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Gerard T. Kyle¹, Jinhee Jun²,
and James D. Absher³

Abstract

In this investigation, we adapted identity theory to reassess a conceptualization of place attachment—conceived herein as an attitudinal construct used by environmental psychologists to describe people’s bonding to the physical landscape. Past work has conceptualized the construct in terms of three components: cognitive, affective, and conative elements. Based on the tenets of identity theory, we hypothesized that the cognitive component—reflected in the dimension place identity—is an antecedent of these other affective and conative facets. We empirically tested this reconceptualization using data collected from two spatial contexts in Southern California: residents living in the wildland–urban interface outside of San Diego and Los Angeles. Analyses of both data sets provided strong empirical support for our conceptualization of place and its associated measures. Rather than existing on the same temporal plane, we suggest that identification processes drive other affective and conative elements that underlie people attachments to physical environments.

Keywords

place attachment, place identity, identity theory

¹Texas A&M University, College Station, USA

²Hallym University, Chuncheon-si, Gangwon-do, South Korea

³USDA Forest Service, Riverside, CA, USA

Corresponding Author:

Jinhee Jun, College of Business, Hallym University, Chuncheon-si, Gangwon-do, South Korea.
Email: jjun@hallym.ac.kr

Introduction

In a number of fields, place attachment has been used by scholars to understand the bonds humans share with the physical environment. While the construct “subsumes or is subsumed by a variety of analogous ideas” (Low & Altman, 1992, p. 3), many definitions consider the construct in terms of its cognitive, affective, and conative elements (Jorgensen & Stedman, 2001; Low & Altman, 1992; Scannell & Gifford, 2010). The affective element, which is most often featured in definitions and empirical explorations of the construct (see Low & Altman, 1992; Relph, 1976; Tuan, 1974), refers to humans’ emotional attachments to place. Alternately, the cognitive element has generally been considered in terms of the thoughts, knowledge, beliefs, and memories of places of interest (Manzo, 2005; Proshansky, Fabian, & Kaminoff, 1983; Twigger-Ross & Uzzell, 1996). Finally, the conative or behavioral facet reflects individuals’ desire to maintain connections to place and is occasionally evidenced in territorial responses (Scannell & Gifford, 2010). These domains reflect various ways people connect and bond with place. While distinct, they are also intimately connected. Conceptualizations and associated operationalizations imply that place attachment is, for the most part, reflected in these abstract domains (see Kyle, Graefe, & Manning, 2005; Kyle, Mowen, & Tarrant, 2004; Jorgensen & Stedman, 2001). For example, Jorgensen and Stedman (2001) suggested that (a) the cognitive element is reflected in place identity—the association between the self and the setting (Proshansky, 1978), (b) the conative component is reflected in place dependence—a bond with a place that is ground in the setting’s functional attributes (Stokols & Shumaker, 1981), and (c) the affective domain is evidenced in an individual’s emotional attachment to place (Altman & Low, 1992).

Another feature of work that has drawn from this tripartite approach is the assumption that all three domains exist on the same temporal plane. While it is understood that the salience of each domain varies among spatial contexts, individuals, and collectives, the temporal order has been portrayed as uniform. Work on identity in social psychology, however, asserts that the cognitive component (i.e., place identity) is central for understanding the meanings and sentiments people ascribe to places and conative action within spatial contexts (e.g., Burke & Stets, 2009; Cast, 2003; Stets, 2003). Social psychological approaches to identity suggest that an identity comprises a set of meanings defining who one is. This set of meanings functions as a standard or reference for a person’s meaningful behaviors (Stets & Burke, 2003). For identity theorists, people act to bring the perceived meanings of the self in any given situation into consistency with the meanings associated with their

identity. The congruence between the two sets of the meanings is self-verification and people experience positive emotions and sentiments during congruence (Burke & Stets, 1999; Smith-Lovin, 1995; Swann, De La Ronde, & Hixon, 1994; Swann, Hixon, & De La Ronde, 1992; Stets & Tsushima, 2001). In addition, the strength of an emotion is a function of the importance of an identity to the individual with more important identities generating stronger emotions (Bartels, 1997; Burke, 1991, 1996; Burke & Stets, 1999; Cast & Burke, 2002; Stets, 2003; Stryker, 1987). Thus, in the context of place attachment, for places central to an individual's sense of self, the greater the likelihood that the individual will endow the setting with value and sentiment.

Identity theorists have also illustrated that individuals seek to establish and maintain self-verification contexts (Swann, 1990). Actions or activities (e.g., leisure and work) and social interactions (e.g., friends and family) that permit verification of the self are played out more often and are viewed more fondly. In this way, the spatial contexts in which activities and social interactions are continuously executed are valued to the extent people are committed to their identity. As places become more central to an individual's sense of self, a line of activities and social groups that verify place identities are increasingly valued, further fostering individual's ties to place. Thus, following identity theory (Burke, 1991; Burke & Stets, 2009; Cast, 2003; Stets, 2003; Stryker, 1987; Stryker & Serpe, 1982), we hypothesized that the cognitive component—place identity—is an antecedent of these other affective and conative facets of place attachment. We tested this hypothesis using data collected from respondents residing in the wildland–urban interface (WUI) surrounding Los Angeles and San Diego in the United States.

Literature Review

Studies of place have drawn from diverse epistemological perspectives in their conceptualizations of place concepts. Our orientation draws from a rich positivistic tradition that relies on theory and past empirical evidence to define and measure key constructs and then present hypotheses stipulating associations among these constructs. In so doing, we consider place attachment in terms of an attitudinal expression whose elements are temporally distinguished with cognition antecedent to other affective and conative components. While this approach, to some extent, lies in contrast to phenomenological perspectives on place, we feel that place scholarship is enriched by heterogeneity in epistemological and ontological tradition. Our review of the literature that follows is framed by our epistemological and ontological biases. Reviews of work conducted by phenomenologists (Buttimer & Seamon, 1980; Relph, 1976; Seamon, 2011; Tuan, 1977), however, portrays

quite a different perspective that is resistant to the people—place dyad; where people, place, and experience are considered inseparable (Relph, 2008). While there remains tension between opposing research paradigms, we embrace Patterson and Williams' (2005) notion of "critical pluralism" where integration and synthesis across research programs is not an imperative and the adequacy of research be assessed using the normative tenets within which the research is framed.

With this in mind, in the review that follows, we provide an overview of conceptual orientations that have been used by scholars to understand the phenomena of place attachment and its dimensionality. We then provide a review of the theoretical framework guiding our conceptualization of place attachment. This review focuses on the role of identity in shaping how we interpret and respond to the physical world. We conclude with a summary of key ideas and their implications for our reconceptualization of place attachment.

Place Attachment

There is general consensus that place attachment can be defined as an affective bond or link that people share with specific places (Hummon, 1992; Low & Altman, 1992; Shumaker & Taylor, 1983). With emphasis on attachment processes, Hidalgo and Hernández (2001) also cited the importance of a positive affective bond for maintaining a close association with place. The importance of an association or interaction, be it real or abstract, also underlies Tuan's (1977) suggestion that through place interaction, sentiment toward the respective setting also builds. Tuan's discussion of place interaction also exposes the conative elements of place attachment: illustrating the importance of behavior relative to the environment. Interaction allows the individual to experience and understand a setting's nuances with all of their senses. In addition to arousing strong emotions that can vary in valence (Manzo, 2005; Williams, Patterson, Roggenbuck, & Watson, 1992), setting attributes can also shape behavior and ultimately experience, by determining what is possible within the spatial context (Milligan, 1998).

