rates among Inuit youth, with the lament "What did I do to make you leave? I wish you hadn't left me. If you were still alive today it would be all right with me." (Qimutjuit 1997). ‒The lyrics express the bewilderment of bereaved relatives and a strong sense of loss. At the same time there is an implicit understanding of the conditions that create despair in the hearts of a generation that finds itself caught between the traditional and the modern.

The political struggle for self-government and the creation of the territory of Nunavut as an Inuit homeland has been a popular theme among Inuit singers and songwriters. With lyrics in Inuktitut and with songs clearly aimed at a local audience, Inuit musicians express the political hopes and aspirations of their communities:

> Nunavut, that Inuit strove for self determination and their own land.
> Nunavut, it was hard to accomplish, to get our own government.
> For a long time Inuit didn't have a voice,
> For a long time Inuit didn't have a choice,
> To choose their own government.
>    (Uvagut 1995, Translated from Inuktitut by Jeff Tabvahtah)

Many songs in Inuktitut celebrate the Inuit identity and the emotional ties that exist between the Inuit and their land. Perhaps typical is Kuujjuaq

artist, William Tagoona's 1979 recording of "Inuit Nunaanit" [In the land of Inuit.] issued on a 1991 CBC compilation:

> Here in the land of Inuit I was born
> Here in the land of Inuit I grew up, I grew up
> Here in the land of Inuit I learned
> Here in the land of Inuit I hunted, I hunted
>
> I'm an Inuk, do you recognize?
> My grandfather passed the [Inuit] way of life to my father and I live the way of life my father passed onto me.
>
> Here in the land of Inuit when I have become tired;
> In the year that I am too old and can no longer do anything;
> My choice is to die, in the place where I was born,
> My choice is to die, in the place where I was born.
>     (Tagoona 1979. Translated from Inuktitut by Jeff Tabvahtah)

## Conclusion

Although traditional Inuit music remains an integral part of modern Inuit culture it no longer is the only form of Inuit musical expression. Contact with European whalers and missionaries introduced new instruments and, later, increasing interaction with southern Canada exposed the Inuit to a variety of musical genres.

Contemporary Inuit music, while often adopting these genres heard from the south, remains unique through the content that it presents. Although some popular Inuit music addresses the stock themes of southern popular music – love, lost love and sadness – the common use of Inuktitut imparts sets it apart from mainstream music coming from the south. The genre, melody and instrumentation are almost an afterthought as the lyrics commonly tell of resistance to European morals, values and customs. They demonstrate an active attachment and deep understanding of the environment and are more than words sung to a catchy tune or rhythm. They are testament to the people who live in one of the world's harshest regions. They are about cultural and physical survival but also, more importantly, about identity and the emotional cost of colonialism.

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# The catalytic potential of murals

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*Abstract:* The painting of murals is a popular tool for community and economic development across North America. Municipalities and community organizations pursue mural development projects for various reasons. This affects the model adopted: either a community development oriented mural (CDOM) model or an economic development oriented mural (EDOM) model. Choice of model depends on the agencies and individuals involved in the development process. This also affects mural placement, mural content, and determines the criteria for the measurement of success. An analysis of the mural program of Winnipeg's West End BIZ reveals a synthesis of both the CDOM and EDOM models. This hybrid approach and the reasons for its implementation are explained and its successes and shortcomings identified.

## Introduction

The most recent trend of mural painting in North America began thirty years ago. Mural making was undertaken as a public response to cultural and political stresses such as racism during the American civil rights movement (Cockfort and Webber 1997). Over time, the process evolved into two distinct responses to urban neighbourhood and rural decline. Urban neighbourhood decline has been addressed with community development oriented murals, while rural decline and depopulation have been addressed with economic development oriented murals. The characteristics and objectives of each strategy differ but, in both models, they govern the approach that municipalities and groups will use and the time frame required to complete the project. Additionally, indicators used to measure project success may vary. Despite the clear differences between the two models, a trend towards a hybrid approach in mural development has recently emerged. In keeping with their mandate to promote community economic development, the West End BIZ, a business improvement

association in Winnipeg has attempted to reap the benefits of each strategy by fusing both approaches into one.

## Community Development-Oriented Murals (CDOM)

Community murals are created with the goals of building community capacity, supporting community development and improving the physical environment (Table 1). These elements are significant in both the creation process and the resulting mural. Community murals have been painted on the walls of buildings in urban neighborhoods for over thirty years, whereas economic murals have a brief history dating back to Chemainus, British Columbia in the 1980s (Schutz 1986). CDOMs are a vehicle for communities to express their identity and values, and are created through a collaborative process that benefits community members.

A community mural can only achieve its intended goals through an emphasis on the art of *mural creation*. Everything from the design of the images to be placed on the wall to the activity of painting the mural is done with heavy community involvement, consultation, and participation. By engaging area residents in the process of mural development, it is believed that they will be able to gain social and artistic skills that can transcend the act of mural painting (Rice 1999). In a collaborative community effort, participants work with amateur and/or professional artists to develop themes, acquire supplies, negotiate wall space, and paint a mural.

While local community members now initiate many community murals, early in the history of community mural development experienced artists served as catalysts to spur interest in mural development (Gude 1989). In 1970, the Chicago Mural Group was formed by a group of artists who were interested in painting murals with members of underprivileged neighbourhoods (Cockfort and Webber 1977). The Chicago Mural Group aided in building community capacity by having the community raise the necessary funds, having local participants decide on a theme, and involving them in the painting of the mural. One of the most successful aspects of this approach was the engagement of local youths as apprentice artists to help with the planning and painting of murals. These youth learned the necessary skills to be competent and professional artists – skills they could transfer to other workplaces. Several cities have used similar strategies and have met with some success.

Philadelphia's Anti-Graffiti Network (PAGN) has painted over 1000 murals using various mural development strategies (Rice 1999). Although Philadelphia's more recent approaches have been geared towards tourism,

they continue to support the offshoots of their founding program. In the early 1980s Philadelphia was notorious for the amount of graffiti that covered the walls of its city. The Philadelphia Anti-Grafitti Network (PAGN) was established in 1984 in order to address this problem. Graffiti artists that had been, or otherwise would be, charged with vandalism were hired to assist with the creation of murals. The project was a success. Not only did other graffiti artists soon trade in their spray cans for paint brushes but the neighborhoods that had once been overrun with graffiti were now being beautified. Instead of graffiti on the walls, murals began to enliven areas with images of a more positive nature. These early murals were often symbols of hope and contained images of waterfalls and other sights foreign to the urban poor. Most notably, these murals served as deterrents to potential graffiti, and in some cases were a factor in the revitalization of communities and improvement of community relations. PAGN's model, based on enhancement of neighbourhood aesthetics, deterrence of vandalism, and increase of incentives for additional improvements, has been replicated successfully in several cities.

**Table 1:** *Community Development Model criteria.*

| **Common Criteria:** Goals | PA | IL | WI | **WE** |
|---|---|---|---|---|
| **Build Community Capacity** | | | | |
| Develop community participation skills | | √ | √ | √ |
| Build social capital | | √ | √ | |
| Build human capital | √ | √ | | |
| Increase potential employability of participants | √ | √ | | |
| **Support Community Development** | | | | |
| Create constructive outlets for youth | √ | √ | | √ |
| Display local pride | √ | √ | √ | √ |
| Promote cultural awareness | √ | √ | √ | |
| Display community identity | √ | √ | √ | √ |
| **Improve physical environment** | | | | |
| Deter crime and vandalism | √ | √ | | √ |
| Beautify an area | √ | | √ | √ |
| Increase incentives for additional improvement | √ | | | √ |
| Reclaim space | √ | √ | √ | √ |
| Process equally or more important than quality of product | | √ | √ | |

IL= Chicago, Illinois
PA= Philadelphia, Pennsylvania
WE= West End BIZ, Winnipeg, Manitoba
WI= Mifflin Community Co-op, Madsion, Wisconsin

Supporting community development through the supply of constructive activities for youth, promotion of cultural awareness, and the public display of community identity and pride is another advantage of community murals. Community murals are often identifiable through their content and multiple image layouts. Although sometimes of an apparently unrelated nature, the images represent values, culture, ethnicity, activities, moral issues, religious beliefs, hopes, dreams and many more of the social, political, economic, and spiritual elements that are unique to each community. They require months of work to complete and result in more eclectic pieces of art than economic development-oriented mural projects.

## Economic Development-Oriented Murals (EDOM)

A relatively recent North American phenomenon, economically motivated murals are intended to achieve different objectives from community murals and differ greatly from community murals in many ways. Economic mural projects are often undertaken in attempt to restructure or revitalize communities with stagnant economies – whether that of rural communities suffering from depopulation or inner city districts lacking a viable economic base (Schutz 1989; Widdis 2000) (see Table 2). By developing and marketing themselves as specialized tourism destinations based mainly upon the appeal of heritage and public art, such places hope to increase outsider spending within the locality, encourage residents to spend locally, increase the appeal for existing businesses to remain in place, attract new commercial interests, and to diversify and strengthen their traditional economic base (Lehr and Kentner Hidalgo 1998). Quite simply, these towns need attractions for visitors, which encourage spending, thereby increasing the community's longevity..

These objectives have an enormous impact on the structure of the mural development process. Most importantly, the outcome of the project is the focus of the mural development strategy. The murals are created for non-locals to admire and, through a cascade effect, for the broader community to benefit economically. Community involvement is limited to approving the proposal for mural placement. Mural content and themes are decided upon by a committee composed of funding agencies and businesses. There is no attempt to achieve community consensus (Boissevain and Morton Arts Council). By adopting a consistent thematic approach to mural content within the area communities hope to create and market a local identity (Town of Stony Plain 2003). These districts are often selected for their heavy traffic flows and proximity to retail activity. The selection of specific mural sites is based on the wall's condition, surface

*Table 2: Economic Development Model criteria.*

| Common Criteria: Goals | BC | MB | SK | WE |
|---|---|---|---|---|
| Main attraction tourism | √ | √ | √ | √ |
| Slow down tourism | | √ | √ | √ |
| Beautification | √ | √ | | √ |
| Create identity | √ | √ | √ | √ |
| Use heritage mural themes | √ | √ | √ | |
| Attract new commercial interests | √ | √ | √ | √ |
| Create new employment opportunities | √ | | | |
| Diversify economy | √ | √ | √ | |
| Increase outsider spending within locality | √ | √ | √ | √ |
| Encourage residents to spend locally | √ | √ | | √ |
| Encourage residents to remain in locality | √ | √ | √ | √ |
| Attract new residents | | √ | | |
| Encourage businesses to remain in locality | √ | √ | √ | √ |
| Quality of product more important than process | √ | √ | √ | √ |

BC= Chemainus, British Columbia
MB= Boissevian, Manitoba
SK= Moosejaw, Saskatchewan
WE= West End BIZ, Winnipeg, Manitoba

and visibility as well as willingness of businesses to participate in mural development (Turner 2003). The paintings are designed and produced quickly by commissioned artists whose purpose is to meet the requirements of those funding the mural. Overall, the process of economic mural development is faster than the community approach; it takes place over a matter of weeks rather than months and the quality of the art is judged upon artistic skill rather than on the degree of community collaboration.

The process, however, only lays the groundwork for the ultimate objectives. The completion of the first few murals, the marketing of the project, accessibility of the location, appeal of the art, location of local retail activity, and so on, all influence the number of tourists who will be drawn to the murals and it is hoped, local businesses. These variables change in an inner city setting. The true measure of success for the economic mural project is whether it contributes to the long term economic stability of the locality. Those municipalities that have been most successful are those that have gained new residents and truly increased the flexibility of their economy by entering the tertiary sector markets (Barnes and Hayter 1992).

## Examining Winnipeg's West End BIZ Mural Program

The West End BIZ encompasses five census tracts/neighbourhoods that cover a significant part of city's centre. Whereas Winnipeg's total population grew by over 15% between 1971 and 1996, the West End's population declined by 20%. This meant the loss of about 8000 local residents, consumers, and taxpayers. Many of the more than 30,000 people who now live there have either moved in recently, or stayed behind due to the availability of cheap accommodation. Areas of the BIZ closer to downtown have older buildings, a higher rate of depopulation and population turnover, a higher incidence of low income, higher poverty rates, and lower rates of home ownership.

The West End BIZ is a non-profit association whose motto is to "make the West End a better place to live, work, and play" by promoting and practicing community economic development within its boundaries (Turner 2003). In operation for over a decade, the BIZ has focused its efforts on improving the built environment so that it is more attractive to potential and existing business. The BIZ's initiatives have included street enhancement activities through the addition of trees, planters, brighter lighting, graffiti removal, and litter pick-up, the addition of bright signage distinguishing the area's boundaries, and the organization of a bicycle patrol. More recently, the BIZ has realized that the success of local businesses is closely tied to the well-being of the community and condition of the built environment. However, the BIZ's attempts at increasing community capacity have been limited; they have generally left the social work up to non-profit associations in the area.

Although mainly a residential area, the West End experiences high traffic volumes. The main avenues are lined by retail, commercial and industrial uses ranging from restaurants to electronics repair stores. As a result, the BIZ hopes to create additional opportunities for existing local businesses by expanding the current consumer base. They know that it is important to attract non-resident visitors, and are anxious to provide passers-by with a reason to stop into the West End neighbourhoods. Having heard that other places were successfully using mural development schemes to attract tourists, the BIZ trusted the experience of places such as Philadelphia and decided to see if a similar formula would work for the West End. The BIZ's approach is similar to EDOM strategies, but incorporates parts of CDOM models as well. The themes that have been decided upon for mural development are multiculturalism, famous people, and local heroes. To date, its hybrid strategy has resulted in the clustering of approximately fifty murals within its boundaries.

*Table 3:* *Involvement in the mural creation process.*

| Involvement | BC | MB | SK | PA | WI | IL | **WE** |
|---|---|---|---|---|---|---|---|
| **Artist(s)** | | | | | | | |
| Consulted for approval | | | | | | | |
| Contributed ideas | √ | √ | √ | √ | √ | √ | √ |
| Assisted in design | √ | √ | √ | √ | √ | √ | √ |
| Helped to paint | √ | √ | √ | √ | √ | √ | √ |
| **Funding Agency(ies)** | | | | | | | |
| Consulted for approval | √ | √ | √ | √ | √ | | √ |
| Contributed ideas | √ | √ | √ | | √ | | √ |
| Assisted in design | | | | | √ | | |
| Helped to paint | | | | | √ | | |
| **Business(es)** | | | | | | | |
| Consulted for approval | √ | √ | √ | √ | | √ | √ |
| Contributed ideas | | | | | | | √ |
| Assisted in design | | | | | | | |
| Helped to paint | | | | | | | |
| **Community Organization(s)** | | | | | | | |
| Consulted for approval | | | √ | √ | √ | √ | √ |
| Contributed ideas | | | √ | √ | √ | √ | √ |
| Assisted in design | | | | √ | √ | √ | |
| Helped to paint | | | | √ | √ | √ | |
| **Community Residents** | | | | | | | |
| Consulted for approval | √ | √ | √ | √ | √ | √ | |
| Contributed ideas | | | | √ | √ | √ | √ |
| Assisted in design | | | | | √ | √ | √ |
| Helped to paint | | | | √ | √ | √ | √ |

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The first six murals went up in 1999 and met community opposition. They were criticized for their appearance, the process by which they were created, their cost and, eventually, their durability. These original murals were based on internet-retrieved images that were assembled into multicultural themes and painted indoors on *alumiply* boards which were later attached to outdoor walls. There was no community input. Following this initial effort, the BIZ acknowledged that it was important for residents to be able to watch the paintings being created and have since made sure that all paintings are original designs painted by Winnipeg artists in full view of pedestrian and vehicular traffic. The majority of murals have been created in this way. However, the extent of direct community input has mainly been limited to the consultation with local business owners and community groups over mural themes.

In the summer of 2002, the BIZ also launched a Mural Mentorship Program which follows the community mural prescription more closely than the rest of their murals. While only three murals have been painted in this way due to the amount of time required to complete each painting, it has quickly become an annual tradition. University students are hired to work with local youths who volunteer to paint a community mural. Thus far, all three murals have been painted along Ellice Avenue. This street has a constant flow of traffic, both vehicular and pedestrian, so the painting of the murals is witnessed at all times, both by community members and visitors. Whereas the rest of the BIZs murals involve only a handful of people, it is estimated that over 250 people helped with the summer 2004 community mural, through discussion of the project, the design, and the painting of the mural itself. In a number of ways, the West End BIZ's community murals exemplify the criteria set out by other community mural projects in Chicago, Madison, and Philadelphia: developing community participation skills, creating a constructive outlet for youth, promoting cultural awareness, displaying community identity, and beautifying the area. However, both the BIZ's resources and the amount of time that residents have available to contribute to mural development are limited.

## Conclusion

The origins of mural painting and the reasons for its continued undertaking are rooted in social, cultural, political and economic challenges. People have become increasingly familiar with murals and have come to recognize them as interesting or pretty pictures on walls without understanding why murals are painted as public art. It is important to identify the motivation behind mural painting and to distinguish how

these factors ultimately influence variations in their geographical distribution, content, and development processes.

Although there are two established mural development models, increasingly mural development projects use various hybrid approaches to set goals and to execute their murals. The West End BIZ will not achieve its desired objectives of community revitalization and increased business opportunities without continued outreach and community involvement. The biggest challenge for the BIZ is that its goals are far broader than those of conventional models of mural development.  Moreoever, their hybrid approach makes it more difficult to achieve and measure success. The sometimes conflicting agendas of community groups and businesses make reaching consensus on goals, procedures, and practices difficult. This can be ameliorated  by direct consultation between business groups and communities.  When the process is inclusive and participatory, mural development benefits all.

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# Trails, truth and tourism: Manitoba's Red Coat Trail

**Lesley Gaudry, University of Winnipeg**

*Abstract:* An enduring problem in heritage tourism is the maintenance of authenticity. Organizations responsible for maintaining standards at historic sites seldom accept replication of historic artifacts as desirable. The resource must be original. This challenge is one that the Manitoba Historic Resources Branch and the private sector dealt with in the early 1980's, when the Red Coat Trail Association attempted to promote a highway route from Winnipeg, Manitoba to Fort MacLeod, Alberta, as the "Red Coat Trail". This "trail" purported to trace the route taken by the North West Mounted Police in 1874 on its trek westwards to Alberta. Heritage purists challenged this notion of authenticity. The North West Mounted Police's path ran some hundred kilometers from the proposed Red Coat Trail. This paper traces the conflict between tourism promoters and heritage interests. It questions the relevance of the trail concept to automobile tourism and argues that a trail's unique potential cannot be fulfilled without involvement of all the senses. Only the visual is significant in windshield sightseeing.

Key words:  *Trails, Tourism, Red Coat Trail, Manitoba, Tourism Developers, Heritage Purists, North West Mounted Police*

## Introduction

There has been a substantial increase in the tourism industry in the past decade to make it one of the world's leading industries. The overall increase in tourism has led to more individuals seeking not only "4 S" tourism (sun, sand, sea and sex), but also an experience based upon "intrinsic assets of our past" (Cossons 1989, 192; Howell 1994, 150; and Nuryanti  1996, 249). Heritage attractions, including heritage trails, are rapidly emerging as a large component of the Canadian tourism industry. The increased interest in heritage tourism and outdoor recreation has ultimately influenced the emergence of heritage trails (Ledohowski 1998,

202). Despite this increasing trend, little research has been conducted on the nature of heritage trails (and trails in general) to explore their functions, primary users, and their utility for the tourism market.

## The Functions of Trails

What purpose do trails serve and why do they emerge? Trails have been built for various reasons in the past, but one can better understand their potential for tourism if their functions are explored. Trails often serve more than one function, but some general trends can be identified. There are five principal functions that trails may serve: (1) utilitarian use, (2) recreational use, (3) to provide access to the aesthetic beauty of a specific area, (4) to cater to a particular mode of transportation, and lastly (5) for development. The last three trail functions listed perhaps have the strongest ties to tourism.

The *first* function of a trail is related to its utilitarian purpose. The utilitarian trail is developed for a specific, practical purpose. An example of a modern utilitarian trail is a trail used exclusively by cyclists. Cycling paths are now being used, particularly in urban settings, as a means of commuting to and from work. The *second* function of a trail is to provide an opportunity for recreation. The recreational trail's purpose is to meet the recreational needs of local residents in the community rather than to attract tourists. Recreational trails were developed as a response to the industrial revolution, when urban areas lacked space for recreational use (Kulczycki). The historic notion of greenways in urban areas may be paralleled with recreational trails. Examples of recreational trails are walking trails, recreational bike trails or cross-country ski trails. A recreational trail is often promoted as a multi-use trail that caters to various recreational interests. Its use may vary from season to season.

A *third* function of a trail is to provide access to the aesthetic beauty of a specific area, either *natural* or *human made*. The *natural* aesthetic beauty of a surrounding environment may include a trail where there is a unique geographical formation such as at the Giant's Causeway located in Northern Ireland. The *human made* aesthetically beautiful area may include a unique cultural resource. An example of a trail that leads to a scenic *human made* environment is the Inca Trail that leads to Machu Picchu in Peru. This trail gives the public access to the beauty and exquisite architecture of ancient Inca structures situated in the Andean Mountains. Local residents may use this type of trail; however, the trail's main function is frequently to draw tourists.

The *fourth* function of a trail is to serve as an attraction for a particular transport mode in the appropriate ideal setting. The motor trail networks that were completed in the 1920's permitted many individuals to explore the Western Frontier and "trail blaze" in their new automobiles (Ackerman 1993, 10). A more recent example of this type of trail is the snowmobile trail. Snowmobiles, which were originally simply a mode of transportation, have increased significantly as a recreational vehicle. Trails developed for a particular mode of transportation can be graded from easy to difficult thereby making them desirable for different skill levels.

The *final* function that a trail may serve is development. Trails used for development may function as catalysts for economic growth, urban redevelopment, beautification, and/or heritage preservation. These types of trails are often designed as multi-use trails so that they may attract a larger number of visitors and generate economic wealth. They may exist in the form of rail trails or heritage trails. Heritage trails are pathways designed to increase the understanding of the natural or cultural heritage of a community. They often present only a selective geography of a city or community and its heritage resources. They range from routes that exist only on paper and can be traced out with the aid of guidebooks to physical entities with pavement treatments, interpretive signs and community and public art (Alexander and McKenzie 1999, 23).

Exploring the various functions of trails allows one to understand their diverse nature and the roles they play in tourism. Local residents and tourists use many trails, despite their function. Trails used for recreational purposes are more homogenous in nature and are commonly found in various locations. Trails used more for tourism development possess a unique characteristic or attraction that cannot be found elsewhere. This "uniqueness" is the key for attracting tourists from further afield.

## Trail User's Attachment to the Land

The trail user's attachment to the land is a significant factor to explore when attempting to understand the nature of trails for tourism. A user's attachment to the land refers to one's personal relationship with the landscape through which the trail passes. A tourist's relationship with the landscape may range from connected and fulfilling to distant and abstract. One can gain a better understanding of the user's motivations when the user's attachment to the land is explored. The mode of transportation may also influence the trail user's attachment to the land, which may be listed at three intensities; low intensity, moderate intensity and high intensity (Figure 1).
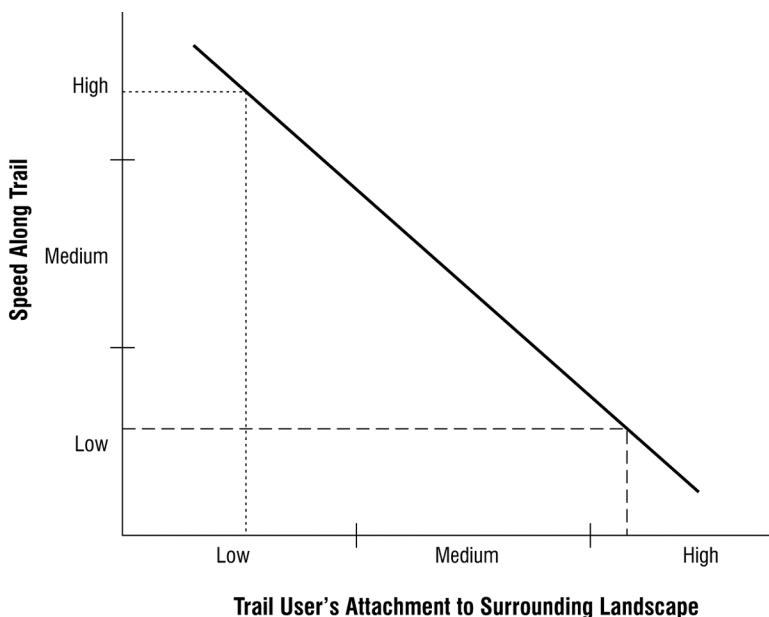
**Trail User's Attachment to Surrounding Landscape**

*Figure 1:* Trail user's attachment to the landscape.

The first level, the low attachment level, is characterized by trails where the mode of transportation is motorized and fast such as a motor road network or a snowmobile trail. It is not of primary importance for the users of these types of trails to experience the natural beauty of the surrounding landscape. They are primarily using trails to participate in a recreational activity such as "trail blazing" or snowmobiling where there is a high rate of speed. Users with a low level of attachment may also be classified as individuals who are seeking the quickest route to a particular destination.

The second level of user attachment to the land is moderate. This level may be characterized by an integration of two different types of trails, those that serve a function for a particular mode of transportation combined with an aesthetic function. The user is more connected to the landscape than in the low level. Bicycle trails and horseback riding trails may be characterized as medium level trails. Horseback riders maintain a moderate level of attachment to the land as the horse reacts directly to the environment and the rider reacts to the horse, using the natural instincts of the horse to "read" the land. The riders are somewhat physically and emotionally removed from the land as "the horse provides a barrier between the land and the human participant" (Beeton 1999, 212).

The final level of attachment to the land is high. The high attachment level may be characterized by trails such as hiking or cross country ski trails. Users of these types of trails are extremely attached to the land, as the rate of speed is slower than the two previous levels. Users that participate in trails of high attachment are seeking a full aesthetic and sensual experience as they use the trail. They are able to physically feel, see, hear and smell their environment to an extent greater than the two lower levels. Hiking is a popular tourist (and recreational) activity, in the high level of attachment, not only because it gives people a rich sensory experience of their surroundings but also because it is affordable.

Trails play a significant role in the tourism field, because they are so varied and potentially versatile. However, they are not without challenges, as there are often conflicts between the users and the landowners. Trail operators may also experience management challenges that increase according to the number of stakeholders involved in the planning and management process. The Red Coat Trail in Manitoba has experienced management difficulties due to heritage purists and tourism developers competing for the designation of the Red Coat Trail on different highway networks.

## A Heritage Trail in Manitoba: The Red Coat Highway Trail

Heritage trails, as tools for development, are not limited to urban settings or walking paths. They may emerge in rural landscapes on highway routes such as the Red Coat Trail that runs from Winnipeg, Manitoba to Fort MacLeod, Alberta. The Red Coat Trail follows provincial highway networks that link the three "Prairie Provinces", thus commemorating the history of the North West Mounted Police and the epic March West that they took in the summer of 1874.[1]

The Red Coat Trail, along Manitoba's Provincial Highway Number Two (P.T.H. #2), was designated with the intent of stimulating economic activity and tourism south of the Trans Canada Highway (Figure 2).

The effort to commemorate and designate this heritage trail for tourism development caused tension between various parties, particularly within the province of Manitoba. The development process was characterized by conflict for eleven years before an outcome was reached. Many groups in favour of the designation (the Red Coat Trail Highway Association and local tourism developers), as well as those who opposed it (The Boundary Commission/North West Mounted Police Trail Association, the Manitoba Historical Society, the Manitoba Historic Resources Branch and local heritage purists), lobbied the Manitoba government with letters, articles, meetings, and public rallies through changes in government and ministers.
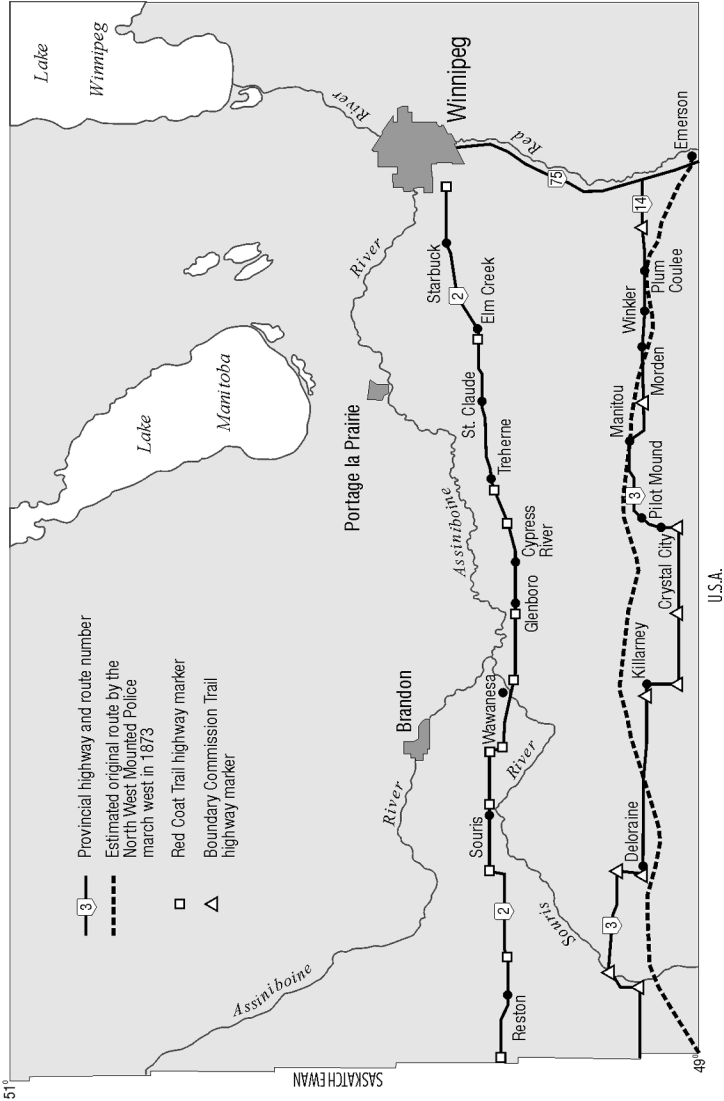
***Figure 2:*** *The Red Coat and Boundary Commission Trails, Manitoba*

On 25 June 1993, after a decade long struggle, P.T.H. #2 was officially designated the Red Coat Trail (Manitoba Government News Release 2 November 1993).

From a tourism developer's perspective, the designation of the Red Coat Trail was a victory, but the heritage purists believed that it lent no credibility to the Manitoba government, and was not a "sane" decision (Crawford 1993). Local heritage groups, the Boundary Commission/North West Mounted Police Trail Association and various historians stressed that designating P. T. H. #2 as the commemorative trail of the North West Mounted Police, was inaccurate and a distortion of history. The North West Mounted Police's authentic path ran some hundred kilometers from P.T.H. #2.

Developing heritage trails for tourism is a dynamic and integrative process. There are numerous challenges associated with commemorating past events and increasing commercial activity. There are many factors to consider in "building" a tourist trail that will be effective, informative and entertaining. The Red Coat Trail development process did accomplish one task- an increased awareness of the NorthWest Mounted Police's role in the development of the West. However, the Red Coat Trail tourism initiative was less successful as a tourism corridor because of the difficulties surrounding its designation and the highway trail's limited use. After analyzing the Red Coat Trail Case Study, there are three key issues that would need to be addressed for the Red Coat Trail (and a heritage trail in general) to be a successful and effective tourism initiative: 1) full cooperation and participation from all the parties that have a vested interest in the heritage trail, 2) an integrative trail network, and lastly 3) the promotion of a comprehensive, authentic and sincere heritage experience. Without these, a heritage trail such as the Red Coat Trail will remain a valuable but under-recognized heritage resource.

## Cooperation and Participation

For a successful heritage trail tourism initiative, it is crucial to have the cooperation and participation of all parties involved. A heritage trail may cover a significant distance in the landscape and have multiple functions. Indeed, the longer the trail and the more functions it has, the greater is its potential to draw interested parties into controversy. If the Red Coat Trail were re-marketed it would be profitable for the tourism developers and the heritage purists to work together in a collaborative manner in commemorating the history of the Canadian Prairies. If the
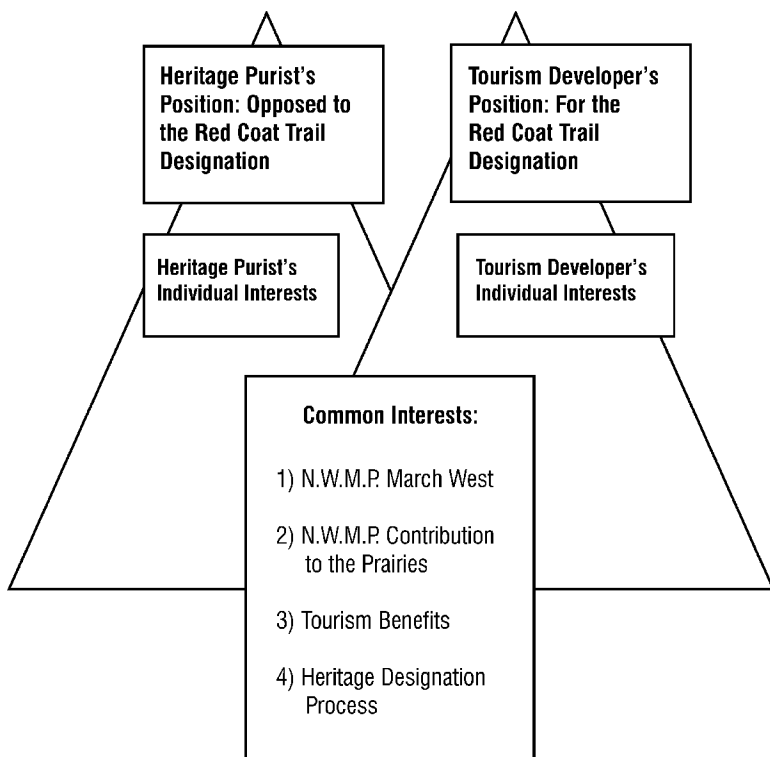
**Figure 3:** *The space for cooperation and participation.*

competing interest groups focused on their common interests rather than their competing positions, it would create a potential space where all parties could cooperate and participate in promoting an authentic, effective and entertaining heritage trail (Figure 3).

These interests could include the retelling of the North West Mounted Police trek westward and their contributions in developing the North West Territories. Discussing the potential for tourism in commemorative events as well as the difficulties associated with heritage designation could also be of benefit.

As of October 2001, the Red Coat Trail was still no more than a designated highway route with the occasional restaurant dedicated to the theme. The Red Coat Trail Highway Association is lacking organization and no physical work has been done to the trail by the association or government. There has been a loss of interest in the Red Coat Trail designation issue and its promotion. The popularity of the Red Coat Trail,

particularly in sections of western Saskatchewan and eastern Alberta, has dwindled due to deteriorating road conditions. Unless one has a half-ton truck or four wheel drive, some sections of the Red Coat Trail should be avoided. It is unfortunate that a decade of effort to establish an inter-provincial tourism corridor has not been more productive.

## An Integrative Trail Network

In order to expand the possibilities of the Red Coat Trail, an integrative trail network would be extremely beneficial. A three-tiered trail network would make this heritage trail more flexible to accommodate a wider range of users and could integrate community heritage initiatives, natural features and attractions, and tourism-related commercial services into a "single easily identifiable package" (Ledohowski 1988, 222). If the Boundary Commission Heritage Region expanded to include all the different types of highway routes and the efforts of interested parties, the tourist could enjoy a variety of alternatives in one "identifiable package". An example of such a project located in the Appalachian Mountains, is the Cherokee Heritage Trails. These include highways, gravel roads through national forests, walking trails, and "original" trails with wagon ruts used in the Trail of Tears to remove Cherokee people from the Southeast United States to Indian Territory (which is now Oklahoma) (Duncan 2002).

The three-tiered trail network, for the Red Coat Trail, could include promoting a heritage highway on a primary route such as P.T.H. #2 or #3. This would allow passing tourists with limited time to sample the Red Coat Trail region without going off the beaten track. The secondary regional route could traverse individual localities connecting with particular communities and municipalities located off the primary route (Ledohowski 1988, 223). These could employ dirt roads or gravel roads that are situated closer to the Boundary Commission/North West Mounted Police trail. Lastly, a tertiary route would be a local heritage route that would proceed from the regional trail system. The tertiary route would encompass the actual B.C./N.W.M.P. trail, be promoted as the *authentic* N.W.M.P. route, and offer tourists an opportunity to get closer to the prairie landscape.

The three-tiered trail network may be added to the trail user's graph, as it directly corresponds to issues of mode of transportation and user attachment to the land (Figure 4).

The three-tiered trail network offers a more integrative approach for trail use as one may follow the primary route with high speed of transport and a low attachment to the land. Alternatively, users may choose to follow
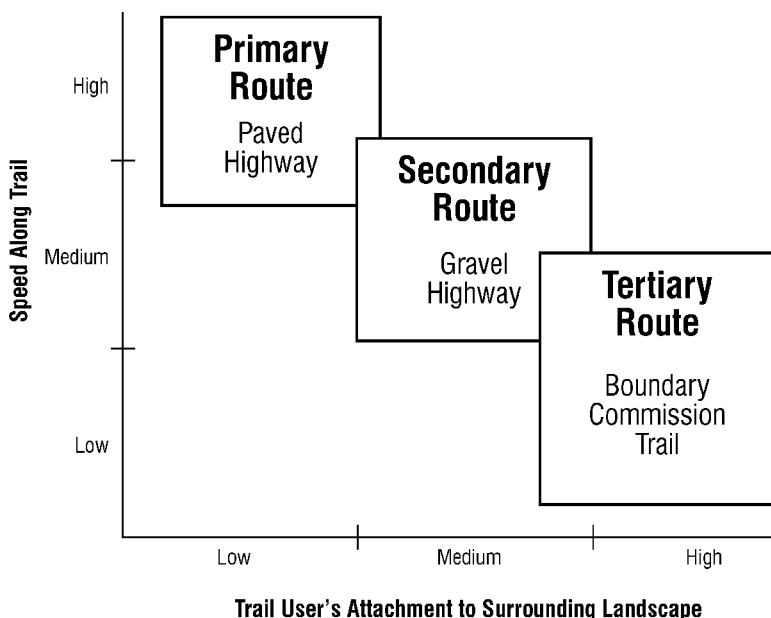
**Figure 4:** *Trail user framework.*

a secondary route with a moderate speed of transport, and medium attachment to the land. Or, an individual tourist may choose to follow the tertiary route, the B.C./N.W.M.P. trail with slow speed transport and high attachment to the land. Unique aspects of this integrative trail network are its flexibility and the presence of a tertiary route. The tertiary route is extremely significant because it encourages the tourist to have a high attachment to the land and follow the authentic trail.

Since the tourist's attachment to the land is extremely low when traveling in a vehicle, it is questionable whether promoting auto-tourism is an effective technique. Can commemorating a highway authentically and effectively develop a heritage trail's unique potential? Central to North American tourism is the car, the highway, and the view through the windshield and the commercial strip (Urry 1990, 6). The background noise from the radio, air conditioning, and combustion engine in American cars insulate the passenger from almost all aspects of the trail environment except for the view through the windshield. The automobile acts as a barrier that separates the traveler from the environment. Tourists who travel a primary route in a vehicle are frequently only sightseeing. They do not hear, touch, taste or smell most of the outside environment, reducing their experience of the world to a one-dimensional experience. Relying solely

on a one-dimensional experience to promote heritage trails would be unfortunate, because environments such as the prairies cannot be fully experienced from within a cocoon. An actual experience of the prairies is composed of whole complexes of visual, auditory, and olfactory sensations, present circumstances and purposes, past experiences and associations (Relph 1976, 29).

Speed has become a convenience that most North Americans cannot live without, but high speed detracts from a tourist's ability to develop a relationship with the landscape. Low speed and high user attachment, can equate to a "romantic gaze" in which the emphasis is upon solitude, privacy and a personal, semi-spiritual relationship with the land (Urry 1990, 45). The spirit of a place lies in its landscape (Relph 1976, 31); thus the more time spent in the landscape, the greater the potential to become attached to it- or detached from it, if one dislikes it.

## A Comprehensive, Authentic and Sincere Heritage Experience

The final key to having a successful heritage trail is the promotion of a comprehensive, authentic and sincere heritage experience. It is possible for tourism developers to distort local heritage and events to suit standardized mass tourism. This standardization encourages a homogenization of local communities, and is frequently illustrated in landscapes of tourism (Relph 1976, 93). If every community along a heritage trail develops the same characteristics, the tourism landscape would lose its "distinctiveness", that is, the ambiguities and complexities that initially made the place interesting (Relph 1976, 93).

To counter this homogenization, heritage trail developers should market heritage experiences involving conflict, misery, and social differences, as they are saleable items that attract tourists. Various communities along the B.C./N.W.M.P Route and the Red Coat Trail could market different experiences such as the whiskey trade, lawlessness in the West, prostitution, and the socio-cultural relations with the native peoples. This is not to say that these characteristics should be the main focus of the Red Coat Trail experience; however, they should be present in the commodified package. It would also be beneficial to include more of the indigenous people's perspective of the development of the West and the impact of the North West Mounted Police on aboriginal families and communities.

## Conclusion

The Red Coat Trail proved to be a creative initiative to stimulate tourism and commercial activity in the southern region of Manitoba. However, ten years of debate between various parties, its inaccurate designation, the use of a highway corridor, and a limited interpretation of history ultimately compromised this heritage trail's potential. Despite the complex nature of heritage trails, they are popular tools for development as they are extremely versatile. Because of the flexibility in their function, the trails may serve as catalysts for urban or rural revitalization, commemoration, preservation, education, and economic stimulation. If heritage trails are developed with sensitivity, creativity and authenticity, rather than controversy and distorted history, their potential expands greatly.

In a time when individuals are becoming increasingly "divorced" from their origins due to urbanization and migration, tourists may substitute the nostalgic heritage trail experience as a journey to self-discovery (Lowenthal 1985, 24-26). If this is the case, it is imperative that heritage purists and tourism developers alike, do what they can to ensure that heritage trails are as comprehensive, authentic and sincere as possible. Otherwise, future generations may know their heritage only through distorted stories and myths. In essence, what we do and how we choose to preserve our past and our landscape will significantly affect the minds and hearts of generations that follow.

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## Endnotes

[1] In the early 1870's large scale settlement was about to begin with the Canadian government's intentions to settle the west. Government officials were concerned about potential hostility that settlers from the east would experience if they crossed paths with tribal natives. Faced with reports of lawlessness and an illegal whiskey trade that sprang up along the Canadian-United States border, Sir John A. Macdonald passed a bill, on May 20th 1873, respecting the administration of justice and establishment of a police force for the North West Territories (Denny 1939, 3). The six original divisions of the North West Mounted Police were recruited in the fall of 1873 and spring of 1874. On July

8th 1874, the North West Mounted Police commenced their march West with 275 people. The goal of the trek was to head west across the Prairies towards Fort Whoop-Up, the most lawless fort in the region (which was located over 800 miles away) and bring land and order to the region.

# From flâneur to arpenteur

**Marc Vachon, University of Winnipeg**

*Abstract:* The nineteenth-century flâneur perceived the transformation of the city through urban wanderings. The practice of urban wandering was adopted and adapted by several cultural avant-garde movements of the twentieth century (Dadaism, surrealism, situationism). Thus, each avant-garde movement and its cultural producers observed, through haphazard urban wanderings, the transformation of the modern metropolis.

The objective of this article is to illustrate how a cultural practice, that of haphazard urban wanderings, was transformed by the Situationists International into an urban-planning technique of surveying the city and identifying its psychogeography in order to design the metropolis of the future.

## Introduction

During the twentieth century, the process of urbanization swept the developed and developing world.  By the middle of the century, urban planning and its different schools of thought became a major force in shaping the cities around the world.  In North America, the rise of the suburbs gave way to a new lifestyle and a new expression of the American dreams, while in Europe, the challenge of rebuilding its cities after World War II offered new opportunities for architectural and urban development. During this process, many countries adopted the International style of architecture and the principles of functional and rational urban planning. At the same time, the urbanization process in the industrialized countries was accompanied by the rise of the consumer society, which, by the end of the century, had become global.

The growth of urbanization and the transformation of daily life under capitalism slowly became a major preoccupation of the cultural avant-garde movements and influenced their programs and actions. From futurism to Dadaism, from constructivism to surrealism and finally with situationism, we witnessed the ongoing development of a method of critiquing architecture, urbanism, and daily life.  These critiques culminated in the

architectural and urban programs and practices of the Situationist International (S.I) movement.

To illustrate the influence of urbanism and architecture on twentieth-century cultural avant-garde movements, this article explores the practice of urban wandering, which was adopted and adapted by several cultural avant-garde movements (Dadaism, surrealism, situationism) of the twentieth century. Through haphazard urban wanderings, each avant-garde movement and its cultural producers observed the transformation of the modern metropolis. While for some movements, these wanderings were completely spontaneous, others integrated this practice in a more sophisticated and formal matter. The objective of this article is to illustrate how a cultural practice, that of haphazard urban wandering, was eventually transformed by the Situationist International into an urban-planning technique of surveying the city and identifying its psychogeography in order to design the metropolis of the future.

## The City as a Space of Dérive

The nineteenth-century flâneur perceived the transformation of the city through urban wanderings. Much has been said and written about the notion of the flâneur (Benjamin 1976, Bernam 1982, Pichois 1993). It is suffice to say here that, for the flâneur, the city is a spectacle: a place in which experience, positive or negative, is fleeting and ephemeral. The flâneur is aware and notices the short-lived character of the form of the modern metropolis.

> Suddenly inundates my memory
> As I cross the New Place du Carrousel.
> *Old* Paris is gone (no human heart
> Changes half so fast as a city's face)
>      (Baudelaire 1982, 90)

The flâneur observes and enjoys the constant alteration of the city landscape. According to Benjamin, "la flânerie" (i.e., strolling) was born with modern capitalism, its architecture, and the phenomenon of the crowd. The arcades and cafés of the boulevards allowed the individual to observe the crowd in the square. The individual, sitting on the terrace of a café, is alone and at the same time part of the crowd. For the flâneur, the public place is an exhibition of both private life and public life. The crowd is, for the flâneur, a spectacle: it provides an occasion to study and to observe individual behavior and a multitude of hitherto private acts under the public

eye. For Baudelaire, to "enjoy the crowd is an art", and the flâneur "enjoys the incomparable privilege of being able at will, to be himself and an other" (Baudelaire 1997, 21). Finally, Benjamin believed that "the department store was the flaneur's final coup" (Benjamin 1976, 170). In other words, the flâneur contributed to "the formation of the new consumer of the late nineteenth and twentieth centuries" (Chorney 1990, 130). Today's urban practice of window-shopping in malls is the modern equivalent of flânerie. The modern flâneur is the consumer who roams the shopping malls where, spread out in all their magnificence, are the consumer goods of the capitalist society. Today's flâneur is far removed from the revolutionary dimension (as a critical observer of the city life and form) of his nineteenth century counterpart.

