The Persistence of Neighboring as a Determinant of Community Attachment: A Community Field Perspective*

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ABSTRACT We examined the community field perspective as a complement to the linear-development and systemic models of community attachment, wherein community attachment is defined as a social bond to the community of place. We empirically evaluated indicators of the actor’s interaction within the social field, such as the perceived quality of neighboring and density of friendships, using social survey and census data from 99 communities in 1994 and 2004 and evaluated as well the percentage change in these indicators from 1994 to 2004. Results show that the community field perspective can complement previous approaches by highlighting the importance of perceived neighboring and friendship density and the persistence of perceived neighboring over time. We suggest implications for community development efforts aimed at enhancing community attachment.

Introduction

This study examined the efficacy of the community field perspective as a complementary approach to understanding community attachment. Previous approaches to understanding community attachment, in particular the linear-development and systemic models, reveal the significance of structural and social conditions for residents’ attachment to their communities. The linear-development model, for example, focuses primarily on population size and density (Buttel, Martinson, and Wilkening 1979; Tönnies [1887] 1957; Wirth 1938) while the systemic model highlights the significance of length of residence, age, and social status for the strength of community attachment (Goudy 1990; Kasarda and Janowitz 1974). We found that by considering community attachment

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through a community field approach (Wilkinson 1991) we gained a better understanding of the effects of neighboring and friendship ties on the emotional bonds that tie individuals to their communities of place. We define “neighboring” as the degree to which residents describe their community as friendly, trusting, and supportive. “Friendship ties” refers to the proportion of adults whom residents know by name and the proportion of close personal friends who live in their community. Data for this study were collected through surveys of 99 Iowa communities for 1994 and 2004. Our findings imply that a community field approach offers a nuanced understanding of community attachment by focusing on the interactive social dimensions over time.

Previous social science studies show significant associations between people’s bonds to the communities in which they live and desirable quality of life outcomes such as lower rates of incivility and violence (e.g., Brown, Perkins, and Brown 2003), stronger mental health (e.g., Prezza et al. 2001), better physical health (e.g., Eyles and Williams 2008), higher rates of philanthropy (e.g., Korsching et al. 2010), and greater civic engagement (e.g., Beggs, Hurlbert, and Haines 1996; Brown 1993; Buttel et al. 1979; Fernandez and Dillman 1979; Goudy 1990; Kasarda and Janowitz 1974; Rojek, Clemente, and Summers 1975; Theodori 2004; Theodori and Luloff 2000). Given these linkages with desirable outcomes, community and place attachment have been studied in a wide variety of ways across several disciplines (Altman and Low 1992; Hidalgo and Hernández 2001; Hummon 1992; Scannell and Gifford 2010; Trentelman 2009).1

Sociological interest regarding community attachment and community social ties emerged during the late nineteenth and early twentieth century. While conceptually we understand community attachment to be distinct from place attachment, we also recognize the significant overlap in measurement, definition, and analysis within and across disciplines (Flaherty and Brown 2010; Trentelman 2009). This study therefore is informed by both place attachment and community attachment literature. Numerous attachment scholars in various disciplines have incorporated place and community attachment literature as nearly interchangeable (Brehm 2007; Brehm, Eisenhauer, and Krannich 2004; Brown et al. 2003; Hidalgo and Hernández 2001; Lewicka 2010; Pretty, Chipuer, and Bramston 2003; Theodori 2000). And most agree on the inadequacy of the conceptual development of place attachment and community attachment (Brehm 2007; Hidalgo and Hernández 2001; Hummon 1992; Pretty et al. 2003), with some calling for greater clarity in differentiating them (Flaherty and Brown 2010; Trentelman 2009). We agree with Flaherty and Brown’s (2010) distinction of place as being “a socially constructed meaning imbued in space” and geographic community as “a set of interconnected social relationships that occur in a space” (506). Throughout this article we identify where scholars have utilized community attachment or place attachment variables in previous works, acknowledging the importance of each in contributing to our study. For a detailed discussion of the place attachment and community attachment literature, see Trentelman (2009).
centuries as sociologists studied the effects of rapid industrialization, modernization, and urbanization on the quality of social relationships. Tönnies ([1887] 1957), for example, observed transitions from gemeinschaft to gesellschaft social arrangements, meaning changes from closely knit relationships and homogenous traits (i.e., typically evident in rural communities) toward greater levels of secondary acquaintanceship and heterogeneous traits (i.e., typically evident in more densely populated, urban areas). Wirth (1938) noticed similar trends and patterns among population size, density, and heterogeneity, and posited that residents of urban areas would experience weaker social ties and community sentiments. Such depictions of societal transformation later influenced sociologists (e.g., Buttel et al. 1979; Kasarda and Janowitz 1974; Wasserman 1982) to examine community attachment within a linear-development perspective, wherein attachment to community was considered to lessen with increases in urbanization, population size and density, and infrastructure development. One might posit, for example, that a potential overload of community contacts might influence persons to limit their contact field to a relatively few others and thereby decrease their attachment to community (e.g., Goudy 1990).

Another approach to understanding community attachment—the systemic model—suggests that attachment is more likely affected by the complexities of our social ties and positions and diverse forms of community organization than changes in population sizes and densities (Hummon 1992; Janowitz 1967; Park and Burgess 1921; Thomas 1967). This approach thereby focuses more on the challenges for the individual in negotiating the social intricacies of living in a more complex environment than on the potential alienating effects of the more complex environment itself. In this manner, one might posit that greater experience with a complex environment would lessen its alienating effects and improve community attachment (Kasarda and Janowitz 1974). The systemic model typically has evaluated the effects of length of residence, social status, and age on the resident’s ability to develop and foster social ties to communities of place, receiving support from numerous studies (e.g., Brown 1993; Flaherty and Brown 2010; Goudy 1990; Kasarda and Janowitz 1974; Sampson 1988; Theodori 2004). In their comparative study of community attachment in Great Britain, for example, Kasarda and Janowitz (1974) found that length of residence had a stronger effect on community attachment than either population size or density, thereby providing support for the systemic model. Similarly, in his multilevel approach to examining local friendship ties and community attachment in rural and urban areas of Great Britain, Sampson (1988) found more support for the systemic than the linear-development model.
model. Goudy (1990) found similar results in his replication of Kasarda and Janowitz’s study for rural Iowa communities, wherein length of residence proved to be the most significant indicator of community attachment.

