34 THE SPACE ON THE EDGE: DICHOTOMOUS PERCEPTIONS OF PLACE

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Foreword

This study explores spatial learning patterns. The focus of the study addresses varying perceptions of the rural fringe surrounding growing towns or metropolitan areas. Dichotomous perceptions of this edge tend to create tensions between population groups. This conflict and lack of understanding complicates the process of growth, and may unintentionally lead to the destruction or degradation of qualities of the landscape that both parties had valued. Traditional residents of these areas who make a living off the land, (farmers or ranchers), and new residents, who commute to places of work, may not share the same topistic (place) learning patterns. This may lead to widely varying understandings of the landscape, and to distinct value systems with regard to land use. The modes of topistic learning explored are visual, haptic or kinesthetic, and sociological. Perceptions of the same rural landscape may vary because they are founded on distinctly different learning patterns. This contrast of perspectives leads to a duality of values about appropriate land use, and ultimately to lack of understanding or empathy between these groups. By investigating and understanding how sub-cultural groups learn about and perceive their local landscape, planners and designers may operate from a more informed standpoint. They may plan for growth or change which conserves critical and highly valued patterns of the landscape. The methodology of this study may serve as a model for the examination of topistic learning patterns in any physical setting, and between various cultural groups. It has potential to assist in the urban planning process by increasing understanding of place identity and territoriality of conflicting groups in adjacent urban neighborhoods in an inclusive way.

Introduction

Examination of the process of growth in American cities ultimately leads to the transformation of the rural fringe. Dichotomous interpretations of the rural fringe create tension or lack of understanding that complicates growth, and sets a stage for conflict. For what reasons do different groups have various understandings of the same physical environment when they share an interest in dwelling in that place? It is not clear to what degree people respond to the physical attributes of place, and how their experiences in a place determine their feelings about it.

The focus of concern in regionalism (when new development occurs in an existing environment) has been on interpretations or translations of historic regional typology, to establish (or re-establish) a place with strong local identity. One of the

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assumptions of regionalism is that such an identity can be physically manifest in buildings or sites. A second and related assumption is that the characteristics designers interpret as creating this sense of identity are the same as those aspects that will inspire the loyalty and identity of the inhabitants of the area.

In our concerns for regionalism, though, we also need to consult the existing population. We tend to consume farm and ranch land on the metropolitan fringe with residential development that, at best, satisfies the aspirations of the individual buyer who usually arrives from outside the area. In the Gallatin Valley of southwest Montana, for example, rich farm land is being consumed by rapid, low-density residential growth. People are attracted to the open space of the area as a relief from more congested environments. However, the development that results from their presence is transforming the rural character that attracted them. It was the desire to define what "rural" means that motivated the following study of how people go about perceiving rural places. The methodology developed for this study, however, has potential application in any setting, to understand specifically how people learn about the environments they occupy.

Purpose

The purpose of the following study was twofold: to describe the perceptions that farming and ranching families develop of their immediate physical environment, and to determine their topistic[1] (place) learning patterns. As an architect and educator, I was interested in how people acquired and interpreted experiences in a physical setting that contributed to their perceptions about the place. Further, I sought to find out what characteristic people-environment interactions led to strong feelings of belonging in a place.

Learning Theory

Learning theory suggests that people develop varying perceptions because of selective attention, and because individual differences in learning patterns determine modes of perception. Educators and psychologists have done some study on how certain modes of learning operate in spatial perception. We may apply the examination of learning patterns and selective attention to learning about qualities of place (topistics).

The haptic system is educational psychologist Piaget's significant addition to space perception theory. One sense organ dominates each perceptual system or sensory modality, with the exception of the haptic system that makes use of multiple senses for highly integrated information.

When Piaget introduced the term, "haptic perception" into the study of environmental perception, he revealed a holistic way of considering our experiences of the physical environment.[2] The term *haptic*, from a Greek term meaning "able to lay hold of" describes the various sensibilities of the body to its position in the physical environment, and to its own condition. This approach to environmental perception goes far beyond visual spatial perception, and involves the integration of many other senses, such as touch, positional awareness, exertion, balance, sound, movement, and the memory of previous experiences. There are multiple sources of sensibility, most of which have no single "sense organ," but are distributed throughout the body: The layer just below the skin, the joints and tendons, the muscles and ligaments, the blood vessels, and the inner ear.