While affect, cognition, and practice are considered to broadly reflect the three essential components of place attachment (Jorgensen & Stedman, 2001; Low & Altman, 1992; Scannell & Gifford, 2010), operationalizations have also varied in the extent to which these elements are reflected in their associated measures. Scannell and Gifford's (2010) recent review of the place attachment literature revealed that some conceptualizations include all three components and others emphasize only one or two of them. While it is understood that these elements do not stand in isolation from one another, to date,

researchers have been content to assume that their contribution to the bonds people share with place occurs simultaneously. This is evidenced in multidimensional measures of place that situate dimensions along the same temporal place (see Brown, Perkins, & Brown, 2003; Harris, Brown, & Werner, 1996; Jorgensen & Stedman, 2001; Kyle et al., 2004; Kyle et al., 2005; Payton, Fulton, & Anderson, 2005; Rollero & De Piccoli, 2010; Williams & Vaske, 2003). Phenomenological scholars have also shied away from propositions of causality, tending to view people–place bonding holistically with constituent elements inseparable (Relph, 1976; Seamon, 1987). They have tended to view definition and measurement of place attachment as falsely abstracting reality—the lived experience of place.

Beyond tensions in ontological and epistemological stance, there have been a select few investigations that present an opposing perspective on causality and structure that aligns with our psychometric paradigm. For example, Hernández, Hidalgo, Salazar-Laplace, and Hess's (2007) study of residents' (university students and the general public residing in the Canary Islands off the northwestern coast of Africa) attachment to three spatial contexts (i.e., island, city, and neighborhood) inferred that affective attachment develops prior to place identification. They also reported that emotional attachment can exist independent of place identification. While causal associations were not at the heart of Hernández et al.'s analysis, their suggestion of temporal order among constructs implies potential causal inference. Similarly, Knez (2005) also tested a model where affective attachment³ was hypothesized to predict the five elements of place identity. They observed strong and positive associations between their measures of place attachment and the identity facets. Finally, Moore and Graefe (1994) and Vaske and Kobrin (2001) each tested models that had place identity being predicted by place dependence. These authors considered place identity in terms of their respondents' emotional attachment to the landscape (both of which were nature-based) and place dependence in terms of respondents' appreciation of the landscape's ability to support desired recreational experiences. Their conceptual logic underlying the hypothesized structure rested on the argument that dependence on the landscape gives rise to emotional attachments. They both observed positive associations that were consistent with their hypotheses.

Troubling comparisons of these authors' work with our own conceptualization of place and the relationships among constructs, however, is the absence of theory. These authors' conceptualizations were ground in variously related past empirical evidence. In the absence of theory, however, the analyses (all cross-sectional data) fail to support causality. This is especially the case for models tested using covariance structure analysis, which, in essence, is a theory-testing tool (Bollen, 1989). In such cases, authors can at

best only claim associations among concepts. It is theory that establishes the conceptual logic and support for causal inference (Maruyama, 1998). Data and associated analyses test the plausibility and bounds of theory. In the absence of theory, any number of competing explanations can be offered with little way of countering and charting progress toward an understanding of the processes being studied.

With this in mind, we drew on social psychological theory on identity to suggest that the three elements do not act in concert with one another. Rather, place identification processes that represent place cognitions (Jorgensen & Stedman, 2001; Kyle et al., 2004; Scannell & Gifford, 2010) are antecedents that drive other affective and conative factors. In the following discussion of identity theory, we illustrate the processes by which place identification acts as an important driver of people's attachment to place.

Identity Theory

The central premise of identity theory that we have adapted from Burke, Stets, and colleagues lies in the suggestion that identity is a primary motivator of an individual's behaviors (e.g., Burke, 1989a, 1989b; Burke & Reitzes, 1991; Stets, 1997; Stets & Burke, 1996; Stryker & Serpe, 1982). Because an identity comprises a set of meanings defining who one is, it provides a person with a sense of who she or he is and how she or he ought to behave. This set of meanings serves as a standard or reference for a person in their evaluations of behavioral choices (Stets & Burke, 2003). Accordingly, people act in a self-regulatory manner with the goal of achieving consistency between the meanings of their identity (which define them in a specific identity) and what they perceive to be the meanings (for that specific identity) in any situation (Burke, 1991; Burke & Stets, 1999; Cast & Burke, 2002; Robinson, Smith-Lovin, & Wisecup, 2006; Smith-Lovin, 1995; Stets, 2006; Stets & Tsushima, 2001). When the consistency between the two sets of the meanings occurs, identity is successfully expressed and affirmed, that is, self-verification.

This perspective on identity views one's identity central for understanding emotion (Burke & Stets, 1999; Stets & Asencio, 2008). In the cognitive process of comparing the meanings of identity with the self-relevant meanings in a situation, a person assesses the degree of correspondence or consistency between the two sets of identity meanings. Incongruence results in the failure to establish self-verification and generates negative emotions, for example, embarrassment, shame, distress, depression, disappointment, or anger. Alternatively, establishing congruence between the two meanings in the self-verification process leads to positive feelings such as esteem, happiness, satisfaction, pleasure, and pride. Individuals feel effective and good about

themselves when they are able to verify themselves. The work of Stets and her associates (Burke & Stets, 1999; Stets, 2003, 2005; Stets & Asencio, 2008; Stets & Tsushima, 2001) empirically illustrates that self-verification has affective implications. In a series of laboratory studies on examining the identity of “worker,” Stets (2003, 2005) illustrated that workers experienced various gratifications when managers gave feedback to the workers that was consistent with what the workers expected to get for their performance. Similarly, Burke and Stets’ (1999) longitudinal study of the “spousal identity” demonstrated that positive self-feelings (e.g., competence, self-esteem, happiness, and satisfaction) were aroused when the self-views of her or his spousal identity were affirmed by the views of their partners.

The strength of emotions is a function of how important or central an identity is to the individual. As identities define “who I am,” they provide individuals existential meanings, purpose in life, and behavior guidance (Burke, 1991, 1996; Burke & Stets, 1999; Stets, 2003; Stryker, 1987; Thoits, 1991, 1995). The importance of one’s identity indicates its meaningfulness to the individual and its affective implications (Stryker, 1968; Thoits, 1991). The more important the identity, the more meaning, purpose, and behavioral guidance an individual derives from its enactment and, consequently, the more the identity influences emotional responses (Thoits, 1991, 1995).