In a manner similar to these sociological approaches, recent research in community and environmental psychology has demonstrated conceptual and theoretical advancement regarding community and place attachment. Brown et al. (2003), for example, in investigating place attachment in urban neighborhoods experiencing revitalization, differentiated place attachment as emotional bonds to one’s house, block, and neighborhood, thereby accounting for variation at each of these levels. Their analysis focused upon the effects of home ownership, length of residence, fear of crime, perceived incivilities, and collective efficacy on place attachment. Hidalgo and Hernández (2001) compared place attachment at the house, neighborhood, and city levels with consideration for both physical and social dimensions of place attachment. Their findings indicate that social measures of place attachment are more important than physical ones, and that affective bonds to place are more significant at the house and city level than the neighborhood. A replication of their study found similar patterns in four central European countries, indicating neighborhood ties as the strongest indicator of place attachment (Lewicka 2010). Others have conceptually distinguished unique features of often interdependent, yet related measures of place identity, sense of community, and place dependence as dimensions of a sense of place (Pretty et al. 2003).

Although previous social science research indicates statistically significant correlations between community and place attachment and indicators associated with the linear-development and systemic models, such as population size, population density, and length of residence, we note three limitations to prior studies that might hinder the ability to capture the most conceptually and pragmatically informative description of community attachment. First, previous research tends to include mechanisms by which one becomes attached to a community as measures of community attachment. Thus, it might be that theoretically interesting determinants of community attachment have been used to measure community attachment. Kasarda and Janowitz (1974), Goudy (1990), and Beggs et al. (1996), for example, included social bonds and sentiments as measures of community attachment. Their measures consisted of questions assessing local friendship and family ties, organizational membership, one’s sense of feeling at home in a given place, one’s interest in knowing the happenings in a given place, and the sense of sorrow or pleasure one might feel if one had to leave a given place.
Similarly, Matarrita-Cascante and Luloff (2008) conceptualized community attachment as one’s feeling of acceptance and belongingness in the community, sense of the community as a real home, trustworthiness of community members, and willingness of community members to help others. Theodori (2004) considered notions of belongingness, friendship and associational ties, collectivism, loyalty of fellow residents, and perceptions of homogeneity among residents in measuring community attachment. Flaherty and Brown (2010) utilized three variables to assess both the emotional and cognitive dimensions of community attachment. The emotional dimensions derived from two questions asking how much the respondent felt “at home” in his or her community and how sorry the respondent would be if he or she had to move away from that community. The cognitive dimension of community attachment was based on the degree of interest of the respondent in knowing what goes on in the community.

Other studies have included environmental and spatial indicators (Brehm 2007; Brehm et al. 2004; Budruk 2010; Stedman 2002, 2003) as well as varying types of social bonds and sentiments (Brehm et al. 2004; Cuba and Hummon 1993; Hidalgo and Hernández 2001; Lewicka 2010; Long and Perkins 2007; Matarrita-Cascante et al. 2006) to measure community and place attachment. In addition to measures of how sorry or happy one would be to move from a given place, previous studies have also included one’s sense of pride (Brown et al. 2003; Lewicka 2010), sense of security and influence and involvement in local affairs (Lewicka 2010), and interest in community affairs (Flaherty and Brown 2010) as key measures of attachment to community and place. Although we note a general agreement on the definition of community attachment across disciplines, conceptualization of its physical and social components often vary (Altman and Low 1992; Brehm 2007; Brehm et al. 2004; Flaherty and Brown 2010; Hummon 1992; Theodori 2000; Trentelman 2009). Therefore, a perhaps more conceptually informative evaluation of community attachment would measure it specifically as a feeling of being at home in or bound to a geographic community and then evaluate the extent to which structural and social conditions influence this sense of attachment.

Second, it might be that previous research using the linear-development and systemic models has been limited in its ability to inform practitioners of the most effective means to foster community attachment. That is, the findings that population size, population density, and length of residence are related to community attachment provides practitioners with little guidance in developing effective programs for fostering community attachment. Some recent studies in envi-
Environmental psychology have indicated the importance of spatial variation in place attachment (Hidalgo and Hernández 2001; Lewicka 2010; Brown et al. 2003) and patterns of home ownership and appearance, collective efficacy (Brown et al. 2003), and neighboring and friendship ties (Lewicka 2010), offering some insight for community practitioners. From an applied perspective, however, it seems worthwhile to identify key social determinants of community attachment that can be effectively altered or enhanced to increase peoples’ attachment to the communities in which they live.

Third, most previous studies have been unable to evaluate residents’ community attachment over time. This inability to assess changes in community attachment longitudinally might hinder the ability to correctly identify the key determinants of attachment to community. Previous literature (e.g., Goldschmidt 1978a, 1978b; Lobao 2000; Lobao and Stofferahn 2008; Stofferahn 2006), for example, notes that changes in economic infrastructure, and in particular the scale of agriculture surrounding the types of small, rural places studied here, might negatively affect the quality of social bonds, community well-being, and ultimately community attachment.

In consideration of these limitations, we examined what might prove to be a conceptually and empirically acceptable complement to the linear-development and systemic models for understanding community attachment. We describe and test our theoretical model with data collected on 99 small communities in Iowa in 1994 and 2004 and using the change in these communities from 1994 to 2004.