According to James Gibson, a wide range of the experiences produced from these sources are not "namable sensations," and hence researchers had tended to overlook them.[3] Bloomer and Moore contend that we learn most of what we know and feel about the physical environment through haptic perception and our basic orienting system.[4] Modes of learning that people use to acquire this holistic understanding of their surroundings requires more study.

Methodology

The following methodology allows for the examination of topistic learning patterns in any contested terrain. It has potential application for an inclusive examination of topistics of various cultural or socioeconomic groups. This interdisciplinary study (incorporating methods from historical geography, sociology, and education) illustrates the connection between topistic perceptions and learning patterns. The method provides multiple avenues for data collection, and for triangulation in the analysis. Case studies of specific bounded sites included interviews with the occupancy group and graphic documentation of selected sites. In open-ended interviews occupants were invited to describe the place where they lived or worked. Past configurations of the sites were mapped and graphically reconstructed from the occupant's knowledge. This produced a *perceived* historical geography for analysis.

The interviews were analyzed to reveal modes of topistic learning: visual, haptic, and two distinct sources of social learning, cultural knowledge and family stories. This was done by constructing a matrix that delineated how a person's perceptual mode varied, depending on the subject matter (see figure 1). Each instance of perceiving a part of the physical environment was recorded as a tick mark in one of the perceptual categories. The four subject-matter groupings down the left side consisted of particular building elements, building and landscape relationships, natural elements, and the larger scale geography. This tool made it easy to draw comparisons between individuals and groups.

Figure 1 Sample matrix constructed for analysis of interview data.

Site 1	Visual	Haptic	Social: Cultural	Social: Family stories
Perception of design attributes of bldgs / structures:				
Bldg. character	IIII		II	
Bldg. age		I		IIII
Form	II			I
Plan	IIII	IIII		IIII
Surface				
Openings	III			I
Circulation	I			
Structure / constr.	IIIIIIIII	IIIIIIIIIIII	I	IIIIII
Color	I			
Materials	IIIII		I	I
Scale	I	I		
Function	III	IIIIIIIII		IIIIIIIIIII
Other				I
Percept. of relation-ships (bldgs/land):				
Proxim. of struct.	I	III		
Site plan org.	IIIIIIIIII	IIIIII	III	II
Struct. / topog.	II			
Ditches				
Roads / railrd.	IIIIII	IIIIIIIII	III	IIIIII
Views (out/in)	II		I	
Land use	II	IIIIIIIII	IIIII	IIIIII
Boundaries	III	IIIII		
Livestock	II	IIIIIIIIIIIIIIIIIIIIIIII	II	IIIIIIIIIIIIIII
Perception of natural elem.:				
Season / weather		IIIIIIIII	III	IIIII
Natural water	IIIII	IIIIII	IIIIIII	II
Lone trees	I	I		
Topography	IIIIIII	IIIIIIIII	I	I
Vegetation	III	I		I
Ground texture		IIIIIIIII		
Wildlife			I	
Size / ownership	I	II	IIIIII	IIIIII
Perception of larger region:				
Neighbor	IIII	II	IIIIII	IIIIIIII
Town	I	II		IIIII
Gallatin Valley			IIII	
S.W. Montana				
Montana	I	I	III	II
Agricult. West	I	II	IIIII	

Figure 2 Comparison of perceptual modes of three family members at site #1.