Identity theory views people as active agents in self-verification processes (Burke & Reitzes, 1991; Leary, Wheeler, & Jenkins, 1986; Sampson, 1978). People learn which behaviors are effective in achieving congruence between their identity meanings and meanings of the self in a situation (Burke & Reitzes, 1991). To facilitate self-verification, people seek to create opportunities and contexts in which such behaviors can be acted more often. For instance, the work of Stryker and Serpe (Serpe, 1987; Serpe & Stryker, 1987, 1993; Stryker & Serpe, 1982) illustrated that college freshmen who entered new environments (i.e., college) attempted to create or construct the contexts that, they learned to believe, would nurture their identities. According to Stryker and Serpe, this attempt is accomplished most effectively to find specific activities (e.g., leisure or work), social groups (e.g., friends and family), and settings permitting behaviors appropriate to identity. The process of establishing and maintaining self-verification contexts leads to the development of commitment and emotional attachment to certain activities, social groups, and settings (Burke & Stets, 1999). In this way, the sentiment ascribed to people, activity, and place become inseparable. As people develop attachments to significant others, the sentiment ascribed to those relationships also become intimately linked to the activities shared and the settings in which the relationship is nurtured (Kyle & Chick, 2007). Individuals also learn to develop and stabilize lines of actions to maintain self-verification, especially

for salient identities. According to Burke and Stets (1999), as an individual's identity is continually verified through the interaction with specific others, shared experiences, and settings, she or he begins to see the relationships, activity, and settings predictable and dependable. The individual feels confident and secure in the likelihood of self-verification of their identity derived from the feedback from the others in the experience of familiar surrounds (Burke & Stets, 1999). She or he also feels less vulnerable to the possibility of the negative consequences emanating from the failure to self verify. Accordingly, self-verification generates not only positive self-evaluations but also positive evaluation of others, the shared experiences, and the settings in which the relationship and experiences are shared. In this way, the contexts and settings that facilitate the maintenance of specific identities are valued to the extent individuals are committed to the identity. People's attachment to place emerges from their desire to strive to preserve contexts for self-verification. The verification of place identities evolves through place interaction, often in the context of activity-specific behaviors and in the presence of significant others. These interactions further affirm individual ties to place.

Alternate Theoretical Explanations

Similar to our conceptualization of identity, other authors' work on place identity appearing in the literature (e.g., Korpela, 1989; Proshansky et al., 1983; Twigger-Ross & Uzzell, 1996) also considers the self an active organism that attempts to maintain balance and a desirable sense of self through the interpretation and manipulation of stimuli within the environment. This process is, in part, reflected in the act of self-verification. Distinctions between these approaches and our own lie most notably in each perspective's approach to what elements are most salient in the process involving the interpretation and cognitive manipulation of environmental stimuli and products of this process. For example, Twigger-Ross and colleagues (Speller, Lyons, & Twigger-Ross, 2002; Twigger-Ross & Uzzell, 1996) drew from Breakwell's (1986) identity process theory (IPT), which considers identity as a process involving the assimilation of new information from the environment (social and physical) and the accommodation and adjustment to this information within the existing identity structure. If a threat to identity is encountered, as a means of dealing with the threat, behavioral and cognitive processes are adjusted to maintain individuals' sense of distinctiveness, self-esteem, self-efficacy, and continuity. In this manner, decisions (conscious and unconscious) on what information is to be accommodated and assimilated are determined by the extent to which they contribute to an individual's sense of distinctiveness, self-esteem, self-efficacy, and continuity.

Alternately, Korpela (1989) drew from Epstein's (1983) conceptualization of identity who suggested that individuals are motivated to maximize a pleasure/pain balance, maintain a coherent conceptual system, and maintain favorable levels of self-esteem. Korpela suggested that these efforts reflect self-regulation: the process of maintaining one's sense of self.

Consensus among each of these perspectives, including our own, is the recognition that the physical environment plays an important role in maintaining identity, most notably in the context of favored settings. Each approach also acknowledges similar affective and behavioral outcomes ensuing from positive place attachments (e.g., self-esteem, continuity, self-restoration). Other perspectives on place and identity can be a little more challenging to integrate. In particular, our psychometric approach hinges on definition and measurement: techniques considered by some phenomenological scholars as problematic (Relph, 1976; Seamon, 1987). Their epistemological posture considers the "essence of place as a psycho-social-environmental whole larger than the sum of its parts" (Seamon, 1987, p. 20). It is not our claim here to avow theory of identity's superiority over other frameworks but to offer an alternate conceptualization that furthers our understanding of identity processes and the role of place in these processes. Ultimately, we find ourselves siding with Patterson and Williams' (2005) perspective on critical pluralism: a posture that embraces diversity in perspective and is quite at ease with incommensurability. Patterson and Williams warn against reductionist approaches that aim for homogeneity. They suggest plurality in perspective enriches our understanding of place and that the adequacy of research should be assessed using the metrics and standards aligned with the authors' research tradition. Regardless of paradigm, continued systematic observation in whatever form will begin to better define the bounds of each approach.

Summary

In sum, identity theory maintains that people's desire to verify and maintain their identities has important affective and conative consequences (Burke & Stets, 2009; Cast, 2003; Stets, 2003). Place identification reflects the degree to which settings, landscapes, or dwellings reflect a portion of individuals' sense of self. The extent to which the setting is embedded in self-conceptualizations also provides insight on the success of self-verification in place. Those who identify with place have found settings where self-verification—the congruence between one's sense of self and that interpreted from feedback from the environment (social and experiential)—has been productive. Successful verification of identity within place generates positive emotions, experience, and social relations. This is especially true of settings in which

identities are frequently verified, cathected, and cherished (Burke & Stets, 1999; Cast, 2003; Serpe, 1987; Serpe & Stryker, 1987, 1993; Stets & Asencio, 2008; Stryker & Serpe, 1982). Given that the strength of affection is a function of identity salience, places central to individuals' sense of self are more deeply invested with sentiment and belonging. Furthermore, settings that permit the verification of place identities, in part through active place experience and/or social interaction, are valued to the extent to which the identity is important to a person.

Thus, in the context of the model we test (depicted in Figure 1), we hypothesized that place identity would drive other affective and conative outcomes. Given that place identity examines the extent to which the physical environment has become part of an individual's self-conceptualization, consistent with identity theory, we contend that it is a determinant of the extent to which the individual is emotionally attached to the landscape (i.e., affective attachment), has developed social ties within the landscape (i.e., social bonding), and has developed an appreciation of its functional attributes (i.e., place dependence). In terms of the model reflected in Figure 1, we hypothesize that place identity will have a positive and significant effect on affective attachment, social bonding, and place dependence. Furthermore, we do not anticipate these effects to vary among the two study contexts.

Method

Data Collection

Data for this investigation were taken from a larger study of the public's perceptions of wildfire management within the WUI near San Diego, Angeles, and Los Padres National Forests (NFs) in southern California. The WUI is defined as the "area where houses meet or intermingle with undeveloped wildland vegetation" (Radeloff et al., 2005, p. 799). Our desire to sample from within or close to the WUI was driven by the project focus of obtaining information about public perceptions of wildfire management from publics most at risk from wildfire. The eastern border of Cleveland NF is situated approximately 25 miles from downtown Cleveland. The southern borders of Angeles and Los Padres NFs are situated 10 and 40 miles, respectively, from downtown Los Angeles. For all three forests, there are pockets of relatively dense urban development situated on the borders closest to the cities of San Diego and Los Angeles. The NFs are popular nature-based recreation areas for the respondents and residents of San Diego and Los Angeles.