Theoretical Approach

We suggest that Wilkinson’s (1991) community field approach might provide additional understanding of the key dimensions of community attachment in conjunction with the linear-development and systemic models. This approach to community suggests that social interaction serves as the foundation for collective action, community development, and enhanced community well-being. From the community field perspective, community attachment would be expected to develop through human interaction and dialogue, which “is the foundation of all communities” (Flora and Flora 2008:214). Through this interaction the self emerges through interactional relationships and is given meaning (Mead 1934). The community serves as the space that fosters multiple interactions and gives meaning to the individual and others. Through the most basic process of social interaction, community arises, and the potential for collective and cooperative actions exist. The social condi-
tions and organization that arise influence the quality of individual and material well-being, contributing to community social well-being and the emotional bonds individuals sense toward the places they live (Wilkinson 1991). As Scannell and Gifford (2010:5) observe, “part of social place bonding involves attachment to the others with whom individuals interact in their place, and part of it involved attachment to the social group that the place represents. . . . These definitions suggest that social place attachment can sometimes center upon the place as an arena for social interaction, or as a symbol for one’s social group.”

According to community field theory, social fields exist and emerge through ongoing contacts among persons participating within the field (Wilkinson 1991). Specific interests drive the various social fields, while the broader community field generally focuses on the overall well-being of the community through coordinating the interests and goals of the multiple social fields (Matarrita-Cascante and Luloff 2008; Wilkinson 1991). This process is dynamic because of “actors, associations and actions moving into and out of contact with the generalization process” (Matarrita-Cascante and Luloff 2008:45). With this perspective in mind, it seems reasonable that increased forms of neighboring, friendship networks, and dialogue that characterize social interaction also will foster greater levels of community attachment. This community field, or interactional, approach implies that in communities where individuals sense high degrees of neighboring and are in close proximity to people they know, they will reveal stronger emotional bonds to these communities of place. A focus upon neighboring and contacts with others implied by the community field perspective might provide an indication of the relative importance of social-structural and interaction-based indicators of community attachment. Additionally, the community field approach focuses on social determinants that are amenable to direct intervention, which might provide more guidance to practitioners in their efforts to improve attachment to community.

We propose the community field approach as a complement to, rather than as a competitor with, the linear-development and systemic approaches because we note important conceptual linkages among them. Advances in communications and transportation infrastructure, for example, typically associated with the linear-development approach, likely can facilitate the social bridging activities typically associated with the systemic approach (e.g., Granovetter 1983). Similarly, one might anticipate that social bridging activities will facilitate local social bonding, essential within the community field perspective (Wilkinson 1991). In this regard, we consider civic participation to be conceptually linked with both the systemic and community field perspectives, wherein
civic participation can be expected to facilitate social networking, and social bonding with others can be expected to facilitate participation in community groups and organizations (Matarrita-Cascante and Luloff 2008).

Theoretically, our principal interests are, first, defining community attachment as a sense of feeling bound to the community, without reference to what we believe to be determinants of community attachment; and, second, positing that determinants of community attachment will include infrastructure development of the community, engagement in it through civic participation and length of ties with others, and a sense of feeling bonded with friends and neighbors. These three theoretical perspectives, therefore, inform one another. And these complementary perspectives imply complementary development activities in that the linear-development perspective focuses on economic and infrastructure development (Goudy 1990; Kasarda and Janowitz 1974); the systemic approach emphasizes building community networks and bonds as they relate to length of residence, age, and social status (Theodori 2004); and the community field perspective highlights the fostering of ties to friends and neighbors within communities (Matarrita-Cascante and Luloff 2008; Wilkinson 1991). Although economic and infrastructure development, civic participation, length of residence, and the quantity and quality of neighboring all are important elements of facilitating community attachment, this study sought to determine the relative importance of these factors on community attachment, at least for the small, rural towns surveyed.

Conceptual Measures

With these theoretical issues in mind, we propose that community attachment be defined as a feeling of affinity for and a commitment to community. Community attachment thereby implies a sense of being bound to a geographic community not only by economic necessity or family ties but by attraction and commitment to the community as a social field. We therefore adopt a definition of community attachment congruent with previous research that highlights a sense of rootedness derived from local social relations (Flaherty and Brown 2010; Hummon 1992; Trentelman 2009), viewing it as distinct from other community-level variables such as community satisfaction (Brown 1993; Hummon 1992; Theodori 2004), community participation (Matarrita-Cascante and Luloff 2008), friendship density (Flaherty and Brown 2010; Sampson 1988), and neighboring (Wilkinson 2007).

In keeping with this conceptual approach, we examined indicators of the social field such as the perceived quality of neighboring and friend-
ship density. Lewicka (2010) cited neighborhood ties as the most significant predictor of place attachment in four central European cities. Sampson (1988) found that the direct effect of local friendship networks significantly increased individual-level attachment to community, more than double the direct effect of length of residence on attachment. Similarly, Brown (1993:393) revealed “community attachment was more closely associated with knowing a greater proportion of people in the community than with length of residence.” Freudenburg (1986) called for a renewed consideration for acquaintanceship density in his studies of deviance, socialization of the young, and caring for those in need of help. Following previous research, we proposed that both structural and social conditions are likely to act as key determinants of community attachment. At the same time, we sought to evaluate the relative effects of neighboring and friendship density in relation to indicators of the linear-development and systemic approaches. Accordingly, we assessed the extent of community attachment to the small, rural places examined here as an outcome of structural conditions such as population size, urban influence, retail activity, and the scale and structure of agricultural production. While most earlier research, like this study, have strictly utilized quantitative methods and analysis, some studies have sought to gain a greater glimpse of interactive community variables by incorporating qualitative methods at the community level. Given our emphasis on the importance of interactional ties to community attachment, we note that our quantitative approach requires further examination of the processes of community engagement and attachment (e.g., Brehm 2007; Brehm et al. 2004; Matarrita-Cascante and Luloff 2008; O’Brien and Hassinger 1992).

In summary, we wondered about the extent to which the community social field perspective, with its focus on the interactional activities of residents, might serve as a complement to the linear-development and systemic models of community attachment. This approach required that we designate community attachment as a feeling of being bound to the social field of the community and omit from its conceptualization and measurement factors that would be identified as determinants of place from the perspective of community field theory.