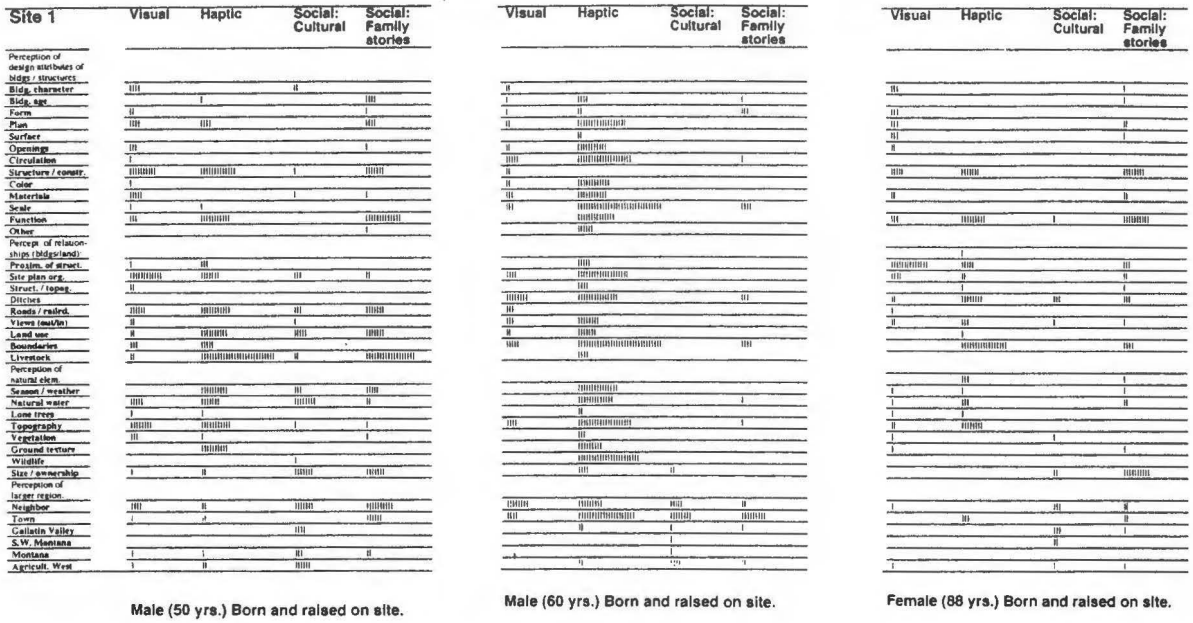
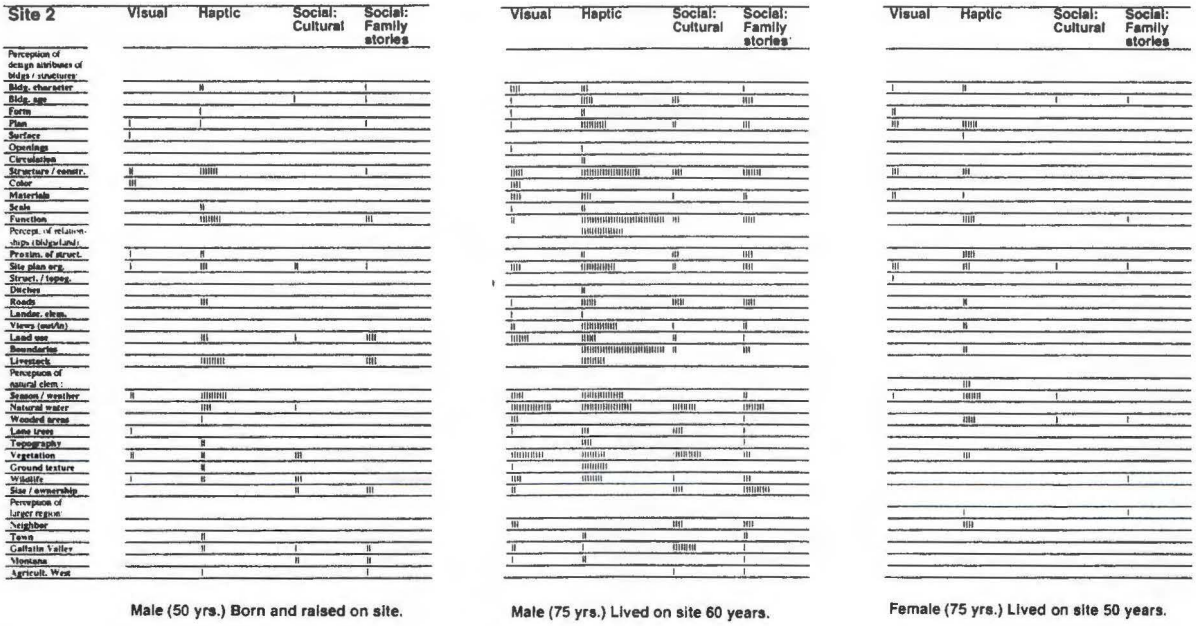


Figure 3 Comparison of perceptual modes of three family members at site #2.