The tradition of flânerie was adopted and adapted by many avant-garde movements of the twentieth century. The Parisian Dadaists, for example, experimented with this urban practice. Having almost exhausted their bag of tricks in Paris - that is to say, their shocking performances were becoming "accepted" - the Dadaists began to look for other sources to renew their energy and activities. On April 14, 1920, therefore, under the influence of Breton, as well as Aragon, Arp, Eluard, Tzara, and Soupault, the Dadaists organized an excursion - the first of what was to become a regular event - to the Church of Saint-Julien-le-Pauvre in Paris.[1] The program was announced as follows:

> The Dadaists passing through Paris, wishing to remedy the incompetence of suspect guides and cicerones, have decided to organize a series of visits to selected spots, particularly those which really have no reason for existing… It is a mistake to insist on the picturesque (Lycée Janson de Sailly), on historical interest (Mont-Blanc) and on sentimental value (the Morgue)… The game is not yet lost but we must act quickly…To participate in this first visit is to become aware of human progress in possible works of destruction and of the need to pursue our action, which you will want to encourage by every means. (Ribemont-Dessaignes 1951, 115)

The Dadaist Ribemont-Dessaignes regarded these excursions, which were characterized by improvisations such as a guided tour of the churchyard and the reading of definitions taken at random from a dictionary, as "more than anything, demoralizing".

Breton later repeated the experience with the surrealists. In turn, Breton's and Aragon's novels reflect their urban experience of wandering through the city streets and they furthermore underline the surrealist's

interest in the city (Breton 1928, Aragon 1926, Bancquart 1972). In fact, the surrealists were not indifferent to the psychological impact of the milieu on the individual: "The course of a single street - Richelieu Street for example - although one must be careful, delivers, within the interval of numbers which one could specify, alternative areas of well-being and unease" (Breton 1967, 276-277) .[2] Breton's comments echo the future phenomenological and existential study of place in the field of geography. Hence, the influence of the milieu on people's emotions anticipates the studies of the existential zones of the city (regions of boredom versus regions of stimuli, etc.). For example, the existential perception of the urban space revealed that the closer you are to the centre of the city, the more your stress increases; likewise, the greater your distance from it, the more your sense of security grows. This phenomenon also characterizes the city center as a region of stimulus and the suburbs as a region of boredom. Their interest in the urban space lead the surrealists to experiment with different kinds of urban wanderings.

In 1923, Aragon, Morise, Vital, and Breton began a "wandering" from Blois, a rural town chosen at random. The four surrealists went to Blois by train and roamed through the area by way of Salbris, Gien, Cour-Cheverny, and Romorantin. Although the experience was intended to last ten days, it ended after three days in an atmosphere of discord (Breton 1952). Nevertheless, it was, according to Breton, "not at all a disappointing investigation, whatever the exiguity of its scope, because within the confines of the "vie éveillée" and the life of dreams, there one cannot meet more the preoccupations we had during this period" (Breton 1952, 30). In other words, the "wandering" was a mitigated success and the experiment was not repeated by the surrealists.

These excursions are significant because many of their elements eventually came to characterize the practice of future avant-garde movements. First, while Breton and Aragon had yet to truly develop the surrealist movement, they nonetheless, under the Dada umbrella, experimented with urban wanderings. Second, both the Dada and surrealist experiences were a success, though a mitigated one, and, although the objectives of the two movements differed, they introduced new elements and goals to the experience of the flâneur. The Dada excursion was all about shocking behavior and playfulness, while the goal of Breton's wandering was to bring forth the surrealist experience of the subconscious associated with automatism and the technique of the "sommeil éveillé". In short, whereas the Dada excursion introduced the aspect of playful behavior, the surrealists aimed for an "unconscious" dreamlike behavior. Nevertheless, it is important to remember that these urban wanderings transformed daily life.

Finally, these experiments by the flâneur, the Dadaists, and the surrealists highlight the emotional responses to the urban environment. The same can be said of Baudelaire's and the surrealist movement's cultural productions, whose descriptions of urban spaces and daily life are the result of an emotional experience of the milieu. Baudelaire's "urban poetry' is a critique of urban modernity by means of the flâneur, who tries to seize the short-lived character and ever-changing life of the modern city. On the other hand, surrealist's works feature a flâneur whose daily life in the city is guided by chance, coincidence, the unconscious, and desire.

## From Flâneur to Arpenteur: The Situationist International

The Lettriste International (1954-1957), which eventually becomes the Situationist International (1957-1972), radically transformed the meaning and purpose of urban wanderings. From its inception, the Situationist International (S.I.) demonstrated its interest in architecture and urbanism through a critique of functional planning and an articulation of an urban utopia. During the fifties and early sixties, the S.I. focused its actions within the cultural arena and produced a plethora of cultural productions. Yet, contrary to previous avant-garde movements, the S.I. refused to be identified as a new cultural movement. In fact, this avant-garde did everything to sabotage any attempts to elevate its activities into a doctrine; they even went so far as to declare that all of its cultural productions were anti-situationist. Finally, during the sixties, the S.I. oriented their activities within the political arena. Even though situationism became very popular in France during the upheaval of May 68 and soon gained international recognition, by 1972, the S.I. had dissolved.

The S.I was a cultural, political, and architectural avant-garde movement. The development of its interdisciplinary focus over nearly two decades illustrates the slow process of radicalization of the avant-garde movement in the political field and the relationship that always existed between architecture and urbanism (Internationale Situationniste 1997, Martos 1989, Sussman 1989, Rapaud 1972, Debord 1972).

The S.I. believed that urban space was not neutral; rather, it was and is the living space influenced by capitalism and communism. For the S.I., urbanism "is the mode of appropriation of the natural and human environment by capitalism, which, true to its logical development toward absolute domination, can (and now must) refashion the totality of space into *its own peculiar decor*" (Debord 1995, 169). In other words, the urban space of the modern city is another form of spectacle that has reduced citizens to the role of spectators in a fragmented, functional, and

homogeneous space. Urbanism is a form of domination that imposes a way of life and alienates human beings. Functional planning (i.e., urbanism) was therefore believed to be one of the principal sources of alienation that limits individual action, social interaction, and that suppresses imagination and playfulness. Hence, S.I. puts forward the concept of unitary urbanism, "the theory of the combined use of arts and techniques as means contributing to the construction of a unified milieu in dynamic relation with experiments in behavior." (Internationale Situationniste 1958, 13-14)

For the S.I, the integration of art into daily life, as well as the overthrow of the state, bureaucracies, and capitalism, necessitated the transformation of space since "architecture is the last point of realization of all artistic endeavor because to create an architecture means to construct an ambiance and a fixed way of life" (Debord 1996, 96). This transformation required a reorganization of the city according to a simple principle: give the individual the power to determine the space and architecture around him. Hence, the city must be conceived in harmony with the psychological needs of people. One must convert men into *homo ludens* by a revolution that occurs on two grounds: daily life and urban space. The principal objective consists in establishing a passionate structure of life through the experimentation of "behaviors, forms of decoration, architecture, urbanism, and communication that provoke attractive situations" (Debord, *Potlatch*, 1996, 86). The architectural expression of this urban program or utopia is expressed in *New Babylon*, the life work of situationist architect Constant.

From 1957 to 1961, the cultural and political orientation of the S.I. was based on the "Report on the Construction of Situations and on the International Situationist Tendency's Conditions of Organization and Action," written by Guy Debord (1997). The objective of the movement during this time was the construction of situations, that is to say, "the concrete construction of momentary ambiances of life and their transformation into a superior passionate quality" (Debord 1997, 697). Unitary urbanism is therefore considered the principal means for transforming daily life and space.

"Flâner" - to stroll - is the act of physically slowing down one's activities in order to observe the crowds and the transformations of the modern city. While the flâneur is a critical observer, the practice of flânerie does not result in the transgression of space (whether through its meaning or through the actual appropriation). The urban practice of the flâneur does not lead to the transformation of the city. The S.I. evaluated the experiments of the Dadaists and the surrealists and, in sharp contrast, developed the concepts of "dérive" (drift) and "psychogeography." These concepts were incorporated into a radical critique of the city and into the

S.I. programs of unitary urbanism. Dérive is defined as an experimental mode of behavior associated with the urban condition of life. It is a technique of wandering through various urban ambiances. P*sychogeography* is the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals[3]. Accounts of dérives, psychogeographic analysis, and maps (Paris, Amsterdam, Venice) were published in the official bulletins of the Lettriste Internationale (*Potlatch*) and the journal of the S.I. (*Internationale situationniste*). These accounts tended to focus on the inner city's historical neighbourhoods and the centre of the city.

More than any other component of unitary urbanism, psychogeography reveals the phenomenological and existential character of the perception of space by the situationist. Hence, psychogeography echoes the humanist current of geography at the end of the sixties and during the seventies. The geographical and architectural studies of Relph (1976), Entrikin (1991), Ley (1989), and Norberg-Schutlz (1980) on the sense of place concentrate mainly on the analysis of the geographical milieu and its affective and cognitive impact on people. Many of these studies offer conclusions similar to the S.I.'s critique of the rational and functional planning of the city. For example, the situationists would have easily integrated in their critique of the city Relph's notion of "placelessness" because it expresses the homogenization of place and the dissolution of the quality of place.

At the end of the fifties, the S.I. reviewed the urban experiences of previous avant-garde movements in order to adapt those practices to their own program. On one hand, having already been influenced by Huizinga's essay, *Homo Luden: Essai sur la fonction du jeu* (1951), which regards the development of any culture as the instinctual result of play and not of rationalization, they easily adopted the playful behavior of the Dadaists. On the other hand, they were critical of the elements of chance that characterized the urban wanderings of the surrealist. Contrary to the flâneur and the excursions of the surrealist, the situationist dérive was not entirely based on chance. According to Debord, the failure of the surrealist wanderings was caused by an "insufficient mistrust towards the element of chance and its use which is always reactionary" (Debord 1956, 7). The S.I. regarded the action of chance as naturally conservative because it tended "to default to the alternation of a limited number of variants and to habits" (Debord 1956, 6). Breton himself underlined this phenomenon by recognizing that, over the years, his walks in Paris always returned him to the same familiar spaces[4]. In turn, the S.I. supported this claim by quoting the research of Chombard de Lauwe on the daily movement of individuals

in the city. By representing on a map the daily routes made during one year by a student of the XVI$^e$ arrondissement, de Lauwe's research illustrates "the smallness of the real Paris in which lives every individual… geographically an area where the radius is extremely small" (Debord 1956, 6). For the S.I., this map illustrated the strength of habit in daily routes, and the smallness of people's lives in the city aroused their indignation.[5] The dérive, therefore, cannot be completely based upon chance; rather it is "indissolubly bound to the recognition of natural psychogeographic effects, and to the assertion of a playful - constructive behavior" (Debord 1956, 9). Unlike the dreamlike wanderings of the surrealists, the stroller consciously explores during the dérive the affective aspects (negative or positive) of space and adopts playful behaviors.

The itinerary of the dérive is subordinate to the psychogeographic study of the urban milieu, whose purpose was to identify "units of ambiance," which might be buildings, neighbourhoods, or streets that correspond to or evoke a negative or positive atmosphere. But, in order to determine the psychogeographic character of the urban space, it was necessary to do a dérive. The situationist's concept of the dérive therefore had a double nature: it is a way of life, characterized by a playful - constructive behavior, for the contemporary and future city, and it is also an analytical method that is used "to establish the first statements of joint psychogeographic articulations of a modern town" (Debord 1956, 9). In other words, the dérive is both an urban practice and a method of field research used to determine the different psychogeographic spaces of cities.

The S.I. wished to rationalize the concept of the dérive into a technique or a method for the study and development of the city according to the principles of unitary urbanism. In his essay, "Théorie de la dérive," Debord establishes precise methodological criteria for the practice of urban wanderings. These criteria apply to the two aspects of the dérive mentioned above. So, although a solo dérive is acceptable, a dérive made by a group of four or five participants is better. Furthermore, various means of communication (walkie-talkies) and transportation (taxis, buses) can be used during a dérive[6]. The spatial extent of this practice depended on the objectives of the dérive, specifically, whether the "dérive aimed to study the city [i.e. field trips] or the various affective results [playful - constructive-behavior]" (Debord 1956, 8). In other words, the area to be covered during a dérive is determined according to the nature of the urban wandering; hence, the extent of the area to be explored is more or less precise if one is studying the psychogeographic space of the city and completely vague if one is practicing a dérive associated with playful behavior. These criteria are important because their purpose is to make the experience more puzzling and exciting. One must not forget that the

dérive, as an urban way of life, is the complete opposite of the routine of the daily life under the modern metropolis. A dérive, therefore, can take place during a single day or it can be spread out in successive stages over several weeks or months. In fact, the S.I. urban utopia and Constant's *New Babylon* are cities in which the citizens would practice continual drift. On this subject, the situationist, Chtcheglov, revised his proposition of permanent continual drift within the city. For Chtcheglov, a dérive should be limited to "Sundays for some, while a week is a good average and one month is a lot" (Chtcheglov 1964, 38). Chtcheglov felt that the extreme limit of a dérive is three or four months, as he had practiced during the years 1953 to 1954. This revision of the duration of a dérive is based on the psychological impact of this urban practice. According to Chtcheglov, continual drift threatens the individual with "explosion, dissolution, dissociation and with destruction", and leads one to "fall again into what one names the common life, that is to say the petrified life" (Chtcheglov 1964, 38). It is ironic that continual drift can lead directly to what its practice was expected to abolish, that is, the alienation of daily life.

Situationists were more than flâneurs; they were arpenteurs (surveyors). Unlike the flâneur, who took pleasure in observing the crowd and the city, the goals of the situationist arpenteur were threefold. First, the appropriation of public space (from cafés to the occupation of May 68) challenged the meaning of private and public spaces under capitalism and the functional planning of the city. The practice of appropriation of place became a way of life.

Second, dérives and psychogeographic studies were completely opposed to the daily life of the modern consumer capitalist city—a way of life that is radically opposed to the social and physical organization of the rational and functional city. For the situationists, the city was a playground waiting to be appropriated and redefined every day by its citizens.

The dérive of the arpenteur was conceived within the framework of the fight against the alienation and the routine of the daily life. The dérive upsets the safety and conformity of the usual routes of the individual. Its practice destroys the small and restricted universe that one daily frequents in the city. Ultimately, the dérive offered the opportunity to live and to know the conditions of existence of the different social groups within the city. For example, situationist Patrick Straram's metagraphic novel, *Blues clair, tea for one/no more Tea* (1983), is the result of a psychogeographic study and dérive of the different affective spaces along Montreal's very cosmopolitan street: Saint-Laurent boulevard.

## Conclusion

The objective of this article was to demonstrate how the cultural practice of urban wanderings, actively practised by several avant-garde movements and reflected in their cultural productions, was ultimately transformed into an urban-planning technique of surveying and of identifying the psychogeography of the city in order to design the metropolis of the future. Through each successive movement, this practice was redefined and ultimately conceived as a tool of radical transformation within a new form of urbanism. In other words, the dérive became not only a means to study, design, and eventually plan the anti-functionalist city, but also a new way of life characterized by a constructive - playful behavior. This practice was radically opposed to the social and physical organization of the rational and functional city. Furthermore, the success and failure of urban wanderings does not alter the fact that, for the situationist, the dérive, psychogeography, and the appropriation of public space was a way of life that corresponded to a living critique of the modern city.

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## Endnotes

[1] Other excursions to the Louvre, Buttes-Chaumont, Saint-Lazare, Station, Mont du Petit Cadenas, Canal de l'Ourcq were planned.

[2] In 1924, Breton praised the city street: "The street that I thought could only give to my life its surprising detours; the street with its worries and appearance was my true element: I cherish, like nowhere else the winds of the unexpected", (translation by the author). See Breton, A. "La confession dédaigneuse" in *Les pas perdus*, Paris: Gallimard, 1990.

[3] For the definitions of dérive, psychogéograhie and unitary urbanism see "Définitions", *Internationale Situationniste*, nᵒ 1, June 1958, pp. 13-14. Translation by the author.

[4] Breton's text "Pont-Neuf" describes the Parisian's affective spaces frequented by the surrealists, in particular the neighbourhood of Pont-Neuf. During the months of December 1953 and January 1954, the members of the Internationale lettriste organized a dérive in Pont-Neuf. See "Deux comptes rendus de dérive", *Les lèvres nues*, nᵒ 9, November 1956, pp. 10-13.

[5] Ironically, 30 years later Debord described the geographical smallness of his Paris situated "within a triangle defined by the intersection of Saint-Jacques Street and Royer-Collard; the one of Greneta Street; the one of Bac Street and Commailles Street" indicating that he "never or rarely left this zone, which is perfectly suited to me, if it weren't for some historical necessity that obligated me many times to get out of this space." Ironically, Debord's urban space is not much bigger than that of the student of the XVIᵉ arrondissement studied by Chombard de Lauwe. See Debord, G. *Panégyrique*, *tome premier*, Paris : Gallimard, 1993, p. 51.

6  The use of walkie-talkies and public transport (buses and taxis) was adaptable
   to the dérive goal either as a means of constructive playful behavior or for the
   psychogeographic study of the city's units of ambiance.

# Craft production in rural Manitoba: some preliminary findings

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*Abstract:* Craft production has been adopted by many households in rural Manitoba. In some cases, it constitutes a significant component of household income, while in others it is little more than a pastime which may or may not generate any income at all. The contemporary economic geography of this segment of production is not well understood. This paper reports on preliminary findings of a research project designed to explore a number of aspects of craft production in rural Manitoba: importance to the household; institutional embeddedness; production relations; role of craft production in the local economy; and the geographical organization of the production-to-consumption chain.

## Introduction

The mainstream of industrial geography is overwhelmingly concerned with what we consider 'core' or 'heartland', and largely urban, economic regions. However, what is often overlooked are the potential parallels to be found between such urban, industrial regions and peripheral, rural regions. This paper is an attempt to make such connections between some current work in what has become known as the 'New Industrial Geography' and potential changes in the nature of work in, and the economic structure of, South-West Manitoba.

In particular, this paper reports on initial findings of an investigation into craft production in South-West Manitoba. It is argued that craft production in this region arises from processes of economic restructuring comparable to that found in heartland manufacturing regions, and that although by no means 'industrial', the organization of work in this sector of the manufacturing economy is similar to that arising in the latter. The research is based on a survey of craft producers in the region

## Context

Recent work on the industrial economy of the Greater Toronto Area (GTA) has indicated a revival of manufacturing there (Gertler 2000) though, like elsewhere, it is argued that the old 'Fordist' model of production (based on mass assembly line methods in large vertically integrated plants) has been replaced by a variety of newer organizations consistent with several models loosely labelled collectively as 'Post-Fordist': flexible specialization (Piore and Sabel 1984), lean production (Womack et al. 1990), diversified quality production (Streeck 1992), etc. (see also Amin 1994). Focussing on the labour process, Eberts and Norcliffe (1999) identify 'neo-artisanal' production as one of these models. The core of the model is an artisanal labour process, in which the technical division of labour (the division of tasks making up the production process) is minimal, but which is accompanied by an extended social division of labour (the division of the total work of the economy among different producers/firms). Case studies of several sectors in the GTA support the principles of neo-artisanal production, while at the same time providing an alternative explanation for the locational patterns observed in many of the new industrial clusters identified in the literature on the New Industrial Geography.

The model of neo-artisanal production is more comprehensive than other versions of Post-Fordism in that it is not restricted to 'industry'. The artisanal labour process, demonstrated to have become more significant in industrial settings, may certainly continue to predominate in traditional artisanal settings as well (for example, household production). Furthermore, the role of technological change in the neo-artisanal model is less deterministic than in some of the other new models of production. For the latter, new technologies are almost always prerequisite to the new patterns of work. While labour process theorists have in the past often argued that such new technologies are usually associated with deskilling (eg. Braverman 1974), the neo-artisanal model allows a number of alternative configurations of technology and work. On one hand, new technologies can also require *en*skilling of workers to become more flexible, perhaps multi-skilled, suggesting possibilities for enhanced integration of tasks at the level of the worker - a *reduction* in the technical division of labour and therefore a move towards an artisanal labour process. Alternatively, old technologies can be used in new ways which are also more artisanal than their previous use. Both possibilities are supported by case studies across the economy of the GTA (the former, for example, by the use of computers for the production of animated film, special effects,

**Table 1:** *Change in the agricultural economy, Canada and Manitoba, 1996 to 2001. (source: Statistics Canada 2001)*

| | Number of Farm Operators | | | | | |
| | Canada | | | Manitoba | | |
| Farm Size[1] | 1996 | 2001 | % Change | 1996 | 2001 | % Change |
|---|---|---|---|---|---|---|
| <$10,000 | 94,220 | 72,960 | -22.6 | 7,475 | 4,915 | -34.2 |
| $10,000 to $49,999 | 112,095 | 101,685 | -9.3 | 9,135 | 7,835 | -14.2 |
| $50,000 to $99,999 | 57,395 | 47,665 | -17.0 | 5,645 | 4,635 | -17.9 |
| $100,000 to $249,999 | 77,090 | 68,205 | -11.5 | 7,155 | 6,370 | -11.0 |
| $250,000 to $499,999 | 30,255 | 34,515 | 14.1 | 2,575 | 3,050 | 18.4 |
| $500,000 + | 14,550 | 21,170 | 45.5 | 1,270 | 1,990 | 56.7 |
| TOTAL | 385,605 | 346,200 | -10.2 | 33,255 | 28,790 | -13.4 |

note: 1. Measured by Gross Farm Receipts
source: Statistics Canada 2001

etc., and the latter by the reorganization of lens manufacture at the level of the retailer in the production of eyeglasses).

The work just described has focussed on manufacturing in an old, urban industrial region. Its applicability to a non-manufacturing oriented rural region must be set within the economic dynamics of the context. This includes the so-called 'crisis' in agriculture - a dominant sector in South-West Manitoba. Some simple data from the 2001 census of agriculture illustrate the economic environment faced by producers in this sector. For Canada, from 1996 to 2001, the number of operators has decreased for small farms (all cateogories under $250,000) and increased only in the larger categories (see Table 1). The data for Manitoba follow the same pattern, only more accentuated - particularly pertinent are the greater losses in the smaller farm categories. This follows a long term tendency in the Prairies by which farm sizes have been increasing, the number of farms decreasing, and the number of workers required per farm declining moderately. From the 1930s to the 1980s, prairie agriculture became heavily capitalized, and the size of farms approximately doubled, while the number of farms was cut in half. The recent data suggest, if anything, an acceleration of this trend. This transformation has worked to the disadvantage of the smaller, family farms.

In this context, rural farm incomes have, for many families, declined in real terms, and the prospects both for future employment for young people entering their working years, and for sustained incomes for existing farmers, are bleak. As a result, alternatives on and off the farm are being sought on a large scale, and as we might expect, there have been significant shifts in population (notably out-migration of the rural farm population) and in economic activities of those who remain in rural areas (farm and non-farm). There are numerous possibilities for such people and families seeking new sources of income - non-traditional agricultural commodities,

Production Chain

|  | | Integrated | Disintegrated |
|---|---|---|---|
| Consumption Chain | Integrated | Traditional Artisan | Independent Decentralization |
|  | Disintegrated | Quasi-Artisan within a Capitalist Firm | Dependent Decentralization |

**Figure 1:** *A typology of neo-artisanal production.*

tourism, public services (health care, education), and home-based businesses, to name a few. Though not often considered very important, various forms of manufacturing ought to be included here. In fact, it is these activities which are the object of this investigation, and which, it is argued, provide a link between rural restructuring and the transformations taking place in urban industrial regions.

　　Craft production can be considered parallel to the traditional artisan, and is one of the many possible configurations of production within the model of neo-artisanal production (see Figure 1). The others represent forms in which the artisan is more tightly integrated within the broader capitalist social division of labour. In 'quasi-artisanal production', the artisan is a member of a larger firm, performing a special role in terms of the production process, but remaining disconnected from the consumer. In the two forms of decentralization, the firms themselves are part of larger chains of production, in which their work must be coordinated with the work of other firms in the kind of flexible relationships described in Piore and Sabel's flexible specialization. The traditional artisan, however, does not so much represent 'something new', as a return to an old way of producing.

A comment on small business is informative at this point. As we shall see, craft production is, practically by definition, small scale. As such, its importance is easy to underestimate. However, it has recently been recognized that small business is a significant component of the Canadian, and Manitoban economies. A recent report notes that, for Canada, the small business sector grew faster in 2001 and 2002 than the economy in aggregate, by 0.5%, and that the gap is expected to widen in the future (Thorpe 2003). Furthermore, small business is considered to be the major contributor to employment growth in Manitoba (Kirbyson 2003). Though his studies were highly criticized, it seems that Birch (1987) was right to identify small business as a significant force for employment and general economic growth in modern economies. Craft production is therefore part of a very important and dynamic sector of the economy, both nationally and within Manitoba - though to be fair, data does not exist to demonstrate the share of small business that is, in fact, accounted for by craft production.

## The Study

In order to investigate some of the dynamics of craft production in South-West Manitoba, a survey was conducted of a sample of craftspeople/ craft businesses in the region (see Figure 2). The sample frame was the participants of the major annual Christmas craft show in Brandon. Clearly, this was a convenience sample, but the show is large enough to cover a broad range of types of craft, and includes participants from throughout the study region (and beyond). After removing those crafters who do not reside in the study area, surveys were sent to the remaining 93. Of those, 25 useable responses were returned, producing a response rate of 27%. This is considered adequate for a survey in which there was no prior contact, and no incentive to participate.[1] Geographically, about 1/3 of respondents resided in the City of Brandon, with the remaining 2/3 scattered across the rest of the study area.

The survey was brief but covered a variety of themes including nature of the craft and how the craft is produced, participation in organizations supporting crafts (either craft-specific or regionally based), general importance of the craft (both by indicators of commitment to the activity, and by relative contribution to household economy), and locational dynamics of the craftspersons' participation in shows and festivals. These themes were designed to provide a general snapshot of the structure and significance of the craft economy to those engaged in it. Subsequent work will focus in more detail on specific themes.
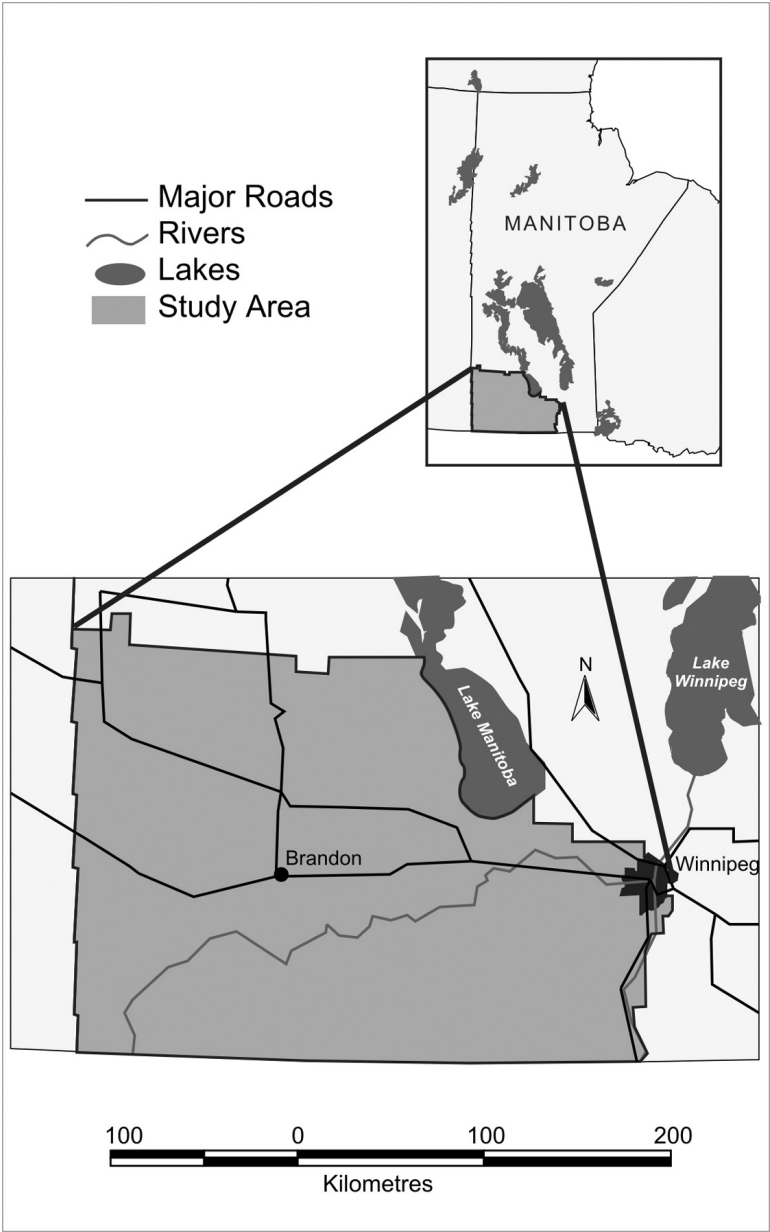
*Figure 2:  Study area: South-West Manitoba.*
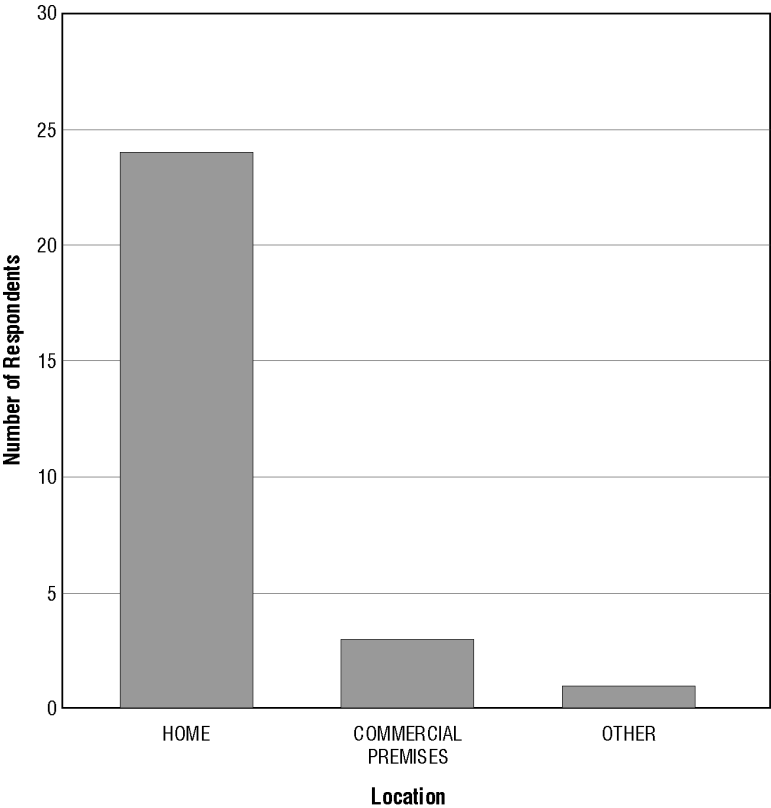
**Figure 3:** *Place of production.*

## Nature of Craft Production: Work Process and Engagement in the Craft Economy

While the type of craft respondents were engaged in varied widely, some broad indicators of the nature of production were identified. Craft production is predominantly a 'home-based' occupation (see Figure 3). Of the 25 respondents, 24 indicated that at least part of the production took place in the home (the sum of responses reported for this question exceeds 25 because some respondents indicated production was divided among more than one location). As we might therefore expect, production may involve family members, but rarely extends to genuine 'employment relations' in which the craftsperson hires non-family members to work in

*Table 2: Survey responses.*

| Question | Response | Number of Responses (n=25) | |
|---|---|---|---|
| How many individuals in this household/ family are engaged in production of the craft? | 0<br>1<br>2<br>3 | 1<br>17<br>5<br>2 | mean = 1.3 |
| Do you formally employ anyone outside the family/household? | yes<br>no | 2<br>23 | |
| Do you 'contract out' any production tasks? | yes<br>no | 4<br>21 | |
| For how long have you been engaged in this craft (years)? | 0 to 5<br>6 to 10<br>10+ | 13<br>5<br>7 | mean = 7.7 |
| Do you belong to a co-operative to assist with the purchase of materials? | yes<br>no | 0<br>25 | |
| Do you belong to a craft guild or association? | yes<br>no | 5<br>20 | |
| Do you belong to a guild or association specific to your community/region? | yes<br>no | 2<br>23 | |
| For how many household members is this craft the primary occupation? | | 14 reported of 33 total | |
| Do you operate the craft as an incorporated business? | yes<br>no | 2<br>23 | |
| Do you own a cash register which you bring to the shows? | yes<br>no | 5<br>20 | |
| Do you accept payment by credit card? | yes<br>no | 6<br>19 | |

the craft (see Table 2). Respondents reported from 0 to 3 family members engaged in production[2], with a mean response of 1.3; on average, it is more than a 'one-person' operation. However, only two respondents reported having any non-family employees - one having one and one having two. Formal employment can therefore be considered of only marginal importance in exceptional cases. Suggesting similar conclusions, only 4 of the 25 respondents reported 'contracting out' any components of production. Clearly, we are looking at a system of production that is dominated by home-based production, engaging individuals within the household as the exclusive producers of the craft. There are few exceptions to this.

While technological change is often linked to broad processes of economic change, the thesis of neo-artisanal production allows for the organization of work with or without new technologies. Therefore, the nature of technology used in an artisanal context is an empirical question. In the case of the traditional artisan examined here, hand methods of
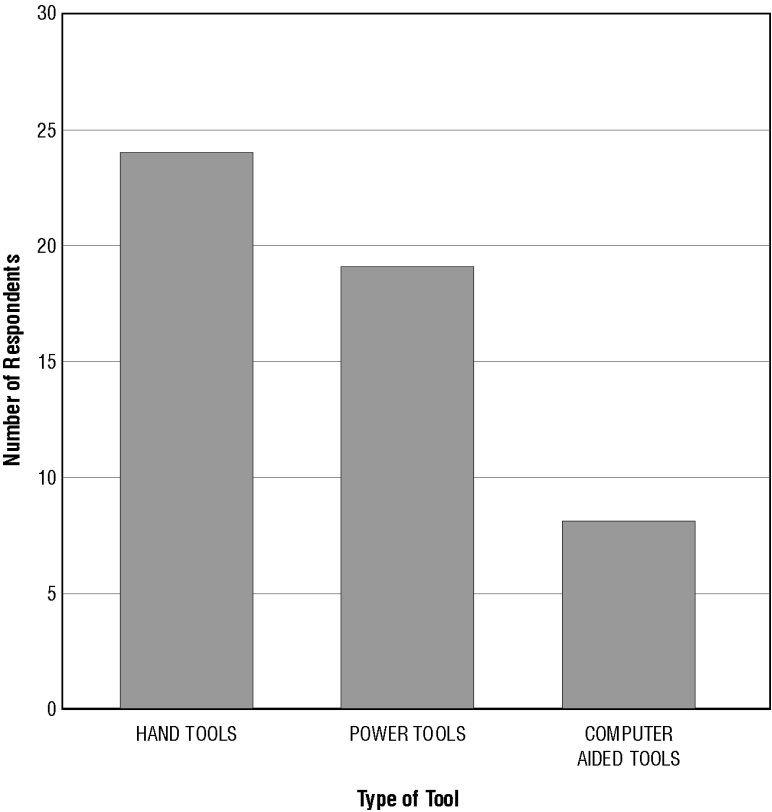
**Figure 4:** *Technology of production.*

production continue to be dominant (see Figure 4) - one might suggest this is true *manu*facture. However, power tools are widely used as well, indicating that the traditional artisanal methods have been 'updated' with newer tool technologies. Although the new industrial geography has been much concerned with the flexibility introduced into traditional factory production by the use of computer aided design and manufacture, the computer seems to play only a moderate role in the traditional craftsperson's workshop. Coupled with the other technologies, we see that even where they are used, computer based methods are more likely to be used alongside more traditional methods, rather than to replace them.

Length of engagement in the craft economy gives us an approximate indication of whether this represents something new - not as a system of production, but in terms of a revival of the artisan within the modern

economy in this region. While some crafters reported having been engaged in the craft for some time (the maximum was 26 years), the average was only 7.7 years, indicating that for most of the people in this survey, the craft is a relatively new activity (see Table 2). Furthermore, over half the respondents reported being engaged in the craft for 5 years or less, reinforcing the suggestion of the recent resurgence of this as a component of the household economy for many participants. The nature of the survey, however, precludes any assessment of whether there has been a general resurgence of the craft economy, as crafters who have discontinued this activity were not surveyed. Anecdotal evidence from the craft shows, however, suggests that there have been increasing numbers of participants in these events over the past few years, giving at least a preliminary indication that the sector may be growing.

## Role of Craft and/or Regional Organizations

An institutional analysis would suggest that organizations supporting craft activities might be of critical importance in maintaining the craft economy, both in its general operation and its spatial structure. None of the questions asked in the survey provided evidence of such institutions of any significance in this study. Of 25 respondents, not one indicated that they are members of any type of cooperative organization for the purchase of materials or distribution of products (see Table 2). Five said they belong to a guild or other such organization specific to their craft, with only two belonging to similar regionally based, non-craft specific organizations. The responses therefore clearly fail to indicate a craft-economy-structuring role for formal organizations geared toward cooperative forms of skill development, learning, support, distribution, etc. Although craft-based organizations may appear to play at best a marginal role, it is even more clear in the scarcity of geographically-based organizations that these do not illuminate the geography of craft production.

## Importance of the Craft

Several indicators suggest the relative importance of the craft to the households in which they are engaged. A little under half the respondents indicated that for them (or the family members engaged), the craft represented their primary occupation (see Table 2). (For the remainder, it would be safe to assume that the craft is either a hobby or a secondary source of income for the individual.) The respondents reported being

engaged in production of the craft (annually) for time periods ranging from one month (for example, 'Christmas crafters' - producing just for the Christmas sales), to the full year (indicating, at least for some, 'full time employment'). Of the 25 respondents, only two were formally incorporated as a business, suggesting that although the craft was an important occupation for many, it is still an informal business.[3] Commitment to the craft is also indicated by a couple of interesting statistics. Five of the 25 respondents reported bringing a cash register to the sales, and six reported accepting credit card payments. The first indicates a financial investment in the 'business' of selling the craft, and also provides an image of professionalism. The latter also represents a commitment to the craft, since there are per-transaction costs that the craftsperson must cover with this form of payment. Clearly these craftspeople are operating on more of a formal business model than the retired hobbyist carrying a small cash box and not issuing receipts to customers.

More telling of the importance of the craft, perhaps, is the relative financial contribution of the craft to the household. While at the low end, some craftspeople did not consider their activity to contribute any significant amount to total household income, at least one craftsperson reported up to 80% of total household income derived from the craft business. This is clearly the main income for this household, not just for the individual. For five of the 25 respondents, the craft represented at least 25% of their total household income - certainly not an insignificant amount. We can safely conclude, therefore, that while the craft is the primary occupation for nearly half of the individuals surveyed, it does not appear to be the primary income for the households overall, with a couple of exceptions. It is more likely to be a form of supplemental income, secondary to the head of household's main occupation, or to some form of support payment, such as a pension. However, while the overall average of about 14% of total household income may appear relatively low, it is worth speculating that for rural households whose primary economic activity is farming, this may be a meaningful contribution to a household whose financial situation may be described as precarious.

## Locational Dynamics

In the craft economy, locational dynamics are tied to the means by which the craftspeople are connected with their customers. Given that the majority of production is *not* custom work done to the customers' specifications (respondents' average indication of custom production was
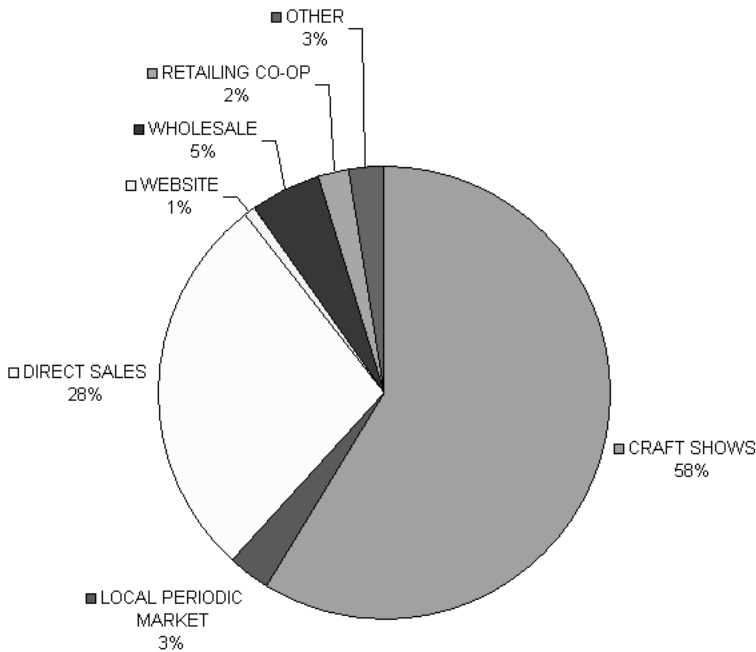
*Figure 5:  Unweighted aggregate distribution of sales by market mechanism.*

just over 20%), the craftspeople rely on a variety of mechanisms to sell
pre-made products to the general public (see Figure 5).  Of these, by far
the most important was the craft show (about 60% of unweighted aggregate[4]
sales), followed by direct sales (28%), and a number of others, none of
which account for more than 5% of total sales.  The craft shows, therefore,
introduce the locational dynamic to the craft economy.  By definition,
these shows require considerable geographical mobility on the part of
many producers, and many consumers (certainly, some sellers at a show
will be local residents, as will many, but not all, buyers).  In this sense, the
geography of production is likely of much less significance to the operation
of the craft economy than the geography of distribution.  Although not
included in this survey, it is notable that many of the participants in the
sale on which the sample frame was based are from outside the study
region.  It is safe to assume that such craftspeople participate in shows
local to their place of residence as well, just as many Brandon-based
craftspeople participate in shows outside Brandon.  Therefore, being
actively engaged as a craftsperson will, for most, involve considerable

travel in pursuit of markets for their products.  In a sense, production could really occur anywhere, with success being based on the shows more than on any other mechanism for selling the craft product - for most producers.

## Conclusion

There is some indication that craft production is a relatively recent activity for many households, and therefore also likely to be showing a general resurgence in the contemporary era in the economy of rural regions, such as South-West Manitoba.  Although for different reasons, this phenomenon is comparable to what is happening in other, core industrial regions' economies as well.  The parallels are more convincing when set within the context of an artisanal model of production, argued to be gaining prominence in the latter, as well as the former type of region.  As suggested by the evidence provided by the survey reported here, craft activities are, in many cases, a significant component of the household economy - much more than a simple hobby which may or may not pay for itself through minor sales to a local market.

There was minimal evidence of local contingency in support of production - lack of a role played by craft and/or regional organizations supporting production.  The technologies of production were dominated by traditional hand methods, and secondly by power tools, neither of which are likely to be influenced by the sorts of factors relevant to the geography of industrial production - inter-industry locational linkages, regional dynamics of learning related to new technologies, etc.  Furthermore, place of work was most often place of residence, indicating a complete lack of role played by 'industrial spaces'.  Therefore the geography of production is, in a sense, trivial to the craft economy.  What is much more important, clearly, is the geography of distribution - in this case dominated by the role of the craft show.  This paper therefore demonstrates that there is a probable connection between the craft economy and tourism, a link that warrants further investigation.

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## End Notes

[1] A follow up reminder was sent about a month after the initial survey was distributed.  Occasionally, a new response will arrive, but clearly the bulk of willing participants have already responded.

[2] The question asked the respondents to include themselves in their count; the 0 might therefore be taken as a misunderstanding of the question.

[3] In informal discussions with craftspeople at sale after sale, as well as from detailed comments provided by one respondent to this survey, this researcher has found on many occasions that craftspeople operate to a certain degree 'under the radar' of the formal economy - many are not registered for GST, for example, and are apprehensive about revealing any financial information lest the 'tax men' in Ottawa come after them.

[4] In calculating this figure, all respondents' estimations of sales by mechanism were given equal weight.  In reality, some craftspeople will in fact sell more than others, but dollar values (sales, income, etc.) were not reported in the survey.

# Spatializing rural communities' sense of place

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*Abstract:* The purpose of this research is to gain insight on how citizens of two rural communities in Canada perceive the community of which they are a part. In the past both qualitative and quantitative approaches have been used to gain a greater understanding of how people perceive their community (Pretty, Chipuer, and Bramston, 2003). In 2001 the New Rural Economy Project administered household surveys to research sites located across Canada. As part of these surveys participants were asked to draw their community boundaries on a base map. Using a standard base map in each community enables us to spatialize the responses and to compare among and within communities. Two communities, Ferintosh and Hussar, both located in Alberta, will be the basis for this research and have been selected because of the unique sketch maps produced by the respondents of the household survey.

## Introduction

Globalization and the restructuring of agriculture have made it increasingly difficult for rural communities to remain sustainable. People are traveling many kilometers to gain access to health, education and government services. Declining populations have also meant families must travel farther to participate in recreational activities. Work, services and recreation are all activities that connect people to communities. This paper will explore the impact of these changes and examine how a person's perceptions of their community boundaries are representative of rural sense of place.

Conventional approaches to classifying communities involve the use of Census Subdivisions, postal codes, or other administrative units as proxies for communities. While the Census Subdivision in particular is a convenient geographic unit, researchers realize that it does not necessarily represent real communities (Coulton, Korbin, Chan, and Su (2001).

Everyone has a unique perception of their community, therefore the identities that emerge from such approaches frequently fail to correspond with those used in daily life or local administration. It is acknowledged that community boundaries that consider resident perceptions might produce more meaningful and relevant settings that are more closely representative of the community construct (Montello, Goodchild, Gottsegen, and Fohl, 2003; Korbin and Coulton, 1997). In urban sociology and environmental psychology the use of resident's maps and boundary definitions to study communities is becoming more popular (Montello, Goodchild, Gottsegen, and Fohl, 2003). By using community sketch maps in conjunction with a larger study of rural communities in Canada we hope to determine some of the spatial characteristics of Canada's rural communities.

**Sense of Community:**
    Everybody has a unique perception of their community: it is influenced by one's shared environment, shared history, and community identity. Many researchers including Prezza, Amici, Roberti, and Tedeschi (2001) use a definition of sense of community provided by McMillan and Chavis (1986: 9):

> "a feeling that members have of belonging, a feeling that
> members matter to one another and to the group, and a
> shared faith that members' needs will be met through their
> commitment to be together".