Methods and Data Analysis

Sampling and Data Collection

We conducted social surveys in 99 communities, one in each of Iowa’s 99 counties, selecting the communities to represent small places, not directly adjacent to large, urban areas, whose economies were predomi-
nantely influenced by agricultural activities. They range in size from approximately 500 to 8,500 residents. A sample of 150 households was selected at random based on listings in telephone directories (with increasing numbers of persons dropping land lines today, this methodology most likely would lead to more sampling bias than would be expected for 1994 and 2004). We contacted adults in these households by mail four times with letters, postcards, and replacement questionnaires as needed (see, e.g., Dillman 1978). Both the 1994 and 2004 surveys used this methodology, with different individuals contacted in each year. Overall, the response rates were 72 percent in 1994 and 67 percent in 2004. We retrieved place and county-level data from the U.S. census (1990 and 2000) and the USDA Census of Agriculture (1992 and 2002).

We eliminated observations with missing responses to the measures of community attachment and its hypothesized determinants rather than replace these responses with means or estimated values. This procedure yielded final samples of 9,154 and 8,347 for the 1994 and 2004 data, respectively. The original 1994 and 2004 data sets contained 10,798 and 9,962 observations, respectively. Analysis of the frequencies indicated no significant differences in the original and final samples. Further analysis (see Bollen 1989) revealed no indications that the final data contained significant outliers.

Measures and Procedures

The study focused on the extent to which individual-level variables such as social-demographic characteristics, length of residence, community participation, community satisfaction, perceived neighboring, and friendship density, along with community-level variables such as population size, urban influence, retail activity, and changes in the scale and structure of agriculture, affect community attachment. Table 1 lists the model variables and constructs and their indicator items.

Dependent variable. We measured community attachment as the mean response to two questions related to feelings of attraction and commitment to one’s community: “In general, would you say you feel ‘at home’ in [Place]?” (four-point response scale); and “Suppose for some reason you had to move away from [Place], how sorry or pleased would you be to leave?” (five-point response scale).

Indicators of linear development. We relied on three variables to represent the linear-development approach to understanding community attachment. Population size equaled the census figures for the place in 1990 and 2000. To account for proximity to an urban center, we
Table 1. Measurement of Model Variables.

<table>
<thead>
<tr>
<th>Theoretical Approach</th>
<th>Alpha 1994</th>
<th>Alpha 2004</th>
</tr>
</thead>
</table>

**Dependent variable**
- Community attachment: In general, would you say you feel “at home” in [Place]? Suppose for some reason you had to move away from [Place], how sorry or pleased would you be to leave?

**Linear development**
- Population size
- Urban influence code
- Retail pull factor

**Systemic involvement**
- Length of residence
- Community satisfaction
- Jobs, medical services, public schools, shopping facilities, shopping facilities, adequate housing, recreation/entertainment, child care services, senior citizen programs, programs for youth.

**Participation in community**

**Community field involvement**
- Perceived neighboring
- Being a resident of [Place] is like living with a group of close friends.
- [Place] is best described as friendly.
- [Place] is best described as trusting.
- [Place] is best described as supportive.

Friendship density (see frequency distributions below).

**Social demographic**
- Age
- Sex
- Formal education
- Household income

**Social structural**
- Mean hogs per farm
- Mean cows per farm
- % large-sales farms
- % land in crops
- Number of hired workers
- % off-farm ownership

**Friendship Density**

<table>
<thead>
<tr>
<th>Proportion of adults known by name</th>
<th>1994</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>792  (8.65%)</td>
<td>838  (10.04%)</td>
</tr>
<tr>
<td>Fewer than half of them</td>
<td>3,184 (34.78%)</td>
<td>3,058 (36.64%)</td>
</tr>
<tr>
<td>About half of them</td>
<td>2,834 (30.96%)</td>
<td>2,551 (30.56%)</td>
</tr>
<tr>
<td>Most of them</td>
<td>2,283 (24.94%)</td>
<td>1,873 (22.44%)</td>
</tr>
<tr>
<td>All of them</td>
<td>61   (0.67%)</td>
<td>27   (0.32%)</td>
</tr>
</tbody>
</table>

**Proportion of close personal friends**

<table>
<thead>
<tr>
<th>Living in the community</th>
<th>1994</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1,208 (13.20%)</td>
<td>1,283 (15.37%)</td>
</tr>
<tr>
<td>Fewer than half of them</td>
<td>2,926 (31.96%)</td>
<td>2,769 (35.17%)</td>
</tr>
<tr>
<td>About half of them</td>
<td>2,242 (24.99%)</td>
<td>1,915 (22.94%)</td>
</tr>
<tr>
<td>Most of them</td>
<td>2,672 (29.19%)</td>
<td>2,271 (27.21%)</td>
</tr>
<tr>
<td>All of them</td>
<td>106   (1.16%)</td>
<td>109   (1.31%)</td>
</tr>
</tbody>
</table>

*a The theoretical approach of this article is that indicators of the linear-development, systemic, and community-field perspectives are complementary to, not mutually exclusive of, one another.
included in our models the urban-influence code. Urban-influence codes classify metropolitan and nonmetropolitan counties according to their population size and commuting distance from urbanized areas (USDA 2003). In effect, they identify the extent to which a county is influenced by its proximity to the socioeconomic conditions of larger urban areas. The urban-influence code ranges from 1 to 12, with smaller numbers indicating larger urban places. Most of the 99 communities selected here were not immediately adjacent to a large urban area. The Office of Management and Budget initiated major changes in its delineation of urban-influence codes in 2003. The Economic Research Service (USDA 2003) asserts that, in concept, the 2003 codes are comparable with those of earlier decades, but cautions that it is impossible to precisely compare earlier codes with the ones developed in 2003. Therefore, one should interpret with some caution the results here related to the effects of urban-influence codes on community attachment. Some studies of community attachment (e.g., Schutjens, Mackloet, and Korteweg 2006) suggest that attachment improves with greater economic and business activity. The retail pull factor represents the strength of retail trade in a place in relation to a larger area, such as the state. It is calculated as the ratio of local retail sales to state retail sales multiplied by the ratio of local per capita income to state per capita income. The center point of the factor is 1, wherein a factor of less than 1 indicates a loss of potential retail activity to surrounding areas and a factor over 1 means the community is attracting retail trade from other areas.