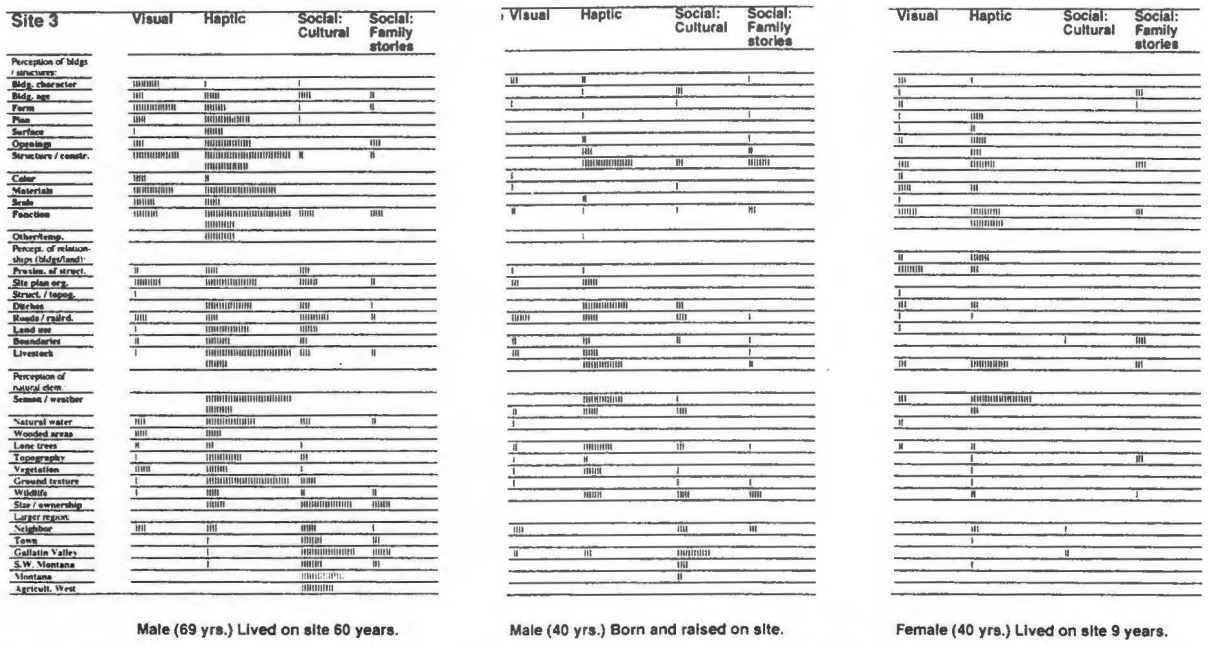


Findings of Sample Study

An investigation in southwest Montana involved interviews with third-, fourth-, and fifth-generation ranching families (see Figures 2, 3, & 4). Those interviewed revealed that it was a combination of their physical work and a localized folklore that formed the basis of their perception of the natural and built landscape. This population perceived and understood their places very clearly in terms of the overall site plan organization, and formed a clear and persistent cognitive map. Analysis of perceptual modes, using the matrix, revealed that haptic perception was by far the dominant form of perception among this group. Ranchers learned about their places by their physical activity on the land and among the buildings, not by seeing them. It also showed that a shared body of local knowledge, about people, farming, ranching, and the history of the area formed the basis of a local folklore that tied families and community together in their location.

As the interviews were analyzed for perceptual modes, it was often the verbs used that revealed the way in which a person perceived and understood their environment. Figures 2, 3, and 4 illustrate comparisons of three family members

Figure 4 Comparison of perceptual modes of three family members at site #3.



interviewed at three different ranch sites. The analysis revealed that visual knowledge played a surprisingly minor role in the place knowledge of Gallatin Valley ranchers.

Ranchers relied most heavily on the haptic system of sensing touch, movement, position, and balance. They learned by doing physical work, year after year, in the same hay fields and in the same barns. They based their perceptions on engagement with the land, the weather, and the buildings. They expressed a detailed, tactile knowledge of the topography and the ground conditions:

> "It's pretty bad sometimes when you're outside feeding...with the snow, and the wind blowing, and the mud is this deep...it gets pretty bad."

They intimately understood the texture of the ground at different times of the season. They knew the topography from the tilting of the tractor, or the flow of their irrigation water. They also understood their buildings and fences from the standpoint of the physical labor it took to construct and maintain them, rather than from how they looked.

Analysis of the perceived historical geography of specific sites over a span of eighty-five to a hundred years illustrates the persistence of cognitive mapping from one generation to the next (Figures 5, 6, & 7). This was achieved by mapping the remembered site plan at approximately thirty-year intervals (temporal cognitive mapping). The earliest iterations of these plans dated to 1890. The existence and position of buildings from this period was information passed verbally from earlier generations (although occasionally a photograph existed to reinforce this information). Whether the site plans produced this way from interview data are historically correct is not as important as how they illustrate the *perceptions of the past*.