To select potential respondents, we began by selecting census tracts intersecting with a half mile buffer surrounding the NFs. Names and addresses of

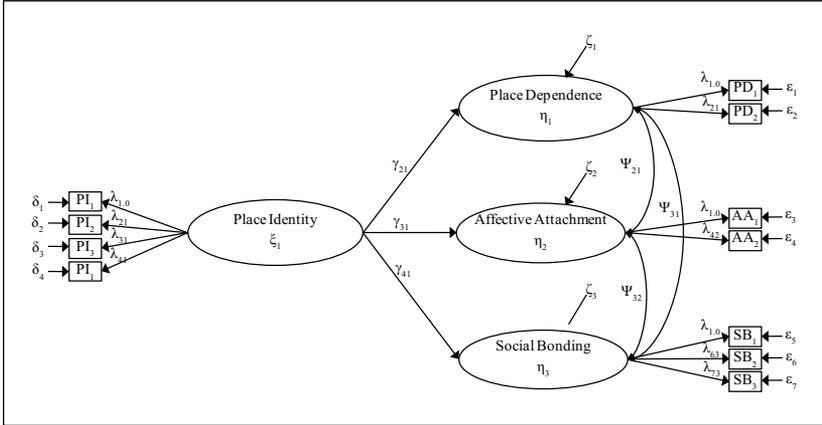


Figure 1. Hypothesized model.

residents were then drawn from census blocks. The buffer was identified using ArcGIS software. Names and addresses of residents within the identified census blocks were provided by a commercial research company ($N = 4,564$). A modified Dillman (2000) procedure was used with four contacts: (a) initial introductory letter explaining the purpose of the investigation and drawing respondents' attention to the survey instrument that would be arriving within the coming weeks; (b) cover letter, survey instrument, and return postage-paid envelope; (c) a postcard reminder; and (d) a second cover letter, survey instrument, and return postage-paid envelope sent to nonrespondents. A total of 1,653 respondents returned their survey instruments: 729 for the San Diego sample and 929 for the Los Angeles sample. This sampling procedure yielded a 36.2% overall response rate. Follow-up phone calls that were made to 46 nonrespondents revealed no significant differences between our sample and nonrespondents' sociodemographic characteristics: gender, age, ethnicity, education, income.

Measures

Our measure of place attachment was adapted from Kyle et al.'s (2004) Place Attachment Scale. Their scale, adapted and refined from earlier work (Jorgensen & Stedman, 2001; Kyle et al., 2005; Williams & Roggenbuck, 1989; Williams & Vaske, 2003), consisted of four dimensions: place identity, affective attachment, place dependence, and social bonding. With more than 20 years of use, the scale has established validity and reliability. The attitude

Table 1. Sample Demographics.

Indicator	San Diego (n = 729)	Los Angeles (n = 929)
Gender n (%)		
Male	445 (61.0)	627 (67.5)
Female	275 (37.7)	291 (31.3)
Age (M years, SD)	61.4 (13.47)	61.8 (13.5)
Education (M years, SD)	15.4 (2.64)	16.3 (2.7)
Income n (%)		
Under US\$20,000	24 (3.3)	35 (3.8)
US\$20,000-US\$59,999	176 (24.2)	178 (19.1)
US\$60,000-US\$99,999	186 (25.5)	230 (24.7)
US\$100,000-US\$139,999	139 (19.1)	166 (17.9)
US\$140,000-US\$179,000	62 (8.5)	113 (12.2)
US\$180,000 or more	60 (8.2)	122 (13.1)
Race/ethnicity		
Hispanic	19 (2.6)	49 (5.3)
White	662 (90.8)	808 (87.0)
Asian American	3 (0.4)	19 (2.0)
Black or African American	2 (0.3)	13 (1.4)
Native Hawaiian or Other Pacific Islander	21 (2.9)	12 (1.3)
American Indian or Alaskan Native	2 (0.3)	2 (0.2)

object reflected in our 11 place attachment items was one of the three NFs that was situated closest to respondents’ residence.

Results

Sample Characteristics

The sociodemographic profile of respondents is reported in Table 1. For both groups, respondents were mostly White (San Diego = 91%; Los Angeles = 87%), older (San Diego and Los Angeles = 61 years [M]), men (San Diego = 61%; Los Angeles = 68%). They were generally well educated (San Diego = 15 years [M]; Los Angeles= 16 years [M]) with annual household incomes in excess of US\$60,000 (San Diego = 61%; Los Angeles = 68%). While the characteristics of these data are not reflective of the broader U.S. population, with disproportionately higher percentages of older White men with more years of formal education and household incomes, they are consistent with characteristics of many property owners residing within the WUI (Radeloff et al., 2005). While model testing in

varied contexts will continue to provide evidence of the plausibility of our proposed conceptualization, residents of the WUI comprise a rapidly growing population within the United States. In the year 2000, it accounted for 104 million residents, 37% of the population (Hammer, Stewart, & Radeloff, 2009). From 1990 to 2000, 53% of new housing construction across the nation occurred within the WUI (Hammer et al., 2009). For some regions of the United States, projections in new housing construction within the WUI from 2000 to 2030 suggest exponential growth at rates of 111% (12.3 million units) for the West and 93% (4.6 million) for the Southeast (Hammer et al., 2009). While these findings have relevance for a large and growing population, our respondents are not indicative of all residents situated in the United States. WUI and caution is warranted when generalizing about the sociodemographic characteristics of our sample.

Item Descriptives

The means and standard deviations displayed in Table 1 illustrate moderate levels of attachment to the NFs for the San Diego and Los Angeles subsamples. For the Los Angeles respondents, all item means fell slightly above and below three on the 5-point scale. For the San Diego respondents, means were significantly higher than the Los Angeles sample for items measuring affective attachment and social bonding.

Model Testing

Our analyses tested both the measurement properties of the Place Attachment Scale in addition to our hypothesized structure, that is, place identification processes that drive other affective and conative outcomes. The purpose of the procedure is to “assist in establishing the plausibility of the theoretical model and to estimate the degree to which the various explanatory variables seem to be influenced by the dependent variables” (Cooley, 1978, p. 13). In the testing of such models, theory and its propositions about the relationships among variables become the centerpiece guiding analysis. Structural equation modeling (SEM) procedures examine the congruence between the predicted variance–covariance matrix (Σ) and the sample (S) variance–covariance, where the structure of Σ is derived from theory. The resulting fit indices provide insight on the degree of congruence and the plausibility of the hypothesized model and theory. This tenability can be assessed even when analyzing cross-sectional data (Bollen, 1989; Heath et al., 1993; Kline, 2005; Winship & Morgan, 1999). While SEM procedures do not provide indisputable

evidence of causality, they do offer insight on the plausibility of models derived from theory, which do imply causality. Ultimately, the tenability of theory and its tenets emerge over time through testing using an array of research designs that would also include experimentation and the collection of longitudinal data.