Indicators of systemic involvement. We measured length of residence in years, and community satisfaction as the mean response (four-point response scale) to satisfaction with 15 attributes of place, including its jobs, medical services, public schools, shopping facilities, availability of adequate housing, recreation and entertainment facilities, child-care services, senior citizen programs, programs for youth, and overall services. We measured community participation (i.e., civic engagement) as the reported total participation in service and fraternal organizations, recreational groups, political and civic groups, job-related organizations, church or other religious groups, and other local groups and organizations.

Indicators of community field involvement. We measured perceived neighboring as the mean response to four questions: “Being a resident of [Town] is like living with a group of close friends” (five-point response scale); “[Town] is best described as friendly” (seven-point response scale); “[Town] is best described as trusting” (seven-point response scale); and “[Town] is best described as supportive” (seven-point response scale). To
measure friendship density we asked, “About what proportion of the adults living in [Town] would you say you know by name,” and weighted the response to this question by the response to the question, “About what proportion of all your close personal adult friends [emphasis in the questionnaire] live in [Town].” The resulting score reflected the perceived number of persons known in the community and the sense of being connected to them as friends, thereby representing friendship density (see Freudenburg 1986).

**Social-demographic covariates.** We measured age in years, and years of formal education in seven categories (1 = less than 9th grade; 2 = 9th to 12th grade, no diploma; 3 = high school graduate; 4 = some college, no degree; 5 = associate degree; 6 = bachelor’s degree; 7 = graduate or professional degree). We measured total household income before taxes in eight categories (1 = less than $10,000; 2 = $10,000–$19,999; 3 = $20,000–$29,999; 4 = $30,000–$39,999; 5 = $40,000–$49,999; 6 = $50,000–59,999; 7 = $60,000–$74,999; 8 = $75,000 or more).

**Social-structural covariates.** Much sociological literature has addressed the potential effects of the scale and structure of agriculture on quality-of-life indicators in small, rural communities (e.g., Lobao and Stofferahn 2008; Stofferahn 2006). This conceptual issue seems to be of particular significance in Iowa because from the early 1990s to the early 2000s the state witnessed dramatic increases in the scale of hog production. For example, the change in hogs per farm from 1992 to 2002 equaled nearly 238 percent (Table 2). Increases occurred during this time frame as well for other forms of large agriculture, such as those measured by the number of cows per farm, the percentage of farms classified by the USDA Census of Agriculture as “large sales farms,” and the percentage of land in crops, but not nearly to the extent of changes in pork production. Nevertheless, we included these additional indicators of changes in scale to account for their potential effects on community attachment. Previous research (e.g., Lobao and Stofferahn 2008) indicates that the structure of agriculture might affect community attachment. We therefore included in our models two indicators of the changing structure of agriculture: mean number of hired laborers per farm and the percentage of farms owned by off-farm owners.

**Interaction terms.** One might expect to find statistically significant moderating effects among the model variables. For example, we might anticipate an age-sex interaction, wherein older females because of their greater propensity to engage with others than older males (e.g., Felmlee and Muraco 2009) would have stronger community attachment. Similarly, one might expect that friendship density would decrease with increasing population size. In analyses available for
review but not shown here we found that an age-sex interaction was a statistically significant indicator of community attachment in 2004, but not in 1994 and not for the model estimating percentage change in community attachment from 1994 to 2004. The parameter estimate for the 2004 data was very small (i.e., −.061). The friendship density–population size interaction variable was not statistically significant for any of the models, despite the large sample sizes for the 1994 and 2004 data sets.


<table>
<thead>
<tr>
<th></th>
<th>1994</th>
<th>2004</th>
<th>Mean Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Individual level</strong></td>
<td>(n = 9,154)</td>
<td>(n = 8,347)</td>
<td>(n = 99)</td>
</tr>
<tr>
<td>Community attachment</td>
<td>3.865</td>
<td>0.707</td>
<td>3.784</td>
</tr>
<tr>
<td>Satisfaction with community participation</td>
<td>2.312</td>
<td>0.538</td>
<td>2.270</td>
</tr>
<tr>
<td>Perceived neighboring</td>
<td>4.787</td>
<td>1.054</td>
<td>4.684</td>
</tr>
<tr>
<td>Age</td>
<td>53.505</td>
<td>17.297</td>
<td>55.107</td>
</tr>
<tr>
<td>Education</td>
<td>3.728</td>
<td>1.482</td>
<td>4.051</td>
</tr>
<tr>
<td>Incomea</td>
<td>3.754</td>
<td>1.936</td>
<td>4.462</td>
</tr>
<tr>
<td><strong>Place level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population size</td>
<td>1,814</td>
<td>1,843</td>
<td>1,868</td>
</tr>
<tr>
<td>Urban influence code</td>
<td>6.672</td>
<td>1.913</td>
<td>6.579</td>
</tr>
<tr>
<td>Retail pull factor</td>
<td>0.716</td>
<td>0.560</td>
<td>0.718</td>
</tr>
<tr>
<td>% maleb</td>
<td>45.991</td>
<td>0.498</td>
<td>45.609</td>
</tr>
<tr>
<td>Median incomec</td>
<td>$22,804</td>
<td>$4,192</td>
<td>$26,099</td>
</tr>
<tr>
<td>Mean hogs per farm</td>
<td>423.628</td>
<td>108.34</td>
<td>1,440.76</td>
</tr>
<tr>
<td>Mean cows per farm</td>
<td>88.494</td>
<td>28.13</td>
<td>106.57</td>
</tr>
<tr>
<td>Percent land in crops</td>
<td>63.790</td>
<td>15.702</td>
<td>67.106</td>
</tr>
<tr>
<td>Number of hired workers</td>
<td>2.910</td>
<td>0.487</td>
<td>2.904</td>
</tr>
<tr>
<td>% off-farm ownership</td>
<td>25.614</td>
<td>3.250</td>
<td>23.909</td>
</tr>
</tbody>
</table>

a Because income was reported in categories, mean percentage change by individual accounting for inflation cannot be calculated.