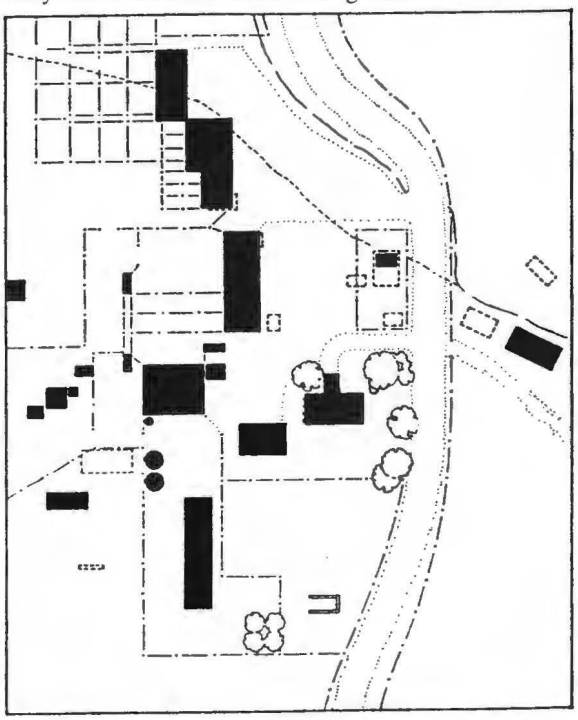
What these plans show is that ranchers tended to maintain a consistent understanding of the site plan organization as buildings were added, demolished, or moved. As they recalled more distant periods in the past, their knowledge was less complete, but their mental construct of the overall organization and site circulation was consistent with the present organization. In other words, through their memory of the past, and through stories handed down within the family, ranchers expressed a high degree of continuity in their temporal cognitive mapping of their places.

Consistency between past and present configuration may or may not have been historically true, but it is significant that the occupants' perceptions suggested that the organization of the place had not fundamentally changed in the course of a century, even though up to twenty buildings had been added, demolished, and often moved. When an individual forms a cognitive map in the mind to understand a complex place, that appositional scheme identifies multiple simultaneous relationships rather than linear relationships, and is an entirely spatial form of thought.[5] It is significant that the development of a cognitive map is dependent on motion and circulation through and around the place, because the process of evolving a cognitive map may be closely linked to the process of acquiring haptic perceptions.

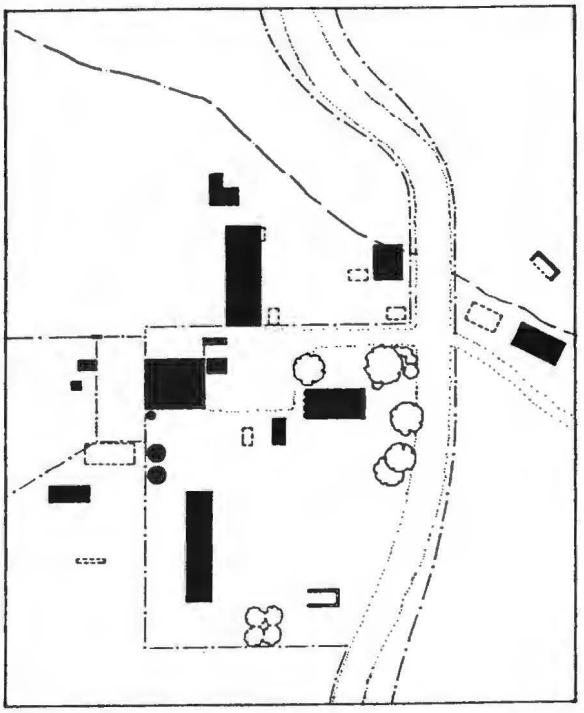
A localized cultural knowledge played a large part in how ranchers understood their places. This knowledge varied from the siting of buildings, to water rights, to local railroad history, or changing farming practices and technology. A locally shared knowledge contributed to community understanding between neighbors who participated in similar work.

Ranchers appreciated the early siting and orientation decisions that their predecessors had made in the establishment of their ranches. They felt that historic concerns for water, drainage,