    Research in community psychology suggests that sense of community can be a powerful explanatory tool for understanding community development and individual well-being (Prezza, Amici, Roberti, and Tedeschi, 2001). Prezza, Amici, Roberti, and Tedeschi (2001) use the concept of sense of community on a territorial scale as a personal indicator of quality of life. Other studies reveal that sense of community is related to active participation in community life and individual well-being (Davidson and Cotter, 1991). There is little attention placed on sense of community and the role of the environment. The discipline of urban planning places a greater emphasis on the physical environment when discussing the concept of sense of place but it has not been empirically and thoroughly studied. We hope that by using a sketch mapping technique we will provide additional insight into rural sense of place as well as some of the structural components that lie at the heart of a strong community.

**Sketch Mapping:**

Sketch mapping is a methodology used for spatializing the internal representation of a person's world. Existing research using the sketch mapping methodology for community mapping has predominantly focused on small-scale environments in an urban context (Montello, Goodchild, Gottsegen, and Fohl, 2003; Coulton, Korbin, Chan, and Su, 2001). Analyzing buildings, streets, and other elements of a city in order to understand how people mentally represent their surroundings is the fundamental role of sketch maps. Sketch maps may include a simple boundary around a place or may require greater detail to be added. Existing research usually includes sketch maps of a person's environment and the labeling of important roads, geographic features, municipal boundaries and buildings that they perceive as a part of their community or neighborhood. Few attempts have employed a sketch map approach in rural settings where there might be increased opportunity for between-community and between-participant variability.

The significance of boundaries for the development and maintenance of social identity is gaining interest from sociologists, cultural geographers, social psychologists, and social anthropologists. There is growing interest in the identification of neighborhood and community boundaries in a number of research areas including market analysis and service delivery (Martin, 1998). Due to the unique perception people have of their community, outlining community boundaries is not a simple task. Puddifoot (1997) includes an interesting quote when discussing community boundaries,

> The simple truth is that the boundary encapsulates
> the identity of the community and like the identity of
> an individual, is called into being by the exigencies of
> social interaction. Boundaries are marked because
> communities interact in some way or other with entities
> from which they are, or wish to be, distinguished
> (Cohen, 1993: 12).

Social identity theorists have been keen to try to take into account historical, social, and economic factors that structure intergroup perceptions in regards to boundary definitions.

By using the sketch mapping method to draw community boundaries, insight can be gained on how people perceive their surrounding environment, or in other words their sense of place. Matthews (1995) uses sketch maps to examine the importance of cultural settings to children's

environmental awareness. Many studies support the idea that gender socialization leads boys and girls to experience landscape in different ways and, therefore, to attach different meanings to it (McDowell and Massey, 1984; Matthews, 1995). Depending on the characteristics of the person, aspects of the environment, and on the person-environment relationship the elements to be cognitively mapped may be 'landmarks' or 'paths', but not all features present in that environment will be accounted for (Pinheiro, 1998).

## Methodology

Data was drawn from a survey of 1,995 households in 20 systematically selected field sites, each one representative of a rural community. The larger study is focused on a better understanding of the emerging new rural economy (Reimer, 2002). Five dimensions relevant for rural communities were used in the sampling frame when selecting sites: the extent of exposure to the global economy, the relative stability of the local economy, the adjacency to large metropolitan centres, the level of social and institutional infrastructure, and the extent to which the site is lagging or leading with respect to a number of socioeconomic variables (Reimer, 2002). Because the sample was designed for strategic purposes, generalizations from the analysis reflect the distribution of rural sites as represented in this sampling frame, not the general population of rural sites or individuals. Sites were identified from the 1991 boundary files for Census Subdivisions, ranging in size from 130 to 5,997 residents across all provinces and two territories of Canada.

**Participants:**

The unit of analysis (household) was defined as people living in the same dwelling who are economically interdependent. Households were randomly selected from individual site sources such as the voters list or property tax assessment records. The primary data presented here was based on surveys conducted in Ferintosh and Hussar, two communities in Alberta, Canada.

**Materials:**

The Household Survey Interview Guide was comprised of 54 questions designed to elicit information regarding the organization, challenges, and strategies of rural households. Information was collected regarding the household organization and labour force characteristics,

major changes each participant has faced and how they respond to these changes, use of services (both formal and informal), local participation, media use (including the Internet), local and regional networks, informal exchanges of goods and services, perception of local relations, and aspirations for the community. The survey consists primarily of closed-ended questions but does incorporate some open-ended questions.

**Sketch Mapping Task:**

As part of the household survey, participants were asked to take part in a sketch-mapping task, which required the participants to draw their community boundaries on a base map. They were given the following instructions: **"Please indicate your community by drawing on one (or both) of these maps. When drawing the boundaries, think of important roads, geographic features, municipal boundaries and buildings"**. The sketch maps used for analysis were completed on base maps of one of two scales supporting between participant comparison and overlays of all sketches for each community. The intent of this task was to measure participants' perception of their community boundaries.

## Analysis and Results

A series of measures have been used in the analysis of the community boundary maps. These are not unlike the measures developed by Coulton, Korbin, Chan, and Su (2001) when analyzing resident's neighborhood maps. The individual map measures are area, perimeter, and distance as defined in Table 1. Each is calculated for individual resident maps, using distances in kilometers obtained from ARCVIEW. The common area in each community was determined by classifying the overlaid maps of all respondents into 5 ranges of 20% intervals.

Table 1: *Definition of resident map measures.*

| Measure | Individual resident's maps |
| --- | --- |
| Area | Area in each resident's map in square kilometers |
| Perimeter | Additive length of the boundary drawn by each resident in kilometers |
| Distance | Distance between the two farthest points of each resident's map in kilometers |
| Common Area | Percent of each resident's map that overlapped at 40% and 100% intervals of the other residents |
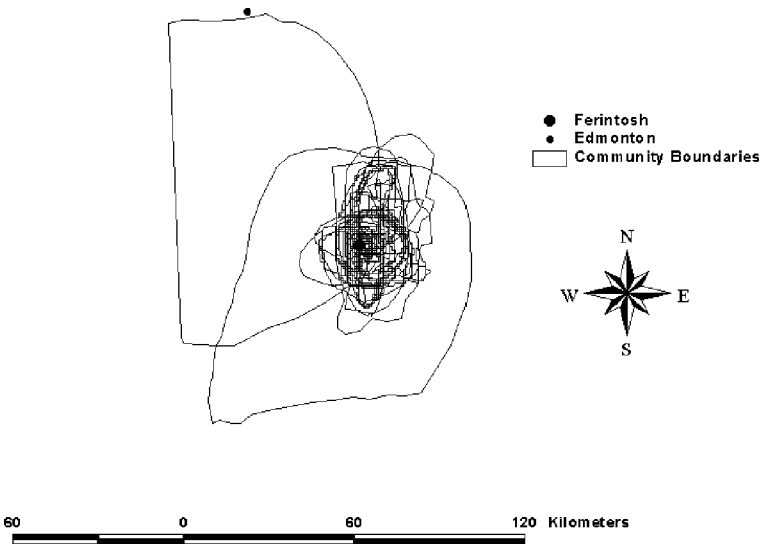
**Figure 1:** *Boundaries of Ferintosh drawn by community members.*

To illustrate some of these measures, sketches of Ferintosh and Hussar, Alberta (Figures 1 and 2) are included. Hussar with a population of 181 people is located 117 kilometers from the city of Calgary. Ferintosh has a population of 150 people and is located approximately 116 kilometers from the city of Edmonton. Each figure shows the individual boundaries drawn by participants for the two communities. By visually inspecting the maps it can be seen that a greater percentage of people outlined a smaller community boundary for Ferintosh then did people from Hussar. A closer analysis of these two communities provides some insight into factors contributing to residents' sense of community.

A descriptive summary of the digitized sketch maps indicates clear differences in the sense of community expressed by drawing a line on a map. Table 2 provides a summary of some of the spatial properties of each community's collective sketch maps. When area, perimeter, and distance (longest axis) are used as collective measures of the outermost boundaries of the sketch maps[1] Hussar appears to be a more distributed community, while Ferintosh appears to be more compact. The "common area at 100%" is the area on the earth's surface that was included in every participant's map for an individual community, indicating a universally
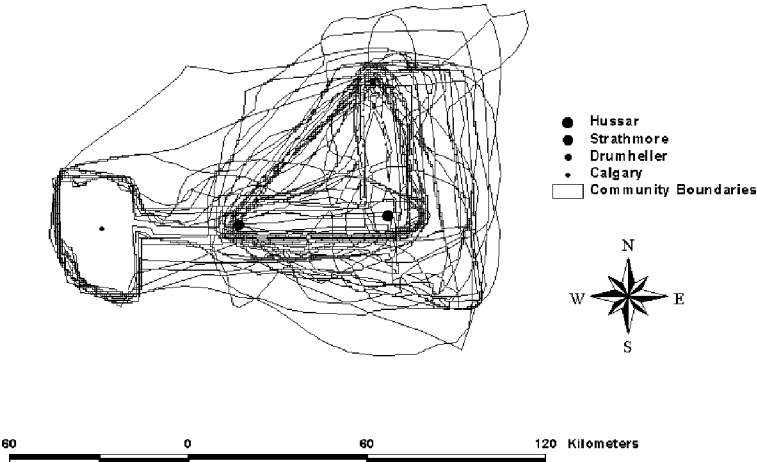
*Figure 2: Boundaries of Hussar drawn by community members.*

agreed upon space that is the community. Hussar residents see their community as covering a much larger area than residents of Ferintosh. Even a cursory look at the spatial pattern indicates that Calgary is an important part of the community's relationship with its surroundings.

The relationship between each study community and its closest urban neighbor is quite dissimilar. A visual examination of the collective sketch maps indicates that while Hussar's population seems to embrace the nearby city, Ferintosh's does not (Figures 1 and 2). The link between each community and its metropolitan neighbor is potentially explained through a directed examination of each community's employment profiles. Table 3 indicates that 95.5 % of the respondents in Hussar identified a location of employment while in Ferintosh more than half of the population when asked where their location of work was, answered not applicable ("missing" in the table). Furthermore, the survey respondents of Hussar (median age is 46) represent a younger community: the average age of Hussar residents based on Canada Census 2001 is 36.5 with the greatest proportion of the

*Table 2: Measures of resident's maps within communities.*

| Community | Area in square kilometers | Perimeter in kilometers | Distance in kilometers | Common Area at 100% (square kilometers) | Common Area at 40% (square kilometers) |
|---|---|---|---|---|---|
| Ferintosh, AB | 886.81 | 67.03 | 26.62 | 16.47 | 614.94 |
| Hussar, AB | 4480.03 | 232.41 | 84.57 | 550.84 | 6310.27 |

Note: For area, perimeter, and distance mean values are given

population (30%) between the ages of 25 and 44. The median age of respondents from Ferintosh is 61 with the average age of residents based on Canada Census 2001 being 45.9. More workers and a younger population imply greater mobility and a greater need for employment opportunities. Therefore, residents of Hussar are more likely to commute from their community to jobs and opportunities in Calgary, but they are not *moving* from their rural community to take these jobs.

That a community with an aging population and fewer people in the work force might be in decline is not surprising; this is what the popular media often tells us about rural communities. However, the results of the larger survey indicate that Ferintosh is not in decline. It is attracting people to the community as they enter their retirement years and its total population is increasing. The compact nature of the collective sketch maps is not

*Table 3: Participants job location for the communities of Ferintosh and Hussar.*

| Community | Frequency | Percent |
|---|---|---|
| **Hussar** | | |
| Valid | | |
|     Home | 7 | 15.9 |
|     In community | 18 | 40.9 |
|     Community within 30 minutes | 13 | 29.5 |
|     Community more than 30 minutes | 4 | 9.1 |
|     Total | 42 | 95.5 |
| Missing | | |
|     Not applicable | 1 | 2.3 |
|     Refused | 1 | 2.3 |
|     Total | 2 | 4.5 |
| Total | 44 | 100.0 |
| | | |
| **Ferintosh** | | |
| Valid | | |
|     Home | 3 | 5.8 |
|     In community | 5 | 9.6 |
|     Community within 30 minutes | 9 | 17.3 |
|     Community more than 30 minutes | 7 | 13.5 |
|     Total | 24 | 46.2 |
| Missing | | |
|     Not applicable | 28 | 53.8 |
|     Refused | 0 | 0 |
|     Total | 28 | 53.8 |
| Total | 52 | 100.0 |

surprising given the above non-spatial assessment of the community. It is interesting that in this situation reduced variability among respondents, and an overall spatial extent that is small represent a positive characteristic for this community, it suggests that community members are happy with the interactions they are afforded and the day-to-day lives they are leading in Ferintosh. In general, the compact nature of these collective maps indicates that there is less "flight" from the community and most community members find their needs being met locally.

Hussar, has several non-spatial characteristics that indicate it is a relatively healthy rural community. It has a young population, high employment rates, and is less dependent on farm income than other similar rural communities. On the other hand, residents taking part in our study indicated that the sense of community as expressed through their sketch maps is highly variable. The residents of Hussar work within and beyond their formal community, and by extension have indicated they consider a much broader area to be their 'community.'

## Conclusion

The purpose of this research is twofold. First it provides insight on how citizens of two communities in rural Canada perceive the community of which they are a part. It is apparent from the sketch maps that people's perception of their community boundaries differs within and between communities. However, in this case the differences speak to important contemporary concerns for rural Canada. In a nutshell respondents from Hussar identify a much larger community boundary than their counterparts in Ferintosh, who identify a relatively small community boundary. It is also apparent in this research that the size of community boundary identified by community respondents, while representative of their sense of place is not necessarily representative of their sense of community or social cohesion. While residents of Hussar indicate that their community covers a much larger area it is not apparent that their community ties are weakened because of the larger area.

Secondly, this research supports the argument that rural communities are unique and general assumptions cannot always be made on their behalf. Some may say that Ferintosh is representative of a traditional community where close-knit ties among its members and development on a local scale are emphasized. In contrast Hussar is representative of a new kind of rural community, a community that according to sketch maps drawn by residents places a greater importance on regional links. Hussar may be

representative of a regional development strategy, which emphasizes co-operation in rural and economic development and is based on the notion that rural communities cannot sustain and develop on their own. However, one might argue that these two communities represent two points along a continuum from traditional to emerging rural communities. Each is considered healthy but they are quite different in terms of how health is achieved.

This paper provides the basis for future community focused research in rural geography. A more in-depth analysis including a larger number of sites will provide greater insight on the relationship between sketch maps and the intensity of sense of community and social cohesion. This greater understanding will not only contribute to future academic research but will also be beneficial to policy makers enabling them to make reliable and better-informed decisions at the community level.

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## Footnotes

[1]Not the largest sketched boundaries, but the cumulative boundary determined by using the collective lines drawn by participants.

# Capitalizing on life at the margins: the pawnbroker and inner city commerce

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*Abstract*: Life in the inner city of many North American cities is marked by a considerable degree of social marginality from suburban neighbourhoods. That inner city populations tend to differ ethnically, racially and socio-economically from their suburban counterparts has been well documented since the early days of the Chicago School of urban ecology. However, less well documented by social scientists is the marginal nature of commerce in inner city districts. In addition to marginal aspects of the traditional retail and service industries, the inner city is often the site of a number of less salubrious commercial enterprises that capitalize on so-called 'deviant' and sometimes criminal behavior. The location of marginal business enterprises such as massage parlours, adult video stores and pawnshops often provokes considerable reaction from municipal officials and the general public. This paper presents some initial observations of an analysis of the delicate interplay between the reactions of the public at large, the policies of city planning officials and the needs of customers and proprietors of such businesses in the city of Winnipeg. The locational dynamic that results from such interplay of social forces helps shape a unique inner city landscape of marginality, despair and desire.

## Introduction

Marginalize: "To relegate or confine to a lower or outer limit or edge, as of social standing" (dictionary.com).

The North American inner city is socially, economically, racially and physically marginal in relation to suburban communities. However, it is important to remember that marginalization is a relational concept. An individual's or an object's marginality can only be meaningfully understood in relation to some normal benchmark. Thus, to observe that the inner city of many urban centers is socially, economically or racially marginal is to

indicate that it stands in sharp contrast to what is perceived to be the 'norm' in the North American city: the suburbs. The relative affluence of the suburbs, absence of visible minorities, and the homogeneity of the built environment are the social and aesthetic standards against which the inner city is ultimately contrasted. Instead of tidy streets largely servicing single-family dwellings, a variety of dwelling types prevail in the inner city. These include a mixture of single-family homes, apartments, rooming houses, single room occupancy hotels, transient hostels and even flop houses. Unlike the exclusive zoned, commercial strip malls and shopping centers of the suburbs, a mélange of land use types characterizes the inner city. Commercial, industrial, residential and institutional land use types all co-exist in geographical proximity in inner city districts. The age and structural condition of the built environment in the inner city also clearly sets it apart from the surrounding districts. In these important ways, the inner city stands apart from the suburban ideal of order, aesthetics and homogeneity. None of these observations should come as a surprise to the seasoned urban geographer. These spatial contrasts were nicely described in the work of the Chicago school of urban ecologists and identified in the classical concentric zonal model of urban form (Park and Burgess 1925). Winnipeg's townscape generally follows this common pattern and its inner city district is very much in conformity with the concentric ring known as the zone in transition (Burgess 1927).

A common view of the relationship between marginality and deviance is that individuals who are socially, economically or racially marginal to the mainstream population tend to be drawn into deviant behavior (Deutschmann 1998). Thus, marginality is thought to lead to deviance. We argue that the sorting process is very much an inversion of the conventional understanding of marginality. That is to say, deviant activities also lead to marginalization. The locational dynamics of commercial activities that deviate from the norm are very much a product of efforts to exclude them from mainstream districts in the city. In this way, such deviant commercial endeavors are pushed into marginal districts, such as neighbourhoods in the core area, that lack the political and social capital to exclude them. Clearly, the NIMBY and LULU ('not-in-my-backyard' and 'locally unwanted land uses') syndromes are operating in these circumstances, wherein the disadvantaged fall victim to the exclusionary attitudes of the majority. However, most of the literature on these topics deals with the more unsightly, physically (ob)noxious and polluting land uses like airports, sewage plants and landfill sites (Freudenburg and Pastor 1992; Dear 1992). In this paper, we will be focusing on activities that are instead deemed to be socially or morally offensive, running counter to middle class cultural values and thereby carrying a stigma that sets them

apart from others. Marginalized neighbourhoods, marginalized people, and the marginalized activities that are contained within them become that way in part because of the pressures placed on them by mainstream societal interests. Thus, the inner city becomes "socially constructed as a zone of abjection, populated with abject figures whose conduct result[s] in rampant disease, disorder, and danger, which put both individuals and the larger community at risk of degradation. (Sommers 1998, 297) Activities taking place in the inner city are perceived as a threat to the *status quo*, that if allowed to infiltrate into 'respectable' districts, will lead to the unravelling of decency, to moral degradation, and reversion to the primordial slime of pre-human existence.

The creation of marginalized districts of deviant retail or commercial businesses in the inner city is of grave concern to those organizations and residents who wish to see core area communities revitalized. For example, communities such as the West End, a mixed commercial and residential district immediately west of Winnipeg's downtown, has long struggled as a 'dumping ground' for the city's unwanted economic activities, such as pawnshops, massage parlours, and more recently, the street prostitution trade (cf. Kohm 1997). To many who live in these neighbourhoods, or work to improve the situation for residents, the high concentration of marginal land uses in inner city districts works to counterbalance efforts to bring about stability. Moreover, the establishment of pawnshops, massage parlours and adult video stores is often associated with a negative stigma that many fear will reduce property values and encourage still more unsavory businesses in these areas. Harvey Smith, the city councilor representing the West End of Winnipeg, has mused loudly about the fact that massage parlour patrons tend to live in suburban areas, while such businesses are restricted by the city's zoning by-law exclusively to the inner city (Kohm and Selwood 2003). In this way, the city's own land use planning and zoning regulations help to ensure the inner city as a logical place to site locally unwanted land uses.

The visual images characteristic of many inner city marginal activities conjure up all the nightmarish perceptions associated with them. Even if the activities are discreet and their premises 'tastefully' designed they are deemed to be unsightly pollutants of the townscape and degrading to the neighbourhood. This is why such activities are frequently buffered from 'respectable' localities and confined to areas lower down in the zoning hierarchy like industrial districts. However, our experience has been that signage and window displays are indeed very often cheap in appearance, garish, using high contrast, strident colours and extra large hoardings that do indeed offend the eye (Figure 1). It is no surprise in these cases that the marginal uses do more than just draw the attention of their potential

**Figure 1:** *Example of a typical pawnshop store front with brightly coloured awning.*

clientele, but also attract the ire of the wider public. It is not just the type of activity that the marginal operators are engaged in; it can also be their **style** of operation that provokes animosity towards them. Thus, the marginalization process can be mutually reinforcing.

The primary objectives of this paper are to identify and examine the various elements of the marginal commercial landscape, with some focus on the processes by which they find their way into the inner city. Because of their long history and varied functions, pawnshops will receive particular attention.

## Winnipeg's Marginal Commerce

Winnipeg's inner city has long been recognized as an area "characterized by *deviant behaviour*, conduct that in some way fails to meet shared behavioural expectations such as homelessness or alcoholism" (Rowley 1978, 212). While there is certainly much deviant behavior throughout Winnipeg, the inner city provides a space for the most visible manifestations of deviant activities and has become strongly associated with such outward signs of disorder in the minds of most residents. Winnipeg's inner city is also very much characterized by marginal commercial endeavours – establishments catering to narrow segments of

the population who find it difficult or impossible to secure their services or goods elsewhere in the city. In order to understand the nature of marginal inner city commerce, it is useful to construct a typology of marginal commercial activities:

## 1. Marginal Retail Outlets:

Marginal retail outlets can be broadly divided into two groups. The first are set apart primarily by their exotic or ethnic character. They do not carry a stigma, but they have not yet been enveloped by the mainstream culture. On the other hand, the second group are marginal because their merchandize is widely frowned upon or condemned by the majority.

### a) Ethnic Specialty Shops:

Ethnic retail operations are found in abundance in inner city districts. These outlets provide specialized products to a clientele of first or second generation migrants or longer established residents seeking the exotic or unusual. Ethnic grocery stores abound through Winnipeg's inner city, representing Chinese, Filipino, Vietnamese, East European, West Indian and Aboriginal groups, among others. Such establishments cater to local as well as suburban populations. Eventually, they can become part of the mainstream as the cultures of which they are part are assimilated into the wider community.

### b) Fringe Retail Outlets:

This sub-group also caters to narrow segments of the population, although not differentiated by race or ethnicity. Rather, fringe retail outlets supply products that are not morally acceptable to the majority of the population. Examples of this type of establishment are the so-called 'head shops' specializing in items of interest to the drug subculture – T-shirts, drug paraphernalia, posters and so on. Prominent in Winnipeg's core area are establishments such as 'Kustom Kulture' in Osborne Village – a trendy neighbourhood adjacent to the city's downtown district – and 'The Urban Bakery' on Winnipeg's main downtown thoroughfare, Portage Avenue. Another example of a marginal retail operation, 'Discreet Boutique', located on Ellice Avenue on the periphery of the CBD, caters to a variety of sexual tastes not widely openly acknowledged by the community at large. Piercing, tattooing, or body ornament shops are other operations that are not widely accepted. Unlike the ethnic specialty shops that have their origins in the ethnically diverse neighborhoods of the inner city, these more specialized retail establishments draw on more far-flung populations. The rent gap in central city districts offers low rents to their operators, yet easy access for marginal consumers patronizing them. Moreover, such

outlets are generally discouraged from locating in suburban neighbourhoods (Kohm and Selwood 1997).

## 2. Marginal Services:

Much like the marginal retail outlets, the inner city's marginal services also serve narrow consumer segments who seek anonymity and who have difficulty finding such services elsewhere in the city. Marginal services can be divided into at least two types:

### a) Sex Industry Services:

The many forms of the commercialized sex trade that operate at the margins of social acceptability and legality tend to cluster in the inner city. Services provided include adult video and DVD rentals, massage parlours, escort services, burlesque clubs, 'swingers' clubs and even street prostitution. Although suburban manifestations of most of these businesses do exist in Winnipeg, they tend to be concentrated in other marginal suburban districts such as the industrial zones adjacent to the International Airport or the old St. Boniface stockyards area. Significant reasons for this concentration are city by-laws (No. 6087/93, 'X-Rated Store Zoning By-Law'; No. 6551/95 'License By-Law'; No. 6400/94 'Zoning By-Law') that either discourage or prohibit such businesses from operating in suburban residential areas (Kohm and Selwood 1997; Selwood and Kohm 1998). A handful of adult video stores operating in suburban commercial districts have been allowed to remain in place since they were established prior to by-law 6551/95. However, expansion of these outlets has been not only fiercely protested by local residents, but also prohibited under the provisions of the by-law (Kohm and Selwood 1997).

It is demonstrable, given the relative scarcity of such services that sex industry businesses draw clientele from a wide area of the city and beyond. The high prices of some of them make it highly probable that considerable numbers of their clients come from the suburbs. Such is the rationale behind relaxing the restriction placed on the location of massage parlours and escort services. Currently, such businesses are confined to the inner part of the city that is regulated by The Downtown Winnipeg Zoning Bylaw (Kohm and Selwood 2003).

### b) Fringe Financial Services:

As more and more bank branches shut down in the inner city, there is an acute need for basic financial services, especially for the recent influx of indigenous people and other migrants of limited means. Capitalizing on this need, new forms of fringe financial services have appeared, supplementing or replacing the more traditional operations. Buckland *et*

**Figure 2:** *Changing distribution of financial agencies in Winnipeg's North End (by permission, Buckland, 2003).*

*al* (2003) have shown how these agencies have recently proliferated in Winnipeg's North End, with cheque cashing and payroll loan businesses like 'Money Mart' now joining the ranks of traditional pawnshops in providing financial services to inner city populations (see figure 2). Unlike the sex trade services, fringe financial services are more likely to be patronized by local populations who cannot join suburban banks and therefore do not have access to their ATMs. The pawnshop's contributions to the inner city's financial services will be discussed in greater detail below.

**3. Second-Hand Retail:**

The numbers and types of second hand retail establishments have greatly expanded in recent years. The second-hand clothing industry alone has gone from being within the exclusive domain of the poor to now serving trendy niche markets and more mainstream tastes with large superstores like Value Village. Other second-hand establishments specialize in items as diverse as used CDs, sports equipment, and even pet supplies. Of course, the pawnshop has traditionally been an important source of second-hand goods and continues to carry out that function, almost exclusively in the inner city.

## Pawnshops

As has been indicated, pawnshops have long provided both important services and retailing operations to inner city dwellers. Nevertheless, they still carry the stigma associated with marginal operations that are not patronized by 'respectable' residents of the city.  However, according to at least one observer, the bad reputation of the pawnbroker may not be wholly deserved (Hartnett 1981). In addition, the pawnbroker acts as an "auxiliary to the police in a community" (Hartnett 1981 152). Working in association with the police, the pawnbroker reports all goods bought or pawned to the police and aids in the recovery of stolen goods. The notion of the pawnbroker as a 'fence' of stolen goods does not seem to be borne out in empirical studies. Regular checks by the police 'pawn detail' ensure that stolen goods are rarely bought and sold in licensed pawnshops. Nevertheless, the location of a pawnshop is frequently vigorously opposed by residents who protest that pawnshops will be disruptive and cause the neighbourhood to "go downhill" (Bell 2003).

City zoning by-laws also restrict the location of pawnshops in Winnipeg and inhibit the establishment of new businesses. Figures 3 and 4 indicate the distribution of pawnshops in the city, showing that there has been an increase in the number of outlets and that there has been some expansion of the area in which they are located. However, almost all of them are still based in inner city localities.  According to the police officer in charge of the Pawn Detail, their numbers have remained fairly stagnant, with locations sometimes changing hands, but few new ventures established (Morrison 2003, pers. comm.).

A good reason for this concentration is that one of the key functions of the pawnshop is to provide loans to people without a good credit rating. Many of such people would fall into the ranks of Winnipeg's poor or underclass, who are largely confined to the inner city. As such, the
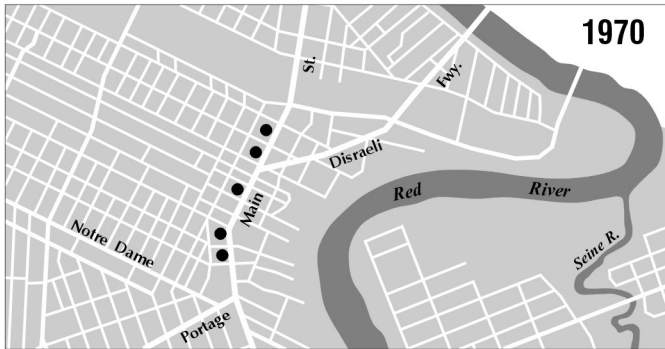
**Figure 3:** *Distribution of pawnshops in 1970.*

pawnbroker has been labeled "banker of the poor" (Hartnett 1981, 149). Also dubbed "shadow banks" (Hudson 1996), pawnshops are a response to the rising cost of banking services, or the downright impossibility of obtaining a bank account for many poor people (Hudson 1996, 51). Pawnshops will provide small loans where banks will not do so (Hudson, 1996, 56). Though often viewed as heartless or greedy, the pawnbroker does provide a needed service. Through the services of a pawnbroker "an individual may borrow money quickly, with no invasion of his [sic.] privacy. No investigation is made of the pawner's occupation, credit rating, or purpose for borrowing money. No waiting period is necessary" (Hartnett 1981, 152). Along with their fringe banking services, pawnshops, are also a source of second-hand goods. In this capacity, they serve distinct segments of the consumer population looking for a bargain or a hard to find specialty item.

Pawnshops carry all manner of items, but certain articles are more prevalent than others, likely due to their high portability, and relatively small packaging. Ethnographic observation at Winnipeg's inner city pawnshops has yielded some generalizations about the types of goods most frequently handled by these establishments. They include: jewelry, musical instruments, home electronics, furniture, tools and seasonal goods such as bicycles and snowboards.

Given the consistency in the types of goods handled by pawnshops and second-hand stores, tentative observations may also be made about the clientele of such stores. Household goods, CDs, video games and the like have broad appeal, and are certainly of interest to local residents as well as suburban bargain hunters. With their wide selection of goods, often moderate prices, and location in economically downtrodden locations,
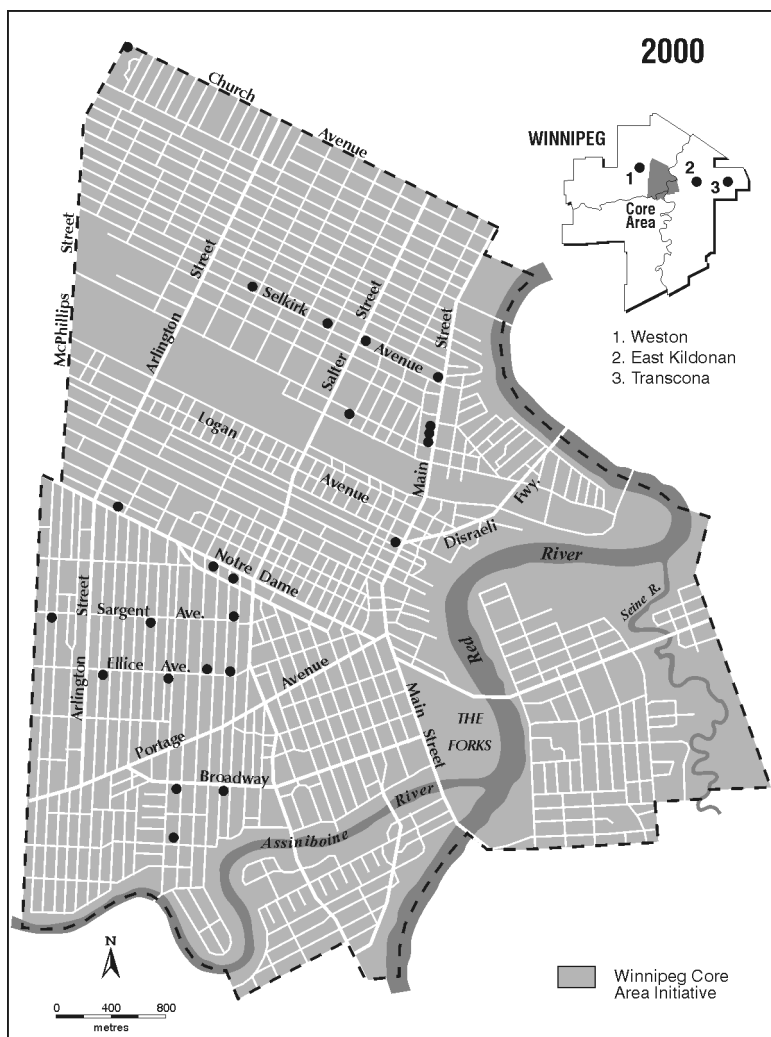
**Figure 4:** *Distribution of pawnshops in 2000.*

the pawnshop might also be dubbed the 'department store of the poor'. However, the pawnshop does not necessarily provide the best value for inner city residents, as goods bought second-hand are not likely to carry a warranty, are generally worn, potentially damaged, and might be obsolete relative to new merchandise available on the market. Items are also frequently priced at a level that is very close to the cost of a new product

at a conventional store. Is a used $40.00 VCR a bargain when DVD players can be bought brand new for $59.00?

Higher end merchandise from pawnshops and inner city second-hand stores may ultimately find its way into the hands of collectors, or the proprietors of antique or 'vintage' stores. Musical instruments are good examples of merchandise that appeal to such non-indigenous populations. Vintage stores often obtain stock from scouring garage sales, charity-run thrift shops, as well as inner city second hand stores and pawnshops (Gregson & Crewe 2003, 6). Furthermore, the tremendous popularity of E-bay, the internet auction site, has spawned a whole generation of would-be profiteers looking to buy collectable goods cheaply at the inner city pawnshop and sell high in the international 'cyber' market place. The intrusion of the international marketplace into the local economy of the inner city produces an unequal exchange relationship reminiscent of Wallerstein's (1974) notion of the core – periphery relationship in the world economic system. Profit flows out of the inner city in the form of interest rates, pawning surcharges and the high rate of return on the sale of unclaimed items. Moreover, the raw material for other entrepreneurial efforts – such as stock for high-end vintage shops and the internet trade on E-bay – is extracted cheaply from the inner city.

## Discussion

While there is considerable variety in the types of marginal commercial activities outlined above, and there is no question that these activities manage to infiltrate many corners of the city – not exclusively the inner city – it is abundantly clear that there is a will on the part of city planners and politicians to exclude many of these landuses from suburban areas, just as there is a strong impulse for suburban residents to protest against the siting of these businesses in their midst. To use yet again the example of the pawnshop, the very process through which a prospective pawnbroker must go through in order to secure permission to open a new location is overtly politicized. New applicants for pawnshops, massage parlours and escort services must appear before local community committees where residents and other concerned parties may speak for or against the proposed business. A decision is then rendered by the city councilors representing the area in which the new application falls. Such a process makes the establishment of new marginal businesses nearly impossible in all but the least politically powerful and organized neighbourhoods. So, while vintage clothing stores and secondhand CD stores are moving into more salubrious territory, there is a governmental push to exclude and concentrate those

businesses seen as most offensive to middle class sensibilities. Once such concentrations are established, it becomes even harder to say no to new businesses that want to move into these districts.

## Conclusion

In this paper we have focused on pawnshops as an example of the type of activity that characterizes forms of marginal commerce that gravitate towards, or are pushed into the inner city. While some marginal retail activities such as ethic shops and second hand clothing outlets like Value Village have generally evolved into more mainstream businesses and gradually found their way into more respectable, suburban locations, other marginal landuses remain urban outcasts in Winnipeg's retail landscape. We argued here that the pawnshop is perhaps a quintessential example of such morally and esthetically abhorrent elements of the urban streetscape. Such activities are generally, even systemically, treated as NIMBYs or LULUs by the wider urban community, as much for their social unacceptability as for their visual, aesthetic, or polluting effects. Nevertheless, these 'renegade' operations can provide useful, even essential services and interesting contrasts to the frequently, overly regulated uniformity that best describes so much of the city. For the likes of Jane Jacobs (1961) and others (Relph 1987), the colourful displays and chaotic confusion associated with the marginal and mixed uses of the inner city lend authenticity and soul to the otherwise commonplace urban environment. Perhaps we should be more accepting of them. However, we should also recognize that such uses are becoming linked to more global operations that are now sometimes owned by internationally based corporations. Even locally owned businesses are now tied in to global markets through the internet. They therefore act as conduits, extracting wealth from the inner city and channeling it elsewhere. In this way, Wallerstein's notion is inverted, with the core area being exploited by the suburban periphery. For these reasons, as Dear pointed out some years ago:

> Despite the frequency of siting problems in everyday planning practice, there is a striking dearth of scholarly studies and practical guidelines that could assist planners, service providers, and client and advocacy groups in understanding and dealing with community opposition. The need to come to grips with these issues is urgent, especially in the light of recent federal legislation that places more emphasis on community obligations than on community rights. (Dear 1992, 297)

To our knowledge, the academic literature has added little to the debate since Dear's observations. There is obviously a need for a more extensive examination of the issues in question.

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# The plaza as a public good:
# civic spaces in Puerto Vallarta, Mexico[1]

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*Abstract:* It has been long recognized by planners, architects and citizens that public spaces, squares and plazas (civic spaces) are important elements in the life of all communities. This can be especially true in urban settings that typically do not have the markets that characterize rural villages and where citizens meet for formal and informal exchanges. In this paper we will discuss civic spaces/plazas and the public good as well as the relationships with quality of life (QOL) and planning. We will report on an empirical study of four selected plazas that we have conducted in Puerto Vallarta, Mexico, over the past three years. Specifically we will provide a classification of the four plazas in terms of criteria relating to 'place making' as elaborated by Whyte (1980) and discussed on the Project for Public Spaces web site. In addition we will provide comments on the planning implications of the classification and the prospects for improving the quality of the spaces to enhance QOL for residents of Puerto Vallarta region (approximately 350,000) and for the many visitors (2.5 million) who visit PV every year.

## Introduction

It has been long recognized that public spaces, squares and plazas (i.e. civic spaces) are important elements in the life of all communities. Banerjee (2001) asserts that public space is shrinking, and the future of such spaces that are necessary for civility to flourish must confront three major trends of privatization, globalization and the communications revolution. In this paper we will discuss civic spaces and the public good in reference to quality of life and planning, in Puerto Vallarta.

Although the need for civic spaces is perhaps widely recognised, their use has been the subject of some discussion. Rochon (2003) offers a critical appraisal of the architectural planning of selected places that could

potentially contribute to increased social interactions. The articles clearly demonstrate that without careful planning some public spaces fail as places where people congregate and feel a sense of belonging. It follows that planners have a responsibility to promote public spaces. Ideally civic spaces are places for citizens to meet and interact. Further, such spaces can add to the quality of life (QOL) of people if they are planned carefully and function effectively.[1] The organization Project for Public Spaces (PPS) offers a detailed web site (<*www.pps.org*>) with information on the attributes of successful public spaces, the reasons why some spaces fail or succeed, and examples of such places from around the world.

According to Zucker (1966, 2), "[t] he square represents a psychological parking place within the civic landscape …the square dictates the flux of life not only within its own confines but also through the adjacent streets for which it forms a quasi estuary…" Zucker's (1966, 1) book provides a classic overview of squares in the life of a city and town, and he reminds us that: "The unique relationship between the open area of a square, the surrounding buildings, and the sky above creates a genuine emotional experience comparable to the impact of any other work of art …this central formative element [the square] …makes the community a community and not merely an aggregation of individuals."

## Squares Over Time and Space

Planned squares appeared in ancient Greece from the 5th century BC. The diffusion among civilizations over space and time of the idea of incorporating civic spaces into a city plan is elaborated in Zucker (1966), and other writers such as Cleary (1999) have focused either on specific squares (*Places Royales* in France) in particular countries and cities, or on the merits of open spaces on the quality of life of citizens.

Clearly squares are critical elements in the life of a town or city and with careful planning they can enhance the status of a place as well as provide a necessary condition to ensure civic pride. For these reasons we argue that a city such as Puerto Vallarta, that seeks to attract tourists as well as integrate local citizens in everyday commercial and social/ recreational life along with the growing number of visitors, should pay close attention to the planning of its plazas and civic spaces as they are valuable assets to be preserved and protected.

Within the context of Latin America, Middleton (2003) discusses the impact of informal traders in historic city centres and the effects on international tourism in such centres. His fieldwork was conducted in Quito,

Ecuador. He argues that old city centres can be seen as sites of confrontation, namely contested spaces, however with careful planning and citizen participation they can develop as attractive sites that accommodate traders, the local public and tourists. Low (1999) has examined the role of the plaza in Costa Rica using over 25 years of fieldwork that began initially in 1972, and was followed by detailed work on plazas in San Jose from 1985. She reminds us that plazas may be designed to offer citizens views of military parades – remnants of Hausmann's designs for Paris - or such plazas may offer views of important buildings or, more humbly but no less significantly, they can provide spaces for informal discussions among individuals and for group activities. The plaza has indeed been the site of political manifestation as was evidenced in Tiananman Square in Beijing in 1989 - reputably the largest square in the world - and the daily demonstration in the Plaza de Mayo of Buenos Aires, Argentina by mothers protesting the disappearance of their children.

Mexican villages, towns, and cities also have a traditional (Spanish-origin) structure that includes a plaza or plazas as organizing principles (Arreola and Curtis 1993). The main plaza was the principal public space and was commonly surrounded by institutions such as the church and government offices. It was often a hub of commercial activity, as well as for social and recreational activities. What Arreola and Curtis term "proper Spanish colonial towns" also had smaller secondary plazas that had different functions and were related to different patterns of urban activities (1993, 45). To a greater or lesser extent these spaces and places have maintained themselves as the urban forms, have grown and developed and "modernised", and taken on different functions such as modern-day industry and commerce, and recreation and tourism.

In this paper we will report on an empirical study that we conducted of four selected plazas in Puerto Vallarta (PV) from 2001 to 2003. Specifically we will provide a classification of the four plazas in terms of criteria relating to 'place making' as elaborated by Whyte (1980) and discussed on the PPS web site. We will also provide comments with reference to the planning implications of the classification and the prospects for improving the quality of the spaces to enhance QOL for the approximately 350,000 residents of PV region, and for the several million visitors who visit PV every year.

We assert in this paper that a civic space, such as a plaza or square, is a public good and as such deserves to be supported by public investments. The civic spaces of a town or city complement other efforts by the state to enhance identity and the quality of life of citizens, and the civic spaces in Puerto Vallarta continue to play a vital role in this regard. The planners of civic spaces are faced by conflicting priorities and goals, and we will

identify some of the major ones and we encourage public debate on the
search for the appropriate roles for civic spaces in a place such as Puerto
Vallarta.


## The Public Good and Quality of Life

The study of the public good is a worthy topic of inquiry for planners
and of considerable significance in the formation and evaluation of public
policies that focus on the roles for public places and space in the promotion
of QOL. The plaza has *inter alia* the potential to contribute to community
spirit and identity.  The planner must be aware of matters of access and
community when evaluating the effectiveness of a plaza. Of course given
the vast numbers of tourists who visit places such as PV every year, the
plazas play a major role in their satisfaction with the place too. A term
similar to the public good is the common good, and Black's Law Dictionary
(1979, 1104) defined this as "…a generic term to describe the betterment
of the general public."  We interpret this to suggest processes that yield
positive outcomes on QOL to citizens and visitors to PV.

As Habermas (1987, 319) maintained, the network of public spheres
should "make it possible for a ... private person to participate in the
reproduction of culture, and for a public of citizens of the state to participate
in the social integration mediated by public opinion." Public culture is
therefore associated with the notions of civil society and the welfare
economics concepts of 'public goods', and a cultural *planning* approach
would seek to apply resource, facility and land-use allocation and
distribution-including what cultural geographer Crang (1998, 164)
identified as "ideas of space to which everyone has access in which people
can meet as formal equals harking back to the Roman market-place"
(quoted in Evans 2001, 39).

Thus we argue that the public good is in large measure related to the
perceived quality of life of individuals, and hence the collectivity, and it
owes much to the availability and the effective, equitable utilization of the
facilities that cater to the myriad needs of citizens as we progress through
life from birth to death. The civic space can contribute positively in this
regard if it is indeed a space where all are welcome and all feel safe and
secure.

The commodification of the public good yields attitudes and practises
of the market place including ownership and property rights, price and
cost, competition and consumption patterns.  Citizens and locals alike in
PV need to do more than consume in private places such as shops, they

need public spaces as sites of interaction and for free pleasure. The famous Malecón in PV is the classic example of a public space. In fact it is a pathway where all can promenade freely, back and forth. This walking space is a connecting link among the main public spaces in PV as shown on Figure 1.

Let us now turn to the civic state and begin with the proposition that such a state is a necessary condition to promote the civic space as a public good. Spinner (1994, 170) elaborates on this: "[t] he state is about space and memories; through these commonalities, liberal citizens often develop overlapping memories. The civic state … is eclectic, pragmatic, fair, just and reasonable; it stresses identity and recognition while working for egalitarian, democratic institutional arrangements for individuals, voluntary groupings and state agencies to cater to all the needs of all citizens…" The civic state is a work in progress that seeks to promote and protect the public good. But what is this good? Certainly it refers to the betterment of the whole and QOL as mentioned earlier, but not all citizens in a state share the same definition of either the ways to achieve it or the desired end results.

If public and private initiatives and energy can be marshalled to provide and enhance all those elements of culture, including public spaces, as well as health, education and general welfare, that stimulate and promote civic virtues and identity then a civic state and *civitas* may emerge, and the public good as QOL is surely enhanced. A strong case can be made for the promotion of the civic state to enhance QOL and the public good, and the future of civic spaces.