b Sex of the respondent was entered as a first-level variable in the hierarchical linear modeling of the 1994 and 2004 data. Percentage change in percent male was entered for the OLS regression on percentage change in place attachment.

c Reported total household income before taxes was entered as an individual-level variable in the hierarchical linear modeling of the 1994 and 2004 data. It was entered as percentage change in median income (in 1994 dollars) for the place in the OLS regression on percentage change in place attachment, 1994–2004.
Analysis Procedure

The models estimated in 1994 and 2004 included variables measured at both the individual and place levels of analysis. Therefore, the estimations for each survey year relied on hierarchical linear modeling (HLM), which accounts for the potential for correlated errors when units are nested within larger units, as is the case here where individuals are nested within places (see Raudenbush and Bryk 2002). HLM provides a more realistic form of estimation and more accurate statistical testing of the parameter estimates, as is appropriate for nested data. The data used to estimate the effects of percentage changes in the independent variables on percentage change in community attachment have no nested observations (i.e., n = 99, the number of places). Therefore, we used ordinary least squares (OLS) regression for this analysis.

Results

Descriptive Statistics

The Cronbach (1951) reliability estimates for the community attachment scale equal .78 and .81 for the 1994 and 2004 data, respectively (Table 1). This scale has a possible range of 1 to 4.5. Thus, the average scores of 3.865 and 3.784 found in 1994 and 2004, respectively, indicate positive community attachment by the survey respondents (Table 2). As might be anticipated for small, rural communities, the mean reported length of residence exceeded 30 years in both the 1994 and 2004 surveys. The community satisfaction scale was unidimensional, as indicated by principal components factor analysis. The values ranged from 1–4 for both data sets, and the Cronbach reliabilities for 1994 and 2004 were .82 and .85, respectively. The mean response to the community satisfaction scale equaled about 2.3 on a four-point scale in both 1994 and 2004, indicating overall slightly better than “fair” satisfaction with jobs, medical services, public schools, and other indicators of community services. The results show a range of 0–16 for number of local organizations in which the respondents participate, with mean scores of 1.721 and 1.453 in 1994 and 2004, respectively. The response categories vary for the indicators of perceived neighboring, wherein one indicator has a response scale of five categories and the remaining three indicators have seven response categories. The possible range for perceived neighboring, therefore, equals 1–6.5. The mean scores of 4.787 and 4.684 for the 1994 and 2004 data, respectively, indicate a perception of neighboring above the possible midpoint of the scaled construct. This scale was unidimensional as indicated by principal components factor analysis and had alpha coefficients of .81 and .82 for the 1994 and 2004 data, respectively. The mean
friendship density scores equaled 7.936 and 7.492, respectively, for the 1994 and 2004 surveys, wherein this score has a possible range of 1–25. We have no figures reported from other studies to compare with the ones we observed for the selected communities in our sample. We can, however, report the frequency distributions for the two items we used to calculate the friendship density score. Respondents in both the 1994 and 2004 surveys reported knowing nearly half of other adults living in their community and that nearly half of their close personal adult friends live in their community.

The survey data are skewed slightly toward females and older persons as compared with what would be expected based on census figures reported for the selected communities. On the other hand, the mean income category reported by respondents is in close conformity with the reported census figures on median income for the community. Years of formal education reported by the survey respondents indicate they have some postsecondary education.

The urban-influence codes for the selected communities ranged from 2–9 in 1994 and 2–12 in 2004. Thus, these towns tend to fall within the designations of “noncore adjacent to small metro area and contains a town of at least 2,500 residents” to “noncore adjacent to small metro area and does not contain a town of at least 2,500 residents” for the urban-influence code, which was the intention of the process used to select the places surveyed. The average retail pull factors of .716 and .718 in 1994 and 2004, respectively, indicate these towns tend to lose potential retail sales to nearby urban areas.

We used mean hogs per farm as one indicator of the agricultural infrastructure affecting the small, rural towns selected for the samples in 1994 and 2004. In 1994 the mean hogs per farm equaled about 424; this figure rose within the next decade to about 1,441, representing an increase, as noted earlier, of approximately 238 percent in the mean hogs per farm within the county encompassing the selected community. The other indicators of the agricultural infrastructure we used were those mentioned earlier, number of cows, farms with large sales, and land in crops, for the county surrounding each of the 99 communities. For our two indicators of commercial agricultural structure, hired workers and off-farm ownership, the mean number of hired laborers per farm equaled nearly 3 for both survey years and the mean percentage of farms owned by off-farm owners equaled nearly 26 percent in 1994 and approximately 24 percent in 2004.

The final column of Table 2 reports percentage changes in the model variables from 1994 to 2004. Perceived neighboring declined about 2 percent from 1994 to 2004, and reports of friendship density declined.
about 4.8 percent during this period. Indicators of community satisfaction and participation declined 2 and 15 percent from 1994 to 2004. The average age increased by just over 3 percent (i.e., about two years), average years of formal education increased by nearly 9 percent, and length of residence increased by about 4 percent (i.e., 1.5 years). Based on census figures, the median income for the communities rose nearly 16 percent from 1990 to 2000. Note, however, that because total household income before taxes was reported in categories, this figure fails to account for inflation. According to figures provided by the U.S. Department of Labor’s Bureau of Labor Statistics (2000), inflation accounted for about a 22 percent increase during this period, meaning that real income seems to have declined somewhat for the small, rural communities studied here.

