# Spatializing rural communities' sense of place

**Rebeka Kennedy-Pruehs, University of Saskatchewan**
**Scott Bell, University of Saskatchewan**
**Diane Martz, Centre for Rural Studies and Enrichment**

*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 |
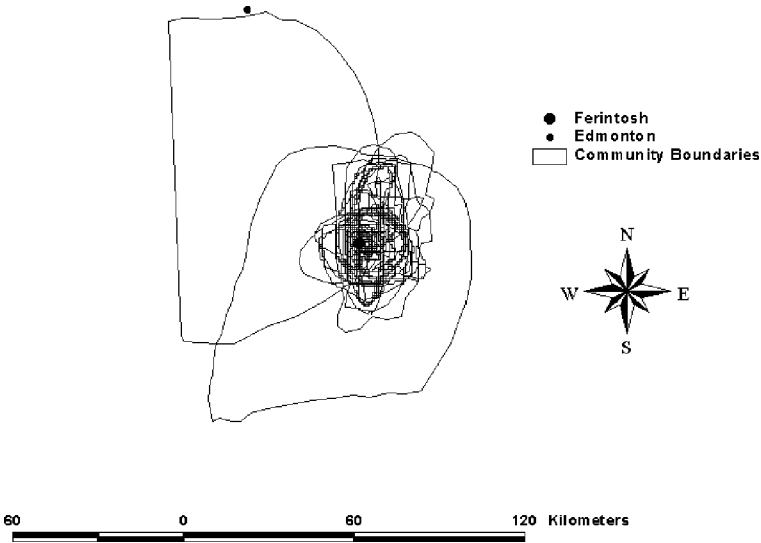
**Figure 1:** *Boundaries of Ferintosh drawn by community members.*

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
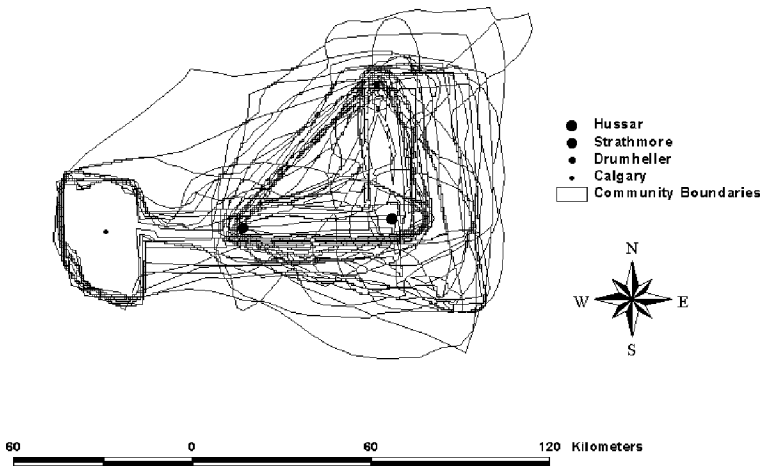
*Figure 2: Boundaries of Hussar drawn by community members.*

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.

## Acknowledgements

## References

COHEN, A.P. 1993 *The Symbolic Construction of Community* London: Routledge
COULTON, C.J., KORBIN, J., CHAN, T., and SU, M. 2001 'Mapping residents' perception of neighborhood boundaries: A methodological note' *American Journal of Community Psychology* 29(2), 371-83
DAVIDSON, W.B. and COTTER, P.R. 1991 'The relationship between sense of community and subjective well-being: A first look' *Journal of Community Psychology* 19, 246-53
KORBIN, J., and COULTON, C.J. 1997 'Understanding the neighborhood context for children and families: Combining epidemiological and ethnographic approaches' in *Neighborhood poverty: Context and consequences for children* eds J. Brooks-Gunn, G.J. Duncan, and J.L. Aber New York: Sage 132-44
MARTIN, D. 1998 'Automatic neighborhood identification from population surfaces' *Computer, Environment, and Urban Systems* 22(2), 107-20
MATTHEWS, H. 1995 'Culture, environmental experience and environmental awareness: Making sense of young Kenyan children's views of place' *Geographical Journal* 161(3), 285-95

MCDOWELL, L., and MASSEY, D. 1984 'A women's place' in *Geography Matters* eds D. Massey and J. Allen Cambridge: Cambridge University Press

MCMILLAN, D.W. and CHAVIS D.M. 1986 'Sense of community: A definition and a theory' *Journal of Community Psychology* 14, 6-23

MONTELLO, D.R., GOODCHILD, M.F., GOTTSEGEN, J., and FOHL, P. 2003 'Where's Downtown?: Behavioral methods for determining referents of vague spatial queries' *Spatial Cognition and Computation* 3(2&3), 185-204

PINHEIRO, J.Q. 1998 'Determinants of cognitive maps of the world as expresses in sketch maps' *Journal of Environmental Psychology* 18, 321-39

PRETTY, G.H., CHIPUER H.M., and BRAMSTON P. 2003 'Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity' *Journal of Environmental Psychology* 23, 273-87

PREZZA, M., AMICI, M., ROBERTI, T., and TEDESCHI, G. 2001 'Sense of community referred to the whole town: Its relations with neighboring, loneliness, life satisfaction, and area of residence' *Journal of Community Psychology* 29(1), 29-52

PUDDIFOOT, J.E. 1997 'Psychological reaction to perceived erasure of community boundaries' *The Journal of Social Psychology* 137(3), 343-54

REIMER, B. 2002 'A sample frame for rural Canada: Design and evaluation' *Regional Studies* 36.8, 845-59

STATISTICS CANADA 2001 Census of Canada 2001: Community Profiles

## Footnotes

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