We tested the scale's measurement properties and structural relations using data drawn from the two spatial contexts. The first step in our model-testing procedure began with an examination of the measurement model (confirmatory factor analysis [CFA]), which examined the suitability of our hypothesized factor structure for these data. For both groups, the fit indices (San Diego— $\chi^2 = 177.77$, $df = 36$, root mean square error approximation [RMSEA] = .071, nonnormed fit index [NNFI] = .984, comparative fit index [CFI] = .989; Los Angeles— $\chi^2 = 197.17$, $df = 36$, RMSEA = .069, NNFI = .984, CFI = .990) for the model and the tests of internal consistency (all $\alpha \approx .70$) indicated that the model satisfactorily fit the data (see Table 2). While place dependence for the San Diego measures dipped below the .70 threshold, the Los Angeles measures in addition to past work have shown the scale to be reliable. Factor loadings were also very good ranging from .65 to .91 for the San Diego and Los Angeles measures (Hair, Black, Babin, & Anderson, 2010). No post hoc model modifications were made. Following the establishment of a valid measurement model, we then tested the structural model (Anderson & Gerbing, 1982). The fit indices of the final model demonstrated satisfactory fit (San Diego— $\chi^2 = 177.77$, $df = 36$, RMSEA = .071, NNFI = .984, CFI = .989; Los Angeles— $\chi^2 = 197.17$, $df = 36$, RMSEA = .069, NNFI = .984, CFI = .990; see Table 3).

The procedure we used for model comparison across the two groups is referred to by Bollen (1989) as invariance testing. Bollen noted that testing for model comparability across groups is a matter of degree in that the researcher decides which parameters should be tested for equality and in what order these tests should be made. The hierarchy of invariance that we used involved the testing of increasingly restrictive hypotheses concerning equality between the two samples in terms of

Hypothesis 1 (H1): equality of structure—examines the suitability of a four-factor solution across the two groups;

Hypothesis 2 (H2): equality of scaling—examines the similarity in the pattern of factor loadings among the groups; and

Hypothesis 3 (H3): equality of structural coefficient estimates—examines the similarity of the regression paths across groups.

Table 2. CFA, Internal Consistency, and Item Descriptives.

	San Diego (n = 729)					Los Angeles (n = 929)				
	α	M	SD	λ	t value	α	M	SD	λ	t value
Place identity (PI)	.92					.90				
PI1		I feel the X NF is a part of me	3.04	.95	.90	—	3.12	.94	.90	—
PI2		I identify with the X NF	3.12	.93	.87	34.24	3.20	.91	.86	36.98
PI3		I feel that my identity is reflected in the X NF	2.92	.88	.84	31.90	2.90	.85	.84	34.16
PI4		Visiting the X NF says a lot about who I am	3.06	.86	.84	27.81	3.08	.82	.79	29.68
Place dependence (PD)	.69					.73				
PD1		I can't imagine a better place for what I like to do	2.88	.88	.83	—	3.20	.91	.88	—
PD2		The X NF is the best place for the recreation activities that I enjoy	3.19	.85	.65	17.26	3.12	.94	.65	18.13
Affective attachment (AA)	.87					.85				
AA1		The X NF means a lot to me	3.63	.88	.91	—	3.08	.82	.91	28.71
AA2		I really enjoy the X NF	3.74	.83	.85	27.61	2.91	.85	.82	23.71
Social bonding (SB)	.88					.88				
SB1		I associate special people in my life with the X NF	3.09	.95	.88	—	3.20	.91	.87	—
SB2		The time spent on the X NF allows me to bond with my family and friends	3.32	.94	.76	21.86	3.12	.94	.76	24.22
SB3		Visiting the X NF allows me to spend time with my family and friends	3.74	.83	.77	22.33	2.91	.85	.77	24.83
Fit index			$\chi^2 = 177.77$, $df = 36$				$\chi^2 = 197.17$, $df = 36$			
			RMSEA = .071				RMSEA = .069			
			NNFI = .984				NNFI = .984			
			CFI = .989				CFI = .990			

Note: CFA = confirmatory factor analysis; NF = National Forest; RMSEA = root mean square error approximation; NNFI = nonnormed fit index; CFI = comparative fit index. Items measured along a 5-point scale where 1 = *strongly disagree* and 5 = *strongly agree*.

These hypotheses were tested sequentially by constraining the relevant parameters of the model to be equal across groups. The effect of these constraints on model fit was examined using the χ^2 difference test (Byrne, 1998). In essence, these tests establish the degree to which our conceptualization of place attachment applies for the two spatial contexts.

Table 3. Summary of Cross-Validation.

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	NNFI	CFI
Baseline							
Cleveland	177.77***	36			.071	.984	.989
Angeles and Los Padres	197.17***	36			.069	.984	.990
H1—Form	374.96***	72			.070	.984	.990
H2—Invariant factor loadings	382.77***	79	7.83	7	.067	.985	.990
H3—Regression coefficients	386.97***	82	4.20	3	.066	.986	.990

Note: RMSEA = root mean square error approximation; NNFI = nonnormed fit index; CFI = comparative fit index; H1 = Hypothesis 1; H2 = Hypothesis 2; H3 = Hypothesis 3.

*** $p < .001$.

Table 3 presents a summary of our analyses. The first test examined the form of the factor solution (H1) across the two groups. The models were hypothesized to have the same pattern of fixed and free values in the matrices containing factor loadings, structural coefficients, and the variance/covariance matrices. Nonfixed parameters were not restricted to have the same value across groups in this first test. We considered the fit of this unconstrained model adequate ($\chi^2 = 374.96$, $df = 72$, $RMSEA = .070$, $NNFI = .984$, $CFI = .990$). This unconstrained model served as a point of comparison for the second test (equality of scaling) discussed below.

In our second test (H2), the factor loadings were constrained to be invariant across the two groups (Marsh & Grayson, 1995). The fit of this model was compared with the fit of the model above, which was unconstrained (equality of structure). As shown in Table 3, the imposition of this constraint did not significantly impact the goodness-of-fit indices ($\Delta\chi^2 = 7.83$, $\Delta df = 7$). Thus, the pattern of factor loadings was held constant across the two groups.

For the final test (H3), equality constraints were placed on each element of gamma matrix to test the equality of regression coefficients across two groups. Model fit was compared with the fit indices from the model tested above (H2) and illustrated that this constraint also did not significantly impair the model's fit to the data ($\Delta\chi^2 = 4.20$, $\Delta df = 3$). This finding indicated that the regression coefficients tested in our hypothesized model were equivalent between the two place groups.

Summary

These findings offer support for the hypothesized model suggesting that the identity-related dimension of place attachment would positively predict each

Table 4. Structural Model Analysis.

Dependent variable	γ	t value	R^2	
			San Diego	Los Angeles
PD	.83	35.12***	.77	.63
AA	.77	34.46***	.59	.60
SB	.80	34.40***	.64	.65

Note: PD = place dependence; AA = affective attachment; SB = social bonding. Independent variable—place identity.