## Four Civic Spaces in PV

When the Spanish first reached the area now called Puerto Vallarta there was an Indian settlement (Fregoso 1986). The exact date of foundation of the contemporary Spanish settlement is unclear. There is some evidence of a village near today's old town in the late 1700s, and certainly there was some development during the 1800s related to local trading (and smuggling), mining, fishing, whaling, and long distance exchange. In 1851 the settlement of Las Peñas ("The Boulders") was founded at the mouth of the Cuale River - perhaps where the old village had also been. In 1880 the population was about 1,500, in 1885 a port was inaugurated, and official status as a commisariat was acquired in 1886. In 1918 the town was elevated to municipality status and the name was changed to Puerto Vallarta in honour of an ex-governor of the state of Jalisco. In 1968 Vallarta became a city, but growth has been (until recently) quite slow. From 12,500 in
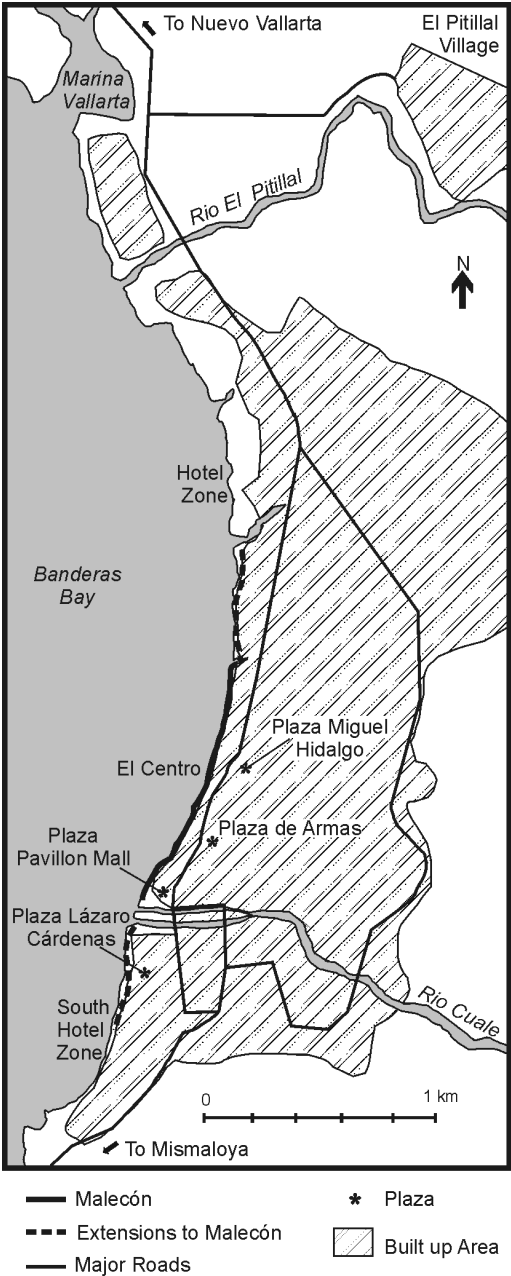
**Figure 1:** *The Puerto Vallarta region.*

1964, by 1970 the population of the settlement had risen to only 24,115. However, by the mid 1990s the population of Puerto Vallarta had grown to 162,000 and that of the Jalisco coast, which can be viewed as "greater Vallarta" now has an estimated population of over 350,000 (Jiménez Martínez 1998; <*http://www.pvconnect.com/map.html*>).

The relatively slow and recent growth has meant that the retention of "character" has been part of the charm of the settlement, and this includes the plazas and their associated land uses. One result is that the core of the city still retains many older buildings, of traditional architectural style, and Puerto Vallarta is considered by many to be the "most Mexican" of all the beach destinations in Mexico.

The greater Puerto Vallarta region can be seen as a series of zones (Figure 1). Traditionally two have been recognised within the older areas of the city, although nowadays some others can be identified within the larger urbanised region to the north and south (Everitt et al. 2001). First there is the "southern hotel zone", which lies south of the Cuale River. Second there is the "central town" (*el centro*), which lies north of the Cuale River and these constitute our study area. Arreola and Curtis (1993, 49) suggest that a number of traditional functions have persisted in many Mexican cities despite significant cultural landscape change. One of these five is the plaza.[2] Four important plazas can be identified within the study area. One is clearly the most important, with the other three being secondary and subordinate to it as public spaces and places, but just as obviously all four contain many elements of a common model (Figure 2). That is to say the plazas have many universal elements, while not conforming to any standardised plan.

The most important square (what Arreola and Curtis (1993, 133) term the *plaza mayor*) is located in the heart of the old city (*el centro*). Arreola and Curtis argue that "[p]erhaps nowhere in the public areas of the border cities is the impress of tradition more evident than in the plazas of *el centro*, especially the *plaza major*" (1993, 133). It is our contention that this case can also be made for Puerto Vallarta, even though this is a more recent urban construction, and has been consequently affected by somewhat different processes. Officially termed the Plaza de Armas[3], the *plaza major* is one of the most conspicuous features of the urban cultural landscape of Puerto Vallarta. It is uncertain when this place was first created, but it appears to date to at least the early twentieth century. It probably predates this time as a civic space, but had in the past a different cultural content and thus functioned as a place somewhat differently (De Oca de Contreras 2002). For much of the history of Vallarta this plaza was also the centre of the elite residential area of the central city, and it is possible that social status was based upon residential distance from this plaza, as was true
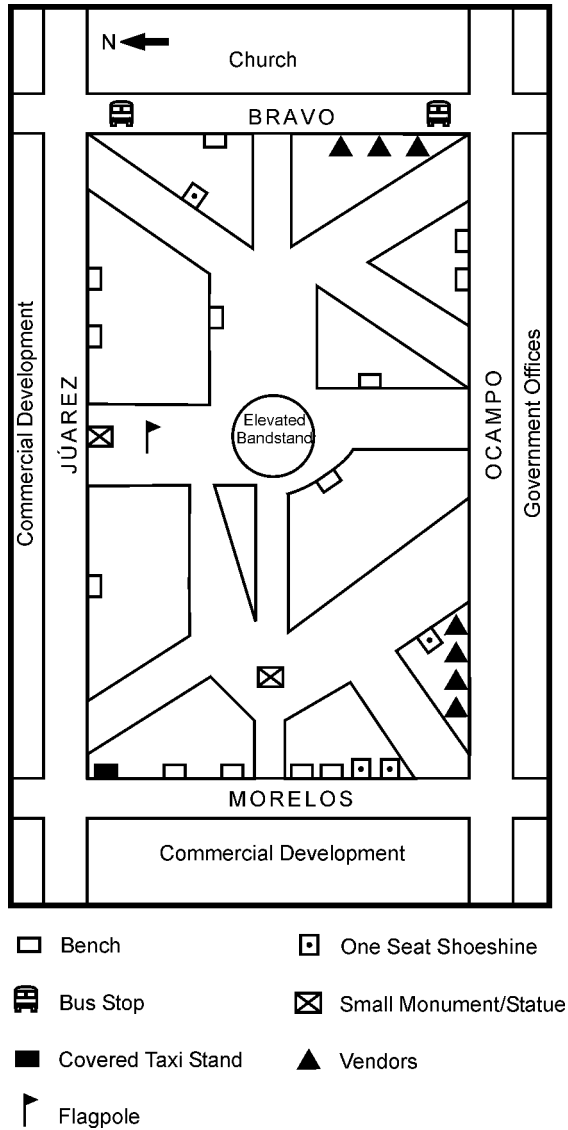
**Figure 2:** *Generic plan of a Mexican plaza.*

elsewhere in Mexico (Arreola and Curtis 1993, 45). Certainly many of the early fine homes can still be detected in this area, although they often now function as restaurants, cyber cafés or art galleries.

Like most Mexican plazas, and like its Vallartan companions, this plaza is rectangular and encompasses a city block (about 2000 square metres). Although the square today contains a considerable amount of open space around its central bandstand (*kiosco*), in the past it did contain a larger extent of formal gardens, separated by criss-cross pathways, similar to those still found in two of the other squares (De Oca de Contreras 2002). Its landscape has no doubt been cleared and paved in the recent past in order to provide a greater amount of space for the various functions it services, but it still contains many typical plaza-features. The Plaza de Armas has a number of contemporary functions, including cultural ceremonial, official ceremonial, touristic (including sales of lower-order goods and services), recreational (sitting, standing, talking), as a site for political demonstrations, and as the symbolic centre of the city – it is arguably the "uncontested central nexus of public life" (Arreola and Curtis 1993, 133). It is flanked on the northern side by the *Palacio Municipal* or City Hall (built on this site in 1981, replacing stores and houses), and on the eastern side by stores (but these lie just in front of a major church ("The Lady of Guadelupe") – the tower of which is one of the landscape symbols of PV. To the west is the Malecón, the historic seafront walkway that connects the Old Town together, and to the south are more commercial establishments, including banks and shops, and the consulates of both Canada and the USA.

The second plaza lies at the northern end of the old city, near the Hotel Rosita, built in 1948 as the city's first true hotel (Everitt et al. 2001). It is known as Miguel Hidalgo Plaza and was inaugurated in 1954. It thus serves as a marker for the city's growth to the north. Like the *plaza major*, this square has many of the classic elements of a Mexican plaza (Arreola and Curtis 1993, 133). It is, however, an irregular quadrilateral and not a perfect square as two non-integrated grid patterns of the older city meet at this point. It is about 5400 square metres in area, reflecting the larger blocks in this part of the city. It is a conspicuous landscape feature and is a tree-shaded urban oasis of "managed nature". It contains many cast-iron benches, as well as plaques and other commemorative features common to the Mexican plaza (Arreola and Curtis 1993, 138). Characteristically this plaza gives the impression of both spaciousness and containment (Arreola and Curtis 1993, 136). It serves a number of functions, but although similar to those in the *plaza major*, there are also significant differences. One side of the plaza (the south) serves as a bus station (another typical plaza function), and another side (the west) is a permanent daytime

market for locals as well as selling lower-order tourist goods. To the east (where the old city cemetery was located in the 1950s) is another large church (La Iglesia de la Virgen del Refugio), as well as some more government offices. To the west is a Baptist church that is a more recent addition to the area. Although this plaza serves many tourists who are walking from the central city to the hotel zone to the north, it is also a very local-neighbourhood space. It is much more so than the Plaza de Armas, which also attracts many Vallartans, but from all over the urban area. Hidalgo Plaza is also successful as a place, but for somewhat different reasons than the *plaza major*.

The third plaza is a core landscape feature for the southern hotel zone popularly known as the "*zona romantica*". This region of the city was relatively isolated from the old town until 1959 when the first concrete bridge was built over the Cuale River (De Oca de Contreras 2002, 253). Officially our study place is called Lázaro Cárdenas Plaza, named after a hero of the Mexican civil war of the early twentieth century. It is a rectangle rather than a perfect square, about 3300 square metres in area, as it extends farther east-west than north-south, reflecting its proximity to the shoreline. It has a bandstand, criss-cross pathways, and is home to many cast-iron benches, as well as plaques and other commemorative features. It also has a bus station on one (eastern) side, as well as a school to the south, commercial developments to the north, and tourist oriented beach commercial and hotel developments to the (extended) west of the plaza. Compared to the other plazas it is underused, perhaps because there is little local population as the area has become more tourist-oriented, but at the same time has little to appeal to most tourists.

The fourth plaza, the Plaza Pavillon Mall, is located close to the city centre, just to the north of the Cuale River mouth. But is isolated from general view by buildings, lower order services (a line of vendors' kiosks), and a major roadway. It is also a considerable distance away from significant areas of local housing, is essentially unserved by public transportation, and has no church or public buildings close to it. It is thus in some ways the antithesis of a typical Mexican plaza. Strictly speaking a rectangular symmetrical plaza, it gives the impression of being less formal in shape as it is flanked on two sides by the ocean and the river, and on a third by a curving roadway. It is about 5000 square metres in area, and has considerable growth potential. On the ocean side it is paralleled by an unfinished extension of the Malecón that runs south of the Cuale River to join to the beach areas of the zona romantica. It is at present an under-utilised and unsuccessful plaza, despite containing a number of cast iron benches and children's play equipment, but is one that does appear to have considerable potential for future use by both locals and tourists.

Because it currently has few of the characteristics of a successful public space identified by the PPS it is arguably of the **most** interest for this paper as it offers the greatest possibility for change and successful development as public space in the future.

## What Makes a Successful Place?

Our discussion here is greatly influenced by: "The Project for Public Spaces" (PPS). An important follow-up of this work was published by the PPS in 2000 and is called "How to turn a Place Around." This research was concerned with places that 'worked' and those that 'didn't work'. Initially it was concerned with playgrounds (in New York City) but later was extended to a variety of kinds of public places - and particularly plazas/squares. It was concerned with the critical roles that public places play in our communities, in terms of giving identity to cities, benefiting cities economically and environmentally, and of providing settings for cultural activities. The PPS project personnel have been very successful in characterizing the key qualities of a successful place, which they summarise as being "accessible"; having "activities" for people; being "comfortable" and with a good image; and being a "sociable" place where people meet and take other people. This process led them to enunciating a series of ten benefits of creating good public spaces" (see PPS 2000; Whyte 1980 and also <*www.pps.org*>):

- Support local economies
- Attract business investments
- Attract tourism
- Provide cultural opportunities
- Encourage volunteerism
- Reduce crime
- Improve pedestrian safety
- Increase use of public transport
- Improve public health
- Improve the environment

In addition, the PPS has identified a set of eleven principles for creating great public spaces:

- The community is the expert.
- Create a place, not a design (i.e. a place, not just a space).

- You can't do it alone. Look for partners.
- Officials say, "It can't be done". But it can.
- You can see a lot just by observing.
- Develop a vision.
- Form supports function: what do the users want?
- "Triangulate": locate elements of place so that they will be used.
- Start with the petunias: small, short-term actions can make a difference.
- Money is not the issue: sometimes too much money is a problem.
- You are never finished. A true place needs ongoing management

Although the PPS research was fascinating and promising, it seemed to us that this work could (and should) be taken out of the Anglo American context and tested elsewhere, in order to see if it has a wider validity. Our prior experience in Jalisco indicated that this could be a very suitable laboratory for testing some of these benefits and implementing some of the principles, as public space in this part of Mexico (both small town and larger urban) is still very much characterised by a variety of uses, by pedestrians, and thus fits many of the criteria that concerned the PPS. As noted above Puerto Vallarta has a number of public places (and in particular, plazas) that are based upon what might be termed a 'Mexican model', and so PV became an obvious study area within a larger cultural region. Thus our evaluation of the PPS research led us to an analysis of the plazas in Puerto Vallarta and to a classification of these civic spaces based upon an extension of the PPS principles. Our classification is summarised in Table 1. In this table we present the results of an evaluation of the four major plazas that we analysed. We used local informants as well as the PPS research to pick the best criteria for evaluation, and were thus able to include both more general PPS concepts as well as more particular (PV) criteria. We then spent time in each place, at different times of day and on different days, and 'scored' each criterion for each place on a five-point scale.

## Civic Spaces, Social Responsibility and Planning

Our results demonstrate that two of the plazas are relatively problem free and consequently are very successful in drawing people; one is slightly less so; and one has a long way to go as it currently keeps most people out,

and thus does not work as a place. Interestingly, however, even the Plaza de Armas has deficiencies when scrutinised through our demanding lens. In fact, although it is the *plaza major*, it 'scores' little better than the Hidalgo Plaza, because its very success in some categories has meant that it is penalised in others, and its central location almost inevitably leads to new challenges. A summary of the scores for each plaza is given in Table1. The total score for each plaza assumes that each factor is equally important.

If we look at our variables in turn, there are four major problem areas for this first plaza. First, there is limited vendor use (variable #6) within the plaza. However, it should be noted that there is extensive vendor use just a short distance away, across the (major traffic) street (Morelos) on the Malecón. In addition on special occasions vendors do occupy the plaza to a much greater degree. This deficiency has been recognised by the city, which is looking for some way of reducing traffic on Morelos and/or improving the connection between the plaza and the Malecón, which would probably increase vendor use. Second, the plaza is harshly defined by the surrounding buildings (#8). It is hemmed-in on three sides (with Morelos on the fourth). It seems unlikely that much can be done here, although if traffic patterns were to be changed this would probably affect this 'score', by opening the square to the west side. Similarly, by definition, a change in the traffic patterns would raise the score on #13. Lastly, washrooms (#17) are available in City Hall and in other buildings around the square, and along the Malecón. Once again traffic changes would improve this score. In some ways it is less 'green' than other parks, but this reflects its higher level of use. Sometimes success is failure. In terms of the PPS "four key qualities", this plaza has an accessible situation, but there are problems with site access. People are commonly engaged in activities in the square, but there is room for improvement. The space is quite comfortable, and has a positive image. Finally, it is a very sociable space – especially when organised (official and unofficial) activities take place.

Hidalgo Plaza lacks a bandstand (#7), but within its context this does not seem to be that serious a deficiency, as it is well served by seats and, landscaping. Its name (#10) is known by the locals, but it does not have high name recognition with tourists.[4] It is again difficult to reach from some directions because of heavy traffic (#13), but as with the *plaza major*, a change in this variable might be difficult, expensive, and contentious. The plaza is also accessible, but not as central as the Plaza de Armas. People engage in a variety of activities in the plaza, and the space is comfortable and has a good image – but more so for locals than tourists. It is a sociable space, but more so with respect to its borders than in its centre.

**Table 1:** *A classification of civic spaces in Puerto Vallarta.*

| Criterion | A | B | C | D |
|---|---|---|---|---|
| Places (see legend below) | (Armas) | (Hidalgo) | (Cárdenas) | (Pavillon) |
| 1 seats/benches/low walls for sitting | 5 | 5 | 5 | 1 |
| 2 well situated vis-à-vis the town centre/Malecón | 5 · | 4 | 4 | 2 |
| 3 close to public buildings-church/ city hall/ library/ social services centre/schools | 5 | 5 | 2 | 1 |
| 4 landscaped/gardens/plants/trees | 4 | 5 | 5 | 1 |
| 5 eating places very close or in plaza | 4 | 5 | 5 | 1 |
| 6 vendors use plaza | 3 | 4 | 5 | 3 |
| 7 band stand | 5 | 1 | 5 | 1 |
| 8 harsh walls/buildings define edge of plaza | 3 | 4 | 5 | 2 |
| 9 locals and tourists use the plaza | 5 | 4 | 3 | 2 |
| 10 plaza is named and name is readily recognized | 5 | 3 | 3 | 1 |
| 11 women alone use plaza | 5 | 5 | 3 | 1 |
| 12 families use plaza | 5 | 5 | 3 | 2 |
| 13 easy access to the plaza no busy streets to cross | 2 | 2 | 3 | 4 |
| 14 neat/tidy/well-kept | 4 | 4 | 4 | 1 |
| 15 shops nearby | 5 | 5 | 5 | 2 |
| 16 shade and sufficient trees | 4 | 5 | 5 | 3 |
| 17 washroom availability | 2 | 4 | 1 | 4 |
| Total Score (out of 85) | 71 | 70 | 66 | 32 |

## Legend

**A - Iglesia de la Virgen de Guadalupe: Plaza de Armas**

**B - Iglesia de la Virgen del Refugio: Plaza Miguel Hidalgo**

**C - Plaza Lázaro Cárdenas**

**D - Plaza Pavillon Mall**

Data for classification: a five point semantic scale - *excellent* (5): *good* (4): *satisfactory* (3): *poor* (2): *very poor* (1)

Cárdenas Plaza suffers from its remoteness (#3) from the core functions of the city, and it is hard to see a simple remedy for this challenge. Its lower score also reflects, more importantly, its relative isolation from local populations, but in some ways its resultant tranquility can be seen as part of its charm. Washrooms are available in restaurants in the vicinity. The challenge for this plaza could be seen as somehow increasing its use for both locals and tourists, but its proximity to some of the best beaches in the region might make this challenge insurmountable. Thus perhaps this 'deficiency' could better be sold as an advantage, and the serenity of the plaza could become its successful feature. Generally, this plaza is accessible to those in the *zona romantica*, but little known by others, and particularly tourists from the hotel zone and marina. Activities take place on the fringe of the plaza, but only in its centre on organised occasions. It is a comfortable space, but its image is more ill defined.

Plaza Pavillon Mall has a long way to go. It scores poorly on most criteria. In addition it has recently been damaged by major storms, and it is used as a temporary storage site for the resultant clean-up materials. But it would appear that it has always been more problematical as a public space, and that more energy needs to be concentrated in his area. Its advantages (close to the city centre, the presence of washrooms, and its proximity to the gradually extending Malecón) are considerable, but it is an area where community planning might be of paramount value, and where the PPS principles might be put to particularly good effect. There need to be more activities in this plaza that include a wider cross section of people. It needs to be made into a sociable space, and it needs to be made more comfortable. Its image is in need of a major overhaul. The good news is that if the PPS methodology is implemented, such a change is perfectly feasible.

In summary, the study plazas are all different, but at the same time have essential place similarities. The first three plazas must be judged as successful places, using both intuitive (qualitative) evaluations as well as quantitative scoring methods. This is not surprising for as Whyte indicates (1980, 17) "the best used plazas are sociable spaces" and these plazas are well used. At the same time the city and the citizens of Puerto Vallarta might decide to "improve" these plazas by, for instance, increasing their accessibility (although this has a cost); increasing the variety of activities that take place there (in order to draw a wider cross section of people (tourists and/or locals) to these places, more of the time; making them more sociable and more comfortable to more people, and thus changing their images. That is to say, these places do not need to be "turned around", but the principles elucidated by the PPS could be profitably applied to these places to make them even more successful. The fourth plaza, the

Plaza Pavillon Mall, needs to be the centrepiece of a community planning process based upon the PPS principles in order to determine where it fits in the general schema of public places in Puerto Vallarta, and how the goals for its development as a more successful place can best be achieved. It is our contention this would enable this plaza to be "turned around", and a successful place be created that would enhance the social and economic viability of Puerto Vallarta, and improve the quality of life of both the city's citizens, as well as the visitors to this key tourist destination.

## Conclusion

Let us close by noting that in the ethos of western society, where individualism, materialism, and the emergence of a technocratic and sensate culture became established, dramatic changes are forcing human progress, the public good and quality of life to be defined by economic growth. Inevitably, this will occur at the cost of diminished environmental protection: *homo economicus* reigns. However, as Whyte (1980, 15) points out the creation of places that work for people also has economic advantages that result from the improvements in their QOL (see also PPS 2000, 14). Further, the rise in the importance of the state - with its vested interest in growth for strategic reasons - exacerbates the issue of reconciling economic growth and environmental protection to ensure sustainable communities. The question remains: precisely what is to be sustained or conserved, via what kind of stewardship? Is there such a person as *homo sustiens*? In the context of Puerto Vallarta this is further complicated as the 'citizens' can be seen to include both locals and tourists. Ultimately the focus of the civic space as a public good must be on the quality of life of citizens, taking into account existential aspects of being and having. The heightening of consciousness from the Hegelian perspective argues that this is the cause, not the effect, of the material world. The means of enhancing consciousness to empower citizens to define and implement alternate paradigms of progress beyond economic growth continues to challenge policy makers and ordinary folk, as well as academics and practitioners including planners who seek to define appropriate roles for civic spaces to play in contemporary urban life. Perhaps the use of the PPS principles as guidelines to make the public spaces of PV better could be a way of promoting such an empowerment.

## Acknowledgement

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[1] An overview of QOL is provided by Massam (2002) under the title: Quality of Life: public planning and private living. For QOL in Puerto Vallarta see Massam and Everitt (2001) and Massam et al. (2003).

[2] The others are the "relative compactness of communities", the "core-versus-periphery tradition", the distinctive barrios, and the persistence of small neighbourhood stores and stands.

[3] The name reflects the military parade ground origin of many of these plazas, and it is likely that the plaza major in PV fulfilled this function at times, as well.

[4] Although a scientific survey was not conducted, we did question a number of tourists during our research and found few that knew the name of this plaza.

# Browsing for English: an investigation of non-material cultural diffusion among Taiwanese youth

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**Abstract:**The development and the mass commercialization of the Internet in the early 1990s has brought reflection upon aspects of diffusion studies. Unlike traditional forms of mass media (e.g. television, radio, etc.), the Internet is an unscheduled and interactive point to multi-point venue of communication. Diffusion via the Internet allows for non-material culture phenomena to be diffused over great distances. One of the goals of this study was to re-examine four influential diffusion models, all of which were developed prior to the mass commercialization of the Internet. The concept of world cities is utilized to aid in re-examining these models. The connections the city of Taipei has to the global network are important in examining the diffusion of non-material cultural phenomena.

An in-person survey was administered to 137 youths in downtown Taipei, Taiwan, who frequent public Internet cafés, in order to uncover trends in Internet use and adoption of Western culture. The study concludes that the Internet may play an important role in the diffusion of non-material culture, and that two of the diffusion models developed in the early 1960s are capable of modeling this diffusion.

## Introduction

Since the late 1980s globalization has increasingly become a central point of attention in the social sciences. It has "emerged as a powerful paradigmatic concept in explaining many far-reaching cultural, economic and social transformations taking place in many parts of the modern world" (Hsiao 2002, 48). Through processes of globalization the world has seen an intensification of relations which link distant regions in such a way that local happenings are shaped by events occurring many kilometres away

(Giddens 1990). To provide intellectual structure to the globalization phenomena, Appadurai proposes that the "new global economy has to be understood as a complex, overlapping, disjunctive order" (1990, 296). To theorize this, Appardurai created a framework which rests on the relationships within five dimensions of global cultural flow: ethnoscapes ('moving' groups of people, such as tourists or immigrants), mediascapes ("image-centered, narrative-based strips of reality"), technoscapes (global configuration of technology and the speed by which it travels), finanscapes (disposition of global capital) and ideoscapes (ideologies of states and counter-ideologies) (Appardurai 1990, 297).

Appadurai's '-scapes' all provide interesting perspectives on the influence of globalization on culture, and on the nature of cultural connections between places. However, an analysis of this influence is very difficult because there is no simple cultural dimension of globalization. Rather "culture is an intrinsic aspect of the entire process of complex connectivity at globalization's core" (Hsiao 2002, 50). The diffusion, or spread, of culture has been occurring through various media for many years, although it has accelerated recently due to the set of technological innovations that are often argued to be intrinsically tied to the general intensification of the processes of globalization.

One of the least understood media of cultural diffusion is the Internet (Goodman *et al.* 1994). "Despite the Internet's increasing importance, there is little social scientific work that addresses its diffusion" (Hargittai 1999, 701) or its influence on other processes of diffusion. The diffusion occurring via the Internet, given the importance of information and communication in a rapidly globalizing economy, is worth investigating further (Robinson and Crenshaw 2002).

The Internet is unlike the traditional mass media forms of diffusion. This new medium provides "interactive and mostly unscheduled access", while the traditional forms of media offer "mostly one-way point to multipoint programming" (Canadian Radio-television and Telecommunications Commission 1999, 18). Castells believes that the "Internet's integration of print, oral and audiovisual components into a single system promises an impact on society comparable to that of the alphabet" (Castells 1996, 328). With seemingly unlimited distribution channels and a borderless distribution network, the Internet is changing the geography of diffusion.

The foundational literature on diffusion studies does not integrate the Internet as a potential channel. Neither Hägerstrand (1952) nor Rogers (1971), two influential academics in diffusion studies, could have addressed the Internet since their work was conducted prior to the mass commercialization of the Internet. Nor has subsequent work on diffusion

addressed this new means of communication; and work on the Internet itself has only gone so far as to deal with diffusion of the Internet, but not to consider the Internet as the means of diffusion of other phenomena (*eg*. Du 1999; Goodman *et al*. 1994; Hargittai 1999; Press *et al*. 1998). Consequently Hägerstrand's and Rogers' models (the Wave Profile Model, Monte Carlo Model, the Central Place Model and the S-M-C-R Model) should be re-examined in light of mass commercialization of the Internet.

This analysis of the diffusion models will be explored geographically, taking into account the role of the city of Taipei as a world city. World cities are defined by their high connectedness to other urban centres through a variety of means. It is probable that the role that the city plays within the global network of cities will have a large influence on the way non-material culture diffuses to it via the Internet. Based on the research of Friedmann (1986), Beaverstock *et al.* (1999), Castells (1996), and Taylor *et al.* (2001), it is revealed that the city of Taipei is indeed a world city. This role will have a unique influence on the diffusion of non-material culture, and subsequently on our understanding of the existing models that explain diffusion.

The four models of diffusion examined within this research are the Wave Profile, the Monte Carlo, the Central Place and S-M-C-R model of diffusion. Hägerstand's Wave Profile model of diffusion is a four stage model that represents diffusion as progressing in waves, or stages. This model is rooted in spatial distance, as the model describes the rate of adoption at increasing distance from the centre of origin of the phenomenon being diffused (Hägerstand 1952, Colemen *et al.* 1966).

The Monte Carlo model of diffusion, also developed by Hägerstand, attempts to simulate the spatial pattern of acceptance of an innovation by dividing the study area into a cellular grid, and assigning to each cell a probability of an innovation being adopted in that cell (Coleman *et al.* 1966). The probabilities used in the Monte Carlo model are based on communication between accepters and non-accepters within physical proximity of each other.

Hierarchical diffusion is the essential focus of the Central Place model of diffusion. In this model, hierarchical diffusion is combined with the neighbourhood effect to represent the diffusion of an innovation. Specifically, an innovation or phenomenon is first diffused across the centres at the top of the urban hierarchy, and subsequently through the networks of smaller places in the hinterlands which those centres serve.

The final model considered was Rogers (1971) S-M-C-R model. Rogers detailed the diffusion process as a special type of communication, a "process by which innovations spread to the members of the social system" (Rogers 1971, 12). The model represents the acronym for **S**ource-

**M**essage-**C**hannel of Communication-**R**eceiver. According to Rogers, diffusion is part of the much larger process of social change. Unlike the other three models, this one does not spell out a geographical process of diffusion, but has the advantage of being based principally on communication.

## The Study

For the purpose of examining non-material cultural diffusion, the case of the English language was selected. This element of non-material culture was examined only within a study group of individuals between the ages of 16 – 24 who frequent Internet cafés in Taipei. Over a three-week period in February 2003, a sample of 137 questionnaires was collected for analysis. Five hypotheses were formulated to identify the influence of the Internet on non-material culture diffusion among Taipei youth. Through these five hypotheses, the validity of the central argument will be assessed.

The first hypothesis is that the percentage of English based websites that respondents visit will be positively correlated to their self-rated proficiency in English. A greater percentage of English based websites would tend to be linked to a greater self-rated proficiency. Since those respondents with a low self-rated proficiency would have greater difficulty comprehending the content of English based websites, it is hypothesized they would visit a significantly lower proportion of English based websites.

The second hypothesis in this project is that the Internet will be in the top three venues in which participants utilize English. It is expected that since the mass commercialization of the Internet there would be an increase in the number of youth utilizing it as a channel of communication. Studies conducted in the USA in 1998 revealed that youth are spending an increasing amount of time on the Internet, and consequently a decreasing amount in the 'traditional media' forms (Hintze and Lehnus 1998). It is hypothesized that Taiwanese youth would follow a similar pattern of increased use of the Internet.

The third hypothesis is that there will be a positive relationship between the number of years of education and use of English via the Internet. It is expected that those participants with a greater number of years of education will have higher rates of English Internet usage, and consequently those with a lower number of years of education will have lower rates of English Internet use. It is predicted that higher education levels will represent the respondents' increased ability to utilize English via the Internet.

The fourth hypothesis is that there will be a relationship between the self-rated proficiency in English and the language of the respondents' favourite website. Those respondents who have higher self-rated proficiencies in English are more likely to actively seek out English content on the Internet.

Closely related to the first and third hypotheses, the fifth hypothesis speculates that respondents who have had a knowledge of English for a time period of less than 5 years will rank the Internet within the top three media for using English. It is predicted that respondents who have under 5 years familiarity will be more likely to actively seek English based websites since the Internet can be utilized as a learning aid or tool. These individuals will seek out popular English based websites in an attempt to improve their proficiency in English. Respondents who have over 5 years of familiarity with English will have learned the language before the mass commercialization of the Internet in Taiwan. We therefore expect that this latter group will be more likely to have established other media or channels in which they seek English content, and will not rank the Internet as highly as these others. The most recent learners of English have a new channel for assisting in the learning of English.

Each of these five hypotheses assists in assessing the central argument of this study, that the Internet has an important influence on the diffusion of non-material culture. Helping to determine if indeed the geography of diffusion is changing since the introduction of the Internet, the second and fifth hypotheses address the importance of the Internet as an emerging channel for non-material diffusion. The other three hypotheses (one, three and four), contribute to the central argument by providing insight on how youth in Taipei are utilizing the Internet.

## Study Area

Located in the north of the island of Taiwan, the city of Taipei, population 6.2 million (Department of Health 2003), serves as the administrative node for the island. Taipei has been ranked as a world city by many academics (Friedmann 1986, Beaverstock *et al.* 1999, 2000, Taylor *et al.* 2001). Much of the literature suggests that the role of Taipei in serving world city functions will increase in the future (Castells 1996, Yeung 1996). Influenced by the entry of Taiwan into the world's largest trade agreement, the World Trade Organization, and Taiwan's aggressive approach to attracting global financial business, the possibility for an increase in Taipei's connection to other world cities is growing.

World cities consist of those cities that are highly connected through 'spaces of flows' (Castells 1996). These spaces of flows can take a variety of forms, however, the space of flows in the form of the Internet is the primary concern in this study. This study wishes to evaluate the influence of the Internet, as a space of flows, on the geography of the diffusion of non-material culture.

For the purpose of this study, the population is Taipei youth who utilize the Internet and who have some knowledge of English. Youth were chosen for this study since according to Du (1999), they are the most likely candidates for adopting technological innovations, such as the Internet. From Du's study in China it was found that youth, especially those from an affluent background, were more likely to adopt innovations than older adults in the same environment (Du 1999). Access to individuals from this population was gained through the facilities of Internet cafés, Internet users stations and educational institutions that provide access to the Internet.

## Methodology

The primary data for this study were collected through a questionnaire delivered in person in Taipei to youth that frequent Internet cafés. This questionnaire was delivered from 15 February to 2 March 2003, to run parallel to the start of the second semester of public schools and universities. This targeted timeframe was seen as optimal since it would mark the return of youth to school-based routines. Youth had returned from their semester break and were again engaging in school-based activities.

Stemming from a legislative amendment in 2001, the once unregulated business of Internet cafés became highly regulated in Taipei. Under the current legislation, Internet cafés must be established in commercially zoned areas with roads wider than 8 metres and not be within 200 metres of any school (Taipei Times 2001). Because of these new regulations, many older Internet cafés have had to close. As a result, the turnover of the location of Internet cafés has recently been very rapid, making locating them difficult. Therefore a variety of methods was required to identify potential Internet cafés. First, the Taiwan Chamber of Commerce (2003) provide a list of registered entrepreneurial Internet cafés. The second method involved personal communications with people at established Internet cafés in the city identified by the Chamber of Commerce. Operators/owners were asked to provide information, both names and addresses, of other Internet cafés within the city. These personal

communications with located Internet cafés proved to be the most efficient means to trace other sites, since much of the information gathered from the Chamber of Commerce was found to be outdated. Many of the reported businesses were no longer operating at the address indicated in the Chamber's records. A third method employed was utilizing the Internet as a search engine for existing websites or contact information of local Internet cafés. Due to language limitations of the researchers, only those listings of Internet cafés on the Internet that were presented in English were utilized. Focussing primarily on downtown Taipei, six Internet establishments were chosen for conducting surveys. These establishments were chosen because of the large number youth who frequent the cafés on a daily basis.

Although all six locations were in commercially zoned areas, as per legislation, two cafés were located near, but not in, the downtown core like the other four. Primarily residential areas surrounded these two locations. All six cafés were accessible to youth as they were all located within close proximity to the mass rail transportation within the city.

During the survey period of 12 February until 2 March 2003 participants were approached during the times of 11:00 a.m. to 1:00 p.m. and 7:00 p.m. to 9:00 p.m. The first time period of 11:00 – 1:00 was chosen to capture youth who may frequent Internet cafés during the lunch hour. The second time period of 7:00 – 9:00 was based on a restriction created by three of the Internet cafés, who objected to any surveying during the period of 4:00 p.m. to 7:00 p.m. because it was one of the busiest periods for the café, correlating with the break between the end of school and the beginning of private tutoring schools (Brown and Shiah 2003, Chin-Hwa 2003). To respect their wishes, the second survey period was 7:00-9:00, although the after-school period would have been preferable. Due to time limitations in the study area, questionnaires were delivered face-to-face and were self-administered. The greatest advantage to this method of questionnaire delivery was a high return rate of completed questionnaires as well as efficient use of the researchers' time. Out of a total of 250 distributed surveys, 137 were returned, representing a return rate of 55%.

## Characteristics of Study Group[1]

The study group can be characterized as being predominantly female, as only 28% of the respondents were males. The respondents' average number of years of schooling was 12.79. This number however may be

misleading since responses ranged from 1 year of schooling to 21 years of schooling, suggesting that some may have misunderstood the question. Of the 124 respondents who answered the number of years of education question, it was found that 53.7% had between 14-16 years of schooling. Regarding the location where respondents' learned the English language, the majority (75.9%) reported they learned it through the school system. The importance of private school tutoring is seen as 7.1% of the youth reported they learned English in this setting. Of the remaining youth, 5%, reported learning English at home and 12% indicated a combination of home, school system and/or private school.

Thirty-six per cent of respondents reported learning the English language between five and ten years ago. The majority of respondents, 52.6%, learned English at least ten years ago. The remaining 11% learned English less than five years ago. In terms of English usage by the respondents, 36.0% reported that they speak English two or three times per week. At 25% of respondents, the percentage speaking English on a daily basis is noteworthy. The greater part of the sample group, 62.5%, speak English at least two times a week.

Respondents' reasons for learning English were grouped according to the general themes that emerged from this open-ended question. The top reasons why youth are learning English include:

- For better employment (23%)
- Required for school (19%)
- To communicate with the west/foreigners (14%)
- Hobby or out of interest (14%)
- Because English is the "international language" (11%)

Some interesting comments that were mentioned in this open-ended question included: "it's a trend to use English", "Through it [English], I can really become a member of the global village" and "I learn it because teachers want me to learn it. Its [sic] CULTURAL INVASION!". The last comment indicates the presence of resistance to English in Taipei. This attitude towards the English language was mentioned by 12 youth, representing 9% of the respondents.

As for the fluency of respondents, only 1.5% rated their proficiency in English as being fluent. The bulk, 47.7%, of respondents rated their proficiency as being functional (requiring a dictionary often). In total, 84.8% of the study group rated themselves as being at least functional. This should be of little surprise since in order for participants to complete the survey they were required to have a minimum proficiency to read the

questionnaire. While youth who cannot communicate in English were therefore excluded from the study, such youth will also, by definition, not (yet) have adopted the English language by any means of diffusion (Internet or otherwise).

Regarding access to technology by respondents, 94.5% reported having a computer within their home. Internet access within the home was reported by 87.1% of the study group. With a high proportion of youth having access to the Internet at home, it is not overly surprising that 52.0% say they access the Internet the most often from their homes. Other common places for youth to access the Internet include their school (18.4%), their workplace (12.8%), or Internet cafés (2.4%). The low number of respondents reporting using Internet cafés as the most common location for accessing the Internet is interesting since the questionnaires were all conducted in Internet cafés. A total of 55.4% of youth revealed that they utilized Internet services seven times per week, or at least once every day. The functionality of the Internet for youth is very diverse. The top function was communication purposes, followed by school purposes, then gaming, job/employment reasons, and lastly news.

As for the language content of what youth are seeking when visiting the Internet, 56.3% reported that less than 20% of the websites they visited were in English. The dominant websites that they visited (*i.e.* most frequently) were Yahoo! Taiwan (64%), Kimo (10%), Sina (7%) and PC Home (3%). Conversely this means that over 43% of the youth devote their time to 20% or more of English based websites. Among the most frequently mentioned English based websites by the youth were Yahoo! (52%), International Community Radio Taipei [ICRT] (10%), Hotmail (10%), and Google (7%). This means that just less than one half of all respondents are actively seeking out English through the channel of the Internet.

When the youth were asked to rank the 'media' channels in which they use English the most, the top five channels were: (1) television (2) movies (3) radio (4) the internet and (5) class/school communications. Of these five channels, on a scale from 1 to 11, with 1 being the most frequently utilized channel, these top five channels had the following median ranks:

| | |
|---|---|
| Television | 2 |
| Movie | 3 |
| Music | 3 |
| Internet | 4 |
| Class Communications | 4 |

Notably, the top three are what have been termed 'traditional' forms of mass communication (Owen 1999). Each of these has been extensively studied by various academics over the years (Owen 1999., Rogers 1971, Turow 1997). The presence of the Internet with these more 'traditional' channels of communication indicates that the Internet does indeed offer considerable potential for diffusion. Not only is it a potential channel of importance, it is a channel of importance that youth are utilizing. Considering the Internet's relative newness, in comparison to the others, this channel has good potential to increase in importance. As DiMaggio *et al.* point out, the Internet is critically important because it "is a medium uniquely capable of integrating modes of communication and forms of content" (2001, 307).

In terms of the language of choice on the Internet, 69% of Taiwanese youth reported that their favourite website was in Chinese, while 21% reported English and 11% reported 'Other' which included languages such as German. In terms of the most frequently visited website, 79% of Taiwanese youth reported that their most frequently visited website was in Chinese. Thirteen per cent of respondents answered that the most frequently visited website was in English and 7% reported their most frequently visited website was neither Chinese or English.

## Results/Findings

Four of the five hypotheses for this study were substantiated. In the first hypothesis, a significant relationship between the percentage of websites visited that are in English and respondents' self-rated English proficiency was found. The chi-square statistic between these two variables was found to have a significance of 0.031. An examination of the crosstabulation of response categories for the variables supports the claim that there is a positive relationship, namely that the higher the respondents' self-rated proficiency in English, the greater the percentage of websites they visit in English. This relationship suggests that the Internet is becoming an important medium of English transmission among selected Taiwanese youth.

The delay in technological development of the Internet may have confounded the predicted outcome of hypothesis two. When asked to rank various channels of English communication, Taiwanese youth ranked the use of the Internet as the fourth most popular, with television, movies and music ranked higher. Although hypothesized that the Internet would be included in the top three, it was later found that the island of Taiwan

has experienced a technological lag in the general development of the Internet compared to both Canada the United States. However, this indicator proved to be a 'close call' – of those who provided rankings of the various communication channels/venues in which English was utilized, 39% did place the internet in the top three. It is reasonable to suspect that the further development and adoption of the internet generally in Taiwan will be accompanied by increased importance of this medium for the experience of English language communication/content.

As suggested in the third hypothesis, it was found that there is a relationship between the respondents' ranking of the Internet as a channel in which they use English and respondents' years of schooling. For this analysis, a t-test statistic was found comparing years of schooling across students differentiated between those who ranked the Internet among the top three venues in which they utilize English, and those who ranked it from 4th to 11th. A t-test statistic of 1.73 was significant at a=0.05 (2-tailed). We may conclude that those with a greater number of years of schooling tended to rank the Internet more highly as a venue in which English was utilized.

In support of the fourth hypothesis, A relationship was found between the respondents' self-rated English proficiency and the language of their favourite website. Again, a chi-square statistic was calculated and found to be significant at a=0.05. Youth whose English proficiency was 'fluent' or 'partially fluent' tended more often to declare that their favourite website was in English.

The final hypothesis of this study showed that youth who have learned English within the past five years have a greater propensity than youth who learned English over 5 years ago to rank the Internet in the top three channels for using English. Those respondents falling in the former category were, in fact, equally likely to rank the Internet in the top three as in the bottom eight. However, the group of respondents who have known English for more than five years showed a different trend. Of these, about 38% ranked the Internet in the top three, while the majority ranked it in the bottom eight. Compared to youth who have known English for greater than five years, youth who have recently learned English are more likely to rank the Internet more highly as a venue in which they use English. This could be explained by the fact that many language-training institutes utilize the Internet as a tool for learning English (Brown and Shiah 2003), itself a notable observation of the utility of the Internet as a support mechanism for the diffusion of English language.

## Conclusions

The mass acceptance of the Internet has produced equally massive changes in the diffusion process. The Internet has introduced an active participation component to the traditional forms of mass media, which were largely by passive participation. To add to that new participation component, this form of mass communication has transcended many political, social and economic boundaries. English based websites are available to most Internet users around the world. It is possible for youth in Africa or Asia to access any English websites, such as an American popular culture website. The changes that have resulted from the introduction of the Internet have given cause to re-examine the geography of diffusion.

The principal advances in diffusion studies were made in the 1960s, by Hägerstrand and Rogers. At the time of their research, diffusion of non-material culture was transmitted through media such as word of mouth, letters, movement of people, newsprint, radio and, later, television. In the late 1990s a new channel for the diffusion of non-material culture was brought to the forefront. Unlike other channels of communication, the Internet has an apparent distribution that is only limited by an individual's access to the Internet and the required apparatus to make it functional. The significance of the Internet is only heightened by the rapid speed of its acceptance throughout the world.

An examination of 137 youth Internet users in Taipei reinforced the importance of the Internet as a channel of diffusion. Overall, youth rated the Internet as the fourth most popular venue in which they utilized English, with only television, movies and music ranked higher. Considering the 'lag' in Internet development between Taiwan and both Canada and the United States, it is likely that the Internet will continue to increase in popularity among Taiwanese youth.

This examination of English diffusion via the Internet among Taiwanese youth has shown that not all models of diffusion are adequate for explaining the diffusion of non-material culture. The Monte Carlo Diffusion Model, developed by Hägerstrand, is inadequate to model the diffusion of non-material culture via the Internet due to its dependency on the Mean Information Field to describe potential acceptance. The Internet is not reliant on physical proximity and therefore the Mean Information Field is incapable of modeling this diffusion.

A second diffusion model of Hägerstrand, the Wave Profile Diffusion Model, is also inappropriate for modeling the diffusion of non-material culture via the Internet. The greatest shortcoming of this model is that it too is rooted in physical distance. According to Hägerstrand, the rates of

adoption are positively related to the distance from the origin. The lack of physical proximity in the Internet would prove that this model is incapable of modeling this aspect of diffusion.

The final model of Hägerstrand discussed in this study is the Central Place Diffusion Model. The basis of this model is hierarchical diffusion, a parallel that can be made with the concept of world cities. Unlike the Wave Profile Diffusion Model, the Central Place Diffusion Model is not established on the notion of physical proximity. Instead the Central Place Model is concerned with the movement of an innovation through a hierarchy, in this case the hierarchy of world cities.

The final model considered was Rogers' S-M-C-R Model of Diffusion. Originally used for the diffusion of communication innovations, this model can describe the diffusion of non-material culture to Taipei. The S-M-C-R Model does not imply a single form of diffusion, but rather that the diffusion process could be any form or even a combination. Through identifying the five components of Rogers' model the process of non-material cultural diffusion via the Internet can be better understood. The source of English is the western world; the message being diffused is English; the channel of diffusion is the Internet; and the receiver of the message is Taiwanese youth. The S-M-C-R Model does not specify the geography of diffusion, rather the elements of the model allow us as geographers to interpret the observed diffusion and to subsequently determine the geography.

This study of the diffusion of non-material culture via the Internet has shed light on aspects of the geography of diffusion. Many of our existing diffusion models were found to be inadequate at describing the diffusion of non-material culture via the Internet. This is largely due to the heavy presence of physical proximity in the models. The advent of the Internet has created an environment where potential adopters need not be in 'direct' contact with adopters. The Internet has created a 'space-less' dimension for interaction. Diffusion studies must recognize this and be able to accommodate this aspect of diffusion in order to accurately model it.