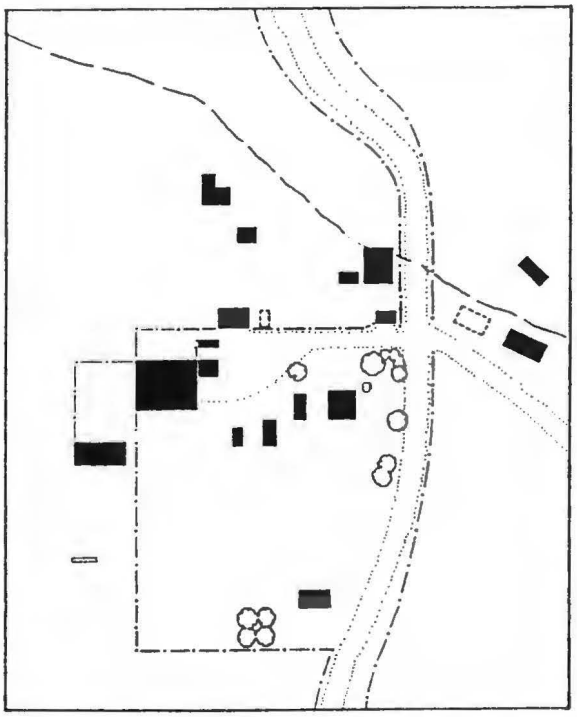
Figure 5 Mapping of site #1 reconstructed from interviews with family members. Note the similarity of site plan revealed in family memories of the earliest configuration.



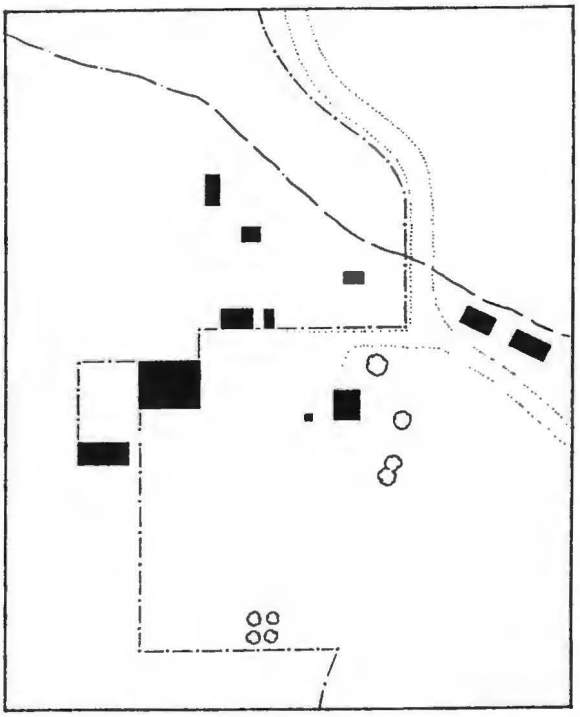
1997- Site 1- Site plan at the time of study



1960- Site 1- Site plan recalled from memory of interview participants

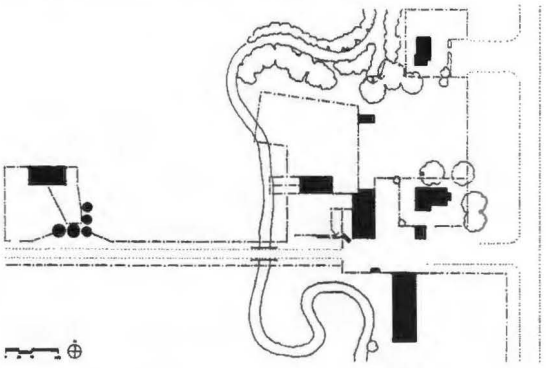


1930- Site 1- Site plan recalled from memory and reconstructed from family stories

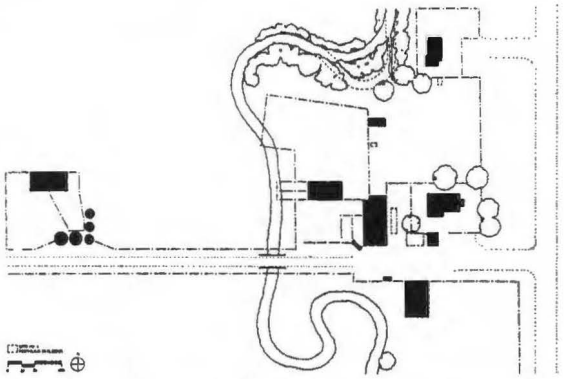


1890- Site 1- Site plan reconstructed from family stories

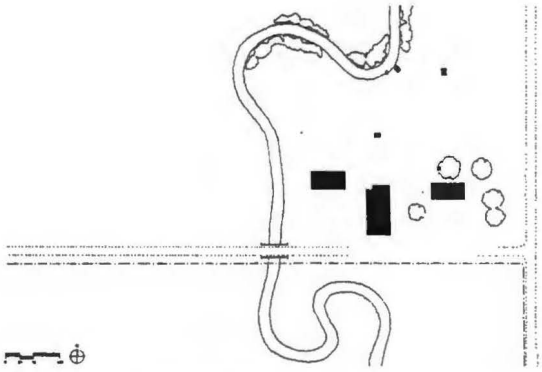
Figure 6 Mapping of site #2 reconstructed from interviews with family members. Note the similarity of site plan revealed in family memories of the earliest configuration.