The percentage change in the retail pull index equaled just over 15 percent, indicating that some communities experienced very high increases in retail pull compared with the other communities. The frequency distribution showed that 96 of the 99 places experienced changes in retail pull, ranging from −88 percent to 107 percent. Three places, on the other hand, experienced changes in retail pull of 459, 510, and 657 percent. Despite the comparatively large increases in retail pull for these three communities, multivariate examination of outliers (see Bollen 1989) indicated they were not influential data points in either the hierarchical linear or OLS regression analyses (results not shown).

The bivariate correlations (results available upon request) indicate that the social demographic controls have little effect on community attachment, although even these small associations are statistically significant due to the very large sample sizes in 1994 and 2004. Percentage change in median household income has a moderate positive effect on percentage change in community attachment. Length of residence, community participation, community satisfaction, and friendship density—key individual variables of theoretical interest—have moderate positive correlations with community attachment. The place-level variables have low correlations with community attachment. Mean hogs per farm has a low, but positive correlation with community attachment for both survey years and across time, a result anticipated for Midwest communities in previous reports (Lobao and Stofferahn 2008; Lyson and Welsh 2005; Welsh 1998).

Causal Analysis

Overall, the most important indicator of community attachment for each survey year and for the percentage change in attachment from 1994 to 2004 was the perceived quality of neighboring. As anticipated by
community field theory, the greater the perceived quality of social connections with others, the greater the community attachment. Friendship density, another indicator associated with the community field perspective, had a statistically significant effect on community attachment in 1994 and 2004, but not for the 1994–2004 period. The persistence of perceived neighboring as a key element affecting community attachment was indicated by the relative size of the standardized parameter estimate for the change in community attachment from 1994 to 2004. That is, for the period 1994–2004 the only determinant with a statistically significant effect on community attachment, accounting for 84.4 percent of the total variance explained in community attachment (results not shown), was the perceived quality of neighboring. Taken together, the indicators associated with the community field perspective accounted for 88.2 percent of the explained variance in percentage change in community attachment from 1994 to 2004.

Sex and years of formal education had significant effects on community attachment in both 1994 and 2004 (Table 3). In both 1994 and 2004, length of residence, community satisfaction, and community participation were found to have positive and statistically significant effects on community attachment. For 1994, but not 2004, the greater the population size, the greater the community attachment. Urban-influence code had a negative and statistically significant effect on community attachment in both 1994 and 2004, a result that would be anticipated by the linear-development model (Kasarda and Janowitz 1974; Wirth 1938).

Mean hogs per farm, a key indicator of the scale of agricultural production in Iowa, had small but positive effects on community attachment in 1994 and 2004 and for the percentage change in community attachment from 1994 to 2004. This result runs counter to some other studies, but has been anticipated for midwestern communities (Lobao and Stofferahn 2008). Other indicators of scale and structure of agriculture, such as mean cows per farm, percentage of large-sales farms, percentage of land in crops, number of hired workers, and percentage of off-farm ownership, had in some cases valences on their parameter estimates that support the hypothesis that the greater the scale and the more commercial the structure, the lower the community attachment. These results are mixed, however, across the two periods and for the percentage change from 1994 to 2004. Three exceptions are worth noting. In 2004, the parameter estimates for percent of large-sales farms, number of hired workers, and percentage of off-farm ownership are statistically significant and support the hypothesis that the greater the scale and the more commercial the structure of agriculture, the lower the attachment to community.
Conclusions

This study considered the extent to which the community social field perspective, with its focus on social interaction, might serve as a complement to existing models of community attachment. We examined the relative extent to which indicators of the linear-development, systemic, and community field perspectives affect community attachment in 99 small, rural Iowa communities. This approach required that we designate community attachment as a sense of being bound to the social field of the community and omit from its conceptualization and measurement factors that, from the perspective of community field theory, would be identified as determinants of community attachment. In doing so, we considered the possibility of previously assumed indicators of community attachment as unique variables that act as determinants of community attachment.


<table>
<thead>
<tr>
<th>Model variables</th>
<th>1994a (n = 9,154)</th>
<th>2004a (n = 8,347)</th>
<th>Percent Changeb (n = 99)</th>
</tr>
</thead>
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<tr>
<td>Model variables</td>
<td>Estimate SE</td>
<td>Estimate SE</td>
<td>Estimate SE</td>
</tr>
<tr>
<td>Population size</td>
<td>.026* .001</td>
<td>.026 .001</td>
<td>-.003 .025</td>
</tr>
<tr>
<td>Urban influence code</td>
<td>-.039** .005</td>
<td>-.037* .004</td>
<td>-.055 .011</td>
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<tr>
<td>Pull factor</td>
<td>-.002 .019</td>
<td>.010 .015</td>
<td>.066 .003</td>
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<tr>
<td>Length of residence</td>
<td>.115** .001</td>
<td>.108** .001</td>
<td>.007 .031</td>
</tr>
<tr>
<td>Satisfaction with place</td>
<td>.146** .012</td>
<td>.135** .013</td>
<td>.026 .044</td>
</tr>
<tr>
<td>Participation in place</td>
<td>.035** .005</td>
<td>.050** .004</td>
<td>-.085 .022</td>
</tr>
<tr>
<td>Perceived neighboring</td>
<td>.440** .006</td>
<td>.442** .007</td>
<td>.620** .072</td>
</tr>
<tr>
<td>Friendship density</td>
<td>.222** .001</td>
<td>.213** .002</td>
<td>.144 .092</td>
</tr>
<tr>
<td>Age</td>
<td>-.005 .001</td>
<td>.021 .001</td>
<td>.006 .070</td>
</tr>
<tr>
<td>Sex</td>
<td>-.034** .011</td>
<td>-.030** .013</td>
<td>-.062 .019</td>
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<tr>
<td>Education</td>
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<td>-.020* .005</td>
<td>-.101 .052</td>
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<tr>
<td>Income</td>
<td>.014 .005</td>
<td>.010 .003</td>
<td>.003 .020</td>
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<tr>
<td>Mean hogs per farm</td>
<td>.014 .001</td>
<td>.014 .001</td>
<td>.007 .011</td>
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<tr>
<td>Mean cows per farm</td>
<td>-.007 .001</td>
<td>.005 .001</td>
<td>.044 .016</td>
</tr>
<tr>
<td>% of large-sales farms</td>
<td>-.056 .272</td>
<td>-.153** .279</td>
<td>.087 .027</td>
</tr>
<tr>
<td>% of land in crops</td>
<td>-.001 .144</td>
<td>.110* .166</td>
<td>-.025 .048</td>
</tr>
<tr>
<td>Number of hired workers</td>
<td>-.006 .023</td>
<td>-.027* .016</td>
<td>.001 .011</td>
</tr>
<tr>
<td>% off-farm ownership</td>
<td>.033 .298</td>
<td>-.041** .249</td>
<td>-.071 .021</td>
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</tbody>
</table>