*** $p < .001$.

of the other place dimensions. Specifically, the following relationships were observed in the final model (see Table 4):

- a. Place dependence was positively predicted by place identity ($\gamma = .83$, $t = 35.12$). For the San Diego data, place identity accounted for 77% of the variation in place dependence, and 63% of the variation for the Los Angeles data. Thus, the degree of self-identification with these NFs positively influenced respondents' assessment of the forests' functional value (e.g., to facilitate desired leisure experiences).
- b. Affective attachment was positively influenced by place identity ($\gamma = .77$, $t = 34.46$) and accounted for 64% of the variance for the San Diego data and 65% of the variance in the Los Angeles data. Thus, the sentiment respondents associated with the setting was a product of the association between the physical environment and their self-conceptualization.
- c. Place identity positively predicted social bonding ($\gamma = .80$, $t = 34.40$). This dimension accounted for 64% of the variance in social bonding for the San Diego data and 65% of the variance for the Los Angeles data. This finding illustrates that the extent to which people identify with place is also intimately associated with other actors involved in the process of self-verification.

Discussion and Conclusion

In this investigation, drawing from theory on identity (Burke, 1991; Burke & Stets, 2009; Cast, 2003; Stets, 2003; Stryker, 1987; Stryker & Serpe, 1982), we proposed an alternate conceptualization of place attachment in which the cognitive component—place identity—preceded other affective

and conative facets. That is, through processes of self-verification within place, other affective and conative facets of attachment emerge. Analyses of data drawn from respondents residing in two areas of the WUI in southern California (San Diego and Los Angeles) provided strong support for our reconceptualization and the psychometric properties of the associated measures. We observed that place identity positively predicted our three other place dimensions: affective attachment, place dependence, and social bonding. Rather than existing on the same temporal plane, our data support theory suggesting identification processes are a driver of other affective and conative elements.

Theory on identity (Burke, 1991; Burke & Stets, 2009; Cast, 2003; Stets, 2003; Stryker, 1987; Stryker & Serpe, 1982) suggests that stronger place identification implies successful self-verification where feedback from the environment is cognitively processed (e.g., interaction with others and setting attributes) affirming one's sense of self. The process of self-verification highlights the interconnectedness of place experience, social interaction, and the individual. To know and understand place requires some form of place experience (real or abstract), which is often accentuated by social actors present or sharing the place experience. Sentiment becomes imbued in place that is derived from the quality of the experience and/or relationships that are spatially anchored. Thus, in the context of our own findings, we observed that place identification had a strong influence on respondents'

- a. appreciation of the functional attributes that comprised the NFs (i.e., place dependence). In the process of self-verification, place interaction brings the individual into contact with the physical attributes that define the NFs and support other outcomes (e.g., desired leisure experiences). These attributes play an important role in affirming individual identity;
- b. emotional investment in the NFs. Places, such as the NFs and settings within, become integral elements of an individual's self-definition through self-verification processes and are receptacles harboring memories of a range of emotions and experience; and
- c. social ties to the NFs. Self-verification often relies on the feedback of others. Given that we are constantly involved in the process of self-reflection and monitoring of environmental feedback, the social cues we receive from others help shape the significance of place. Affirmation occurring in place, especially from those with whom we share close relationships, adds to the sentiment imbued in place and embellishes our ties to the setting.

It is worth commenting on the settings that were referenced in our measures of place attachment, that is, NFs. The character of these settings and the nature of our respondents' interactions with place have important implications for understanding attachment processes but also may limit generalizability. First, these NFs reflect large, relatively undeveloped landscapes (Cleveland NF = 424,000 acres; Los Padres NF = 1.75 million acres; Angeles NF = 650,000 acres) that attract thousands of visitors and residents desiring close access to amenity-rich natural resources. Given the literature illustrating humans' preference for nature (Kaplan & Kaplan, 1989; Knopf, 1987; Ulrich, 1981, 1983, 1984) and our findings, it is evident respondents shared a positive association with the NFs.¹ Consequently, our purposive sampling frame (i.e., targeting residents of the WUI) may overrepresent a population who share a uniquely positive association with the landscape where self-verification processes are most evident.

The positive association is further amplified by the nature of respondent's interaction with the NFs. These NFs are popular recreation settings that support a variety of nature-based leisure pursuits. The nature of leisure-based place interaction provides a context that differs from other spatial contexts such as work or even home. While the latter may provide for episodic moments of leisure, they support more functional outcomes, for example, income and shelter. Given definitions of leisure most commonly feature concepts of perceived freedom (i.e., behavior free from obligation) and intrinsic motivation (i.e., behavior that is an end unto itself; Mannell & Kleiber, 1997), respondents' place interactions are more inclined to be positive and shared with favored others. Similar to the issue raised in the preceding paragraph, the present study context likely reflects a context where positive self-verification is prominent and the expression of self is pervasive. Leisure affords individuals opportunities to reveal self that is seldom achieved in other life domains. While we would contend that our theoretical framework would transcend context, further empirical testing is warranted.

The commensurability among theories of place-identity-related processes remains a challenging issue to resolve. As noted earlier, commonality among approaches (e.g., Korpela, 1989; Twigger-Ross & Uzzell, 1996) lies broadly in their emphasis on processes that maintain individual self-conceptions. That is, the physical world and its attributes help people maintain self-views. Korpela, drawing from Sarbin (1983) along with Twigger-Ross and Uzzell (1996) who drew from Breakwell's (1986) IPT, go further to suggest that settings can also provide opportunities for self-enhancement. Identification with the valued symbols and meanings associated with features of the landscape can also maintain, restore, and enhance self-esteem. While not central in writings of identity theory and self-verification processes as conceived in this

manuscript (Burke & Stets, 1999; Stets & Burke, 2000), Cast and Burke (2002) have attempted to draw conceptual linkages. Depending on context, they presented three possibilities for the relationship between self-verification and self-esteem: (a) self-esteem can be an outcome of successful self-verification, (b) self-esteem can act as a buffer in contexts where self-verification processes are disrupted, and (c) self-esteem can be seen as a motive for self-verification. While Cast and Burke's discussion of the relationship between self-esteem and self-verification was framed within the context of social relationships and made no reference to place, there is a considerable body of evidence illustrating the meanings tied to relationships also become embedded in the spatial context in which those relationships are enacted (Hidalgo & Hernández, 2001; Kyle & Chick, 2007). Thus, just as place has implications for self-verification, it is likely that it also influences self-esteem: for example, maintain, restore, and enhance. While this is a fertile area for continued study, one significant challenge for understanding the self-verification/self-esteem relationship will be to identify spatial contexts that are prone to influence the roles of self-esteem identified by Cast and Burke for self-verification. Some research (Hartig, Mang, & Evans, 1991; Kaplan & Kaplan, 1989; Korpela, 1989; Ulrich, 1984) points strongly toward natural environments providing psychological/physiological benefit, but given the importance of social relationships in self-verification processes, the role of place remains poorly understood.

Authors' Note

Gerard T. Kyle and Jinhee Jun contributed equally to this article.

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Note

1. It should be noted that respondents face the constant threat of wildfire. In recent years, both National Forests have had severe wildfires that has spread into the neighboring communities burning thousands of homes and business.