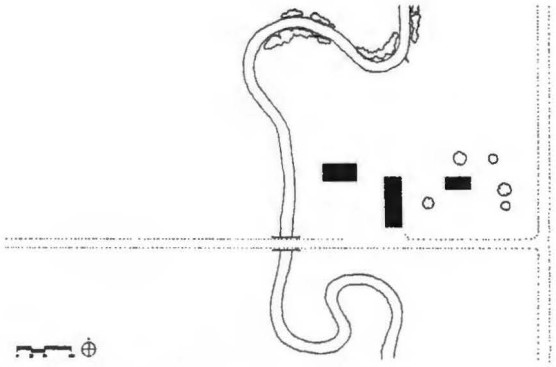
1997- Site 2- Site plan at the time of the study



1960- Site 2- Site plan recalled from memory of interview participants



1915- Site 2- Site plan reconstructed from family stories



1890- Site 2- Site plan reconstructed from family stories

shelter, and accessibility were timeless siting qualities, which they continued to appreciate. Understanding of historic water rights was also an important factor in place knowledge, and was often challenged. The history of local railroads and spur lines played a major part in the perceptions of many ranchers, because of the corporation's methods of appropriating and disposing of land.

Ranchers frequently referred to members of the family as they talked about their places and their work. There were no clear boundaries between living and working on the ranch. Family and ranch work were parts of an inseparable whole. A shared narrative of family stories, handed down, not only informed ranchers about earlier buildings on the ranch, or the nuances of a particular hay field, but they contributed heavily to an accumulated knowledge about the place:

> "When my grandparents were running the ranch the threshing crews from all over all stayed here, up in the barn. My dad remembers that."

The way in which ranchers managed their places visibly reflected their shared world view. They interpreted diverging world views of new neighbors by their visibly differing land use.

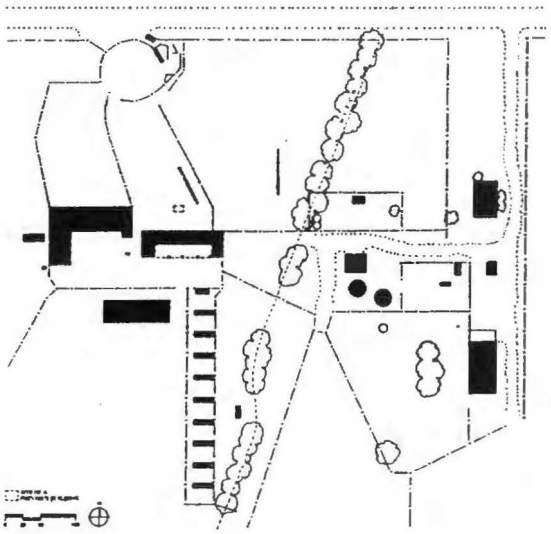
> "Then he went along our fences and put no hunting signs on our fence, so nobody would trespass on his ground. You just drive down the road and you see what's going on."

Ranching families expressed the sentiment that they derived their self-identity from their geographic place through their actions and interactions:

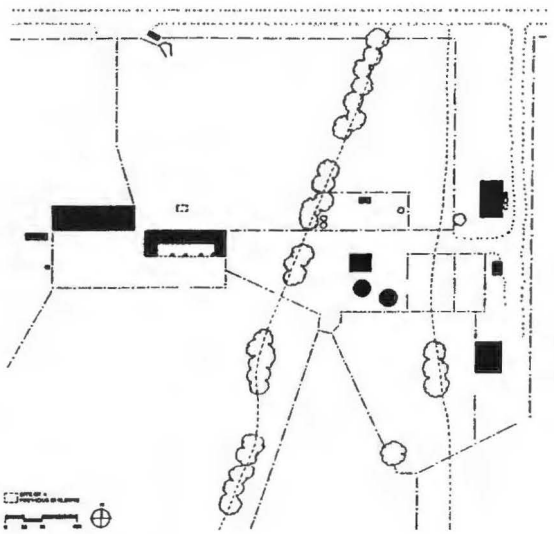
> "There's a little bit of you in every fence post, every staple that you drive, every nail that you put in...everything that you do is a little part of you."