Model statistics

<table>
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<tr>
<th>Rsquarec</th>
<th>−2 Res. Log Likelihood</th>
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<tr>
<td>.45</td>
<td>14,304.8</td>
</tr>
<tr>
<td>.44</td>
<td>14,482.2</td>
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</tbody>
</table>

---

*a* Results of hierarchical linear modeling.

*b* Results of ordinary least squares regression.

*c* Rsquare is estimated for the hierarchical linear modeling: 1994 and 2004.

* Parameter estimate is statistically significant at $I < .05$.

** Parameter estimate is statistically significant at $p < .01$. 
The results suggest that the community field perspective can complement previous approaches by revealing the importance of friendship density and perceived neighboring as well as the ongoing importance of perceived neighboring over time. For 1994 and 2004 the strongest predictor of community attachment was perceived neighboring followed by friendship density, community satisfaction, length of residence, and level of participation. The strongest and only statistically significant predictor of community attachment during the period from 1994 to 2004 was the perceived quality of neighboring. These findings provide support for a community field perspective in that most of the significant indicators reflect the social, interactive dimensions of community attachment. When residents participate more in community organizations and activities, identify greater numbers of friends who live within their community, and most importantly, sense a higher degree of neighboring, they generally are more attached to the communities in which they live.

Theoretically, the application of a community field perspective lends itself to a more nuanced approach to community attachment consistent with recent findings that indicate the significance of social dimensions of people's attachment to the communities in which they live (Hidalgo and Hernández 2001; Lewicka 2010). The interaction-based variables presented in this study give insight into the associations, actions, and social processes of dialogue that influence community attachment, all of which are vital for the emergence of community and community well-being (Matarrita-Cascante and Luloff 2008; Wilkinson 1991). The interaction-based components of neighboring have important implications not only in tying residents together but in creating a supportive environment leading to greater levels of community attachment, participation, and collective action (Matarrita-Cascante and Luloff 2008; Chavis and Wandersman 1990; Unger and Wandersman 1985). The persistence of neighboring over time supports the broader significance of neighboring in influencing social interaction, local problem solving, and neighborhood and community viability (Unger and Wandersman 1985).

The results here therefore suggest that different methodological approaches are warranted in the area of community attachment. What is the process through which neighboring takes place and grows? In what ways does it foster community attachment, development, and well-being? The quantitative methods utilized in this study on community attachment cannot sufficiently address these and other questions like it. Approaches that focus more on interactional processes might offer greater insight into community attachment (e.g., Brehm 2007; Dixon 1995; Park 1992).

Previous sociological studies have highlighted length of residence (Goudy 1990; Kasarda and Janowitz 1974; Sampson 1988), population
size, and population density (Buttel et al. 1979; Wirth 1938) as strong predictors of community attachment. These models, however, offer minimal opportunity or direction for community development practitioners in that it is difficult to change population size, population density, or length of residence to affect residents’ attachment to the communities in which they live. Recent research in community and environmental psychology has focused on the spatial, physical, and social dimensions of attachment to community and place (Brown et al. 2003; Hidalgo and Hernández 2001; Lewicka 2010), and the theoretical and conceptual development of community attachment in relation to other intervening and independent community variables (Pretty et al. 2003). While some studies do highlight accessible approaches for community practitioners related to space, home ownership, civility (Brown et al. 2003), and neighboring (Unger and Wandersman 1985), this research isolated key social dimensions of community attachment within the structural context of rural communities over time.

The results from our model highlight tangible approaches and opportunities for community practitioners in fostering community attachment. Practices and development strategies that create greater levels of interaction among and between neighbors might prove to strengthen local residents’ attachment to their communities. The implications of increased community attachment on other interaction-based variables such as participation, neighboring, local community or neighborhood movements, and community development have been well cited (Theodori 2004; Theodori and Luloff 2000; Unger and Wandersman 1985). Community-based initiatives that facilitate interactive, supportive, and participatory processes between groups and individuals such as block, neighborhood, or community events or festivals; neighborhood organizations (Unger and Wandersman 1985); involvement in civic groups, projects, and local clubs (Matarrita-Cascante and Luloff 2008); and encouraging less participative residents to become involved (Matarrita-Cascante and Luloff 2008; Theodori 2004) may prove to be valuable opportunities.

The primary limitation here is the study’s focus on relatively small, rural communities located in a single midwestern state. Additionally, there is little variance in population size or population density among the communities, posing some challenge to adequately comparing key variables in the linear-development model of community attachment. Despite these limitations, this study offers a possible reevaluation of community attachment as a conceptual model. By reexamining social determinants of community attachment not previously considered in this context, this research offers new directions for community practi-
tioners and future research. Ongoing examinations of community attachment should consider the role of interactional dimensions of community attachment throughout the rural-urban continuum in relation to rapid economic and structural changes. Additionally, further analysis of the varying dimensions of neighboring (see Unger and Wandersman 1985) may provide deeper understanding of its relationship to community attachment and additional key community variables.

References


Eyles, John and Allison Williams, eds. 2008. *Sense of Place, Health and Quality of Life*. Burlington, VT: Ashgate.