## Endnote

1. While 137 youth responded, not all respondents provided answers to all questions, so in some cases, the number of responses will not total to 137.

## Acknowledgements

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# The socioeconomic adjustment challenges of Bosnian refugee resettlement in North Dakota

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*Abstract:* Immigrants are a growing part of the US ethnic population and many face challenges adjusting to life in US communities. Refugees, as a special segment of this population, often experience a particularly difficult initial adjustment period. The US refugee resettlement program has been based on the premises of permanent residence and early economic self-sufficiency through employment. This study investigates the problems that refugees from Bosnia face in their socioeconomic adjustments to their new lives in North Dakota, and the issues confronting the state/local services providers in the host communities. Bosnians have been resettled in North Dakota since 1993, and they are now the largest refugee group in the state. Survey questionnaires were conducted with members of the Bosnian population in the Fargo community to gain insights into resettlement processes. Among the many problems, one of the greatest adjustments for the Bosnian refugees was entering the US job market with limited English language skills. Both the refugees and resettlement service providers are constantly challenged to find ways for the refugees to move beyond entry-level, low-wage jobs and to use their skills/ training to secure employment in areas of their former occupations.

## Introduction

In the early 1990s, Eastern Europe held the attention of the world as civil war erupted in the republics of Yugoslavia. By 1992, the war had spread to Bosnia-Herzegovina. Bosnian Muslims (Bosniaks) and people in ethnically mixed marriages began to flee their homes and seek protection from the United Nation High Commissioner for Refugees (UNHCR). The UNHCR is responsible for granting legal refugee status and finding permanent humanitarian solutions, including resettlement in safe countries. In 1999 alone, 478,300 refugees from Bosnia were resettled in Yugoslavia (Serbia-Montenegro), Croatia, Sweden, the Netherlands, Denmark, and the United States (INS 2001).

Each year, the US permanently resettles more refugees than any other country (UNHCR 2003). According to the 1951 Convention and the 1980 Refugee Act, those considered for refugee admission must be "persons of special humanitarian concern who can establish persecution or have a well-founded fear of persecution" (Gordon 1996; Holman 1996; Vialet 2000; USDOS 2001). The US refugee resettlement process was temporarily put on hold following the terrorist attacks on September 11, 2001. The annual refugee admission ceiling (70,000) for 2002 was the lowest in a decade. Because of increased security measures, less than 27,000 were actually resettled (INS 2003). Ten national voluntary agencies work under cooperative agreements with the State Department's Bureau of Population, Refugees, and Migrations to sponsor and provide initial refugee resettlement services (USDOS 2001). Throughout the US, the local refugee resettlement agencies include state agencies, religious-based, private, and ethnic organizations.

Since the US refugee resettlement program is based on the pursuit of economic self-sufficiency as quickly as possible, refugees are expected to secure employment within a few months of their arrival. This study examined the socioeconomic adjustments that confront refugees as they build new lives in North Dakota communities, specifically the Bosnian experience in Fargo. The findings of this study offer insight into the socioeconomic problems that other refugee groups may face in resettling in the state, as well as other areas of the US.


## North Dakota Refugee Resettlement Process

North Dakota has traditionally sponsored refugees through the local efforts of churches in coordination with the Catholic, Episcopalian, and Lutheran resettlement agencies. Since the early 1990s, two national voluntary agencies, the Episcopal Migration Ministries (EMM) in New York and the Lutheran Immigration and Refugee Services (LIRS) in Baltimore, have sponsored refugees resettling in North Dakota. They are responsible for the guidelines of services to be provided during the first 90 days (Slobin and Klenon 1995; Slobin et al. 2002).

Lutheran Social Services of North Dakota (LSSND) provides refugee resettlement services through its Center for New Americans. The Center is required to meet the refugees at the airport; to provide housing, health checkups, and necessary clothing; to enroll children in school; to assist adults to learn English; and to help them apply for Social Security cards, and become "job ready" to seek employment. Services are provided for the first eight months and funded through federal and state monetary grants.

***Table 1:*** *Number of refugees arriving in North Dakota cities, 1991-2000.*

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total | Percentages |
|------|------|------|------|------|------|------|------|------|------|------|-------|-------------|
| Bismarck | 9 | 52 | 62 | 35 | 100 | 52 | 116 | 126 | 134 | 33 | 719 | 16.1 |
| Fargo | 172 | 382 | 264 | 304 | 294 | 247 | 364 | 389 | 445 | 559 | 3420 | 76.5 |
| Grand Forks | 0 | 7 | 9 | 11 | 15 | 18 | 27 | 11 | 33 | 18 | 149 | 3.3 |
| Jamestown | 7 | 10 | 5 | 9 | 1 | 4 | 0 | 4 | 0 | 0 | 40 | 0.9 |
| Minot | 5 | 10 | 15 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 35 | 0.8 |
| Valley City | 10 | 7 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 31 | 0.7 |
| Wahpeton | 4 | 11 | 5 | 11 | 0 | 10 | 9 | 7 | 8 | 9 | 74 | 1.7 |
| State Total | 207 | 479 | 360 | 380 | 419 | 331 | 516 | 537 | 620 | 619 | 4468 | 100.0 |

Source: Lutheran Social Services of North Dakota, Center for New Americans

The refugees are encouraged to become a part of their new communities and economically self-sufficient as soon as possible. A refugee is eligible for adjustment of their status to lawful permanent resident after one year and eligible for naturalization to US citizenship after five years (USDOS 2001).

North Dakota's three largest cities (Fargo, Grand Forks, and Bismarck) are all staffed locations for refugee resettlement. Between 1991 and 2000, over 76 per cent of all resettlement activity was in Fargo (Table 1). Bismarck averaged 16 per cent of the resettlement over the same time period, and Grand Forks followed with three per cent. During 2000 a total of 619 refugees were resettled in North Dakota. Roughly 72 per cent of the refugees came from Bosnia, which represents the largest refugee group in the state. In 1993, at the beginning of the Bosnian resettlement in North Dakota, 19 refugees arrived. In 2000 alone, nearly 450 Bosnian refugees settled in the state.

In August 2001 the North Dakota Office of Refugee Resettlement essentially shut down the refugee resettlement program in Fargo, citing management problems. The increased refugee flow (annual average 619) during 1999 and 2000 apparently had overwhelmed the program. After a process of reorganization, the program was expected to resume accepting new refugees by October 2001 (Forum 2001). Then, the events of September 11th temporarily halted all refugee flows to the US. The US refugee resettlement program has since resumed, but at a much slower rate.

## Research Problem: Socioeconomic Adjustment Challenges of Refugee Resettlement

A 1995 US study of Bosnian resettlement found that the adjustment challenges that refugees face include learning English, securing employment, starting over as refugees, and culture shock. There are some cultural differences coming from a socialist system and moving to a capitalist system. For example, the social safety net, such as welfare, medical, dental, and childcare provisions, no longer exists (Somach 1995). The employment issues for refugees include the short timeline for obtaining their first job, finding jobs that fit their backgrounds and skills, and satisfaction with their job.

Refugees are given immediate authorization to work by the Immigration and Naturalization Service (INS). They may seek employment as soon as they obtain a social security card. After a year in the US, they may apply for a Permanent Resident Alien Card or Green Card (Bureau of Refugee Services 2003). Early employment has become a definitive measure of a resettlement agency's success rate in assisting refugees to achieve their goal of economic self-sufficiency. However, researchers (Slobin et al 2002), who assessed the impact of refugees on the Fargo, North Dakota and Moorhead, Minnesota communities, argue that this employment urgency complicates the issues for achieving long-term sustained employment. Service providers have insufficient time to evaluate the refugees' education/employment backgrounds, therefore refugees end up taking jobs without the necessary skills or settling for entry-level, low-wage jobs.

The focus of the current study is the socioeconomic adjustment challenges that the Bosnian refugee population faces as it strives for self-sufficiency and economic independence in the Fargo community. This study is a continuance of a statewide research project examining resettlement issues for refugee populations in North Dakota's urban areas, including Fargo, Grand Forks, and Bismarck. As the largest and fastest growing city in North Dakota, Fargo resettles the majority of refugees. In part, Fargo's population growth during the last decade is due to refugee resettlement. A previous study (Hansen 2003) conducted in 2001 investigated the overall issues that Bosnian refugees face in adjusting to resettling in Grand Forks, which has a much smaller refugee population than Fargo. Although Grand Forks ranks as North Dakota's third largest city, the smaller than expected number of refugees can be attributed to the 1997 flood and its aftermath. The Grand Forks study, using data from questionnaires (English only) and personal interviews (English only), found

that the main concerns included the lack of employment opportunities with a livable wage, learning English, and job/skills training.

## Research Methods

This study uses data from survey questionnaires to investigate the socioeconomic problems that Bosnian refugees face in adjusting to the Fargo community. The sampling procedure was not random, but instead uses the "snowballing" method, which is often used when conducting survey research with refugee groups. Participants in the research "are obtained through referrals among people who share the same characteristics" (Bloch 1999, 371). The questionnaire was translated into Serbo-Croatian, allowing refugees with low levels of English language proficiency an opportunity to participate in the study. The study relied on assistance from the Center for New Americans and members of the Bosnian population to distribute and collect the questionnaires. In fall 2002, 100 questionnaires were distributed to the adult members of the Bosnian population in Fargo. The response rate was 45 per cent. The identity of the respondents was not indicated on the survey form, nor was there any way to match the respondents' answers to their identity.

The respondents were surveyed from a multidimensional perspective. The study's participants answered 48 questions, of which 45 were structured and three were open-ended, regarding their resettlement experiences in North Dakota communities. In the questionnaire, 12 questions requested demographic, family, and length of residency data; nine questions addressed education and language; 13 questions requested employment and transportation data; seven questions addressed the assistance provided during the resettlement process; four questions addressed resettlement difficulties; and three questions asked what would improve the respondents' lives. The questions were coded and entered into a database. Percentages were calculated for the structured questions of the survey. The open-ended questions were analyzed for emerging themes. The responses from men and women were examined for differences. For example, are there differences in how quickly that they found their first employment or how they adjusted to Fargo? Since this study has as its focus the socioeconomic adjustment problems of Bosnian refugees, the general research questions are: (1) What are the demographic characteristics, education, English language proficiency, and employment levels of the Bosnian refugees? (2) What are the problems that refugees face in their socioeconomic adjustments to their new lives in North Dakota?

(3) What could be improved in the community to make the refugees' lives easier or better?

## Results

Twenty-one men and 24 women answered the questionnaires. They ranged in age from 20 to 57, with a majority in their 30s or 40s (64 per cent). Most are married (89 per cent) with children (84 per cent). Nearly 69 per cent had lived in North Dakota for over four years.

Eighty-four per cent of the respondents have at least a high school education. Forty-seven per cent report that they have completed some college or a trade/technical or undergraduate degree. Several questions examined their English language proficiency. Fifty-six per cent responded that they did not speak English when they first arrived in North Dakota (Table 2). Thirty-eight per cent report that they had studied English less than three months. Nearly 78 per cent said that they were somewhat confident in their English language skills or making progress in learning English.

Ninety-three per cent of the respondents were employed at the time of this questionnaire and 47 per cent had been with their current employer for over three years. They were employed in various types of work, including manufacturing (windows, food, plastics, etc.), hospitality, and retirement/nursing homes. Thirty-eight per cent found their current job through advice from friends in the community, the Center for New Americans assisted 22 per cent of respondents, and newspaper advertisements were used by 22 per cent of the respondents to find jobs. Forty-seven per cent found their first job less than three months after arriving in North Dakota (Table 3). The responses for male and female and how soon they found their first jobs were cross-tabulated by constructing a contingency table. A chi-square statistic (0.0232), df=1, N=41) was calculated with a p-value of 0.8788. Therefore, the hypothesis of no difference cannot be rejected. Men and women secure their first employment at the same rate. Based on the sample data reported in the contingency table, the percentage of men (52 per cent) finding their first jobs in less than three months was just slightly higher than for women (50 per cent). A majority (69 per cent) of the participants was satisfied with their current employment. Of those that were not, several responded that their jobs were lower than their professional skills or education level.

Several questions specifically referred to their experiences as they adjust to resettlement. One research question inquired about the problems

**Table 2:** *English proficiency of Bosnian refugees.*

English Proficiency of Bosnian Refugees

|  |  | Responses | |
| Question |  | Number | Percentage |
|---|---|---|---|
| How well did you speak English when you first came to North Dakota? | | | |
| (N=45) | Very well | 4 | 8.9 |
|  | Well | 3 | 6.7 |
|  | Not well | 13 | 28.9 |
|  | Not at all | 25 | 55.6 |
| How long have you studied English in North Dakota? | | | |
| (N=45) | Less than 3 months | 17 | 37.8 |
|  | 3-6 months | 15 | 33.3 |
|  | More than 6 months | 9 | 20.0 |
|  | No response | 4 | 8.9 |
| Do you feel you are making progress in learning English? | | | |
| (N=45) | I feel somewhat confident. | 11 | 24.4 |
|  | Yes, I am definitely making progress. | 24 | 53.3 |
|  | No, I am not learning English as fast as I would like. | 9 | 20.0 |
|  | Others | 1 | 2.2 |

**Table 3:** *Employment statistics of Bosnian refugees.*

|  |  | Responses | |
| Question |  | Number | Percentage |
|---|---|---|---|
| After arriving in North Dakota, how soon did you find your first job? | | | |
| (N=45) | Less than one month | 3 | 6.7 |
|  | 1-3 months | 18 | 40.0 |
|  | 3-6 months | 11 | 24.4 |
|  | 6 months-one year | 6 | 13.3 |
|  | More than one year | 3 | 6.7 |
|  | No response | 4 | 8.9 |
| Are you satisfied with your current job? | | | |
| (N=45) | Yes | 31 | 68.9 |
|  | No | 11 | 24.4 |
|  | No response | 3 | 6.7 |

they encountered as they started working in North Dakota (Table 4). Among the respondents, common threads include lack of English language skills (26 per cent), not working in the occupation in which they received their education/training in Bosnia (19 per cent), transportation/distance to work (16 per cent), and low pay (14 per cent). The participants were asked about their adjustment to Fargo. The responses for male and female, ranging from easy/ok or difficult/very difficult adjustment to Fargo, were cross-tabulated by constructing a contingency table. A chi-square statistic (5.8765, df=1, N=45) was calculated with a p-value of 0.0153. Therefore, the hypothesis of no difference can be rejected. The adjustments to Fargo for men and women are different. More specifically, based on the sample data reported in the contingency table, over half (54 per cent) of the women reported that their adjustment was difficult/very difficult, while less than 20 per cent of the men responded the same way. Eighty per cent of the participants replied yes and 18 per cent were unsure when asked if they planned to stay in Fargo for the next two to five years. The participants were asked about what could be improved in the Fargo community to make their lives easier or better. The most often reported answers are more job opportunities (24 per cent), educational opportunities (22 per cent), and lower cost of housing (21 per cent).

**Table 4:** *Socioeconomic adjustment challenges of refugee resettlement.*

|  | Responses* | |
| Question | Number | Percentage |
| --- | --- | --- |
| What were the problems as you started working in the United States? | | |
| (N=133)   Lack of English language | 35 | 26.3 |
| Not working in the occupation that I received my | | |
| education/training in Bosnia | 25 | 18.8 |
| Transportation/distance to work | 21 | 15.8 |
| Low pay | 18 | 13.5 |
| Lack of health insurance/benefits | 12 | 9.0 |
| Lack of time | 10 | 7.5 |
| Job insecurity | 7 | 5.3 |
| Child care | 5 | 3.8 |

*Respondents could check all answers that apply.

## Discussion

The Bosnian experience in Fargo was investigated to understand the socioeconomic adjustment challenges confronting refugees resettling in North Dakota communities. Following guidelines set by the US refugee resettlement program, the Center for New Americans in Fargo provides assistance to newly arriving refugees, which includes completing a family self-sufficiency plan. In addition to collecting basic biographical information, this plan establishes short- and long-term goals to achieve self-sufficiency and economic independence (The Cultural Orientation Project 2000; LSS 2003; LSSND 2003). In the short term, refugees are expected to secure employment as soon as possible, even if that means taking a low-wage job or a job outside the refugee's former profession in Bosnia. It is also imperative that refugees stay on their first job for at least six months to establish a good work history. The Bosnian refugees who have resettled in Fargo are finding employment early in the resettlement process with 47 per cent employed by the third month after arriving in the community. However, as they enter the labor force, lack of English language skills was recognized as a major barrier to their pursuit of economic self-sufficiency. The English language proficiency of refugees arriving in Fargo varies, ranging from those with no English language skills (56 per cent) to being relatively fluent in English (16 per cent). For many refugees resettling in North Dakota communities, as this study and other researchers (Slobin et al 2002; Hansen 2003) confirm, it oftentimes becomes a trade-off between attending English language classes and accepting early employment. Although it takes a committed effort on their part, employers in Fargo have found that limited English language proficiency is not necessarily an insurmountable barrier to hiring refugees. The initial language barrier can be overcome by using interpreting services, job shadowing by bilingual coaches, reviewing job functions to minimize the need for English, and developing on-site English Language Learner classes (Slobin et al 2002; Olson 2003).

In the Fargo community, underemployment is cited as an adjustment issue for some refugees in their pursuit of economic self-sufficiency. Nineteen per cent of the respondents cite their greatest challenge remains not being able to work in the skilled or professional occupations as they had in Bosnia because their foreign-acquired skills/degrees are not recognized and US certification is needed. During the first years of resettlement, it is not uncommon for refugees to experience socioeconomic downward mobility. In the long term, members of the Bosnian population in the Fargo community are acquiring the skills/training to get a better job or to resume their former occupations.

North Dakota communities, such as Fargo, have promoted refugee resettlement to increase their labor markets. Yet, the question remains how to achieve sustained employment for refugees resettling in the state. The results of this study show that refugees want more job and educational opportunities to make their lives better. The service providers at the Center for New Americans offered some recommendations so that refugees resettling in North Dakota could better meet the socioeconomic adjustment challenges in their pursuit of economic self-sufficiency. They suggested providing longer financial assistance for refugees, if needed. The eight months of initial assistance for refugees resettling in the state is not sufficient for many. They also recommended substantial job training, which would include more partnerships with local employers, such as those included under the Job Training Partnerships Act (JTPA). This would give the refugees a chance to move beyond the entry-level, low-wage jobs more quickly. English language classes for at least a year are essential, including basic and occupational English language training. While a minimum language level is necessary for any job, the service providers cited that English language proficiency is absolutely critical to upgrade from entry-level jobs (Slobin et al 2002; Olson 2003).

## Conclusion

This study found the principal issues confronting Bosnian refugees as they pursue economic self-sufficiency in Fargo are the lack of English language skills, not working in their former occupations, and low wages. These findings are consistent with prior research (Somach 1995; Dimeo and Somach 1996; Bluc and Dongieux 1999; Jackson 2000; Slobin et al 2002; Franz 2003; Hansen 2003) on Bosnian socioeconomic adjustments in the resettlement process in US communities. Under federal funding requirements, the need to quantify the success rate of the resettlement program has a tendency to force service providers to give only minimal attention to sustainable employment for refugee populations. Service providers in Fargo, as well as others assisting refugees in the community, realize that the success of their resettlement programs depends upon a concerted effort to address refugee employment concerns, including finding ways to integrate early employment with learning English (i.e., job shadowing, on-site English language classes, etc.), job fit, hourly wage, and career opportunities. The results of this study may be beneficial to other refugee resettlement programs in North Dakota, as well as other areas of the US.

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# The brain drain of medical services in KwaZulu-Natal, South Africa

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**Abstract**: A medical health system is a crucial service. While some countries invest little in it, others are committed to making it available to every citizen. Canada, through its Medicare system, provides one of the best medical services in the world. At the same time, South Africa is struggling to maintain adequate health care. This problem is due to both doctors' emigration as well as doctors' moving from the public to the private sector. This paper investigates the reasons for both means of exodus. Accurate data about this topic is difficult to obtain, even through examination of statistics recorded both in South Africa (SA) and in the receiving countries of Canada, Australia, New Zealand, United Kingdom, and the USA. However, this document provides the basic database to investigate this "brain drain". Through this investigation, two major problems in collecting accurate data in SA have become evident, namely, dual citizenship and the freedom of travel. In the last ten years, doctors' immigration to other countries and doctors' resignation from the public sector has reached 25% of the total number of South African doctors. The problem is serious but it can be dealt with. The South African government will have to meet the doctors' needs for a safe living environment, productive working conditions, and reasonable remuneration.

## Introduction

Official emigration data are notoriously suspect, and South Africa's are no exception: Brown et al, 2001, estimate that South Africa's reported emigration understates the actual number of departures by as much as 60 per cent. Between 1987 and 1997, South African data indicate that 82 811 people emigrated either to Australia, Canada, New Zealand, the United Kingdom or the United States, while statistics for these receiving countries counts 233 609 immigrants from South Africa (Brown *et al*, 2001: 3). In the case of physicians, official statistics report the loss of 813 doctors

since 1986 (Sullivan, 2001); however, a recent study of the graduates of Witwatersrand's medical school provides a more alarming picture with roughly 45 per cent of graduates since 1975 located outside of the country (Weiner et al, 1998).

It is often more informative, therefore, to look at the immigration data of receiving countries to obtain a picture of a country's emigration. Canada's Landed Immigrant Data System (LIDS, 1998-2000) is a useful source for documenting the number and characteristics of South African physicians immigrating to Canada. The LIDS data record all arrivals of landed immigrants in Canada according to a host of variables, including immigration entry class, gender, age, education level, intended occupation and country of origin.

According to an article in the South African *Daily News*, 5/6/2002, the South African government is trying to stop the brain drain. The Minster of Health addresses the shortage of health care workers, particularly in the rural areas where community service was set to expand in 2002. It has been estimated that 26% of the public sector dental posts were filled through community service in 2001. In 2002, the Health Minister indicated that there would be 1742 young doctors, dentists and chemists in the field. While the leaders of the new national party in South Africa support compulsory community service, the government should apply it as was originally intended, for rural and under serviced areas. In another article in the *Daily News*, 5/11/2001 on the "brain drain" being unaffordable, the Finance Minister of South Africa, Trevor Manuel, admits that private and public sector partnerships could have a major impact on learning and productivity. As for importing expertise, according to the finance minister, foreign medical professionals are usually costly and cannot always be relied upon to understand the developmental and national concerns that local professionals grasp. The authorities attempted to deal with this problem by inviting foreign doctors, such as doctors from Cuba, but this initiative did not provide good results (Van der-Linde, 1996). According to Skelly (1999), South Africa's Recruit Doctors policy did not solve the shortage crisis.  In regard to the migration of health care workers, the Minister of Health has said that their recruitment from developing countries should take place only within formal bilateral agreements between developing and developed countries. In addition to the high number of health professionals leaving SA, he said, destabilization of the workforce supply pattern is compounded by the unplanned nature of these departures. According to the Democratic Nursing Organization of South Africa (DeNOSA), health professionals were leaving because of inadequate staffing levels and poor salaries. In commenting on why KwaZulu-Natal (KZN) doctors are quitting in droves, The *Daily News*, 8/6/2002 reported

that anesthetists are getting private, more lucrative positions in private hospitals. This migration is in addition to the steady drift of these health professionals to more rewarding overseas positions. The presidents of the colleges of medicine of SA observed that there was much dissatisfaction with the conditions of employment in the public sector. In addition, remuneration was regarded as insufficient, and there was also a concern for the lack of personal safety for doctors and their families. In general, disillusionment with the public sector is the main reason for doctors joining the private sector and, in particular, for their emigrating from SA.

This paper investigates the shortage of medical services in KZN, SA through examinaion of:

a. the emigration of medical doctors from KZN, SA.
b. the resignation of  doctors from the public sector to assume posts in  the private sector in KZN, SA.

## Methods of Analysis

The data have two components:

1) The brain drain of medical doctors emigrating from S.A., with reference to the following database:

a. Comparison of statistics, namely self-declared emigration from SA  and documented immigration statistics in receiving countries.
b. The number of emigrant medical doctors departing from the three international airports in S.A. from 1994-2001.
c. Comparison between medical doctors immigrating and emigrating from KZN, SA. from 1998-2000.
d. The age, class, and gender of medical doctors who immigrated and emigrated from KZN, 2000.
e. Medical doctors immigrating to Canada, 1986-2000.
f. The number of medical doctors in Canada by province, 1991-2000.
g. The gender, country of birth, and specialization of SA medical doctors emigrating to Canada, 1991-2000.

2) The resignation of doctors from the public to the private sector in S.A., with reference to the following database:

a. The location and the number of medical doctors resigning from 1996-2001.
b. The reasons for medical doctors' resignation from 1996-2001.

c.   The race of medical doctors resigning from 1996-2001 and their reasons for resigning.

d.   The gender of medical doctors resigning from 1996-2001 and their reasons for resigning.

The data cover eight health regions according to urban centres associated with city or town (Table 8). In addition to the region for each doctor, the following information was covered: the name, the date of birth, the appointment and termination date, the reason for resignation (Table 9), the race (white, non white, shown in Table 10), the gender (Table 11) and the rank of each doctor emigrated from KZN. Since 1996, the KZN Health Department has been using a different computer system. Before, it was not compulsory to state the race of the person. It is only since 1996 that race and gender have become important, and that was due to concern for employment equity. The data indicated the total number of doctors' resignations for each region from 1996 to 2001. The reasons for medical practitioners' resignation from 1996-2001 were compiled as a report from the Department's computerized payroll system. This report indicates the duration of employment of groups of workers in the health sectors ranging from medical doctors to hospital support staff as well as the reasons for resignation. It also records the numbers of black, coloured, Indian, and white health services staff, and their gender. Listed in Tables 8-11 are the number of resigned medical practitioners for each urban centre, the race and gender for each, and reasons for their resignations.

## Results and Discussion

### 1) Doctors' emigration from South Africa:

The increase in self-declared emigration from SA to other countries (Table 1) has been gradual. From 1970 there have been three major peaks. These occurred in 1977, 1986 and 1994. The main destination countries were the UK, Australia, and New Zealand. In 2000, the number of self-declared emigrants was 21% higher than in 1999, increasing from 8487 to 10 262 (Statistics SA, 2000). Age and occupation are two important characteristics of documented immigrants and self-declared emigrants. For self-declared emigrants, the major peak occurs in the age group 30-34. For ages below five and ages forty and over, there is a relatively higher proportion of self-declared emigrants than documented immigrants, while for ages 20 to 40 there is, conversely, a relatively higher proportion of documented immigrants than self-declared emigrants. For both profiles there is a dip in the number of international migrants aged 70-74. For self-

declared emigrants, out of a total of 10 262, 6434 (62.7%) were economically active, while 3828 (37.3%) were not. Of the economically active documented self-declared emigrants, 2439 (23.8%) were in a professional category, followed by 1057 (10.3%) in the clerical and sales category (Statistics SA, 2000).

**Table 1:** *Comparison of accumulated statistics of self-declared emigration from S.A. statistics and documented immigration statistics in receiving countries (SA citizens and residents). Source: Statistics SA, 2000.*

| Year | SA | USA | SA | AUST | SA | NZ | SA | CAN. | SA | UK |
|------|------|-------|-------|-------|------|-------|-------|-------|--------|-------|
| 1994 | 11082 | | 40025 | 58600 | 5644 | 9062 | 12114 | 26897 | 89255 | 80030 |
| 1995 | 11964 | 52000 | 41532 | 60900 | 6583 | 10198 | 12793 | 27865 | 91300 | 84020 |
| 1996 | 12927 | | 43299 | 64100 | 7849 | 11334 | 13567 | 28465 | 93543 | 88010 |
| 1997 | 13759 | | 44807 | 66253 | 9006 | 14891 | 14124 | 30519 | 95705 | 92000 |
| 1998 | 14648 | | 46438 | 68406 | 9875 | 14753 | 14573 | 32154 | 98015 | |
| 1999 | 15475 | | 47982 | | 10836 | 14988 | 14914 | 33851 | 100331 | |
| 2000 | 16574 | | 49526 | | 11730 | 15474 | 15396 | 35762 | 103183 | |

Table 2 shows that the total number of declared medical emigrants from SA reached 725 from 1994 to 2001. The years 2000 and 1996 have shown the highest number of doctors leaving the country (105 and 103 respectively), whereas the year 1995 shows the lowest number leaving the country (71 doctors). If one compares the number of doctors coming to the country to those who left the country through1994 to 2001, it becomes obvious that the loss of doctors was consistent and significant every year. The maximum loss of doctors corresponds to the maximum number of emigrant doctors in the year 1996 and 2000 and the least number in the year 1995. From 1994 to 2001, 727 doctors left the country, but only 56 doctors immigrated to SA. The total number of doctors immigrating to SA is 56 during the same period with the maximum number of 14 doctors in 2001 and no doctors at all in 1994. Dentist practitioners rated second and medical specialists third in the list of both emigration and immigration.

Table 3 shows a comparison between the loss and gain of doctors between 1998 and 2000, in addition to the emigration of medical professionals leaving from the three international airports. While the number of emigrant doctors in the year 1998, 1999, and 2000 was the same in Tables 2 and 3, the immigrant total in Table 3 was much higher than that recorded in Table 2. The difference in the total loss of 34 doctors was partially due to the result of some of the doctors (showing as a gain) coming from other provinces to work in KZN.

**Table 2:** *The number of emigrant doctors departing from the three SA international airports from 1994 to 2001.  Source: Statistic SA, 2000*

| Medical professions | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | Years |
|---|---|---|---|---|---|---|---|---|---|
| Practitioner | 72 | 56 | 92 | 60 | 77 | 68 | 89 | 88 | |
| Specialist | 21 | 15 | 11 | 22 | 17 | 15 | 16 | 6 | |
| Medical Dr. | 93 | 71 | 103 | 82 | 94 | 83 | 105 | 94 | Emigration |
| Dental | 16 | 14 | 33 | 50 | 13 | 12 | 31 | 27 | |
| Practitioner | 0 | 4 | 3 | 0 | 9 | 9 | 12 | 13 | |
| Specialist | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 1 | |
| Medical Dr. | 0 | 5 | 5 | 0 | 11 | 9 | 12 | 14 | Immigration |
| Dental | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | |
| Net Medical Dr. | -93 | -66 | -98 | -82 | -83 | -74 | -93 | -80 | |

**Table 3:** *Medical occupation of immigrants and emigrants from 1998-2000. Source: Statistic SA, 2000*

| Medical professions | 1998 | 1999 | 2000 | Years |
|---|---|---|---|---|
| Practitioner | 77 | 68 | 89 | |
| Specialist | 17 | 15 | 16 | |
| Medical Dr. | 94 | 83 | 105 | Emigration |
| Dental | 13 | 12 | 31 | |
| Practitioner | 25 | 38 | 21 | |
| Specialist | 3 | 1 | 1 | |
| Medical Dr. | 28 | 39 | 22 | Immigration |
| Dental | 0 | 1 | 1 | |
| Net Medical Dr. | -89 | -44 | -83 | |

Table 4 shows the gender of the doctors emigrating from and immigrating to SA. The demographic structure of the emigrant doctors is similar to that of the wider doctor population. We see that 159 doctors were between the ages of 25 and 64 and only one was over 65. Female emigration was higher than male: 304 female and 155 male. The data in this table indicate there was a loss of male and female doctors in age ranges between 25 and 54 with a total of 89 doctors, with the exception of a gain of two female doctors (between age 35 and 44). Out of the 111 male and female doctors who emigrated in 2000, 37 were female and 74 male; as one can see, the number of male doctors leaving SA from KZN province is twice the number of female doctors. Of the 74 male and 37

**Table 4:** *The age, class, and sex of medical doctors immigrating to and emigrating from KZN, SA 2000 . Source: Computerised payroll system, KZN, 1997-2001.*

| Medical professions | 25-29 | | 30-34 | | 35-44 | | 45-54 | | Year2000 |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Male | Female | Gender |
| Practitioner | 12 | 6 | 29 | 10 | 12 | 0 | 9 | 1 | |
| Specialist | 3 | 4 | 4 | 9 | 1 | 1 | 4 | 0 | |
| Medical Dr. | 15 | 10 | 33 | 19 | 13 | 1 | 13 | 1 | Emigrated |
| Dental | 2 | 4 | 5 | 9 | 4 | 0 | 1 | 0 | |
| Practitioner | 0 | 0 | 3 | 3 | 10 | 3 | 0 | 1 | |
| Specialist | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| Medical Dr. | 0 | 0 | 0 | 4 | 10 | 3 | 1 | 1 | Immigrated |
| Dental | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | |
| Net Medical Dr. | -15 | -10 | -30 | -15 | -3 | +2 | -12 | 0 | |

female doctors, 33 male and 19 female doctors were between the ages of 30 and 34.

Table 5 shows the total number of doctors immigrating to Canada from various countries, including SA. Doctors' emigration represents two patterns - a decrease from 1994 to 1997, and an increase from 1997 to 2000, with the highest percentage of emigration occurring during the 1994 transition of government, followed by the lowest of 17.3% in 1997. During the period between 1994 and 2000, 25.8% of all the doctors who immigrated to Canada were from SA.

Table 6 shows the number of immigrant doctors in the various provinces of Canada. The province of Ontario has the highest number of doctors, including Canadian doctors, foreign doctors, and South African doctors (the lowest percentage of the total). B.C. has the highest number of South African doctors, while Newfoundland has the lowest number of doctors, Canadian, foreign, or South African. Saskatchewan has the highest percentage of South African doctors. Out of 57 626 doctors in Canada, 1338, or 2.3%, came from SA. Of the 602 South African physicians entering Canada between 1991 and 2000, 351 (66%) were destined for Manitoba, Newfoundland and Saskatchewan, and half initially settled in rural areas. Source: Citizenship and Immigration Canada, Landed Immigrant Data System, LIDS 1980-2000 update.

In analyzing Table 7, one notices four characteristics of South African physicians immigrating to Canada:

a.  19 per cent were women. This corresponds to the gender representation of physicians in South Africa, but is well below the recent percentage of women graduating from South African medical schools. In 1994, women comprised 20 per cent of all physicians on the registry in South Africa (Pick, 1995: 3); in

**Table 5:**  *Medical doctors immigrating to Canada, 1986-2000.*
*Source: LIDS, 1980-2000.*

| Year of arrival | From all countries | From South Africa | % from South Africa |
|---|---|---|---|
| 1986 | 119 | 8 | 6.7% |
| 1987 | 240 | 43 | 17.9% |
| 1988 | 171 | 35 | 20.5% |
| 1989 | 234 | 55 | 23.5% |
| 1990 | 163 | 28 | 17.2% |
| 1991 | 240 | 49 | 20.4% |
| 1992 | 244 | 67 | 27.5% |
| 1993 | 291 | 107 | 36.8% |
| 1994 | 185 | 66 | 35.7% |
| 1995 | 172 | 57 | 33.1% |
| 1996 | 169 | 33 | 19.5% |
| 1997 | 156 | 27 | 17.3% |
| 1998 | 186 | 38 | 20.4% |
| 1999 | 151 | 32 | 21.2% |
| 2000 | 196 | 61 | 31.1% |
| Total | 2917 | 711 | 25.8% |

**Table 6:** *The number of medical doctors in Canada by province from 1991 to 2000. Source: Canadian Institute of Health Information (2001), Sullivan (2001).*

| Province | Total Medical | Canadian Medical | Foreign Medical | South African Medical | %Foreign | % South African |
|---|---|---|---|---|---|---|
| Newfoundland | 912 | 521 | 391 | 46 | 42.9% | 5.0% |
| Manitoba | 1984 | 1364 | 620 | 124 | 31.3 | 6.3 |
| Sask. | 1560 | 754 | 806 | 263 | 51.7 | 16.9 |
| Alberta | 4971 | 3622 | 1349 | 195 | 27.1 | 3.9 |
| Ontario | 21160 | 15880 | 5280 | 305 | 25.0 | 1.4 |
| BC | 7942 | 5737 | 2205 | 378 | 27.8 | 4.8 |
| Others | 19097 | 16488 | 2609 | 26 | 13.7 | 0.1 |
| Total | 57626 | 44366 | 13260 | 1338 | 23.0 | 2.3 |

1998, over half of all first-year medical school students were women (Moomal and Pick, 1998: 5).
b.  Emigrants tended to be extremely young. The average age was 42 years, with 70% under 45. Moreover, the average age has fallen annually, from 44.5 to 38 years between 1991 and 1999.
c.  87.5% were born in South Africa, with the remainder fairly evenly divided between Europe, other African countries and the rest of the world. Since data do not refer to citizenship, it is not strictly comparable to data on South Africa's stock of physicians. It is noteworthy, however, that foreign doctors comprise only 5.8% of the South African physician workforce.
d.  32 % of migrants were specialists as opposed to general practitioners. This compares to a South African physician workforce of which 28% are specialists  (Van Rensburg and Van Rensburg, 1999: 16).

**Table 7:** *The gender, country of birth, and specialization of SA medical doctors immigrating to Canada, 2000.  Source: LIDS, (1998-2001).*

| Gender | Male | 485 | 80.6% |
|---|---|---|---|
|  | Female | 117 | 19.4 |
| Age | 35 | 33 | 5.5% |
|  | 35-39 | 185 | 30.7 |
|  | 40-44 | 205 | 34.1 |
|  | 45-49 | 108 | 17.9 |
|  | 50-54 | 40 | 6.6 |
|  | 55-59 | 15 | 2.5 |
|  | 60+ | 16 | 2.7 |
| Country Of Birth | South Africa | 527 | 87.5% |
|  | Other Countries | 75 | 12.5 |
| Specialization | Practitioner | 312 | 51.8 |
|  | Specialists | 148 | 24.6 |
|  | Others | 142 | 23.5 |
| Total |  | 602 |  |

**2) Doctors resigning from the public sector in KwaZulu-Natal:**
Table 8 indicates that the highest number of resignations among all the major health centres totaled 892 doctors in Durban between 1996 and

*Table 8: The location and the number of medical practitioners resigning from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

| Location/years | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|
| Port Shepstone | 10 | 19 | 31 | 51 | 80 | 76 |
| Pietermaritzburg | 51 | 169 | 184 | 53 | 20 | 70 |
| Ladysmith | 19 | 24 | 35 | 10 | 22 | 63 |
| Ulundi | 10 | 37 | 220 | 25 | 21 | 71 |
| Jozini | 7 | 29 | 35 | 2 | 6 | 6 |
| Durban | 161 | 164 | 297 | 87 | 145 | 38 |
| Newcastle | 5 | 26 | 15 | 5 | 1 | 2 |
| Empangeni | 26 | 69 | 47 | 20 | 5 | 2 |
| Total | 289 | 537 | 864 | 253 | 300 | 328 |

2001. The lowest number of doctor resignations (54 doctors) was in Newcastle during the same period. In 2001 there was a shift in the highest number of doctor resignations from Durban to Port Shepstone. The lowest number of doctor resignations in this year was in Empangeni and Newcastle, with two doctors from each location. While the number of doctor resignations does not reflect an absolute loss, it does show a trend of loss of public sector doctors to the private sector. The very small urban centres with small populations such as Jozini, Empangeni, Ladysmith, and Newcastle have experienced insignificant loss due to the small numbers they had in 1996.

Table 9 shows the reasons for medical doctors resigning from 1996 to 2001. The author has combined overlapping reasons reducing the number from twenty-one to eight:

- a. Changing from the public to the private sector for given reasons as defined by the South African system: invalid reasons, other occupation, contract expired, own business, other reason, resigning of position.
- b. Better remuneration.
- c. Nature of work environment, and insufficient progress of work .
- d. Personal reason: marriage, grievance, transport problem, domestic problems, pregnancy.
- e. Bad health and age.
- f. Further studies.
- g. Translation; permanent, temporary, part-time, permanent probation. This refers to translation from the local (tribal)

***Table 9:*** *The reasons for medical practitioners' resignation from 1996-2001.*
*Source: Computerised payroll system, KZN, 1997-2001.*

| Reasons | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|
| 1. Invalid reason | 170 | 298 | 631 | 240 | 161 | 189 |
| 2. Better remuneration | 54 | 41 | 19 | 3 | 6 | 3 |
| 3. Nature of work | 38 | 140 | 170 | 8 | 22 | 113 |
| 4. Personal reason | 15 | 47 | 27 | 0 | 7 | 17 |
| 5. Bad health and age | 3 | 5 | 7 | 0 | 98 | 0 |
| 6. Further studies | 4 | 3 | 7 | 1 | 1 | 2 |
| 7. Translation | 5 | 4 | 2 | 0 | 1 | 1 |
| 8. Emigration | 0 | 0 | 1 | 1 | 4 | 3 |
| Total | 289 | 537 | 864 | 253 | 300 | 328 |

> language to English or Afrikaans, which is a necessary function
> for South African doctors.
> h.   Emigration.

Of 2145 reasons, 1262 or 58.8% of invalid reasons of resignation
between 1996 and 2001 represent the highest number of resignation. The
"nature of work" reason totaling 491 represents the second most significant
reason for resignation. The number of resignations based on better
remuneration (126), personal reasons (113), and bad health and age reasons
(113) become the second and third most common. The lowest number of
resignations and the insignificant reasons for resignation were indicated
under further study (18), translation (13), and emigration (9). All the above
reasons for resignation from 1996 to 2001 can be partially due to doctors
emigrating, and mostly due to doctors moving from the public to the private
sector. When we compare the number of resignations between 1996 and
2001, we find that out of 881 reasons of resignation, 590 or 67.0% were
for invalid reasons. It was also found that 16.2% of resignations were as
a result of the nature of work, 11.1% for bad health and age, and less than
2% for the remaining reasons.

Table 10 shows that out of 2145 reasons for resignation between 1996
and 2001, 1517 or 70.7% were those of non-white doctors. Out of 1689
invalid reasons, 1048 were ascribed to non-white doctors. Table 10 shows
also that out of 590 "no reason" resignations, 190 or 32.2% of white doctors
had resigned between 1999 and 2001, and out of 881 reasons in total, 190
or 21.6% white resigned, but switched from the public to the private sector.
The results indicate clearly that the number of resignations of white doctors

**Table 10:** *The reason for and the race of medical practitioners resigning from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

| Year | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | | 2001 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code/race | Nw | W | Nw | W | Nw | W | Nw | W | Nw | W | Nw | W |
| Invalid reason | 110 | 60 | 170 | 128 | 368 | 263 | 163 | 77 | 116 | 45 | 121 | 68 |
| Numeration | 42 | 12 | 33 | 8 | 8 | 11 | 0 | 3 | 6 | 0 | 2 | 1 |
| Nature of work | 26 | 12 | 81 | 59 | 83 | 87 | 3 | 5 | 9 | 13 | 56 | 57 |
| Personal reason | 6 | 9 | 25 | 22 | 9 | 18 | 0 | 0 | 3 | 4 | 7 | 10 |
| Bad health, age | 2 | 1 | 1 | 3 | 3 | 4 | 0 | 0 | 40 | 58 | 0 | 0 |
| Future study | 3 | 1 | 1 | 2 | 5 | 2 | 0 | 1 | 1 | 0 | 1 | 1 |
| Translation | 3 | 2 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Emigration | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 1 | 3 | 0 |
| Total | 192 | 97 | 314 | 223 | 477 | 387 | 166 | 87 | 178 | 122 | 190 | 138 |
| Total | 289 | | 537 | | 864 | | 253 | | 300 | | 328 | |

using "invalid reason" was very low (32.2%) in comparison to the very high non-white figure of 67.8%.

Table 11 indicates the gender of medical doctors and the reasons for their resignation from 1999-2001. The number of male and female resignations increased from 253 in 1999 to 328 in 2001. While the increase was insignificant, the trend was consistent. The number of female doctors' resignations increased significantly from 104 to 175, while the number of male doctors' resignations changed insignificantly from 148 to 153 between 1996 and 2001. It was noticed that the percentage of male resignation using invalid reason (60.7 %) was higher than the female percentage due to the original demography of medical doctors. It was also found that out of 881 reasons of male and female resignation, 358 or 40.6% represented the male and 59.4% represented the female. While males and females are needed equally for the health services, the loss of female doctors is more significant than the loss of male doctors due to the demography of gender. However, the loss of female doctors from the public sectors is associated directly or indirectly with SA's need of professional males.

## Conclusion

Medical practitioner emigration from SA and resignation from the public to the private sectors constitute a serious problem in SA. This problem has been the focus of the media for some time. Local and national newspapers draw the authorities' attention to the alarming changes in the medical services in SA. Newspaper articles such as: 'KZN Doctors Are Quitting In Droves,' 'Brain Drain Move,' 'Keeping Doctors At Home,'

***Table 11:*** *The relationship between the reason and the gender of medical doctors resignations from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

| Reasons | 1999 | | 2000 | | 2001 | |
|---|---|---|---|---|---|---|
| Sex | Male | Female | Male | Female | Male | Female |
| Invalid reason | 140 | 100 | 114 | 47 | 104 | 85 |
| Numeration | 1 | 2 | 3 | 3 | 2 | 1 |
| Nature of work | 6 | 2 | 19 | 3 | 32 | 81 |
| Personal reason | 0 | 0 | 3 | 4 | 10 | 7 |
| Bad health, age | 0 | 0 | 13 | 85 | 0 | 0 |
| Future study | 0 | 1 | 1 | 0 | 1 | 1 |
| Translation | 0 | 0 | 0 | 1 | 1 | 0 |
| Emigration | 1 | 0 | 3 | 1 | 3 | 0 |
| Sub total | 148 | 105 | 156 | 144 | 153 | 175 |
| Total | 253 | | 300 | | 328 | |

'Call To Address Reasons For Professional Brain Drain,' 'Bid To Halt Brain Drain,' 'Government Tries To Stop Brain Drain,' 'We Have To Halt The Brain Drain,' and 'Brain Drain Unaffordable,' are a few examples protesting the shortage of doctors in SA. In comparing the data from the sending country (SA) and the receiving countries, one encounters the classic problem of flow versus stock data. The sending country has only incomplete flow data on persons leaving during the year while the receiving country may in principle have both flow and stock data. It is therefore best to compare flow data of one country with flow data of the other country. With regard to reported data, the closest comparison that can be made is between census data in the receiving country and commulative flow from the sending country. In Canada, Statistics Canada conducts a census every five years from which they provide stock statistics on foreign-born populations resident in Canada. In the comparative assessment, the census data available at three dates were used. In addition, flow statistics on SA citizens granted permanent residence in Canada are published annually by the Department of Citizenship and Immigration Canada.