References

- Altman, I., & Low, S. M. (1992). *Place attachment, human behavior and environment: Advances in theory and research*. New York, NY: Plenum.
- Anderson, J. C., & Gerbing, D. W. (1982). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*, 411-423.
- Bartels, D. J. (1997). *An examination of the primary emotions of anger and sadness in marriage within the context of identity theory* (Master's thesis). Pullman: Washington State University.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: John Wiley.
- Breakwell, G. M. (1986). *Coping with threatened identity*. London, England: Methuen.
- Brown, B., Perkins, D. D., & Brown, G. (2003). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology*, *23*, 259-271.
- Burke, P. J. (1989a). Academic identity and race differences in educational aspirations. *Social Science Research*, *18*, 136-150.
- Burke, P. J. (1989b). Gender identity, sex, and school performance. *Social Psychology Quarterly*, *52*, 159-169.
- Burke, P. J. (1991). Identity process and social stress. *American Sociological Review*, *56*, 836-849.
- Burke, P. J. (1996). Social identities and psychosocial stress. In H. B. Kaplan (Ed.), *Psychological stress: Perspectives on structure, theory, life course, and methods* (Vol. 1, pp. 141-174). Orlando, FL: Academic Press.
- Burke, P. J., & Reitzes, D. C. (1991). An identity theory approach to commitment. *Social Psychology Quarterly*, *54*, 239-251.
- Burke, P. J., & Stets, J. E. (1999). Trust and commitment in an identity verification context. *Social Psychology Quarterly*, *62*, 347-366.
- Burke, P. J., & Stets, J. E. (2009). *Identity theory*. New York, NY: Oxford University Press.
- Buttimer, A., & Seamon, D. (1980). *The human experience of space and place*. London, England: Croom Helm.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Cast, A. D. (2003). Identities and behavior. In P. J. Burke, T. J. Owens, R. T. Serpe, & P. A. Thoits (Eds.), *Advances in identity theory and research* (pp. 41-53). New York, NY: Kluwer Academic.
- Cast, A. D., & Burke, P. J. (2002). A theory of self-esteem. *Social Forces*, *80*, 1041-1068.
- Cooley, W. W. (1978). Explanatory observational studies. *Educational Researcher*, *7*(9), 9-15.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York, NY: John Wiley.

- Epstein, S. (1983). The unconscious, the preconscious, and the self-concept. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2, pp. 219-247). Hillsdale, NJ: Lawrence Erlbaum.
- Hair, J. F., Black, W., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hammer, R. B., Stewart, S. I., & Radeloff, V. C. (2009). Demographic trends, the wildland-urban interface, and wildfire management. *Society & Natural Resources*, 22, 777-782.
- Harris, P. B., Brown, B. B., & Werner, C. M. (1996). Privacy regulation and place attachment: Predicting attachments to a student family housing facility. *Journal of Environmental Psychology*, 16, 287-301.
- Hartig, T., Mang, M., & Evans, G. W. (1991). Restorative effects of natural environment experiences. *Environment and Behavior*, 23, 3-26.
- Heath, A. C., Kessler, R. C., Neale, M. C., Hewitt, J. K., Eaves, L. J., & Kendler, K. S. (1993). Testing hypotheses about direction of causation using cross-sectional family data. *Behavior Genetics*, 23, 29-50.
- Hernández, B., Hidalgo, M. C., Salazar-Laplace, M. E., & Hess, S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, 27, 310-319.
- Hidalgo, M. C., & Hernández, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology*, 21, 273-281.
- Hummon, D. H. (1992). Community attachment: Local sentiment and sense of place. In I. Altman & S. M. Low (Eds.), *Place attachment* (pp. 253-278). New York, NY: Plenum.
- Jorgensen, B., & Stedman, R. (2001). Sense of place as an attitude: Lakeshore owners' attitudes toward their properties. *Journal of Environmental Psychology*, 21, 233-248.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. New York, NY: Cambridge University Press.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guildford.
- Knez, I. (2005). Attachment and identity as related to a place and its perceived climate. *Journal of Environmental Psychology*, 25, 207-218.
- Knopf, R. (1987). Human behavior, cognition and affect in the natural environment. In D. Stokols & I. Altman (Eds.), *Handbook of environmental psychology* (Vol. 1, pp. 783-825). New York, NY: John Wiley.
- Korpela, K. M. (1989). Place identity as a product of environmental self regulation. *Journal of Environmental Psychology*, 9, 241-256.
- Kyle, G. T., & Chick, G. (2007). The social construction of a sense of place. *Leisure Sciences*, 29, 209-225.
- Kyle, G. T., Graefe, A. R., & Manning, R. E. (2005). Testing the dimensionality of place attachment in recreational settings. *Environment and Behavior*, 37, 153-177.
- Kyle, G. T., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*, 24, 213-225.

- Leary, M. R., Wheeler, D. S., & Jenkins, B. (1986). Aspects of identity and behavioral preference: Studies of occupational and recreational choice. *Social Psychology Quarterly*, 49(1), 11-18.
- Low, S. M., & Altman, I. (1992). Place attachment: A conceptual inquiry. In I. Altman & S. M. Low (Eds.), *Place attachment: Human behavior and environment* (pp. 165-185). New York, NY: Plenum.
- Mannell, R. C., & Kleiber, D. A. (1997). *A social psychology of leisure*. State College, PA: Venture.
- Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. *Journal of Environmental Psychology*, 25, 67-86.
- Marsh, H. W., & Grayson, D. (1995). Latent variable models of multitrait-multimethod data. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 177-198). Thousand Oaks, CA: SAGE.
- Maruyama, G. M. (1998). *Basics of structural equation modeling*. Thousand Oaks, CA: SAGE.
- Milligan, M. J. (1998). Interactional past and potential: The social construction of place attachment. *Symbolic Interaction*, 21, 1-33.
- Moore, R. L., & Graefe, A. R. (1994). Attachments to recreation settings: The case of rail-trail users. *Leisure Sciences*, 16, 17-31.
- Patterson, M. E., & Williams, D. R. (2005). Maintaining research traditions on place: Diversity of thought and scientific progress. *Journal of Environmental Psychology*, 25, 361-380.
- Payton, M. A., Fulton, D. C., & Anderson, D. H. (2005). Influence of place attachment and trust on civic action: A study at Sherburne National Wildlife Refuge. *Society & Natural Resources*, 18, 511-528.
- Proshansky, H. M. (1978). The self and the city. *Environment and Behavior*, 10, 147-169.
- Proshansky, H. M., Fabian, A. K., & Kaminoff, R. (1983). Place identity: Physical world socialization of the self. *Journal of Environmental Psychology*, 3, 57-83.
- Radeloff, V. C., Hammer, R. B., Stewart, S. I., Fried, J. S., Holcomb, S. S., & McKeefry, J. F. (2005). The wildland-urban interface in the United States. *Ecological Applications*, 15(3), 799-805.
- Relph, E. (1976). *Place and placelessness*. London, England: Pion.
- Relph, E. (2008). Sense of place and emerging social and environmental challenges. In J. Eyles & A. Williams (Eds.), *Sense of place, health and quality of life* (pp. 65-78). Burlington, VT: Ashgate.
- Robinson, D. T., Smith-Lovin, L., & Wisecup, A. K. (2006). *Affect control theory*. In J. E. Stets & J. H. Turner (Eds.), *Handbook of the sociology of emotions* (pp. 179-202). New York, NY: Springer.
- Rollero, C., & De Piccoli, N. (2010). Does place attachment affect social well-being? *Revue Europeene De Psychologie Appliquee*, 60, 233-238.
- Sampson, E. E. (1978). Personality and the location of identity. *Journal of Personality*, 46, 552-568.