Family and self were deeply tied to location through work and stories linking them to a specific past in that place.

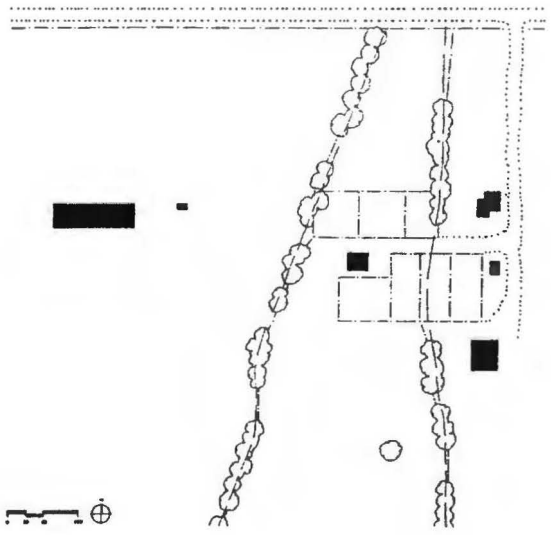
Figure 7 Mapping of site #3 reconstructed from interviews with family members. Note the similarity of site plan revealed in family memories of the earliest configuration.



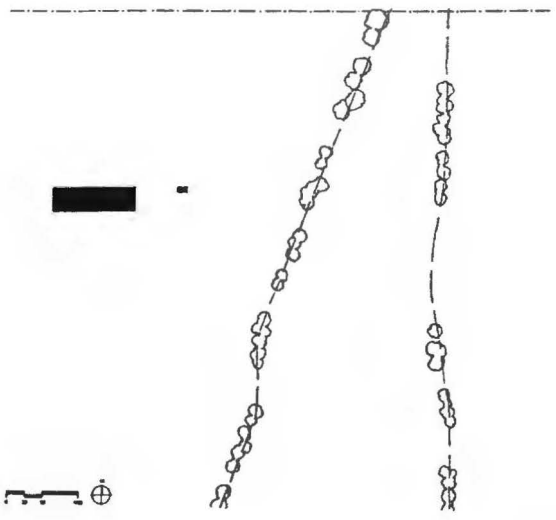
1997- Site 3- Site plan at the time of the study



1960- Site 3- Site plan recalled from memory of interview participants



1930- Site 3- Site plan recalled from memory and reconstructed from family stories



1915- Site 3- Site plan reconstructed from family stories

Conclusion

In this particular study of a rural environment pressed by sprawling development, only one group was studied. The methodology presented here, however, would be useful in determining and analyzing the place learning patterns of two or more groups in the same setting.

Ranchers based their place knowledge on a history of practical experiences that were fundamentally participatory. Visual perception and esthetics did not play a prominent role in their understanding. A history of participation and involvement of the family within a community that shared interests and work was critical in linking the individual's own identity with the geographic place. They based their community and connection with the landscape on what Yi Fu Tuan calls the "steady accretion of sentiment,"[6] which they evolved largely from experiences, and not from seeing.

These results suggest that planners, developers, and architects can protect the identity of place for Gallatin Valley ranchers only by looking well beyond visually based solutions for new development. This has potentially profound implications for growth planning, if the cultural heritage of the farming and ranching population is to be protected at all. By investigating and understanding how any sub-cultural group learns about and perceives a local environment, planners, designers, and economists may plan for growth that conserves critical and highly valued patterns of the landscape. This method of examination of perceptual patterns is an opportunity to get us closer to understanding the concerns and priorities of various groups in the contested terrain of development.

Notes

[1] E. V. Walter, in *Placeways: A Theory of the Human Environment,* describes *topistic* as an adjective associated with *place* as *spatial* is associated with *space*. (Chapel Hill: University of North Carolina Press, 1988), p. 21.

[2] Jean Piaget and Bärbel Inhelder, *The Child's Conception of Space* (London: Routledge and K. Paul, 1956).

[3] James Gibson, *The Senses Considered as Perceptual Systems* (London: Houghton Houghton Mifflin Co., 1966).

[4] Kent Bloomer and Charles Moore *Body, Memory, and Architecture* (New Haven, CT: Yale University Press, 1977).

[5] David Stea "Program Notes on a Spatial Fugue," *Environmental Knowing*, ed. Gary T. Moore and Geginald G. Golledge (Stroudsberg, PA: Dowden, Hutchinson and Ross, 1976), p. 111.

[6] Yi Fu Tuan *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota, 1977), p. 33.