According to the South African Ministry of Health, the emigration of doctors has to be regulated according to a bilateral agreement between involved countries. At the same time, SA must make greater efforts to accommodate and acclimatize foreign doctors. The Minister of Finance recommended that SA should be listening closely to the reasons for doctors leaving. Through interviews with many doctors the media found that the

main reason was a need for safety. Cost of living and remuneration came second, contrary to the belief of the authority of SA that remuneration is the main reason. The work environment in terms of supporting nursing staff, language interpretation, and hospital medical facilities became the final legitimate reason for doctors' resignation and emigration.

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# The role of introduced forage species in sustainable cattle-pasture development in the Gran Pajonal, Amazonian Peru

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*Abstract:* Marked improvements in sustainable fodder production resulted from the adoption of exotic forage grass and legume species in western Amazonia. On the plateau of the Gran Pajonal in the *Montaña* (rain forest region) of eastern Peru early efforts at cattle production by *campesinos* (colonists) were focused primarily on grazing the rough pastures of anthropogenically produced *pajonales* (grasslands). These *pajonales* have resulted from a long history of burning some abandoned *chacras* (shifting-cultivation fields) developed by the native Asheninka. Volunteer endemic species in these annually-burned *pajonales* provide browse of modest biomass, low palatability, and limited nutritional value. In addition, they provide little soil protection from water erosion. In the 1970s two African grass species, *braquiaria* (*Brachiaria decumbens*) and *brizantha* (*B. brizantha*), received wide acceptance in eastern Peru. Since 1976, 3,500 ha of Gran Pajonal rain forest have been felled, burned over and are now planted to *braquiaria*. These new improved pastures (*pastales*) provide palatable, nutritious forage of high biomass. *Braquiaria* also produces a dense surface sward which protects the soil from serious erosion, and does not require dry-season burning. While *pajonales* are still used for rough grazing, it is concluded that the new *pastales* provide superior forage, and are sustainable when not overgrazed.

Key words: *beef-cattle, introduced species, braquiaria, pasture, shifting-cultivation*

## Introduction

In 1999 there were 4.9 million cattle and 14. 4 million sheep in Peru, most being located above 2,200 m in the Andes. Below, and to the east of

the Andes, is the *Montaña* or rain forest region which covers 63% of the country but supports only 11% of the population (Vera, 2000). Efforts at improving beef and milk-cattle production in this *Montaña* region have been fraught with difficulties. These included; 1) conflicts between *campesinos* (colonists) and both native peoples and guerillas, 2) poor nutritional quality of forage, 3) land management practices that degrade forage and soil, 4) cattle diseases such as hoof-and-mouth (*aftosa*), and 5) distance from markets (SENASA, 2002; Holmann, 1999; Scott, 1992). Early efforts at large-scale ranching after the 1940s often proved unsustainable, although *campesino* families practicing mixed farming had modest successes grazing small numbers of cattle on existing pasture (*pajonal)*, or on abandoned *chacras* (shifting-cultivation fields) seeded to native forage species. Dry-season grass die-back often necessitated the burning of *pajonales* to rid them of invading shrubby/woody vegetation and encourage the sprouting of new browse. This, however, only exacerbated soil erosion by exposing the soil. Since the 1970s forage has been greatly improved by the introduction of a number of African grass species having high nutritive value and good palatability (White et al., 2001; Vela, 1995). In addition, herbaceous legumes have been introduced from other regions of South America to enhance availability of soil nitrogen.

This paper examines the consequences of introducing exotic species to the process of sustainable beef-cattle pasture/forage production in the Gran Pajonal (Figure 1). Some comparisons will also be made with dual-purpose dairy-beef developments elsewhere in the *Montaña*, particularly around major centres such as Tambopata 450 km to the southeast, and Pucallpa and Yarimaguas 180 km to the north. Field studies were carried out over 16 months during the years 1969, 1971, 1976 and 2003.

## The Gran Pajonal Region

The heartland of the Gran Pajonal is presently home to over 4,500 *Asheninka* Indians (Inst. Bien Commun, 2003), as well as some 1,400 colonists originating from the high Andean provinces. These settlers *(campesinos* or *colonos)* live in and around the village of Oventeni which they founded in 1937 on a dried-up lake bed *pajonal* suitable for an air strip. A mission soon followed, and in 1969 the village itself had about 250 inhabitants, with some additional families living away from the village close to their *chacras* and coffee plantations. By 2003 Oventeni had expanded to some 800. In the late1990s the Federal Government formalized 30 native Asheninka communities on ancestral lands with title,
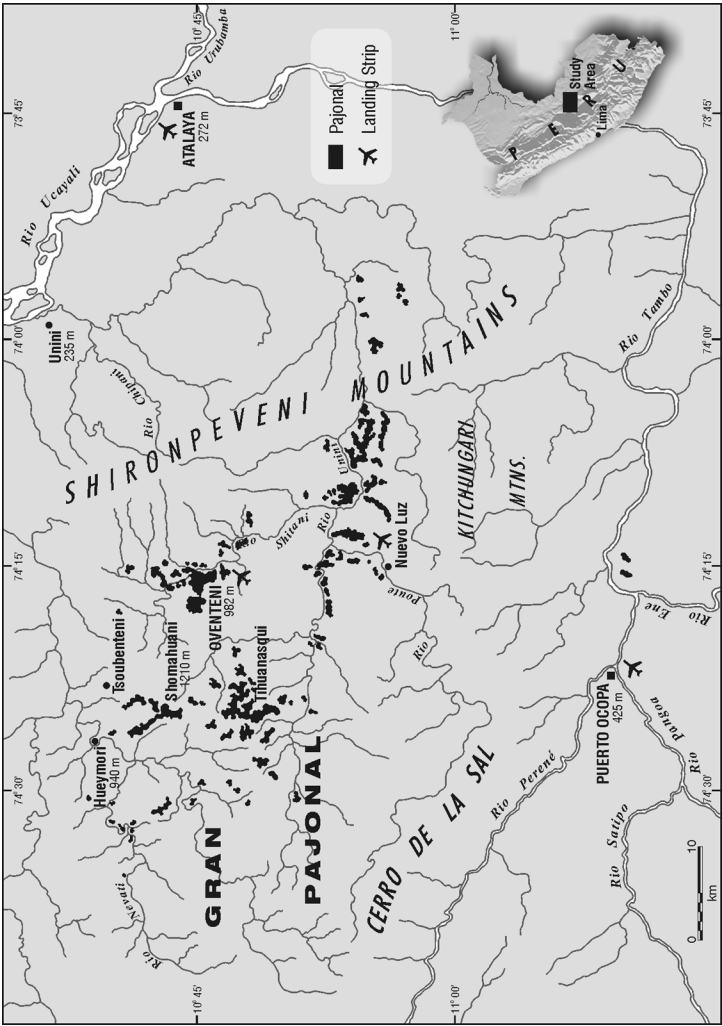
***Figure 1:*** *Location of the Gran Pajonal, Alto Ucayali, Peru.*

provided elementary schools with teachers, and encouraged economic activities such as coffee growing to supplement their shifting cultivation and gathering (Inst. Bien Commun, 2002). At the same time *campesinos* were assigned title to a smaller territory primarily on the land they already occupied around Oventeni, and today no new *campesino* families are permitted entry. Access to the region is by foot, horseback or Cessna, and a dry-season earthen road is under construction between Oventeni and Puerto Ocopa to the south (Figure 1).

The Gran Pajonal is classified as having a montane humid tropical climate. The elevation at Oventeni is 982 m. Mean monthly temperatures range from 21 - 23° C, and mean annual rainfall exceeds 2,100 mm with a three-month soil-moisture deficit period (ONERN, 1968). This dryer season lasts from June to August, while the very wet part of the rainy season lasts from January to April. Vegetation is montane evergreen rain forest peppered with over 9,700 ha of small anthropogenic grasslands (called *pajonales* after *pajo*, the Spanish word for straw). In contrast to the forest soils which retain available soil moisture year-round and therefore support evergreen trees, *pajonal* soils become droughty in the dry season, and the herbaceous cover dies back becoming flammable. These *pajonales* owe their origin to a long history of *Asheninka* shifting cultivation followed by annual dry-season burning (Chrostowski and Denevan, 1970; Scott, 1977). In addition, there are active shifting cultivation gardens (*chacras*), secondary forest growth (*purma*) on abandoned *chacras*, coffee plantations, and at least 3,500 ha of post-1975 pasture (*pastales*) created primarily by the *campesinos*. The Gran Pajonal plateau is effectively isolated as its heartland is surrounded to the east and south by low mountains, and in all other directions by deeply incised valleys and steeply undulating terrain with almost unbroken forest (Figure 1).

## Cattle Production up to the 1970s

Up to the 1970s *campesino* cattle grazed native *pajonal* pasture almost exclusively, though fodder was occasionally supplemented by seeding more nutritious *chacra*-grown grasses such as the endemics *yaragua* (*Hyparrhenia rufa*) and *castillo* (*Panicum maximum*). This combination of low nutrient status *pajonal* soils and native forage species that are low-to-moderate in terms of palatability and nutrition, limited cattle production. In addition, these native species do not maintain productivity throughout the dry season, and die-back. *Hyparrhenia rufa* is also rapidly degraded following grazing (Portillo, 1994).

The Asheninka had created these *pajonales* for reasons other than grazing domesticated animals, and they maintained the herbaceous cover by annual dry-season burning. *Campesinos* also burned *pajonal* cover to rid it of undesirable woody invaders, and to promote fresh browse. Native forage species include the grasses *torourco* (*Axonopus compressus* and *Paspalum conjugatum*), and *kieshe* (*Andropogon* spp.), and the occasional herbaceous legume such as *Desmodium adscendens*. *Pajonales*, such as the Obenteni *pajonal* itself, were often successfully invaded by woody species as overgrazing left little fuel for a killing dry-season burn. As a result a scrub cover or 'cattle purma' developed and had to be cut by machete, an unpopular chore of the children (Scott, 1979). In the late 1950s a Lima-based company, Ganadera Forestal, set up Hacienda Shomahuani to the west with several hundred head grazing *pajonal* supplemented with chacra-grown *yaragua* and *castillo*. However, due to theft by guerillas (in the early sixties), distance to market, and poor nutrition, the hacienda was abandoned in 1968 (Chrostowski and Denevan, 1970). Getting cattle to market requires a 4 - 5-day drive over very rugged country through Puerto Ocopa to Satipo, or cattle are slaughtered, quartered and flown to Satipo by Cessna. In 1976 I estimated there to be only 300 cattle in all of the Gran Pajonal, while the mainstay of the *campesino* economy at that time was coffee, and that of the Asheninka was primarily shifting cultivation (Scott, 1979).

## Cattle Production since the 1970s

In the 1970s and 1980s the National Institute for Agricultural Research (INIA) made great strides in encouraging the adoption of introduced grass (Table 1) and legume fodder species. In addition, they promoted the production and availability of seed (Vela, 1995). Of these introductions, braquiaria (Brachiaria decumbens) was the one most readily accepted by Gran Pajonal campesinos. The early introduction and use of pasto San Martin (Andropogon gayanus) was discontinued after braquiaria was introduced to the Gran Pajonal in the early 1980's. Braquiaria was used in three ways. Existing pastales were re-seeded to braquiaria, new chacras were cropped for one-to-three years and then immediately seeded to braquiaria, and large areas of forest were felled as if for shifting cultivation, but were then seeded directly to grass (Figure 2 B). This sequence was similar to other parts of Peru except that outside the Gran Pajonal B. brizantha, B. dictioneura and B. humidicola play a small but significant role (Vera, 2000). Of note is that while for the Montaña as a whole the use

***Table 1:*** *Principal exotic forage grass species adopted in Amazonian Peru (Vela, 1995).*

| Scientific Name | Local Name | Origin and Year of Introduction to Peru | Year of Introduction to Gran Pajonal* |
|---|---|---|---|
| *Brachiaria decumbens* | *brachiaria* | Africa, 1950s | 1983/84 |
| *Brachiaria brizantha* | *brizantha* | Africa, year unknown | 1998 |
| *Andropogon gayanus* | *pasto San Martin* | Africa, 1942 | 1982 |
| *Brachiaria dictyoneura* | *dictyoneura* | Africa, 1978 | not here |
| *Brachiaria humidicola* | *humidicola* | Africa, year unknown | not here |

* Personal communication, Ing. K. Luna, Agricultural Experimental Station, Oventeni, 2003.

of Bracharia spp. increased from 15.5 % to 40 % of pasture cover between 1982 and 1996 (White et al., 2001), by 2003 well over 90% of pastales in the Gran Pajonal were braquiaria-dominated. In 1998 the very palatable and nutritious brizantha was eventually introduced, and patches of it are now grown in some chacras as a cattle and sheep feed supplement.

By 2003 some 5,000 cattle (mostly Brown Swiss/Brahman crosses) grazed over 3,500 ha of the new *braquaria*-dominated *pastales*, as well as at least an equal area of *pajonales*. In addition there are several thousand sheep, the lambs being a specialty in Lima during Easter (Ing. K. Luna, personal communication, 2003). The dramatic acceptance of *Braquiaria* in the Gran Pajonal is not just because conditions are very suited to its growth, but because it provides a superior fodder, has excellent palatability and nutritional value, is resistant to fire, and competes well against weed invaders. Its stoloniferous habit produces a dense sward which provides good protection from soil erosion year-round except on overgrazed hill slopes and trails. In addition, its $C_4$ photosynthetic pathway helps it remain green usually throughout the three-month dry season. Unfortunately it is susceptible to infestations by the insect *salivaso* (*Zulia* sp., a spittlebug) which can reduce biomass production (Holmann and Peck, 2002). While *salivaso* is not as yet a problem here, its presence was first detected in the Gran Pajonal in 2002 (S. Sanchez, personal communication, 2003). In addition, while INIA has recommended new *pastales* include exotic legumes of the *Stylosanthes*, *Desmodium* and *Centrosema* genera, because of the known beneficial relationship between forage biomass production and soil nitrogen (Vela, 1995), planting legumes has received little attention
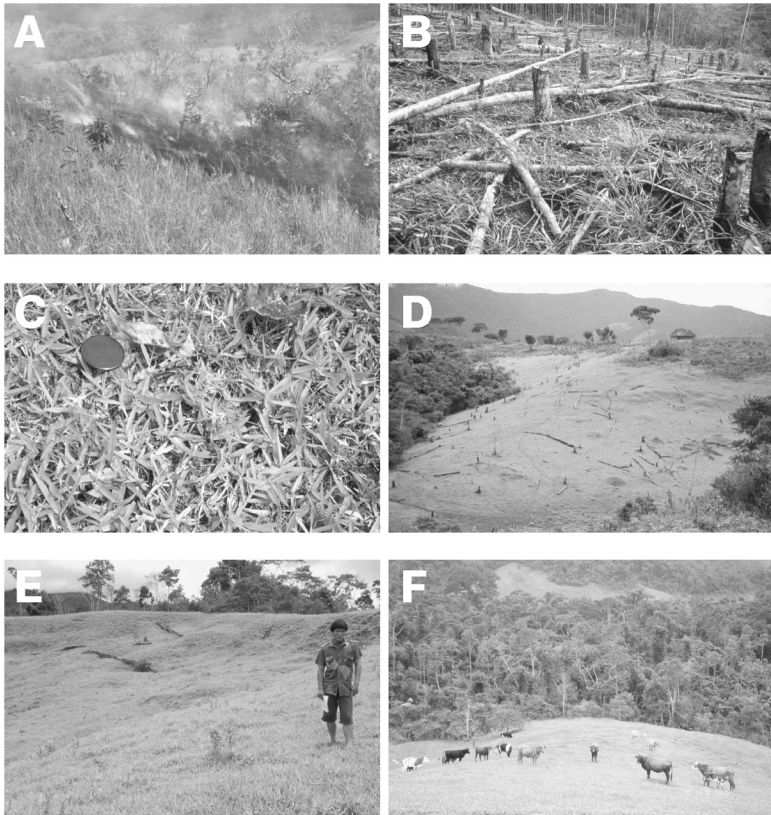
**Figure 2:** *Gran Pajonal landscapes. A. Dry-season burn of cattle* purma *(shrub* pajonal) *east of Oventeni (1976). B. New* chacra *planted to* braquiaria *to form* pastal *(2003). C. Heavily grazed* braquiaria pastal *(2003). D, E and F.* Braquiaria pastales, *8, 22 and 25 years old respectively (2003).*

here. One *campesino* explained he felt no pressure to do this because native legumes such as *Desmodium adscendens* volunteered in small amounts in any event. Elsewhere in Peru the acceptance of forage legumes has likewise been minimal (Vera, 2000). Fortunately modest pasture rotation is practiced as is evidenced by the expense devoted to barbed wire fencing and intact forest strips separating individual *pastales* on a property.

**Table 2:** *Comparitive mean pH values for six* pajonal *and six* pastal soil *profiles, 2003, using a Palintest 'Colour-Comparison Tester'. For detailed forest,* chacra *and* pajonal *soil nutrient inventories see Scott (1981, 1979).*

| Depth (cm) | Old *pajonal* pH | pastal (10-25 years) pH |
|------------|------------------|--------------------------|
| 0 - 3      | 4.60             | 5.2                      |
| 3 - 6      | 4.65             | 5.04                     |
| 6 - 9      | 4.70             | 4.95                     |
| 9 - 12     | 4.78             | 4.84                     |

## *Pastal* and Cattle Production Sustainability

Factors such as soil protection, pasture management, and beef-cattle health and access to markets, impact on the sustainability of the overall agrosylvopastrol activities of the Gran Pajonal inhabitants. A comparison of *pastal* with *pajonal* topsoils indicates marked difference in horizon thicknesses, colour, structure and pH. The dark organic-stained Ah horizon under *pastal* is frequently greater than 15 cm thick, which is two-to-three times thicker than under long-established *pajonal*. Munsell notations (dry) are often 1.5 units of colour value lower (darker) in the upper six cm of *pastal* profiles, which is interpreted as a much higher organic matter content. *Pastal* soil colour values below 9 cm are generally at least 2 units darker than their equivalent *pajonal* profiles because at this depth the organic-stained Ah has already given way to a red-yellow B horizon. At Yarimaguas, Alegre et al. (1996) found soil carbon values under well-developed *braquaria* pastal was 72.6 t/ha, while the equivalent value under degraded grassland was only 54.5 t/ha. In the Gran Pajonal mean values for forest/new *chacra* soil organic matter contents are 184.8 t/ha, while the equivalent value under *pajonal* is 79.22 t/ha (Scott, 1979). These studies suggest that *pastal* topsoils retain a CEC not much lower than under the original forest, and certainly higher than under *pajonal*. Add to this the higher *pastal* pH values (Table 2) and it is concluded that the overall base saturation % and available nutrient cation levels are higher than under *pajonal*. This higher base inventory indicates that many of the fertilizing

bases released as ash by burning of forest slash remain. This is attributed to the shorter period of cropping followed immediately by planting *braquaria*, or more often today, the direct seeding of grass into a newly prepared *chacra* (Figure 2 B) and the soil's subsequent protection under the thick sward. The photograph sequence (Figure 2 D, E and F) shows, however, that as *pastales* age, nutrients are still provided to the soil as old tree trunks continue to mineralize. Figure 2 E illustrates a *pastal* prepared in 1981 which still has some undecomposed trunks, so 25 years could well represent the maximum time for total trunk/stump decomposition. Particularly significant is that the higher organic matter biomass in *pastal* topsoil permits a greater dry-season moisture retention than under *pajonal*, which in turn allows for greater browse availability until the rains return.

Of importance is that the absence of the annual dry-season burn, which is so characteristic of *pajonal*, allows for a greater overall recycling of nutrients under *pastal*, and the stoloniferous nature and surface creeping habit of *braquaria* greatly reduces erosion. Figure 2 C illustrates how even a quite heavily grazed *braquaria* cover protects the surface from water erosion and promotes infiltration. While previous studies show soils under developing *pajonal* can deteriorate in as little as ten years (Scott, 1987, 1981), *pastal* soils do not as yet show such signs except where overgrazed on steep slopes. Generally, excellent spheroidal structure and less compacted *pastal* Ah horizons contrast sharply with the more compacted and very much lower infiltration properties of old *pajonal* (Scott, 1981). In some heavily grazed *pastales,* however, signs of modest soil profile alteration can be seen in the development of cattle terracettes, trail gullies and occasionally, on steep slopes, clearly visible red subsoil under thin vegetation cover. Rarely have true gullies developed, with the deepest encountered being 3.5 m in 25-year-old *pastal*. Occasionally another sign of pasture deterioration is seen where cattle not only overgraze, but cause compaction and puddling, leaving hoof prints that often retain surface water well into the dry season. A natural response to this is the colonization by such weed species as the sedge *Cyperus miliifolius*. While soil compaction from mechanical forest clearing is absent in the Gran pajonal, the compaction from cattles' hooves is sufficient to initiate weed invasion. In the Yarimaguas region Portillo (1997) and Alegre and Cassel (1996) have shown soil compaction to be a significant threat to *braquiaria* and legume-grass pasture sustainability, particularly under intense grazing pressure.

Cattle production in the Gran Pajonal has increased over the last 20 years even though elsewhere in Peru this has not always been the case. During this time period road-accessible areas such as Tambopata showed rapid increases in pasture development between 1986 - 1991 due to

government-sponsored rural credit and guaranteed markets. This slowed dramatically after 1991 when rampant inflation caused austerity measures to be imposed (Alvarez and Naughton-Treves, 2002). At approximately the same time other regions showed dramatic declines due to *Sendero Luminoso* (SL or Shining Path) terrorist groups and cattle rustling. Around Pucallpa, cattle production dropped from 87,000 head in 1986 to 26,000 in 1995 (Holmann, 1999). While great disruptions resulted from SL activities just south of the Gran Pajonal along the Tambo and Perene rivers, there were only a few minor incursions into the region. To protect the local inhabitants the government set up two Rondas (local militias), one Asheninka and one *campesion*, and armed both with shotguns. Strangers are still met with suspicion until they have established some credibility, and as noted above, no new settlers are allowed to enter the region.

Although Gran pajonal cattle are normally vaccinated against *aftosa* (hoof and mouth disease) this disease has never been present here. While there were six outbreaks elsewhere in Peru in 2000, none have been reported since then (SENASA, 2003). Isolation may have helped to prevent Gran Pajonal outbreaks to date, but this isolation will be overcome when the dry-season road is completed to Puerto Ocopa. With road completion the economic conditions and products of the region may be greatly altered as it is estimated that road transportation costs will only be half that of air transport.

## Conclusion

The introduction of the African forage species *braquiaria* has greatly improved the productivity and sustainability of Gran Pajonal *pastales*. It is possible that in the future *salivaso* insects may reduce *braquiaria* productivity, so greater use may have to be made of *brizantha*, an almost identical species which tolerates these infestations, and recuperates rapidly (Vela, 1995). Likewise, *dictyoneura* may yet be introduced because it has not shown itself susceptible to *salivazo* elsewhere in Peru (Vela, 1995). Although little attention is yet given to seeding legumes because some native species volunteer anyway, they will deserve more attention when soil nitrogen levels inevitably decline. In addition, INIA-encouraged *pastal* rotation must be more effectively adopted.

It is concluded that the people in the Gran Pajonal may be adapting better to sustainable beef-cattle production than in many other parts of Peru. White et al.(2001) concludes that forest scarcity is a prerequisite for technology intensification, but in the Gran Pajonal some of this technology

has already been adopted even before forest scarcity has developed. This may be in part due to isolation and because increases in population are due to local births only and not because of immigration. It is likely that cattle production will continue to expand to accommodate natural increases in both the *campesino* and Asheninka populations, this being achieved at the expense of the remaining rain forest.

## Acknowledgements

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# Birding as a tool for conservation: preliminary development of an educational program to increase environmental awareness in the Assiniboine River Valley in Brandon, Manitoba.

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*Abstract:* Bird watching is a popular past-time for many people, ranging from throwing bread to ducks in a pond to experienced birders who spend hours observing and documenting bird behaviour. The objective of this project is to exploit the public fascination with birds in order to develop an educational program that increases environmental awareness in southwest Manitoba. The first stage of this project involves documentation of the species assemblage along the Assiniboine River in Brandon. Weekly bird surveys were carried out along public walking paths near the Brandon Riverbank Discovery Centre from mid-May to the end of September, 2003. The paths pass through a variety of habitats such as maple forests, native and non-native grasslands, marshland and riparian areas. With the help of volunteer birders from the Brandon Naturalist Society, information was recorded on the species observed, method of observation, habitat, and behaviour. This data is presented, along with preliminary examples of birding educational materials. This study is the beginning of a long-term project that will include the development of an interactive educational plan to be implemented at the Riverbank Discovery Centre in Brandon.

## Introduction

Between 1996 and 2001, the population of Brandon, Manitoba increased by 2% every year (Economic Development Brandon 2003). As Brandon becomes a larger urban centre, it is becoming increasingly important to keep Brandonites in touch with their natural environment through first-hand experience with natural areas. This can be achieved through the development of ecotourism programs that can attract people

of all ages to natural areas that are within the city limits and, therefore, are accessible to all people regardless of mobility or socio-economic status. The intrinsic respect that people will develop for nature through contact with these environments will hopefully be reflected in "environmentally-friendly" behaviours (Rome and Romero 1998; Neisenbaum and Gorka 2001).

The Assiniboine River Corridor is a nature conservation area in Brandon, providing an important habitat for many species of plants and wildlife, as well as "being a gathering place to connect people and nature" (Brandon Riverbank Inc. 2003). In 1995, the City of Brandon enacted the Assiniboine River Corridor Master Plan (ARCMP) (Lombard North Group 1995). The ARCMP outlined a strategy for the "enhancement, development and conservation of Brandon's Assiniboine River Corridor" (pg. 7). Conservation of the river habitat is to include the development of education and interpretive opportunities (Lombard North Group 1995). The two main objectives for education under the ARCMP include environmental education, and learning experiences. (pg. 9). Environmental education will "increase the visitor's and community's understanding and sensitivity to the dynamics of the River's environment by making provisions for people to experience and appreciate the Assiniboine's natural qualities". (pg. 9). Learning experiences will "provide opportunities for family oriented learning experiences which enable access and enjoyment of natural eco-systems in balance with their conservation for future generations." (pg. 9). These goals can be accomplished through a comprehensive nature education initiative, which includes bird watching, for local residents and ecotourists.

Bird watching is a popular recreational activity in which people of all ages can participate. Activities range from buying birdfeeders for backyard bird watching to spending significant amounts of money on viewing equipment and travel (Dickinson and Edmondson 1996). As a result of its popularity, birdwatchers compose the largest sector of global ecotourism. In addition, birdwatchers tend to be educated, wealthy and committed; this makes them an excellent candidate for conservation education (Sekercioglu 2002). As the number of people participating in ecotourism activities, such as viewing and photographing wildlife, continues to increase, the number of recreational birdwatchers can be expected to increase as well. In Manitoba, wildlife viewing is the most important ecotourism related activity. After mammals, birds are the most important wildlife group associated with ecotourism in the province (Weaver *et al.* 1995).

This paper reports on the first stage of a multi-year education project that will use birds and the activity of bird watching as an educational tool

to increase the public fascination with birds in Brandon. In turn, a greater understanding of the environment, gained through bird watching, will hopefully lead to an increase in environmental conservation ideals in southwest Manitoba. The Assiniboine River Valley in Brandon is an ideal place to develop educational ecotourism programs based on birding, since it offers a variety of avian habitat types, including forested regions, wetlands, and native prairie grasslands.

The development of an effective educational program firstly requires baseline data of the bird species present along the Assiniboine River Corridor. The aim of this stage of the study is therefore to document bird species present during the summer months in the Assiniboine River Valley ecosystem in Brandon. We also present some initial educational tools developed for the beginning birder that will be implemented in education programs through the Brandon Riverbank Discovery Centre.

## Methods

The maps presented in this paper were created by digitizing land cover types directly from orthorectified aerial photographs of the area and ground-truthing to ensure accuracy. The habitat types present in the study are quite diverse, ranging from pavement to native grass prairie (Figure 1). Two walking trails at the Brandon Riverbank Discovery Centre were selected as study sites, labelled Pond Trail and Vireo Trail (Figure 2). A modified point count transect (Bibby *et al.* 2000) was utilized to census bird species along the paths. Bird data were not collected for abundance estimates but rather simple presence by location and date. Census points were established at 100 metre intervals along the path (i.e. not straight line), with 50 metre radii and were marked using Global Positioning System (GPS) technology. Due to path sinuosity, some census diameters overlapped (Figure 2); however since only occurrence was recorded no bias was present. Data were collected for 3-minute periods at each census point, recording: 1) species type, 2) cardinal direction or observation, 3) type of observation (visual or audio), 4) number of individuals, and 5) behaviour (e.g. flying, perching, singing, calling.) A total of 20 surveys were completed for each trail. Data were collected along both transects twice weekly from May 20 to June 11, 2003, during spring migration and breeding, and once a week from June 17 to September 23, 2003. Four days were cancelled due to weather conditions, such as rain or wind speed exceeding 25 km/hr, and volunteer availability. Skilled birders are essential in this type of research, often requiring researchers to hire or seek volunteer
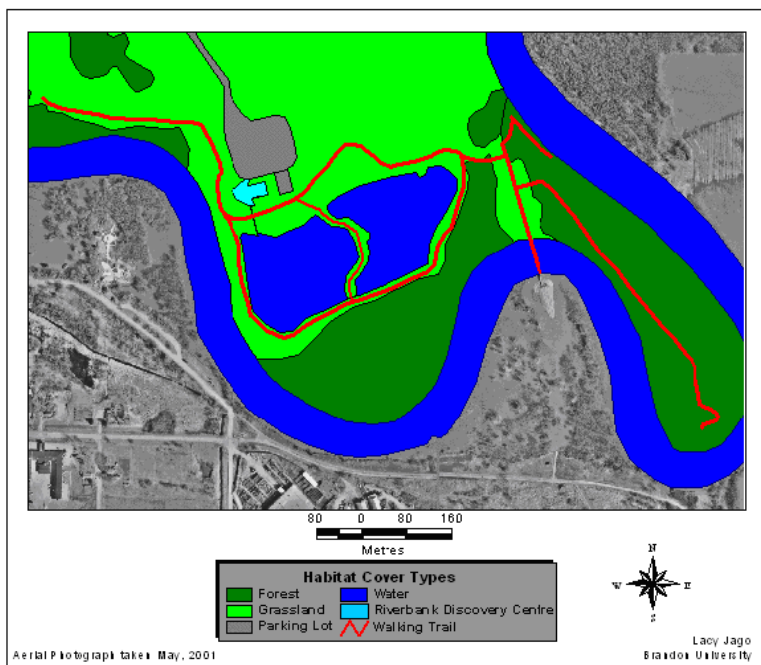
*Figure 1:* *Study area.*

expert research assistants (Hobson *et al.* 2002). In this study experienced volunteer birders from the Brandon Naturalist Society participated to help with species identification.

To begin development of the education portion of the project, the presence of bird species observed more than five times on the Pond Trail and the Vireo Trail was calculated for each month. This eliminates species that are quite difficult to observe and transients that may be very uncommon to the area. Due to weather conditions and volunteer availability, data were not collected on an equal number of days per month. Data were therefore corrected so that the number of census days per month was equal. The greatest number of observations for an individual species in each month was approximately 1000. Therefore, observations were grouped into four main "chance to observe" categories in multiples of ten: 0 = "Not Likely", 1 - 10 = "If You are Lucky", 11-100 = "Good Chance", and 101 - 1000 = "Very Good Chance". Each category was assigned a shade of green from light ("not likely") to dark ("very good chance") (Table 1). The purpose of this type of presentation is to provide inexperienced birdwatchers with a simple method of identifying the probability of viewing
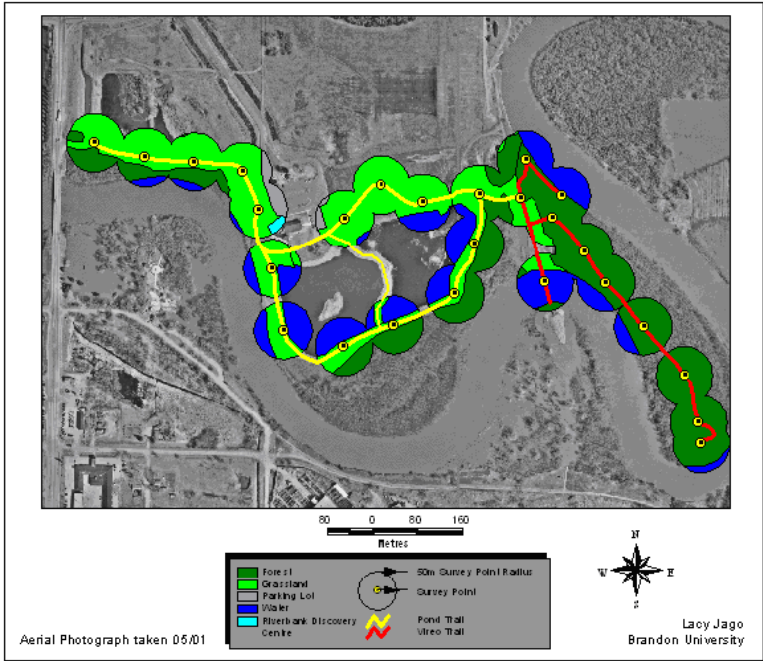
**Figure 2:** *Point census transects.*

specific species: 1) during general periods of the summer, and 2) in different environments along the trail.

For a birding education program to be successful, it is important to include the two different methods of observation: visual and audio. During the surveys birds were observed both by sight and by ear. The percentage of visual versus audio observations was calculated for each bird observed more than five times, for each trail. Each species were classified into one of three categories: "most likely to hear", "most likely to see", or "may see or hear". A threshold of 75% was applied for classification. For example, a species identified by sight 75% of the time or more was classified as "most likely to see". Species that did not reach 75% for either visual or audio were classified as "may see of hear". For educational purposes, these tables can be simplified to include only the species names and a corresponding colour.

Birds that were observed less than five times in the study will also be incorporated into future education programs, although separate from species viewed more frequently.

**Table 1:** *"Chance to Observe" and primary observation method for bird species observed more than 5 times on the Pond Trail.*

| Species | Scientific name | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| Wood Duck | *Aix sponsa* | | | | | |
| Mallard | *Anas platyrhynchos* | | | | | |
| Blue-winged Teal | *Anas discors* | | | | | |
| Canada Goose | *Branta canadensis* | | | | | |
| Pied-billed Grebe | *Podilymbus podiceps* | | | | | |
| Killdeer | *Charadrius vociferus* | | | | | |
| Ring-billed Gull | *Larus delawarensis* | | | | | |
| Spotted Sandpiper | *Actitis macularia* | | | | | |
| Rock Dove | *Columba livia* | | | | | |
| Mourning Dove | *Zenaida macroura* | | | | | |
| Belted Kingfisher | *Ceryle alcyon* | | | | | |
| Northern Flicker | *Colaptes auratus* | | | | | |
| Barn Swallow | *Hirundo rustica* | | | | | |
| Cliff Swallow | *Petrochelidon pyrrhonota* | | | | | |
| Least Flycatcher | *Empidonax miminus* | | | | | |
| Gray Crested Flycatcher | *Myiarchus crinitus* | | | | | |
| Eastern Kingbird | *Tyrannus tyrannus* | | | | | |
| American Robin | *Turdus migratorius* | | | | | |
| Cedar Waxwing | *Bombycilla cedrorum* | | | | | |
| American Crow | *Corvus brachyrhynchos* | | | | | |
| Gray Catbird | *Dumetella carolinensis* | | | | | |
| Black-capped Chickadee | *Poecile atricapilla* | | | | | |
| Marsh Wren | *Cistothorus palustris* | | | | | |
| House Wren | *Troglodytes aedon* | | | | | |
| Warbling Vireo | *Vireo gilvus* | | | | | |
| Red-eyed Vireo | *Vireo olivaceus* | | | | | |
| Common Yellowthroat | *Geothlypis trichas* | | | | | |
| Red-winged Blackbird | *Agelaius phoeniceus* | | | | | |
| Brewer's Blackbird | *Euphagus cyanocephalus* | | | | | |
| Brown-headed Cowbird | *Molothrus ater* | | | | | |
| Yellow-headed Blackbird | *Xanthocephalus xanthocephalus* | | | | | |
| Yellow Warbler | *Dendroica petechia* | | | | | |
| Yellow-rumped Warbler | *Dendroica coronata* | | | | | |
| Song Sparrow | *Melospiza melodia* | | | | | |
| Clay-colored Sparrow | *Spizella pallida* | | | | | |
| Chipping Sparrow | *Spizella passerina* | | | | | |
| American Goldfinch | *Carduelis tristis* | | | | | |

**Observation Method**

| | |
|---|---|
| | Most Likely to Hear |
| | Most Likely to See |
| | May Hear or See |

**"Chance to Observe" per Month**

| | |
|---|---|
| | Not Likely |
| | If You're Lucky |
| | Good Chance |
| | Very Good Chance |

***Figure 3:*** *Most likely areas to observe the American goldfinch (*Carduelis tristis*).*

Two individual species birding maps (American goldfinch (*Carduelis tristis*) and the red-winged blackbird (*Agelaius phoeniceus*)) (Figures 3 and 4) were also developed using the "chance to observe" concept. The trails were classified into segments by survey transect circle. The "chance to observe" factor was calculated for each species and the appropriate colour applied to each segment. In addition, a cardinal direction arrow was added for each survey point location corresponding to the most common direction in which the species was observed.

## Results and Discussion

A total of 80 species were observed during this time period. On the Pond Trail, 68 species were observed; 55.9% were observed more than five times during the census period. On the Vireo Trail, 50 species were observed; 46% were observed more than five times.

Due to the open nature of the habitat surrounding the Pond Trail, species were primarily identified visually, while the dense vegetation of
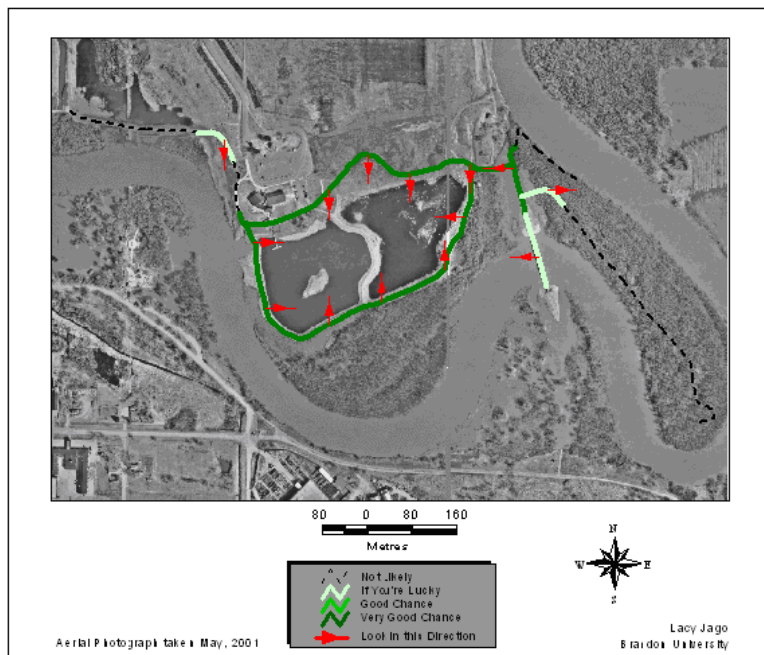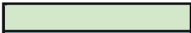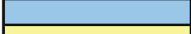
*Figure 4: Most likely areas to observe the red-winged blackbird (*Agelaius phoeniceus*).*

the Vireo Trail made visual identification difficult; in this instance, identification was primarily by bird vocalizations. For example, in bird species observed more than five times, 51% of species were identified visually on the Pond Trail, while only 26% of species were identified visually on the Vireo Trail. Some species, such as the red-winged blackbird and the American crow (*Corvus brachyrhynchos*) have loud vocalizations that may restrict identification of other species that are quieter. Also, some birds are easier to see because of colour, size and behaviour. These will be important aspects in the development of educational programs.

The data were used to develop some initial educational materials. Tables 1 and 2 demonstrate how likely an observer walking the trails might encounter each species during the summer months, along with the likelihood of audio or visual observation. Figures 3 and 4 allow birders to identify where on the trails the American goldfinch and the red-winged blackbird can most likely be found. Using these materials (along with identification pictures) a beginner bird watcher can identify which bird species is likely being observed by the time of year and location on the paths. This is a simpler method, designed for a particular location, than a

**Table 2:** *"Chance to Observe" and primary observation method for species observed more than 5 times on the Vireo Trail.*

| | | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| **Mallard** | *Anas platyrhynchos* | | | | | |
| **Franklin's Gull** | *Larus pipizcan* | | | | | |
| **Spotted Sandpiper** | *Actitis macularia* | | | | | |
| **Rock Dove** | *Columba livia* | | | | | |
| **Northern Flicker** | *Colaptes auratus* | | | | | |
| **Downy Woodpecker** | *Picoides pubescens* | | | | | |
| **Cliff Swallow** | *Petrochelidon pyrrhonota* | | | | | |
| **Least Flycatcher** | *Empidonax miminus* | | | | | |
| **American Robin** | *Turdus migratorius* | | | | | |
| **Gray Catbird** | *Dumetella carolinensis* | | | | | |
| **Black-capped Chickadee** | *Poecile atricapilla* | | | | | |
| **White-breasted Nuthatch** | *Sitta carolinensis* | | | | | |
| **Red-eyed Vireo** | *Vireo olivaceus* | | | | | |
| **Warbling Vireo** | *Vireo gilvus* | | | | | |
| **Yellow Throated Vireo** | *Vireo flavifrons* | | | | | |
| **Chestnut-sided Warbler** | *Dendroica pensylvanica* | | | | | |
| **Common Yellowthroat** | *Geothlypis trichas* | | | | | |
| **Red-winged Blackbird** | *Agelaius phoeniceus* | | | | | |
| **Brown-headed Cowbird** | *Molothrus ater* | | | | | |
| **Yellow Warbler** | *Dendroica petechia* | | | | | |
| **Song Sparrow** | *Melospiza melodia* | | | | | |
| **Clay-colored Sparrow** | *Spizella pallida* | | | | | |
| **American Goldfinch** | *Carduelis tristis* | | | | | |

**Observation Method**

- Most Likely to Hear
- Most Likely to See
- May Hear or See

**"Chance to Observe" per Month**

- Not Likely
- If You're Lucky
- Good Chance
- Very Good Chance

field guide with many possible bird species, organized by family, to choose from.

Birds that were observed less than five times in the study are presented in Tables 3 and 4 for each trail. The month (or months) in which they were observed is indicated in blue. It will be important to include these species as present in the area in the interpretive programs to teach about natural environmental variability. In addition: 1) some of these species may have been present more often during periods of time that we did not census, 2) this list may include species that are difficult to observe, or 3) this group may include species that are missed when other more visible and/or vocal species are present.

The collection of baseline bird data will continue in the spring and summer of 2004. With further research and study of education theory,

**Table 3:** *Birds observed less than five times on the pond trail and month of observation.*

| | | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| **Common Merganser** | *Mergus merganser* | | ■ | | | |
| **Red-necked Grebe** | *Podiceps grisegena* | | | | | ■ |
| | *Buteo swainsoni* | | | | | |
| **Swainson's Hawk** | *Bonaparte* | | | | | ■ |
| **Red-tailed Hawk** | *Buteo jamaicensis* | | | | | ■ |
| **Northern Harrier** | *Circus cyaneus* | | | | ■ | |
| **Great Blue Heron** | *Ardea herodias* | | ■ | | | |
| **American Bittern** | *Botaurus lentiginosus* | | | | ■ | |
| **American Coot** | *Fulica americana* | | | | ■ | |
| **Franklin's Gull** | *Larus pipizcan* | | ■ | | | |
| **Downy Woodpecker** | *Picoides pubescens* | | | ■ | | |
| **Hairy Woodpecker** | *Picoides villosus* | | ■ | | | |
| **Ruby-throated Hummingbird** | *Archilochus colunbris* | | | | ■ | |
| **Tree Swallow** | *Tachycineta bicolor* | | | | | |
| **Eastern Phoebe** | *Sayornis phoebe* | ■ | ■ | | | ■ |
| **Black-billed Magpie** | *Pica hudsonia* | ■ | | | | |
| **Brown Thrasher** | *Toxostoma rufum* | | | ■ | | |
| **White-breasted Nuthatch** | *Sitta carolinensis* | | ■ | | | |
| **Crested Kinglet** | *Regulus calendula* | | | | | ■ |
| **Chestnut-sided Warbler** | *Dendroica pensylvanica* | ■ | | | | |
| **Northern Oriole** | *Icterus galbula* | ■ | | | | |
| **Common Grackle** | *Quiscalus quiscula* | ■ | | | | |
| **Eastern Meadowlark** | *Sturnella neglecta* | ■ | | | | |
| **Palm Warbler** | *Dendroica palmarum* | | | | | ■ |
| **House Sparrow** | *Passer domesticus* | ■ | ■ | | | |
| **Savanna Sparrow** | *Passerculus sandwichensis* | | ■ | ■ | | |
| **Vesper Sparrow** | *Pooecetes gramineus* | | | | | |
| **Harris's Sparrow** | *Zonotrichia querula* | | | | | |
| **White-throated Sparrow** | *Zonotrichia albicollis* | | | | | ■ |
| **Purple Finch** | *Carpodacus purpureus* | | | | | |

future development of an educational program to be implemented at the Riverbank Discovery Centre in Brandon is planned to include:

1. A series of maps, such as that depicted in Figures 3 and 4 for common species along the trail.
2. A CD-ROM audio/visual presentation in the Riverbank Discovery Centre building including information on all bird species observed on the Pond and Vireo Trails, as well as environmental education and conservation issues such as birding etiquette and preservation of bird habitats.
3. Interpretive signage located at various locations along the trail and a companion pamphlet with information on habitat, feeding and breeding behaviour, and conservation requirements.