- Sarbin, T. R. (1983). Place identity as a component of self: An addendum. *Journal of Environmental Psychology*, 3, 337-342.
- Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30, 1-10.
- Seamon, D. (1987). Phenomenology and environment-behavior research. In E. H. Zube & G. T. Moore (Eds.), *Advances in environment and behavior design* (Vol. 1, pp. 3-27), New York, NY: Plenum.
- Seamon, D. (2011). Place, place identity, and phenomenology: A triadic interpretation based on J.G. Bennett's systematics. In H. Casakin, O. Romice, & S. Porta (Eds.), *The role of place identity in the perception, understanding, and design of the built environment* (pp. 3-21). Oak Park, IL: Bentham Science.
- Serpe, R. T. (1987). Stability and change in self: A structural symbolic interactionist explanation. *Social Psychology Quarterly*, 50, 44-55.
- Serpe, R. T., & Stryker, S. (1987). The construction of self and reconstruction of social relationships. *Advances in Group Processes*, 4, 41-66.
- Serpe, R. T., & Stryker, S. (1993). Prior social ties and movement into new social relationships. *Advances in Group Processes*, 10, 283-304.
- Shumaker, S. A., & Taylor, R. B. (1983). Toward a clarification of people-place relationships: A model of attachment to place. In N. R. Feimer & E. S. Geller (Eds.), *Environmental psychology: Directions and perspectives* (pp. 219-251). New York, NY: Praeger.
- Smith-Lovin, L. (1995). The sociology of affect and emotion. In K. S. Cook, G. A. Fine, & J. S. House (Eds.), *Sociological perspectives on social psychology* (pp. 118-148). Boston, MA: Allyn & Bacon.
- Speller, G. M., Lyons, E., & Twigger-Ross, C. (2002). A community in transition: The relationship between spatial change and identity processes. *Social Psychological Review*, 4(2), 39-58.
- Stets, J. E. (1997). Status and identity in marital interaction. *Social Psychology Quarterly*, 60, 185-217.
- Stets, J. E. (2003). Justice, emotion, and identity theory. In P. J. Burke, T. J. Owens, R. T. Serpe, & P. A. Thoits (Eds.), *Advances in identity theory and research* (pp. 105-122). New York: Kluwer Academic.
- Stets, J. E. (2005). Examining emotions in identity theory. *Social Psychology Quarterly*, 68, 39-56.
- Stets, J. E. (2006). Identity theory and emotions. In J. E. Stets & J. H. Turner (Eds.), *Handbook of the sociology of emotions*. (pp. 203-223). New York, NY: Springer.
- Stets, J. E., & Asencio, E. K. (2008). Consistency and enhancement processes in understanding emotions. *Social Forces*, 86, 1055-1078.
- Stets, J. E., & Burke, P. J. (1996). Gender, control and interaction. *Social Psychology Quarterly*, 59, 193-220.
- Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 63, 224-237.
- Stets, J. E., & Burke, P. J. (2003). A sociological approach to self and identity. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 128-152). New York, NY: Guilford.

- Stets, J. E., & Tsushima, T. M. (2001). Negative emotion and coping responses within identity control theory. *Social Psychology Quarterly*, 64, 283-295.
- Stokols, D., & Shumaker, S. A. (1981). People in places: A transactional view of settings. In J. Harvey (Ed.), *Cognition, social behavior, and the environment* (pp. 441-488). Hillsdale, NJ: Lawrence Erlbaum.
- Stryker, S. (1968). Identity salience and role performance: The relevance of symbolic interaction theory for family research. *Journal of Marriage and the Family*, 30, 558-564.
- Stryker, S. (1987). The vitalization of symbolic interactionism. *Social Psychology Quarterly*, 50, 83-94.
- Stryker, S., & Serpe, R. T. (1982). Commitment, identity salience, and role behavior: Theory and research example. In W. Ickes & R. Kidd (Eds.), *Personality, roles, and social behavior* (pp. 199-218). New York, NY: Springer-Verlag.
- Swann, W. B., Jr., (1990). To be adored or to be known: The interplay of self-enhancement and self-verification. In R. M. Sorrentino & E. T. Higgins (Eds.), *Foundations of social behavior* (Vol. 2, pp. 408-448). New York, NY: Guilford.
- Swann, W. B., Jr., De La Ronde, C., & Hixon, J. G. (1994). Authenticity and positivity strivings in marriage and courtship. *Journal of Personality and Social Psychology*, 66, 857-869.
- Swann, W. B., Jr., Hixon, J. G., De La & Ronde, C. (1992). Embracing the bitter "truth": Negative self-concepts and marital commitment. *Psychological Science*, 3, 118-121.
- Thoits, P. A. (1991). On merging identity theory and stress research. *Social Psychology Quarterly*, 54, 101-112.
- Thoits, P. A. (1995). Identity-relevant events and psychological symptoms: A cautionary tale. *Journal of Health and Social Behavior*, 36, 72-82.
- Tuan, Y. F. (1974). *Topophilia: A study of environmental perception, attitudes, and values*. Englewood Cliffs, NJ: Prentice Hall.
- Tuan, Y. F. (1977). *Space and place: The perspective of experience*. Minneapolis: University of Minnesota Press.
- Twigger-Ross, C. L., & Uzzell, D. (1996). Place and identity processes. *Journal of Environmental Psychology*, 16, 205-220.
- Ulrich, R. S. (1981). Natural versus urban scenes: Some psychophysiological effects. *Environment and Behavior*, 13, 523-556.
- Ulrich, R. S. (1983). Aesthetic and affective response to the natural environment. In I. Altman & J. Wohlwill (Eds.), *Human behavior and environment* (Vol. 6, pp. 85-125). New York, NY: John Wiley.
- Ulrich, R. S. (1984). View through the window may influence recovery from surgery. *Science*, 224, 420-421.
- Vaske, J. J., & Kobrin, K. C. (2001). Place attachment and environmentally responsible behavior. *Journal of Environmental Education*, 32(4), 16-21.
- Williams, D. R., Patterson, M. E., Roggenbuck, J. W., & Watson, A. E. (1992). Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sciences*, 14, 29-46.

- Williams, D. R., & Roggenbuck, J. W. (1989, October). Measuring place attachment: Some preliminary results. Paper presented at the NRPA Symposium on Leisure Research. San Antonio, TX.
- Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science*, *49*, 830-840.
- Winship, C., & Morgan, S. L. (1999). The estimation of causal effects from observational data. *Annual Review of Sociology*, *25*, 659-707.

Author Biographies

Gerard T. Kyle is affiliated with the Human Dimensions of Natural Resources Laboratory at Texas A&M University and the Department of Marketing at the University of New South Wales. His research interests lie in the area of conservation psychology.

Jinhee Jun is affiliated with the College of Business at Hallym University. Her research interests lie in the area of the social psychology of identity.

James D. Absher is a research social scientist affiliated with the USDA Forest Service. His research interests lie in the area of the human dimensions of natural resources.