**Table 4:** *Birds observed less than five times on the vireo trail and month of observation.*

| | | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| **Blue-winged Teal** | *Anas discors* | | ■ | | | |
| **Canada Goose** | *Branta canadensis* | ■ | | | | |
| **Common Merganser** | *Mergus merganser* | | ■ | | | |
| **Sharp-Shinned Hawk** | *Accipiter striatus* | | | | ■ | ■ |
| **Killdeer** | *Charadrius vociferus* | | ■ | | | |
| **Mourning Dove** | *Zenaida macroura* | | | ■ | | |
| **Belted Kingfisher** | *Ceryle alcyon* | | | ■ | ■ | |
| **Hairy Woodpecker** | *Picoides villosus* | | | | | |
| **Yellow-bellied Sapsucker** | *Sphyrapicus varius* | ■ | | | | |
| **Eastern Wood-Pewee** | *Contopus virens* | | | | | ■ |
| **Gray Crested Flycatcher** | *Myiarchus crinitus* | | | | | ■ |
| **Swainson's Thrush** | *Catharus ustulatus* | ■ | | | | |
| **Cedar Waxwing** | *Bombycilla cedrorum* | | | | ■ | |
| **Blue Jay** | *Cyanocitta cristata* | ■ | | | | |
| **Blue-headed Vireo** | *Vireo solitarius* | | | | | ■ |
| **Nashville Warbler** | *Vermivora ruficapilla* | | | | | ■ |
| **Orange-Crowned Warbler** | *Vermivora celata* | | | | | ■ |
| **Northern Oriole** | *Icterus galbula* | | ■ | | | |
| **Western Meadowlark** | *Sturnella neglecta* | | | | | ■ |
| **Yellow-rumped Warbler** | *Dendroica coronata* | | | | | ■ |
| **Palm Warbler** | *Dendroica palmarum* | | | | ■ | ■ |
| **Lincoln's Sparrow** | *Melospiza lincolnii* | | | | | ■ |
| **House Sparrow** | *Passer domesticus* | ■ | | | | |
| **Rose-Breasted Grosbeak** | *Pheucticus ludivicianus* | | | | | ■ |
| **White-throated Sparrow** | *Zonotrichia albicollis* | | | | | ■ |
| **Harris's Sparrow** | *Zonotrichia querula* | ■ | | | | |
| **House Finch** | *Carpodacus mexicanus* | | ■ | | | |

## Conclusion

In a society where television noise and the hum of traffic are more familiar than the melody of a bird's song, society's connection with nature is becoming insignificant in its daily urban lifestyle (Ehrenfeld 1993). The creation of simple, user-friendly environmental education programs that are easily accessible (i.e. within city limits where possible) are a realistic method to encourage a connection and respect for nature to a large number of people. Urban parks are ideal locations to deliver interpretive programs given that they often provide a variety of natural habitats within a relatively restricted area, such as the park areas that surround the Assiniboine River Valley in Brandon. Birds are a valuable resource in the development of such education plans since they are familiar to most people, relatively easy to observe and are linked to various parts of the ecosystem. As shown by this study, effective learning materials can be created using data obtained from a simple bird census.

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# Outburst flood in the upper Rolling River spillway, Riding Mountain uplands, Manitoba: a physiographic and sedimentological appraisal

**R.A. McGinn and K. Zaniewski, Brandon University.**

*Abstract:* The Upper Rolling River valley represents the eastern segment of a prominent spillway complex that initially drained supraglacial lakes on the Riding Mountain Uplands. It is speculated that a large supraglacial lake located to the northeast of the Upper Rolling River Spillway spilled over the stagnant ice to the southwest. The jökulhlaup-like flows poured into the Upper Rolling River Spillway backflooding into Glacial Lake Proven and effectively shutting down the primary outlet of the supraglacial lake. This paper examines the physiography of the Upper Rolling River Spillway and the sedimentary facies exposed in both the Upper Rolling River borrow pits and the Scandinavia gravel pit in order to assess the possibility that an outburst flood reversed the late Wisconsinan supraglacial flow in the Upper Rolling River Spillway. Physiographic, depositional and stratigraphic evidence supports the occurrence of a major late Wisconsinan flooding event in the Upper Rolling River valley. Over two metres of valley fill, an associated Hjulstrom-type delta and paleocurrent indicators suggest that the supraglacial flow was reversed in the Upper Rolling River Spillway system.

## Introduction

In the early 1960's R.W. Klassen mapped the surficial deposits of a major portion of the Riding Mountain Uplands, specifically, the Northern, Western and the western half of the Eastern Uplands and proposed a late Wisconsinan deglaciation scenario for the region (Klassen 1966). The proposed deglaciation sequence, however, remained in the original doctoral thesis and was not published elsewhere. Mihychuk and Groom (1979) published a preliminary mapping of the surficial deposits of the southeastern segment of the Eastern Uplands and throughout the last 25 years, McGinn has conducted field mapping in the Eastern and Western Uplands. Many of Klassen's sites were revisited as well as prominent

exposures marked on the Mihychuk and Groom preliminary map. Following this remapping, McGinn (1991) published a reconstruction of the late Wisconsinan deglaciation of the Riding Mountain Uplands as it pertained to the development and draining of prominent supraglacial lakes in the region.

Glacial ice covered the entire Riding Mountain area during the late Wisconsinan (20,000 - 12,000 B.P.) with ice flow generally towards the southeast (Klassen 1979). Waning and downmelting of the last ice advance, the Falconer Ice Advance (Fenton et al. 1983), resulted in the stagnation of glacial ice on the Riding Mountain Uplands. The Horod Moraine (Figure 1) is believed to be the hinge point for a two-stage ice stagnation model first postulated by Klassen (McGinn 2002). Meltwaters ponded over the stagnant ice on the Eastern Uplands, creating small thermokarst supraglacial lakes and later an integrated network of ice-walled supraglacial lakes (McGinn 1991). Klassen (1966) named the largest of these ice-walled lakes Glacial Lake Proven (Figure 1). Glacial Lake Proven appears to have begun as a small shallow ice marginal lake formed between the glaciofluvial marginal ridge the "Horod Moraine" and the stagnating ice of the Eastern Uplands (McGinn 1991, 2002).

Early Glacial Lake Proven drained over the stagnant ice into the Otter Lake sub-basin and then eastward into the Upper Rolling River - McFadden Valley - Polonia Trench spillway system (Figure 1). This spillway system was in operation for a long period of time, probably throughout the history of Glacial Lake Proven. At first the supraglacial meltwaters flowed eastward up the regional slope to the edge of the Manitoba Escarpment and then paralleled the crest of the escarpment, draining southward (McGinn 1991). The meltwater channel rapidly entrenched into the substratum and a subaqueous fan was deposited as the discharge entered a small supraglacial lake southeast of Glacial Lake Proven (McGinn1991).

An intriguing aspect of the deglaciation sequence proposed by McGinn (1991, 2002) is a flow reversal that occurs in the upper Rolling River Spillway. It is suggested that a glacial outburst flood accounts for the abandonment of the primary outlet through the Upper Rolling River-McFadden Valley-Polonia Trench to the Lower Rolling River outlet and current drainage (Figure 2 and 3). This event, a jökulhlaup, could have been caused by the sudden drainage of an ice/sediment-dammed lake, collapse of a subglacial meltwater reservoir or supraglacial lake overflow and its associated rapid ice/sediment channel incision. Although scanty, the evidence for this critical event is based on spillway channel physiography; paleocurrent observations taken from borrow pits in the
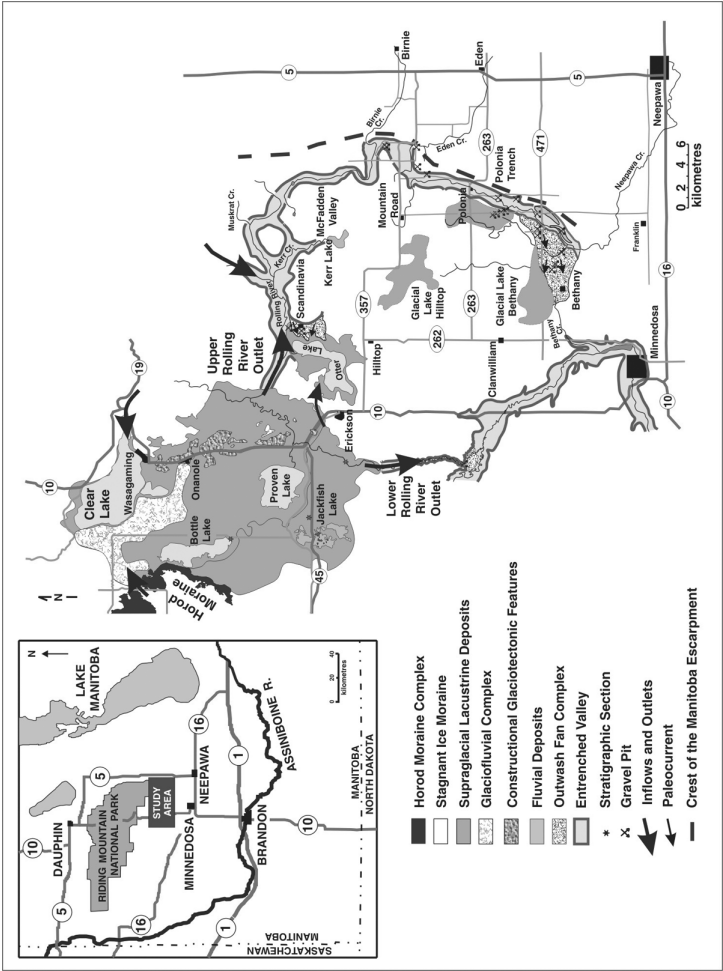
***Figure 1:*** *Surficial deposits in the Glacial Lake Proven basin and the McFadden Valley and Polonia Trench.*
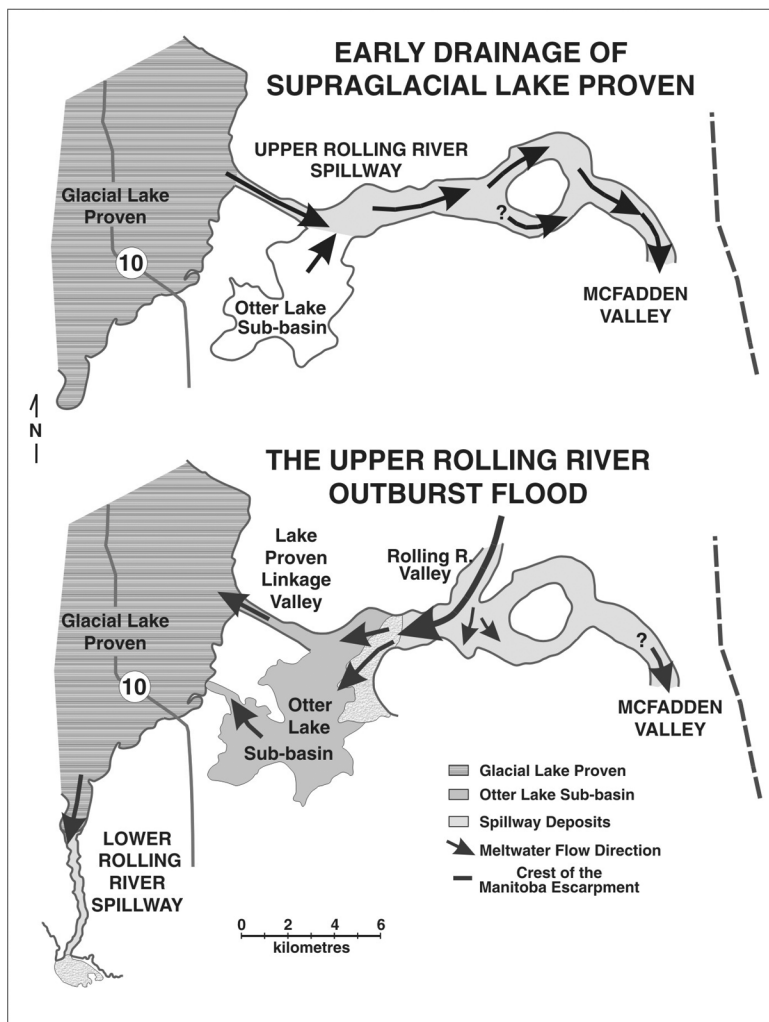
**Figure 2:** *Flow reversal in the Upper Rolling River Spillway System.*

Upper Rolling River Spillway and from the measurements and descriptions of sections in the Scandinavia Pit (Figure 3).

    The purpose of this study is to assess the possibility of an outburst flood reversing the late Wisconsinan supraglacial flow in the Upper Rolling River Spillway by re-examining the physiography of the Upper Rolling River Spillway and the sedimentary facies exposed in the Upper Rolling River borrow pits and the Scandinavia gravel pit.
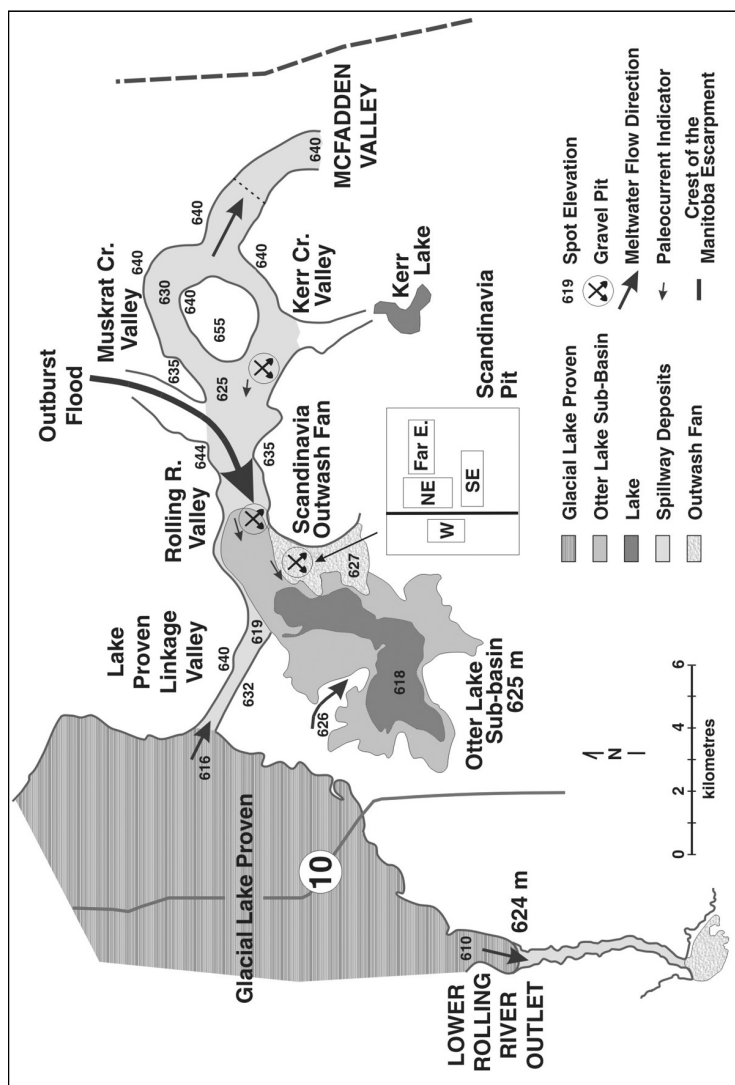
*Figure 3: The Upper Rolling River Spillway System.*

## Spillway Physiography

The Upper Rolling River Spillway may be subdivided into three valley reaches and a storage basin: the Muskrat Creek valley, the Rolling River valley, the Proven Lake basin valley linkage and the Otter Lake storage basin (Figure 3). McGinn's outburst flood (McGinn 1991, 2002), theoretically, would not affect the Muskrat Creek valley as the flow waters entered the spillway downstream of the Muskrat Creek interfluve. The flood, however, would impact on the Rolling River reach and perhaps the Proven Lake basin valley linkage. It could be argued that if the Otter Lake basin accommodated some of the discharge and attenuated the flow, the Proven Lake linkage might not have been significantly eroded.

Table 1 summarizes the reach and storage basin geometric parameters of the Upper Rolling River Spillway. The data were derived from the National Topographic Database and included a hypsometric elevation layer. The Spatial Analyst extension of the ArcGIS 8.2 was used to generate the TIN surface representation and to obtain numerous morphometric measurements, summarized in Table 1. The area analyzed corresponds with the NTS map sheet 62J12.

The physiography of the Upper Rolling River Spillway indicates that the 9-11m scoured depths in all three reaches are for the most part identical (Table 1), not an unexpected result since base level was probably unaffected by the supraglacial lake outburst. The width of the Rolling River valley

**Table 1:** *Physiography of the Upper Rolling River Spillway System.*

| Spillway Component | Length | Width | Depth |
|---|---|---|---|
| Spillway Channels | | | |
| Muskrat Creek Valley | 5400 m | 602 ±129 m | 10-11 m |
| Rolling River Valley | 6500 m | 1531 ±158 m | 10-11 m |
| Proven Lake Basin Link | 5200 m | 693 ±130 m | 9-10 m |
| Spillway valley rim | | | |
| Maximum height | 650 m | | |
| Minimum height | 632 m | | |
| Outwash fan | | | |
| Surface elevation | 627 m | | |
| Otter Lake Sub-basin | | | |
| Lake surface elevation | 618 m | Maximum Depth | 2 m |
| Lake surface elevation | 625 m | Maximum Depth | 9 m |
| Storage capacity | 205,000 dam$^3$ | | |
| Lake surface elevation | 631 m | Maximum Depth | 13 m |
| Storage capacity | 683,000 dam$^3$ | | |

segment, however, is twice that of Muskrat Creek valley and twice the width of the Proven Lake basin linkage valley (Table 1), suggesting greater lateral scour has occurred in the Rolling River valley. What accounts for the greater volume of erosion in this reach? It could be argued that it was associated with the outburst flood and that much of the scoured material was deposited in the Scandinavia outwash fan (Figures 2 and 3) as the flow entered the rising waters in the Otter Lake sub-basin (McGinn 1991).

Storage in the Otter Lake sub-basin has been calculated to exceed 205,000 dam$^3$ if post-outburst water levels were to rise seven metres from the current lake level (618 m) to 625 m elevation (Table 1). This storage value certainly would not contain the theoretical outburst flood but could attenuate the flow and back flood into Glacial Lake Proven. This could perhaps result in the raising of a non-supraglacial lake level to the topographic divide of 624 m, and spill down the Lower Rolling River. It is probable that the water levels in the Otter Lake sub-basin achieved 631m (4 m above the fan surface). Storage capacity at 631m elevation was estimated to be 683,000 dam$^3$ (Table 1). In this scenario, it is possible that back flooding could raise Glacial Lake Proven water levels above the supraglacial topographic divide.

The Scandinavia deposit (Mihychuk and Groom 1979) has the planimetric shape of a composite sandur or Hjulstrom-type delta deposited by northeastern and western flows entering the Otter Lake sub-basin (Figures 1, 2 and 3). Hjulstrom-type delta is a gently sloping, shallow water (subaqueous)-landform deposited at the distal end of a sandur plain (Benn and Evans, 1998).

## Sediments in the Upper Rolling River Spillway

### Upper Rolling River Borrow Pits:

The Upper Rolling River borrow pit (> 2m of fluvial sands and gravels) mapped by McGinn in 1989 has been landscaped. However a second borrow pit recently excavated in the lower reaches of the Kerr Creek exposed a 2 m thickness of fluvial sands and gravels. While there was no evidence of small-scale paleocurrent indicators (ripples, dune foresets etc.), the sand and gravel plane beds dip slightly towards the west. Pebbles were elongated down flow towards the west and the a-b planes paralleled the sedimentary surface.

**The Scandinavia Pit:**

The Scandinavia Pit exposes the sedimentary sequence deposited in the northern part of the Scandinavia deposit (Figure 2). The site was visited on five different occasions. Observations and photographs were taken. Four stratigraphic sections were described and textural, lithological and fabric samples were collected. The Scandinavia Pit can be subdivided into four working units: the inactive Far East Pit, the Northeast Pit, the Southeast Pit and the newly exposed and active West Pit (Figure 2). The Far East and Southeast pits have been inactive for many years. There appears to be no information available from the Mihychuk and Groom (1979) or Groom (1980) mappings. McGinn visited the Northeast Pit in 1989. Two photographs and west wall section notes are available for evaluation.

**The Northeast Pit: Description and Interpretation of the Stratigraphic Section:**

The general description of the west wall of the Northeast Pit (Appendix I) is derived from 1989 notes, sketches and photographs. Three stratigraphic units are described. Unit 1 is interpreted as a fluvial or glaciofluvial deposit of fine to medium gravels with well-sorted sand lenses. Unit 2 is described as a diamict-type deposit, a glacial till (melting ice facies), or more likely a mass transport deposit, perhaps laid down in an aqueous environment (a "flowtill"). Unit 3 is interpreted as massive glaciofluvial (ice contact) sands and gravels. Paleocurrent indicators (dune foresets) suggest a flow towards the west or southwest.

**The West Pit: Description and Interpretation of the Stratigraphic Sections:**

Four stratigraphic sections in the active West Pit were mapped, two along the south wall (S1 and S2) and two along the west wall (W1 and W2). Later the four sections were combined to produce a south wall view (S), a west wall view (W) and a composite stratigraphic section (Appendix II and Figure 4).

Three stratigraphic units have been identified. Unit 1 is described as a fining upwards, stratified, horizontally laminated deposit of sand and gravel. The a-b planes of flattened clasts parallel the sedimentary surface. The unit is interpreted to be a transition from terminoglacial deltaic complexes and or topsets of an Hjulstrom-type delta to a terminoglacial fluvial facies (stream deposits).

Unit 2 is a 1.5m thick diamict-type deposit. The deposit is massive and unsorted but can be sub-divided into five relatively distinct sub-units. The matrix composition generally fines upward. The largest cobbles and
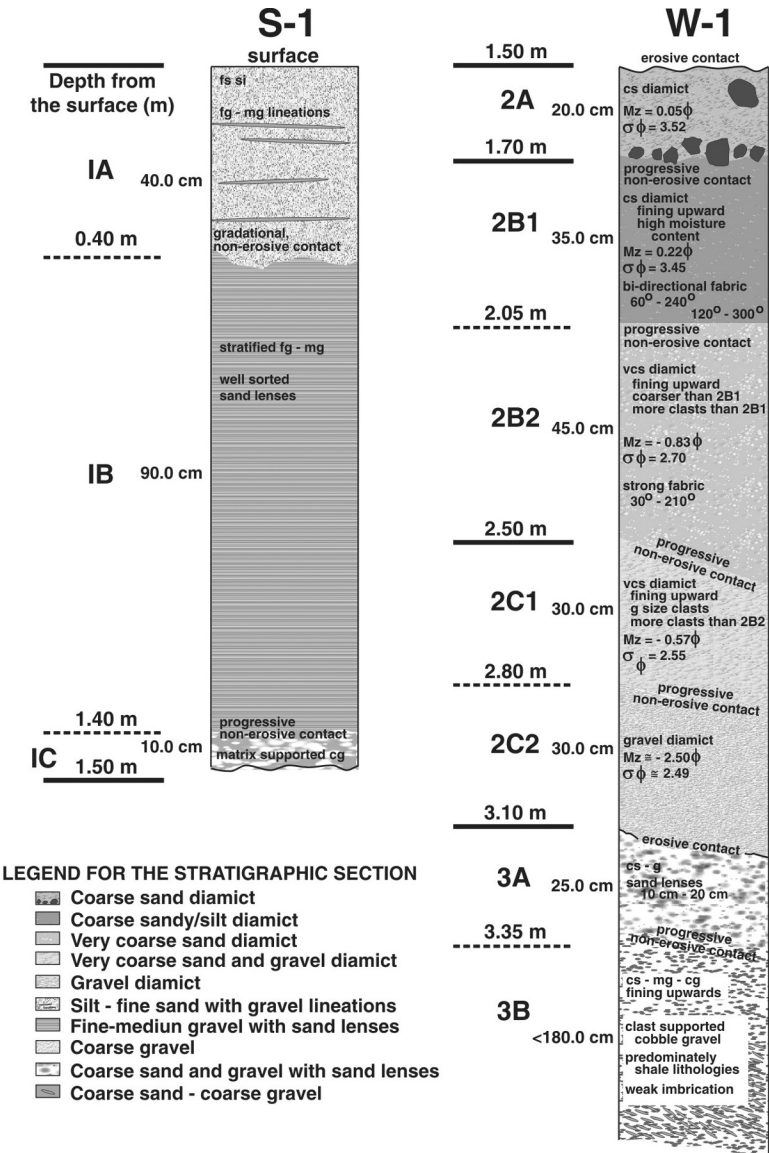
***Figure 4:*** *A composite stratigraphic section of the Scandinavia gravel pits.*

boulders, however, occur at the top of the unit. Most of the fines appear
to have been washed out during transport as the matrix composition is
described as very coarse gravels to coarse sands. Clast fabrics in Unit
2B2 show a strong NNE to SSW fabric. Fabrics in Unit 2B1 are bi-
directional, ENE to WSW and perpendicular to the primary direction (ESE
to WNW). The unit is interpreted to be a subaqueous mass transport
facies, a high concentration debris flow.

Unit 3 is a supraglacial fluvial or terminoglacial fluvial facies. The
fluvial complexes and streamflood deposits are a poorly sorted massive
coarse-grained deposit with gravel or diamict-type mixtures. Clast
imbrications, particularly at the base of the sediment are indicative of the
presence of strong currents. The deposits are associated with high-energy
flow conditions and rapidly changing flow regimes. Waning flows result
in a general fining upward.


## Interpretation and Discussion

The sedimentary sequences exposed in the Scandinavia pit are
interpreted to represent a transition from supraglacial/terminoglacial fluvial
complexes and/or streamflood deposits to deltaic complexes and or topsets,
themselves transitioning to a fluvial facies as flows subsided and lake
levels began to drop. The lower part of the sedimentary sequence (Unit 3)
is similar to the vertical lithofacies profiles of Icelandic "limno-glacial
jokulhlaup sandurs" described by Maizels (1993). This general sequence
has been interrupted by a significant mass transport intercalation that
probably occurred as water levels rose in the Otter Lake sub-basin.

The thick diamict type intercalation may be a subaqueous debris flow
associated with the outburst (a sediment-laden dam), erosive oversteepened
valley sides, or from a large iceberg. The low percentages of fines and
moderate to strong fabrics indicate a subaqueous mass transport under
strong current conditions.

As water levels rose in the Otter Lake sub-basin, the sheetflood
deposits transitioned to a subaqueous Hjulstrom-type delta complex and
or topsets characterized by stratified coarse sands and gravels. Later, as
water levels subsided, perhaps due to the opening of a lower elevation
outlet to Glacial Lake Proven, the upper part of the delta became subaerial
and terminoglacial stream sediments were deposited.

## Summary and Conclusions

The purpose of this study is to assess the possibility of an outburst flood reversing the late Wisconsinan supraglacial flow in the Upper Rolling River Spillway. Physiographic, depositional and stratigraphic evidence supports the occurrence of a major late Wisconsinan flooding event (perhaps an outburst flood) in the Upper Rolling River valley. Associated paleocurrent indicators, an Hjulstrom-type delta, and more than two metres of valley fill indicate that the supraglacial flow was reversed in the Upper Rolling River Spillway system. Whether this event resulted in a significant backflooding into Glacial Lake Proven and the opening of a lower outlet remains speculative.

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## Appendix I

### Section of the Northeast Pit (West Wall):
Derived from notes, sketches and photographs.

Three stratigraphic units are described.

### Unit 1A
Approximately 50 cm thick. Matrix supported fine-medium gravels.

### Unit 1B
Approximately 50 cm thick. A progressive non-erosive contact with
1A. Stratified fine to medium gravels with well-sorted sand lenses.
A fluvial facies (plane beds) with alternating flow regimes. Bird holes.

### Unit 1C
Approximately 40 cm thick. A progressive non-erosive contact with
1B. A coarse gravel matrix transition to 1B. A few sand lineations.
No bird holes.

### Unit 2
Variable thickness (10 cm -50 cm). An erosive contact with 1C. A
diamict type deposit coarsening upward. Very poorly sorted. Cobbles/
boulders and large clasts of shield metasedimentary or Interlake
carbonate lithologies occur near the top of the unit.

### Unit 3

Greater than 1.0 m thick. An erosive contact with Unit 2. Massive glaciofluvial (?) coarse sands and gravels. Lenses of sand, 10 to 20 cm thick, are common in the matrix-supported medium to coarse gravels. Paleocurrent indicators (dune foreset beds in the sand lenses) suggest a flow towards the west and southwest.

## Appendix II

**The composite section of the West Pit (South Wall and West Wall):**
Unit 1 interpreted to be a deltaic topset to fluvial facies transition and has been sub-divided into three sub-units.

**0.0 Unit 1A**
Approximately 40 cm thick. Matrix supported silt/fine sand with fine-medium gravels lineations. A gradational boundary to 1B. No bird holes.

**0.5 Unit 1B**
Approximately 1.0 m thick. A progressive non-erosive contact with 1A. Stratified medium to fine gravels with well-sorted sand lenses. A fluvial facies (plane beds) with alternating flow regimes. Bird holes. Bird holes tend to be constructed in the sand lenses. The floor of the bird holes tends to be finer sands, silt or gravel size clasts. There are no apparent sedimentary structures, deformation structures or paleocurrent indicators.

**1.45 Unit 1C**
Approximately 0.05 - 0.1m thick. A progressive non-erosive contact with 1B. A coarse gravel matrix transition to 1B. No bird holes. There are no apparent sedimentary structures, deformation structures or paleocurrent indicators.

**1.50 Unit 2A**
1.50Unit 2A is interpreted to be a washed over diamict type deposit. Variable thickness, approximately 0.15-0.25m thick. An erosive contact with 1C. Cobbles/boulders and large clasts. All cobble/boulder size clasts are of shield metasedimentary or Interlake carbonate lithologies. The matrix Graphic Mean size [(f84 + f50 + f16)/3] (Folk and Ward 1957) is approximately +0.05f, (0.96mm diameter). The matrix median size is +0.40f, (0.75mm). The Graphic Standard Deviation [(f84 - f16)/2] (Folk and Ward 1957), which can

be interpreted as a sorting coefficient is equal to 3.52 f units.  The sample contained only 6% by weight fines.

## 1.70 Unit 2B
1.70Unit 2B is approximately 0.7-0.9 m. thick and is sub-dividend into two sub-units.  The unit is interpreted to be a subaqueous mass transport flow.

## Unit 2B1
Variable thickness, approximately 0.3-0.4m thick. A progressive non-erosive contact with 2A.  A diamict type deposit fining upward with occasional gravel stringers.  The matrix Graphic Mean size is approximately +0.22f (0.84mm). The matrix median size is +0.75f (0.60mm). The Graphic Standard Deviation is 3.45 f units, very poorly sorted (Folk and Ward 1957).  The sample contained approximately 9% by weight fines and fewer clasts and cobbles than 2A. The obvious higher moisture content as evidenced by a darker colour and a wetter feel may be attributed to the higher percentage of silt and clay than any other sub-unit. A bi-directional fabric. Primary azimuths of 60°-240°, secondary azimuths of 120°-300°.

## 2.05 Unit 2B2
Variable thickness, approximately 0.4 - 0.7m thick.  Progressive non-erosive contact with 2B1.  A diamict type deposit, fining upward but coarser than 2B1.  The matrix Graphic Mean size is approximately –0.83f (1.78mm).  The matrix median size is calculated to be -0.55f (1.45mm). The Graphic Standard Deviation is 2.73 f units, very poorly sorted (Folk and Ward 1957).  The sample contained approximately 4% by weight fines and there are more clasts and more frequent gravel stringers than in 2B1.  A strong fabric, azimuths of 30°-210°.

## 2.50 Unit 2C
Approximately 0.5-0.7m thick.

## Unit 2C1
Variable thickness, approximately 20-40cm thick. Progressive non-erosive contact with 2B2.  A matrix supported gravel diamict type deposit, coarser than B. The matrix Graphic Mean size is approximately –0.57f (1.48mm).  The median size is -0.12f (1.10mm). The Graphic Standard Deviation of 2.55 f units indicates very poor

sorting (Folk and Ward 1957). The sample contained approximately 3% by weight fines.

## 2.80 Unit 2C2

Variable thickness, approximately 20-40cm thick. A progressive non-erosive contact with 2C1. An extrapolated matrix Graphic Mean size of approximately –2.50f (5.65mm). The median size is –2.5f (5.65mm). The extrapolated Graphic Standard Deviation of 2.49 f units indicates very poor sorting. The sample contained less than 1% by weight fines. Matrix supported poorly sorted sands and gravels. A field lithology sample indicates 31% Shield igneous and metasedimentaries, 40% Interlake carbonates and 29% shales.

## 3.10 Unit 3

Greater than 2.10 m thick. The unit is interpreted to be a supraglacial fluvial or terminoglacial fluvial facies composed of fluvial complexes and streamflood deposits.

## Unit 3A

Massive glaciofluvial coarse sands and gravels. An erosive contact with 2C2. Distorted ripple and horizontal laminations occur in the 20cm-40cm thick sand lenses exposed in the west wall of the section. In the same sand lenses there are prominent compressive folds and minor reverse faults, perhaps associated with the deposition of Unit II and later dewatering.

## 3.35 Unit 3B

Greater than 1.80 m thick. A progressive non-erosive contact with 3A. Massive matrix supported medium to coarse gravels. There is the impression of coarsening downwards with cobbles at base of section. Shale pebble imbrications are common in the poorly sorted, clast supported, gravel beds, particularly at the base of the sediment. The a-b plane of other lithologies parallels the sedimentary surface and generally dips towards the west.

# A Mongolian ice sheet?

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*Abstract:* Based upon a preliminary study in the Chifeng region, eastern Mongolian Plateau, a series of glacial or glacial-associated landforms and deposits have been identified. These include roche moutonnees, P-forms (potholes and Sichelwannen), tunnels/caves, tors and mushroom rocks composed of granites, located on mountain tops or ridges often 1,500 m asl. Other common features include U-shaped valleys and arêtes, erratics, crag-and-tails, tills, dune sand fields, large lakes, small prairie potholes, and loess deposits. The distribution pattern of these features is similar to those left by the Laurentide ice sheet in North America during the last glacial maximum (LGM). These findings suggest that this region may have been glaciated and covered by an ice sheet. It is postulated that this ice sheet was part of the huge global circumpolar ice sheet that existed during the late Quaternary. We propose the name "Mongolian Ice Sheet" for an ice sheet which covered most of the Mongolian Plateau, terminated along the Daxinganling Mt. range, with an area of over 1 million km$^2$ and a thickness of ca. 500-1,000 m.

Key words: *Mongolian Plateau, glacial landforms, Mongolian ice sheet*

## Introduction

It is widely accepted that ice-sheets covered North America and North Europe during the period of the last glacial maximum (LGM) (Stoker 1998; Wilson et al. 2000; Svendsen et al. 2004) (Figure 1).

In North America, erosional and depositional landforms including striated and/or grooved land surfaces/lakes, diamict deposited in various forms (such as drumlins and moraine ridges), kame-kettle topography, huge meltwater-incised river valleys, sandy outwash plains and loess deposits are used as evidence for continental glaciation. It has been suggested that some glacially derived features can be observed over a spatial continuum (Sugden & John, 1976). This can be recognised over
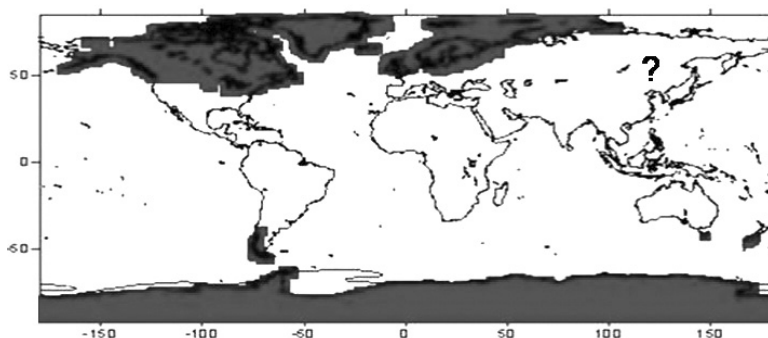
*Figure 1*: Ice sheets (shaded areas) distribution during the LGM (after Peltier 2003).

parts of North America from the Laurentide ice sheet. The LGM global ice sheet model shows no ice cover over northeast Asia where it is normally accepted that no ice-sheets ever existed (Shi 2001; Gualieri et al. 2003), although evidence of localised alpine glaciers or a small ice cap have been proposed (Min and Yin 1999; Li et al. 1999; Qian et al. 2002). The study of the distribution of modern vegetation, soil and climate zones indicate that the boreal forest and tundra ecozones have circumpolar distributions, and that physical environmental settings in these middle and high latitude regions are generally similar latitudinally. With such present similarities in the natural environment today two questions can be posed. Is it possible that Mongolian Plateau had an environment similar to North America during the LGM, and if yes, why was there was no ice sheet in the eastern side of the Eurasia continent (Mongolian Plateau)? Global LGM ice volume calculations show that the present estimated ice volume is not enough to explain a drop in sea level of 120-150 m during the LGM (Clark et al. 2001; Lambeck et al. 2002). To establish a balance between ice volumes and sea level elevation, new ice sources are required. This study compared the widely accepted features of glaciated landforms and deposits typical of ice-sheet in North America (Klassen 1975; Aber 1993; Benn and Evans 1998; Clark and Ciolkosz 1988; Kor and Cowell 1998) with similar features found on the eastern Mongolian Plateau to determine if the Mongolian features could be the results of an undocumented ice sheet during the late Quaternary.

## Regional Background and Methods

The study area is within the Chifeng region, Inner Mongolia Autonomous Region, P.R. China (approx. 42-44°N and 116.5-119.5°E), southeastern margin of the Mongolian Plateau (Figure 2). Geologically, Mesozoic Jurassic and Cenozoic Tertiary granites (Beidashan Group) intruded into the rocks of the Carboniferous and Permian Periods to form the present mountain ridges, where most of the glacial erosional landforms are found and the potential sources for the erratics are located. The granites are generally coarse grained with mineral compositions of potassium feldspar (40-50%), quartz (25-30%), clinofeldspar (15-20%), and biotite (5%) (MGMR 1990).

Daxinganling Mt. range stretches from NE to SW across the region and forms the highest ground with elevations of 1,500-2,000 m asl. The Mongolian Plateau surface lies west of the mountain range, and is generally flat, with elevations ranging from 1,200-1,500 m asl. East of the mountain range, elevations gradually decrease from 1,200 m asl to <600 m asl. Generally speaking, the Mongolian Plateau has been regarded as a typical Davis peneplain owing to its low rolling topography, extremely wide river valleys and many small relict hills (Ren et al. 1979).

Fieldwork was carried out in August 2003 in the Chifeng region. Site visits include Qingshan, Mantuoshan, Asihatu, Bolongke, and Zhaomiao
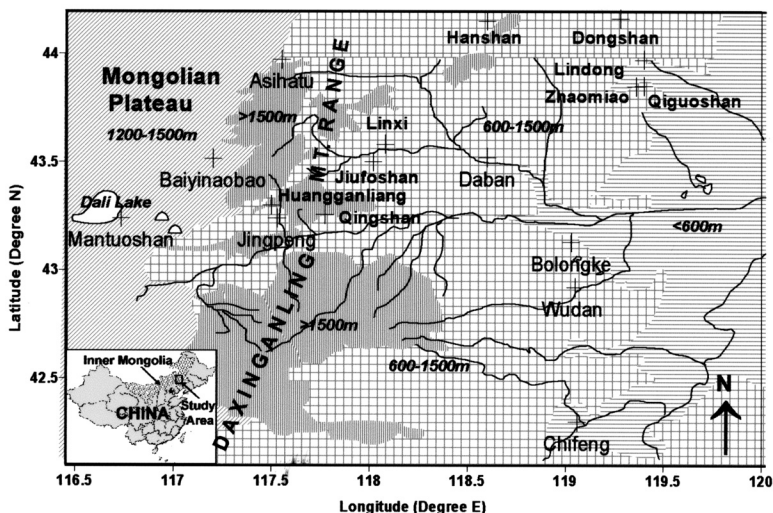


***Figure 2****: Location and topography of the study area (based upon CEUS, 1964).*

(Figure 2). Positions were located using a Garmin GPS handset (Etrex Venture). Additional existing literature, data and Internet resources (web pages and photos posted on Internet) were collected as part of the present study, and the basis for further analyses and map compilations.

## Results

Typical erosional and depositional landforms associated with glacial environments and paraglacial periods were identified in the Chifeng region. These include erosional features such as striae, roche moutonnees, polished rock surfaces, U-shaped valleys, horns/arête, potholes, mushroom rocks, tors, and huge underfit river valleys, together with depositional features, such as erratics, tills, streamlined hummocky topography (crag-and-tail), and prairie pothole lakes, and large former lake basins (Table 1).

### (i) Striae and polished rock surfaces

Due to the composition and coarse-grained texture of the granite, small-scale forms of glacial erosion are rare in the region. Well-preserved striae and polished (shining) rock surfaces only occur at locations composed of fine textured granites boulders and some exposed bedrock. Large areas of polished rock surfaces can be seen on one side of a U-shaped valley south of Zhaomiao in the eastern side of the Daxinganling

*Table 1: Typical glacial landforms found in the Chifeng region in the present study.*

| Locations | Lat. ($^{o}$N) | Long. ($^{o}$E) | Elevation/ Relief (m) | Major Landforms Related to Glaciation |
|---|---|---|---|---|
| Asihatu | 44.0 | 117.6 | 1718/411 | Tors, potholes, tunnels, roche moutonnees, hummocky topography and striae. |
| Mantuoshan | 43.2 | 116.7 | 1355/75 | Tors, polished rock surfaces, tunnels and caves, tors, dune sand, prairie pothole lakes, and large lake basins. |
| Zhaomiao | 43.9 | 119.4 | 705/50 | Potholes, grooves, tunnels and caves, polished rock surfaces, dune sand, loess, crag-and-tail, striae, horns, arêtes, erratics, and U-shaped valleys. |
| Qingshan | 43.3 | 117.8 | 1574/542 | Potholes, roche moutonnees, tunnels, dune sand, loess, diamictons, horns, arête and U-shaped valleys. |
| Bolongke | 43.1 | 119.0 | 724/142 | Tors, potholes, polished rock surface, tunnels, striae, dune sand and sandy lakes. |
| Dongshan* | 43.8 | 118.3 | 700/50-100(?) | Potholes |
| Hanshan* | 44.2 | 118.6 | 1997/600-700 | Potholes and mushroom rocks |

Mt. (Table 1, Figure 2 and Plate 1). Grooves, crescentic fractures, and polished rock surfaces have been found on the large boulders in Bolongke, Asihatu and Zhaomiao, respectively. Both vertical and horizontal grooves are common in Zhaomiao.

**(ii) Roche moutonnees and whalebacks**
   Characteristic roche moutonnees and whalebacks occur widely in the region, such as Qingshan, Mantuoshan and Asihatu (Table 1 and Plate 2). The whalebacks exhibit a normal streamlined rock surface on exposed granite surfaces. The roche moutonnees, a typical glaciated terrain, have a smoothed gentle slope up ice side and rugged steep slopes on the down ice side. Ice flow directions derived from roche moutonnees vary from SW to SE dependent on their locations relative to the Daxinganling Mt. range.

**(iii) Tors, P-forms, mushroom rocks and tunnels/caves**
   Generally tors are considered to be the products of long-term differential weathering or landforms closely related with the ice sheet margins in northern Europe and North America (Linton 1955; Briner 2002). Tors appeared as rounded columns or polygonal prisms and are found in Mantuoshan, Qingshan and mostly Asihatu (Table 1, Figure 2 and Plate 3). At Asihatu, they are composed of extensive horizontally jointed granites within belts hundreds of meters in length and tens of meters in width, rising 5-20 m above the mountain top surface (1,500-2,000 m asl). Therefore, the height difference from the top of the tors to the Mongolian Plateau surface (1,200 m asl) in the west is ca. 550 m, and 1,000 m to the pediment surface (750 m asl) in the east.
   Various types of P-forms defined by Ben and Evans (1998) are well developed in the Chifeng region. Potholes formed in granites on mountain tops are very common at 600-1,700 m asl in Qingshan, Jiufoshan, Bolongke, Mantuoshan, Zhaomiao, Qiguoshan, Dongshan, Hanshan, and Asihatu (Figure 2 and Plate 4). On the Qingshan mountain top, within an area of <2 km$^2$, there are over 200 potholes (Plate 4A), commonly with outlet spouts showing clearly the evidence of running water (Plate 4D). The largest potholes here can reach 10.5 m in diameter and 4.5 m deep. In some cases, adjacent potholes are connected by tunnels (Plate 4G). While some potholes are empty, many have residual grinding stones, and/or are filled with sand and/or loess. Generally, the potholes are located on the top surface of mountains along the south-eastern margin of Daxinganling, ca. 600-1,500 m asl, putting them at least 500 m above present river water level. Another type of P-form is the sichelwannen. This erosional feature has been found in Qiguoshan (Plate 4I), which bears a remarkable

resemblance to those in Cantley, Quebec (Plate 4H) which are believed to be associated with glacial and fluvial processes. Together, this suggests erosion by water under high pressure consistent with subglacial meltwater flow within the ablation zone of a large glacier or ice sheet that once covered the whole area, not by aeolian processes (Cui et al. 1999). Another feature found associated with the potholes and glacial/fluvial processes is residual rock outcrops in mushroom-shape, such as those on the mountain top of Hanshan (Plate 4E).

Tunnels carved in bedrock are another feature related to meltwater hydrological processes associated with the ablation of ice sheets (Brennand and Shaw 1994). While this region is now semiarid to arid, there is considerable evidence of large amounts of water in the past that created small scale tunnels and caves (with deposits) within the granite mountain tops in Mantuoshan, Zhaomiao, Asihatu and Dongshan (Plate 5). Walls of these rock tunnels and caves are normally smooth, with a strong indication of fast flowing water. Loess-like deposits and gravels have been found within the cave in Zhaomiao (Plate 5C).

**(iv) Horns, arêtes, U-shaped valleys, and erratics**

Horns, arêtes and U-shaped valleys can be found on around the areas of Qingshan and Zhaomiao (Table 1 and Plate 6). One huge erratic was sitting in the centre of the floor of a wide valley south of Zhaomiao (Plate 6B). Similarly, a large erratic ('Stone-camel', 30 m long, 10 m high) has been reported on the level plateau surface 40 km southeast of Xilinhot city (NW of Dali Lake, see Figure 2). All of these large erratics are rested on level ground composed of diamict deposits, and at least 10-40 km away from the closest bedrock sources.

**(v) Large lake basins and prairie potholes**

It is noteworthy that within this arid and semiarid steppe grassland area, there are thousands of lakes ranging from 100s of $km^2$ in size to small prairie potholes of a few $m^2$. Most of them are clustered together on both sides of the Daxinganling Mt. range (Table 1 and Figure 3). Prairie potholes are either single lakes clustered together within sand fields where modern dunes have developed, such as those at Bolongke (Plate 4B), or lakes connected via tiny streams to form a series of linear drainage networks parallel to one another, such as those on the SE side of the Daxinganling Mt. range.

**(vi) Meltwater depositional and erosional landforms**

Glacial meltwater can form huge underfit valleys, such as the Qu'Appelle Valley in Saskatchewan. On the Mongolian Plateau, there are
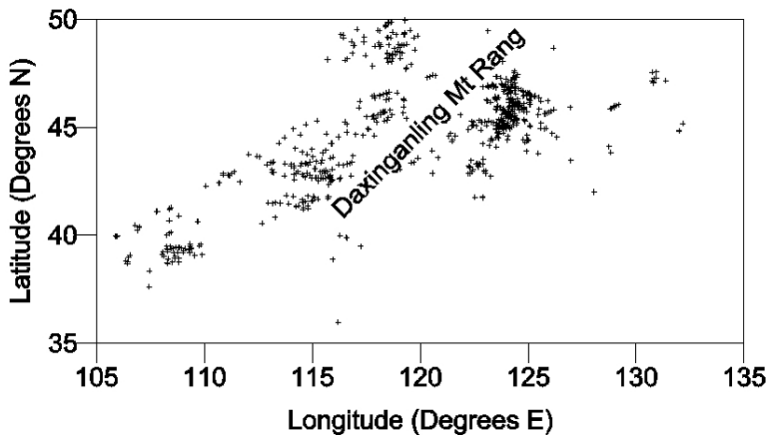
***Figure 3****: Distribution of all lakes with an area larger than 1 km² in northern China (Data sources: Wang 1987).*

many wide flat-bottom valleys with no present streams or underfit streams such as the Xilinguole and Gonggeer Rivers near Dali Lake. Incised valleys cut into bedrocks can also be formed by glacial meltwater erosion, such as the Big Muddy Valley in Saskatchewan (Klassen 1975). This type of valley is also common on the Mongolian Plateau, such as the Huanghua (Yellow Flower) Valley near Huhhot, some 600 km SW of Chifeng.

**(vii) Glacial, proglacial and periglacial deposits**
     Diamictons, mixtures of gravel, sand, silt and clay, are the common surficial sediments of the grasslands of the Mongolian Plateau, with large boulders scattered throughout the area (Table 1 and Plate 7). *Obo*, the common local landmark used as a ritual site for Mongolians, is actually a pile of stones and boulders with a variety of lithologies collected by ranchers from the grassland over thousands of years (Plate 7D).
     Vast dune sand fields are widely distributed within the wide valleys, such as those at Baiyinaobao, Mantuoshan and Bolongke (Figure 2), and near the foot of mountains, such as Zhaomiao (Plate 7A) and Qingshan (Plate 7C). Loess, eolian deposits often associated with glacial/periglacial environments, coexist with dune sand, and commonly occurred along the SE side of the Daxinganling Mt. range (Figure 4A and Plate 7). Normally, loess and dune sand overlie diamictons along the sides of large valleys (Plate 7C), and form various kinds of streamlined topography, such as crag-and-tail (Plate 7A and 7B).
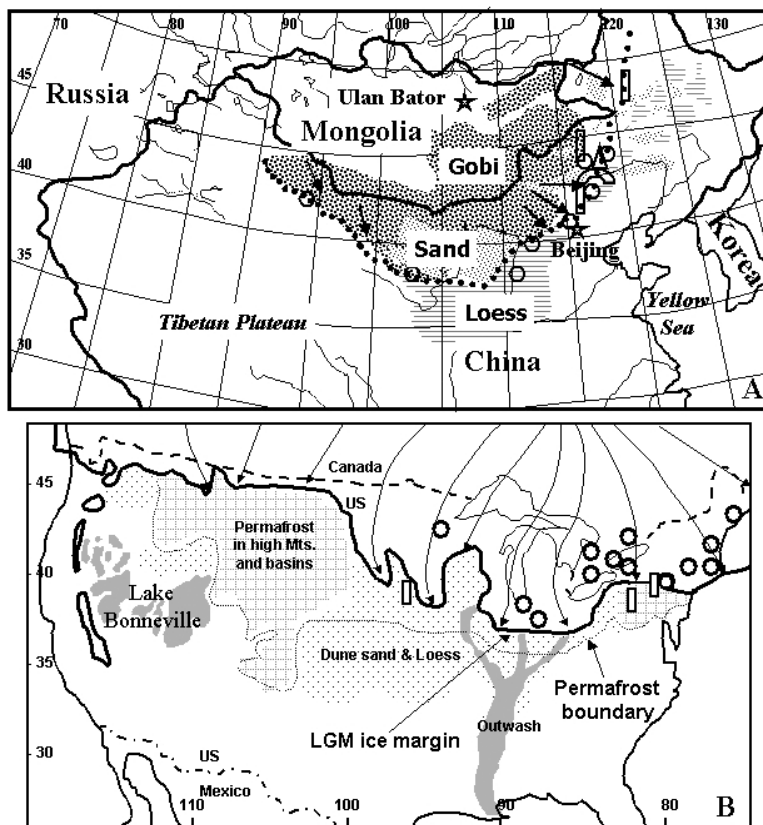
**Figure 4**: *Distribution of glacial landforms and deposits in: A. Mongolian Plateau and northern China (data sources: Li 1922; Ren et al. 1979; Zhu 1980; Min and Yin 1999 and the present study); and B. North America during the LGM (revised from Dawson 1992 and various sources, see discussion). Key:* / *Tor,* ○ *Pothole,* ⌒ *Rock knob,* Δ *Horn/arête,* → *Ice moving direction, and* ⋯⋯ *Hypothesized ice margin.*

## Discussion and Conclusions

The present study shows that there are extensive glacial landforms and deposits in the Chifeng region. These features, together with other lines of evidence from earlier studies on geomorphology, remote sensing, lake level history, carbon isotopic analyses of sediments from lake core, and climate modeling (Li 1922; Min and Yin 1999; Li et al. 1999; Yu et al.

2000; Qian et al. 2002), and the general well-organized succession of the gravels/sand (central Gobi) - sand (transitional region, desert) - silt (beyond the plateau, loess) on the Mongolian Plateau as well as in Eastern Asia (Zhu 1980), suggest a spatial landform-deposit pattern consistent with other glaciated terrains. In addition, P-forms including potholes and sichelwanne, and tors are located within a narrow zone on the SE side of mountaintops in the Daxinganling Mt. range and transitional areas between sand/gravel deposits and sandy deposits (Figure 4A).

This pattern of geomorphologic and sedimentologic assemblages is comparable to that of North America during the LGM (Figure 4B). In NE US and SE Canada, potholes have been found on bedrock surfaces with their formation associated with glacial ablation and high velocity subglacial meltwater flow (McKellar 1890; Osborn 1900; Brennard and Shaw 1994; Kor and Cowell 1998; Gilbert 2000). Tors exist in glaciated terrains throughout the Canadian arctic and alpine regions in Alaska and Baffin Island (Sugden and Watts 1977, Gualtieri and Brigham-Grette 2003), NY State (McCann and Ford 1997), central and NE Pennsylvania (Clark and Ciolkosz 1988; Braun 1990; Inners and Braun 1994), and SW Minnesota (Bierman et al. 1999). Till plains, glacial lakes, and glacial outwash deposits developed with the retreat of the Laurentide ice sheet, providing a source for extensive dune sand fields, including Middle Sand Hills in Alberta, Great Sand Hills, Dundum Sand Hills, Manito Sand Hills and Fort a la Corne/Nisbet Sand Hills in Saskatchewan, and Brandon Sand Hills in Manitoba (Klassen 1975; Aber 1993; Wolf et al. 2000). Loess deposits generally thicken with increasing distance from the glacial epicentre in Hudson Bay, and become as thick as 30 m at sites within the Mississippi Valley (Figure 4B). The accumulation rates were unprecedentedly high in western Nebraska during the early LGM (Roberts et al. 2003).

Numerous glacial landforms and deposits, and their spatial distribution in the Chifeng region as well as the Mongolian Plateau are similar to those of the Laurentide ice sheet in North America during the LGM, and suggest that both landscapes formed under glacial or glacial-related environments. We propose the name "Mongolian Ice Sheet" for an ice sheet which occupied the Mongolian Plateau, moved from N to S and SE and terminated along the Daxinganling Mt. range. In considering the global ice sheet distribution during the late Quaternary (Polyak et al. 2001; Grosswald and Hughes 2002; Peltier 2003), we suggest that this ice sheet is part of the build up of global circumpolar ice sheets during this period. The distribution of potholes, tors, tills, and diamictons and loess deposits indicate that the ice sheet covered an area of over 1 million km$^2$, with a thickness reaching ca. 500-1000 m.

This initial study provides preliminary evidence of a potential ice sheet on the Mongolian Plateau. Further studies of sedimentary records, glacial landform characteristics and chronology of both landforms and deposits are required in order to verify its extent and impact on the paleoclimate. This would help fill in gaps in our understanding of Quaternary environments across the Northern Hemisphere. The existence of a Mongolian ice sheet has implications in data-modeling projects, such as LGM vegetation reconstruction and climate simulation. This, we believe, will greatly improve our knowledge of global and regional climate change of the late Quaternary.

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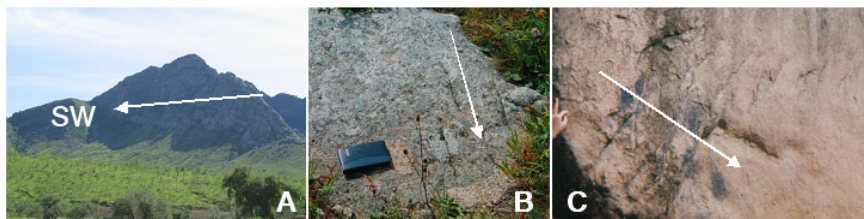ZHU, K.Z. ed. 1980 *Physical Geography of China: Geomorphology* Beijing: Science Press

**Plate 1***: Polished rock surfaces and striae in the Chifeng region: A. Zhaomiao; B. Asihatu; and C. Bolongke (Arrows indicates possible ice flow direction).*
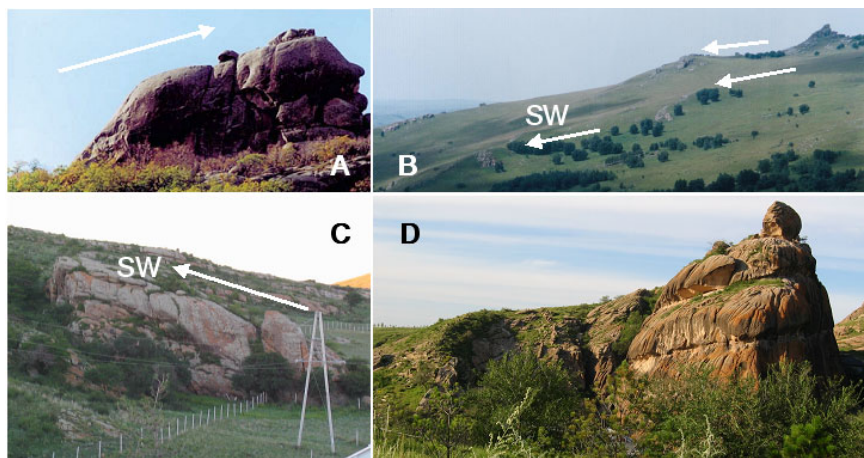


**Plate 2***: Roche moutonnees and whalebacks in the Chifeng region: A. Qingshan (photo by Bai, X.L.); B. Asihatu; C. Mantuoshan; and D. Zhaomiao.*
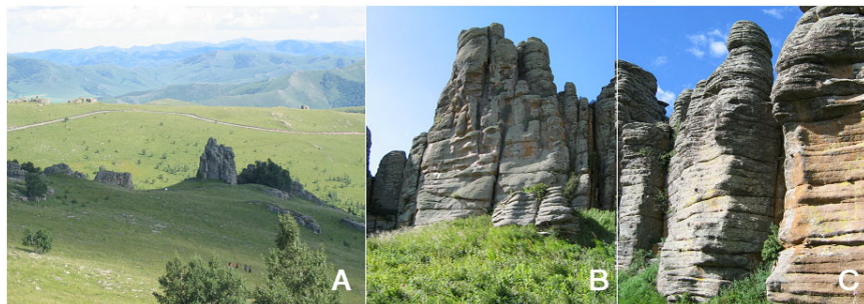


**Plate 3***: Tors at Asihatu: A. General view (at ca. 1780 m); and B and C. Close view (note the potholes on the tors in B. and C.).*
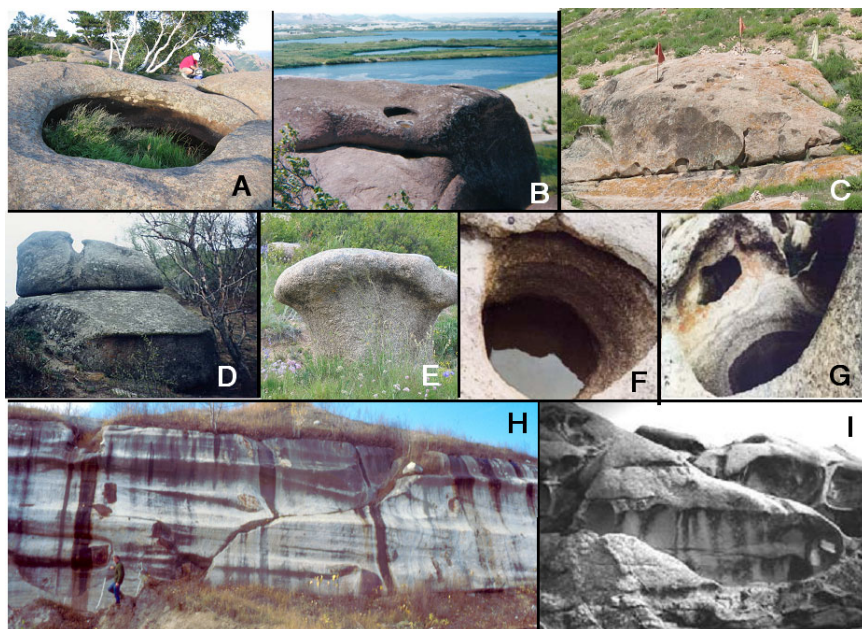
*Plate 4: P-forms (potholes and Sichelwann): A. Qingshan (approx. 1,574 m asl); B. Bolongke; C. Zhaomiao; D & E. Hanshan (at 1,997 m asl); F. Dongshan; E. Qiguoshan (D~ G from http://www.blyq.gov.cn, <http:// www.china-lsj.com>); H. Cantley, Quebec,Canada; and I. Qiguoshan at ca. 900 m asl (photo by Cui, Z.J.). Note the similarities between the bullet-like shapes at the two sites.*
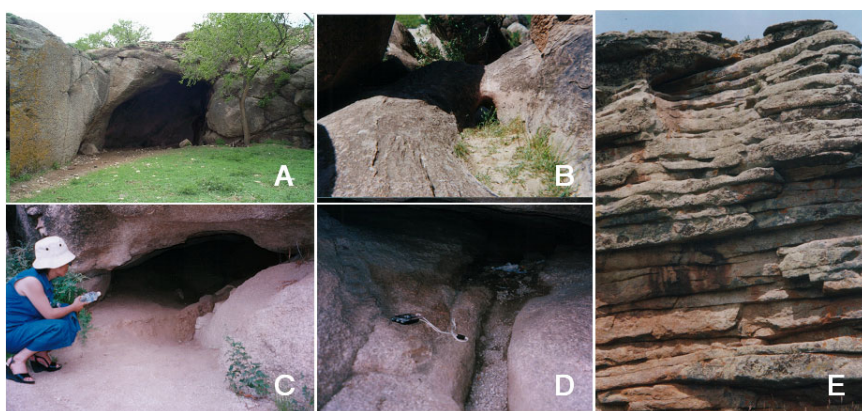


*Plate 5: Tunnels and caves in the Chifeng region: A. Mantuoshan (photo by B. Barter); B. Bolongke (ca. 15 m above ground); C,D. Zhaomiao (approx. 50 m above ground, and note gravels and loess-like deposits inside); and E. Asihatu.*
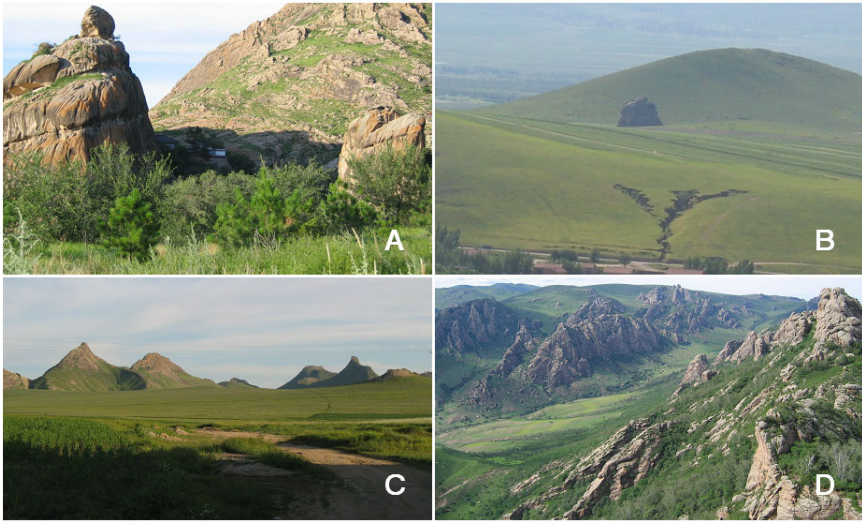
**Plate 6:** *Glacial landforms in the Chifeng region beyond the present alpine mountains: A. U-shaped valley, Zhaomiao (from <http:// www.chian-lsj.com>); B. & C. Erratic and horns, south of Zhaomiao; and D. U-shaped valley and arête, north of Qingshan.*
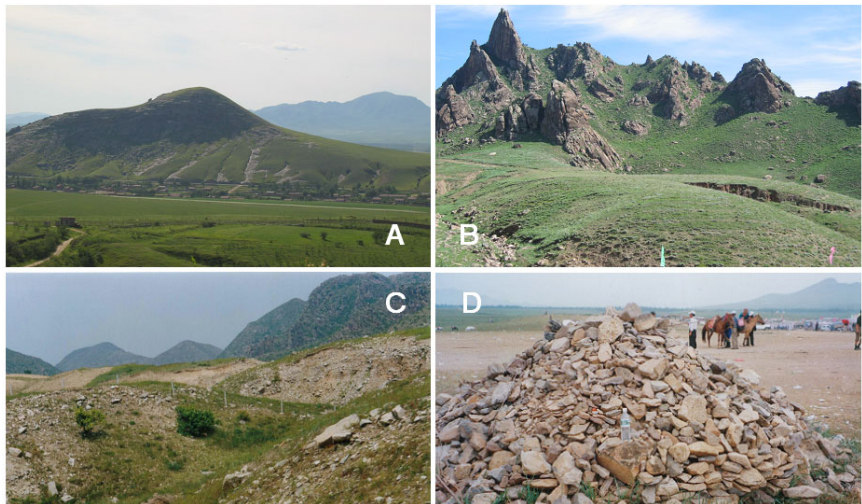


**Plate 7:** *Glacial deposits in the Chifeng region: A. Crag- and- tail (bedrock and sand), and loess deposits, Zhaomiao; and B. and C. Loess and diamicton (boulders, gravels, sand, silt and clay), south of Qingshan; and D. An Obo near Daban.*

# Towards a working framework for 'best'-practice EA follow-up: lessons from Canadian case studies

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*Abstract:* Feedback is basic to the learning process. Although the need for some form of environmental assessment (EA) follow-up is widely recognized, follow-up in the post-consent decision stages is performed in only a minority of cases; where it is done, it is rarely done well. There is a considerable literature on follow-up-related themes; however, much of the emphasis focuses on the development of procedural frameworks which, while important, pay relatively little attention to *how* to do good follow-up. Based on an examination of Canada's extensive experience with EA follow-up, both the successes and the lesser successes, this paper illustrates a number of principles that emerge from recent EA applications to facilitate the development of 'best'-practice follow-up programs. Through the identification of 'best'-practices, including reconsidering the scope of current legislation and specifying follow-up program goals and objectives, this paper suggest ways in which we might move Canadian EA forward through a broader and a somewhat more practical approach to obtaining feedback on project developments and our EA efforts.

Keywords: *Environmental assessment (EA); follow-up; monitoring*

## Introduction

Environmental assessment (EA) is a systematic process that proactively examines the consequences of developmental actions and seeks to improve development by *a-priori* assessment (Arts *et al*. 2001). Section 4(b)(1) of the *Canadian Environmental Assessment Act* (Canada 1992) (*Act)* states as one of the purposes of the *Act* "to encourage responsible authorities to take actions that promote the sustainable development of the environment." Although pre-decision analysis is the focus of EA, it is

not sufficient for sound environmental decision-making (Arts *et al.* 2001). That is to say, EA cannot achieve its sustainability objective without a systematic and comprehensive post-project analysis or follow-up program (Wlodarczyk 2000). Follow-up is broadly defined as the collection of activities undertaken during the *post*-decision stages of EA to monitor, evaluate, manage and communicate the environmental outcomes that occur in order to ensure that projects are meeting intended goals and objectives and, more importantly, to provide for feedback and learning[1] for improving environmental management practices (Arts *et al.* 2001).

The need for follow-up in EA is well-documented (Bisset 1980; Culhane *et al.* 1987; Sadler 1987; Arts 1998), and there is a considerable literature on follow-up-related themes, including its rationale, relevance, and methodologies (see, for example, Culhane *et al.* 1987; Tomlinson and Atkinson 1987; Bailey and Hobbs 1990; Canada 1997; Baker and Dobos 2001; Storey and Jones 2003). That said, follow-up has not been satisfactorily implemented in EA practice (Austin 2000; Hui 2000) and has yet to be recognized as an integral part of the EA process (Marshall 2001). Arts *et al*. (2001), for example, describe follow-up as the 'missing link' between EA and sound environmental management.

Given the current state of follow-up practice, we must do a better job of follow-up in respect to improving EA quality.  Part of the problem, however, is there has been very little consideration given to the necessary principles to facilitate the development and implementation of EA follow-up programs. This paper presents a number of principles and guidelines to facilitate the development of 'best'-practice EA follow-up. The principles and guidelines are based on lessons learned from recent Canadian EA case studies, and drawn from the EA follow-up literature. First we present a brief summary of the nature and current state-of-practice of EA follow-up, followed by a discussion of several key principles used to design of 'best'-practice follow-up programs.

## Environmental Assessment Follow-up

The Canadian Minister of Environment's report to Parliament on the review of the *Canadian Environmental Assessment Act*, "Strengthening Environmental Assessment for Canadians," identifies follow-up as "an essential component of an effective environmental assessment process." In respect to paragraph 20(1)(a) section 38(1) of the Act, the Minister proposes that "where a responsible authority takes a course of action…it shall consider whether a follow-up program for the project is

appropriate…and, if so, shall design a follow-up program…and ensure its implementation."

In recognition of the importance of follow-up activities in ensuring environmental protection and fostering the sustainable development of the environment, and in compliance with the Minister's recommendations, the Canadian Environmental Assessment Agency's (CEAA) research and development priorities for 2002-2003 included the need to improve the effectiveness of EA follow-up programs.  Under the *Act* (Canada 1992) a "follow-up program" means a program for:

l.  verifying the accuracy of the environmental assessment of a project; and
2   determining the effectiveness of any measures taken to mitigate the adverse environmental effects of a project.

Defined in this way, follow-up programs represent part of a much larger process that includes, *ex post* evaluation, auditing and routine monitoring, or quality assurance inspections. When undertaken during the post-decision stages of the EA process, these individual processes help close the loop between impact assessment and impact management. It follows, therefore, that the effectiveness of an EA cannot be established without follow-up; but follow-up is missing or ad hoc in most EA practices (Glasson *et al.* 1994; Austin 2000).

The past thirty-plus years of formal international EA application has provided practitioners and decision-makers with significant feedback experience that has contributed to development of all aspects of the EA process.  However, as basic as feedback is to the learning process, there have been constant and consistent messages in the EA literature arguing that follow-up of projects or other actions is rarely done. McCallum (1987: 211) noted that:

> it is now generally believed that environmental impact assessment cannot be  expected to endure in society unless follow-up is included. Follow-up provides the systemic feedback needed to make environmental impact assessment relevant to society, and thus have it accepted as the normal way of doing things.

Fifteen years later, Arts *et al.* (2001) noted that while there is a prevailing recognition of the importance of, and the need for, some form of EA follow-up, such follow-up in the post-consent decision stages is performed in only a minority of cases. As Frost (1997) notes in respect to follow-up practice in the UK, significantly more attention seems to be

given to EA procedures rather than EA results. We must do a better job of EA follow-up. However, much of the emphasis in recent literature has focused on the development of procedural frameworks which, while important, pay relatively little attention to questions associated with *how* to do good EA follow-up.

## Principles for Best-practice

Current research suggests that it is not clear how follow-up should be done and efforts should concentrate around best practice for future follow-up in EA (Storey and Noble 2004). The current lack of regulations, guidelines, standards or procedures regarding the design of follow-up programs; uncertainties regarding the management roles and responsibilities in implementing such programs; and barriers to effective permitting and enforcement of follow-up requirements contribute to the current state of affairs (Wlodarczyk 2000). CEAA recognizes the need to improve the effectiveness of follow-up as this will help in determining:

a.  the purpose and objectives of monitoring and follow-up within the context of environmental assessment;
b.  when a follow-up program is warranted;
c.  the key elements of a follow-up program; and
d.  the activities and institutional design characteristics required to support follow-up.

In the following sections we briefly report a number of Canadian case studies (Table 1) and similar experiences from abroad, in an attempt to identify lessons or 'best'-practice principles to facilitate the design and implementation of EA follow-up programs. There is no consensus on what is 'best' practice follow-up. 'Best' simply refers to the best way of doing things, and is both a subjective and dynamic concept. Best practice is essentially about choices –selecting the highest quality options in decisions and applying these using the best techniques available for optimum results (Storey and Noble 2004). The case studies we selected represent unique lessons and experiences from the perspective of EA follow-up. They are all mega-projects representing examples of both best and worst practice. They were identified based on a review of literature, informal discussions with practitioners and researchers, and based on Storey and Noble's (2004) report to the Canadian Environmental Assessment Agency on improving EA follow-up practice in Canada. Due to length restrictions, we provide

**Table 1:** *Case studies reviewed.*

| Project EA | EIS* Year | Location |
|---|---|---|
| BHP Ekati diamond mine | 1996 | Lac de Gras, NWT (300km NE of Yellowknife |
| Confederation Bridge | 1989 | |
| | | Northumberland Strait (NB to PEI) |
| Hibernia offshore oil development | 1985 | |
| | | Bull Arm (Trinity Bay), Newfoundland |
| | LG-2A 1991 / LG-1 | |
| La Grande hydroelectric stations | 1994 | La Grande Riviere, James Bay, Quebec |
| McArthur River uranium mine | 1995 | Northern Saskatchewan |
| Rabbit Lake uranium mine | 1987 (resubmitted 1991) | Northern Saskatchewan |
| Voisey's Bay mine/mill | | Northern Labrador, Newfoundland |
| | 1997 | |

*EIS = impact statement

only a summary of the key elements of each case study, and the lessons or principles emerging from each.

## Legislation that Sufficiently Covers the Scope of Follow-up

Follow-up in Canada is legislated by the *Canadian Environmental Assessment Act* (Canada 1992). Under the *Act* the primary focus of assessment is on the adverse effects of a project or activity on the bio-physical environment. 'Environment,' in the context of the *Act*, means components of the earth including land, water, air, organic and inorganic matter, living organisms and the interacting natural systems of which they are part. This has resulted in most of the energy with respect to follow-up procedures being directed at the biophysical components of project effects (Storey and Noble 2004). However, an 'environmental effect', as defined by the *Act* in terms of a project, any change that the project may cause in the biophysical environment, and any effect of such change on health or socio-economic conditions, physical and cultural heritage, land and resource use, and sites of historical, archaeological, palaeontological or architectural significance (Canada 1992).

In practice, the socio-economic effects of a project may or may not be factors in determining significant environmental effects and related matters such as the need for follow-up programs. This appears to be inconsistent with the stated CEAA view that EA provides an effective means of integrating environmental factors into planning and decision-making processes in a manner that promotes sustainable development (Storey and Noble 2004). While socio-economic impacts are receiving

increased attention in EA practice, in only a few cases is there evidence that the broader socio-economic impacts are examined at the same level of detail as bio-physical phenomena. Storey and Noble (2004) argue that an expansion of the scope of follow-up practice is important if EA is to meaningfully contribute to sustainable development practice, and if we are to learn more about the effects of projects on people and how to manage those effects. In most cases follow-up of social issues is rarely required and at best only a few selected economic variables (e.g. employment, local expenditures) are tracked. While this is consistent with current legislation, it means that EAs continue to generate little feedback on the effectiveness of social, economic and other human effects management strategies (Storey and Noble 2004). This is illustrated by the limited scope of the Confederation Bridge EA follow-up program.

**Case Study: Confederation Bridge Project**
In May 1989 Public Works Canada submitted a Bridge Concept Assessment document for EA review. The proposed project involved the construction of a 13 km bridge over the Northumberland Strait, extending from Cape Tormentine, New Brunswick to Borden, Prince Edward Island. The mandate of the panel reviewing the Bridge Concept was the examination of the environmental and socio-economic effects, both beneficial and harmful, of the proposed bridge concept. There was consensus on the need for an improved transport service between Prince Edward Island and New Brunswick, but the Panel recommended that the risk of harmful effects, particularly concerning possible delay in ice-out, risk of damage to the marine ecosystem, and the displacement of more than 600 Marine Atlantic ferry workers, was such that the project should not proceed.

The panel's recommendation was not accepted by the federal government, and following a 1990 study by an independent Ice Committee the Minister of Environment approved the project based on the Committee's conclusion that the design for the bridge under consideration would meet the Panel's ice-out criteria. Construction began in the fall of 1993 and the Confederation Bridge project was completed in the spring of 1997. An environmental management plan was prepared, including a long-term environmental effects monitoring program. Consistent with the CEAA definition of follow-up and the emphasis on the physical environment, the goals of the monitoring program were to evaluate the effectiveness of environmental protection procedures and to verify predictions regarding the potential biophysical effects of the project. Ice characteristics, for example, were initially documented in 1993, before the bridge was constructed, studied throughout project construction, and monitored after

the bridge was complete. Notwithstanding the concern expressed in the initial Panel report over the issue of displacement of ferry workers, there was no formal attempt to follow-up on this or any other potential social or economic effects forecasted in the initial assessment document or raised at the public hearings.

## Clear Statement of Follow-up Goals and Objectives

Clarification of the need for, and importance of, follow-up facilitates the carrying out of actions relevant to the achievement of desired ends. An explicit and agreed-upon set of objectives for any follow-up program is fundamental to its success (Glasson *et al.* 1994:169). As Sadar (1999) notes, a viable follow-up program is characterized by a plan, effective process management and a clear rationale for monitoring. Neither was evident in the Hibernia socio-economic environmental effects monitoring (SEEM) program discussed below.

## Case Study: Hibernia offshore platform construction project SEEM Program

A proposal submitted to develop the Hibernia offshore oil field, discovered on the Grand Banks of Newfoundland in 1979, was subject to a Panel review under the Canadian Federal Environmental Assessment Review process – a precursor to the current *Canadian Environmental Assessment Act*. Approval for the project was granted in 1986 and construction of a gravity based platform at Bull Arm, Newfoundland, commenced in 1990. As part of project approval and management, the Hibernia Construction Sites Environmental Management Committee (HCSEMC), a socio-economic technical working group comprised of government agency representatives and external advisors, was assigned the responsibility of monitoring the socio-economic effects of the project on local communities and the Hibernia workforce. Monitoring was expected to facilitate the identification and mitigation of negative effects and enhancement of beneficial ones. Four socio-economic components were identified as high priority items for monitoring in the local impact area, namely: business and employment; community services and social infrastructure; housing; public services, commercial and industrial infrastructure.

Data on the four components were to be provided by the proponent and its primary contractors, and various provincial government departments. HSEMC would compile data, circulate monthly reports, and provide an annual summary report of monitoring results and project effects. The first monthly report was produced in June 1992 and the program was

terminated in 1996. Over time, reports were increasingly delayed, data for some components were often not available, and some monitoring programs were never implemented.

Overall, the SEEM program added little value to the understanding of project impacts or impact management. The main reason was the failure to clearly establish the objectives of the monitoring program and to identify indicators and threshold values for measuring real project impacts (Storey and Noble 2004). There was little evidence that the information distributed to government departments and agencies or to the public had any utility with respect to verifying EIS predictive accuracy or in managing project impacts (Storey and Noble 2004). Findings from the SEEM program did not result in recommendations for action regarding impact management measures.

## Establishment of Pre-project Environmental Baseline

One of the key roles of follow-up is to gain an understanding of project impacts that are not well understood when initial predictions are made. EA predictions are made in an uncertain environment, thus impact predictions of future events are often inexact. The lack of pre-project baseline data perpetuates this situation (Bisset and Tomlinson 1988:124). Baseline information includes the establishment of both the present and future state of the environment, in absence of the project, taking into account changes induced by natural events and other human activities other than the project (Glasson *et al*. 1994:4) and are thus fundamental to predicting likely changes resulting from the proposed development in the ecosystem and surroundings. Recent practice, however, suggests that baseline data are not always available to follow-up impact predictions.

### Case study: La Grande hydroelectric and the NWT diamond projects

Determining the baseline condition may require several seasons or years to sufficiently quantify ranges of natural variation and directions and rates of change (Therivel and Morris 2001), and is critical to effective impact monitoring. In the case of the La Grande-2A and La Grande-1 power houses located on the La Grande Riviere, Quebec, a three year program was initiated to establish baseline environmental conditions between 1987 and 1990 (Denis 2000). However, this is perhaps an exception to conventional practice in that baseline monitoring is rarely done nor is it done sufficiently (Storey and Noble, 2004). Time constraints in EIA usually preclude lengthy survey and data collection programs, and impact predictions typically have to rely on existing data. In frontier areas,

even existing data can be limited, thereby devaluing the process of verifying the accuracy of impact predictions. In the case of the Ekati Northwest Territories Diamond Project, for example, most biophysical impact predictions and associated mitigation measures in the EIS were based on data collected during just one field season (Mulvihill and Baker 2001).

## Maintain Consistency in the Collection of Monitoring Data

Bisset and Tomlinson (1988) identify three key benefits of monitoring. First, monitoring environmental and socio-economic variables can identify potentially negative trends at an early stage. Second, monitoring can be useful to improve knowledge and understanding of the impacts of various projects on specific environmental indicators. Third, monitoring can provide information on the utility, accuracy and comprehensiveness of impact predictions and predictive techniques.

Environmental effects monitoring is undertaken primarily to determine the effects of a project, and secondarily to increase the understanding of cause-effect relationships between the project and environmental change (Wlodarczyk 2000). A fundamental problem, however, as illustrated above by the Ekati experience, is the frequent absence of adequate monitoring data in EA practice. That said, in cases where baseline and project monitoring data are collected, the nature and quality of that data have significant implications for program efficiency, timeliness and credibility (Storey and Noble, 2004). Effective follow-up programs require that data be collected not only in a timely fashion to allow those using the results to make prompt responses to management, but also in a consistent fashion. Experience in Saskatchewan's northern uranium mining resource sector is illustrative of the importance of maintaining consistency in data collection for follow-up.

### Case study: Rabbit Lake uranium mining project, Saskatchewan

In 1991, a joint federal-provincial EA Panel was appointed to examine the environmental, health, and socio-economic impacts of uranium mining activities in northern Saskatchewan. Included amongst the projects under review was Cameco's Rabbit Lake mining project, Saskatchewan's oldest operating uranium mining and milling facility.

Contamination of the biophysical environment by radionuclides and heavy metals was a primary concern of both the initial 1987 EIS for the proposed expansion of the Rabbit Lake project, and the 1991 joint federal-provincial Panel review team. In its presentation to the Panel, Cameco

noted that it had collected baseline data and monitored the biophysical environment near the mine site since the late 1970s. However, the Panel noted that while monitoring requirements were in place that met regulatory requirements, and data collection was ongoing, there was some concern over the quality of the monitoring data, consistency of methods used to test for radionuclides and trace elements, and the effectiveness of the monitoring program in determining the impacts of mining activities. Monitoring and testing procedures had changed several times throughout the 1980s, and data collected during 1989 and 1990 were discarded due to quality control problems. After more than a decade of biophysical monitoring and data collection, there were few comparable data concerning the effects of radionuclides from mining operations on fish – a valuable social and economic resource base for northern communities.

## Focus on 'Actual' Project Effects

Impact prediction is fundamental to EA (Therivel and Morris 2001), and EA itself is designed with the intent to provide information of the changes that will occur in the environment if a particular proposed activity is implemented (De Jongh 1988). However, where outcomes are predicted, numerous studies (Murdock *et al.* 1982; Canter 1983; Culhane *et al.* 1987; Buckley 1991; Locke and Storey 1997) serve to illustrate the difficulties of determining the accuracy of impact predictions. Storey and Noble (2004) suggest that the main source of prediction data are project environmental impact statements (EIS), and these are seen to be deficient insofar as they typically offer:

i)   vague, imprecise and untestable statements about potential outcomes, including little indication of when impacts are likely to occur;
ii)  non-existent, insufficient, inadequate or inaccessible monitoring data, both pre-project baseline and during project implementation;
iii) obsolete predictions resulting from changes in environmental conditions between the time that the predicted outcome was made and the monitoring activity, or changes in project design, schedules, etc., each of which can affect the relevance of project outcomes.

The net result is that for most assessments the accuracy of only relatively few predictive statements can be determined. For example, Bisset (1984) reviewed EA documents for four development projects in the UK (the Sullom Voe and Flotta oil terminals, Cow Green reservoir and the

Redcar steelworks) for the predicative accuracy of their impact statements. Due to the imprecise and "wooly" language, "accuracy" ranged from 23 percent to 67 percent.

That said, it is not the *predicted* effects, but the *actual* effects that are important (Arts *et al*. 2001). There may be a significant gap between the predicted impacts and the actual impacts of a project. The learning curve and new practice in EA has been greater in terms of the development of impact management approaches than in the development of predictive techniques and methods (Storey and Noble 2004). In this sense it is more important to determine what the *intended* outcomes of the project are and to compare these with *actual* outcomes. As illustrated by the Hibernia socioeconomic impact mitigation program, notwithstanding the inaccuracy of impact predictions, the real negative socioeconomic impacts of project development were avoided.

## Case study: Hibernia construction project, socioeconomic impact mitigation

The Hibernia project, described above, was the first of its kind to be developed in Newfoundland. In the absence of experience, many impact predictions, particularly those concerning employment and economic benefits, were unrealistic. For example, employment predictions for 1994, the peak year of construction employment, were under-predicted by 44 percent (Locke and Storey 1997). Similar inaccuracies were evident in related housing demand predictions.

Of particular concern were negative effects of platform construction employment on local communities due to the predicted influx of workers. Considerable attention was given to how the benefits of project development could be captured, while minimizing or avoiding the potentially negative social impacts, particularly the disruption of local communities. After considering experiences elsewhere, and based on consultation with local residents, it was determined that a self-contained work camp designed to feed and house between 1,000 and 1,500 workers at peak construction was the preferred option to avoid the negative social impacts associated with predicted employment increases. The impact assessment only considered the residual social impacts after taking the self-contained work camp into account. Social impacts in the communities near the project were therefore predicted to be minimal. Despite a high demand for labour, previously developed plans to increase work camp capacity - should it be necessary - meant the general objective of minimizing social disruption was achieved.

## Hypothesis-driven Approaches to Impact Prediction

Part of the objective of follow-up under the *Act* is to verify the accuracy of impact predictions. Clearly, verifying the accuracy of impact predictions presents a valuable opportunity for scientific research and learning to improve future project impact predictions and predictive techniques. In cases where impact predictions *are* made, there is some suggestion that they should be based on rigorous and falsifiable null hypotheses stating the relevant affected variables, impact magnitude, spatial and temporal extent, probability of occurrence, significance, and associated confidence intervals. Wolf *et al.* (1987) and Ringold *et al.* (1996), for example, suggest that impact predictions should be couched in quantitative terms: specify the exact characteristics to be monitored, identify the spatial and temporal characteristics of interest, and state the Type I and Type II probabilities. This is consistent with recommendations of the Panel reviewing the Voisey's Bay nickel mine-mill project, Newfoundland. In this example, recommendations suggested that an hypotheses-driven approach be adopted for impact prediction and verification (Voisey's Bay Mine and Mill EA Panel 1999). Such was also the approach adopted by the Hibernia biophysical environmental effects monitoring (BEEM) program.

### Case study: Hibernia offshore platform construction project BEEM program

The Hibernia Management and Development Corporation, in conjunction with the Hibernia Construction Sites Environmental Management Committee (HCSEMC), established a multi-year (1991-1996) program to monitor the effects of the Hibernia gravity base structure construction site on the marine environment. Survey data on marine variables were collected as part of the EA process that provided both a baseline for subsequent monitoring activity and information for determining various monitoring criteria and variables. The general objectives of the BEEM program included an assessment of the effectiveness of environmental protection and mitigation measures, but also included:

- providing early warning of undesirable change;
- testing impact predictions; and
- assurance that impacts predicted to be insignificant in fact were insignificant (LGL 1993).

For each measured variable an impact (null) hypothesis was developed stating that the impacts of site development and construction activities would not exceed the maximum allowable effects level for that variable.

The findings from subsequent analyses were that all of the null hypotheses developed for the BEEM program could not be rejected. In other words, the construction project did not have impacts on the marine environment beyond acceptable levels.

## Institutional Accountability

Commitment and accountability are necessary on the part of proponents and responsible authorities if EA and the project are to achieve intended results. For instance, the results of Hydro-Québec's follow-up program are highly credible due to the quality of the science employed, the fact that the studies were peer reviewed, and that several independent investigations were undertaken (Lascelles 1999). In other cases, such as the Northwest Territories (NWT) Ekati diamond mining project, accountability of the proponent is maintained through an independent environmental monitoring organization.

**Case study: Ekati diamond mine project Independent Environmental Monitoring Agency**

The Ekati Mine, 300km northeast of Yellowknife in NWT, is Canada's first diamond mine. The proponent, Broken-Hill Proprieties, submitted its assessment documents, and a full Panel review was carried out between 1994 and 1996. The project was approved in 1996, subject to a number of conditions specified in the Environmental Agreement signed by BHP, the Government of the NWT and the Government of Canada, one of which was the creation of an independent 'watchdog', the Independent Environmental Monitoring Agency (IEMA).

The mandate of IEMA is to watch over the mine operator, the regulators, and the various agencies of the Governments of Canada and the NWT. The tasks of the Agency include technical and outreach components such as: reviewing and commenting on management and monitoring plans and their outcomes; bringing forward the concerns of the Aboriginal peoples and the general public; and keeping Aboriginal peoples and the public informed about Agency activities and its findings (Ross 2002). The mandate of the Agency is that of a *review* rather than a *research* organization. As such monitoring for management is the primary focus of its mandate, and finding solutions to environmental management issues arising from the project is a primary objective.

## Clarity of Roles and Responsibilities

Government-industry-community cooperation lends credence to the EA and follow-up program. To achieve best practice of EA follow-up, the coordinated roles and responsibilities of government and industry, together with community relationships[2], need to be clearly established in order to contribute to a meaningful, efficient, and informative follow-up program. Responsibilities for follow-up programs require a simple and direct organizational structure, including well-developed communications channels among all interested parties, to ensure that the program work is carried out efficiently. In practice, however, proponents and decision makers face difficult problems because of a system of responsibilities that is fragmentary and lacks clarification and coordination of specific roles for follow-up programs.

### Case Study: McArthur River Uranium Project

The McArthur River uranium mining project is located in the Athabasca region of northern Saskatchewan. The ore body was first surveyed in 1984. In 1993 Cameco corporation commenced an underground exploration program and in 1995 submitted an impact statement for Panel review. The Panel noted that the effects of the McArthur River project on northern communities would require long-term monitoring, much longer than recognized in the impact statement. In addition, the impact statement emphasized monitoring of contaminants in air, water, and soil, but mentioned very little of monitoring of broader biophysical effects. The Panel noted that the proposed monitoring program would sample fewer environmental components than do government agencies which currently monitor cumulative effects in the region at points distant from the proposed mine site. The Panel concluded that the monitoring program lacked coordination and that mine operators and government agencies should be cooperating and monitoring the same components.

## Conclusion

While there is no consensus on what is 'best'-practice follow-up, based on the current state-of-practice, we must do a better job, particularly with regards to:

- adopting legislation that sufficiently covers the scope of EA follow-up, including biophysical *and* socioeconomic components;
- ensuring a clearer statement of follow-up goals and objectives;

- establishing pre-project environmental baseline data;
- maintaining consistency in monitoring data collection using analytical procedures that are consistent with project impacts over space and time;
- re-focusing EA and follow-up efforts on the real and desired effects and outcomes rather than predicted ones;
- adopting hypotheses or threshold-based approaches when impact predictions are made;
- implementing mechanisms, such as an independent monitoring agency, to ensure institutional and proponent accountability in follow-up actions and reporting; and
- clarifying the roles and responsibilities for follow-up procedures early in the project life cycle.

Given our lengthy history of EA in Canada, there has been significant time for testing and gleaning efficient EA follow-up. However, while considerable attention has been given to procedural frameworks for follow-up practice, there has been very little attention given to how to do good follow-up. The development of best-practice follow-up programs has lagged in comparison to the development of pre-project assessment mechanisms. As a result, follow-up has not been satisfactorily implemented, and has yet to be recognized as an integral part of the EA process. We do have the tools and knowledge to accomplish 'best'-practices, but for the most part the shortcomings of follow-up are due to the limited scope of EA on pre-project impact assessment. If EA follow-up, and therefore the contributions of EA to sustainability, is to advance, then what is required is a re-sourcing of our EA efforts to managing the *real* versus the predicted impacts of project developments.

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## Acknowledgements

## Footnotes

[1] Ideally, follow-up and monitoring procedures are a means to incorporate 'double-loop' learning into organizational systems. In other words, emphasis is placed not only on corrective action, but also on adapting underlying values and system behaviors based on feedback results. For a detailed discussion of learning approaches see Diduck (2004).

[2] While community participation in follow-up programs, concerning both identifying follow-up objectives and ongoing data collection, is important to ensure follow-up success, the role of participation and its specific design within the context of EA follow-up deserves attention which is beyond the scope of this particular paper. Its importance, however, is recognized and it is suggested that further process development is required in this regard.

# Government policy and Hutterite Colony diffusion: 1917 - 2003

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*Abstract:* Diffusion of Hutterites in North America has been profoundly affected by government policy. The initial migration to Canada was triggered by the United States' denial of conscientious objector status for Hutterites. Within Canada the pattern and pulse of colony diffusion responded to provincial law that reflected popular opinion at various times. For example, during the 1940s and 50s the province of Alberta restricted colony expansion, forcing new colonies to locate at least 40 miles from any existing colony. Manitoba and Saskatchewan employed similar measures to prevent concentrations of colonies. GIS was used to determine distances between mother and daughter colonies during periods when restrictive policies were and were not in effect. Various techniques are used to illustrate and assess how government policy and other factors such as land availability and price have influenced the geography of Hutterites in Canada.

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*Hutterite_Diffusion_1917to2003.htm*