

'Lynne Manzo and Patrick Devine-Wright have made an excellent work in assembling an international and interdisciplinary team of authors, who provide up-to-date knowledge of current state of research on theoretical, methodological, and applied issues related to one of the most fascinating and elusive concepts of environmental psychology.'

M. Vittoria Giuliani, ISTC-CNR, Italy

'The essays provide researchers, practitioners, and policy makers material needed to understand and nurture the importance of place for individuals and communities.'

Robert Mugerauer, University of Washington, USA

Place Attachment

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CHAPTER 10

Theoretical and Methodological Aspects of Research on Place Attachment

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Conceptualization of Place Attachment

Slow, unclear, stuck, lack of theory, little empirical progress—these terms are used to describe research on place attachment in a recent very complete review (Lewicka, 2011a) and are shared by other researchers (Giuliani, 2003; Hernández, Hidalgo, Salazar-Laplace, & Hess, 2007; Jørgensen & Stedman, 2006; Scannell & Gifford, 2010). Unfortunately, the substantial increase in the scientific production related to the study of the bonds between humans and places has not been accompanied by advances in the theoretical and empirical aspects.

Most researchers agree that the main reason behind this lack of progress is the proliferation of concepts and measurements proposed for characterizing emotional bonds between humans and places. *Topophilia*, *rootedness*, *place dependence*, *place identity*, *urban identity*, *place attachment*, *sense of place*, *sense of community*, or *community attachment* are examples of the wide array of existing terms. The problem is not new. Twenty years ago, this terminological and conceptual chaos led Giuliani and Feldman (1993) to state that “the most important challenge for researchers in this area of inquiry is to integrate different viewpoints and approaches” (p. 271). Regrettably, still today many authors highlight that challenge, thus confirming the insufficient progress achieved in this aspect.

Since the first works in the field, the number of different conceptual frameworks proposed is indeed colossal. Focusing only on recent works (from 2010), we find many proposals regarding the conceptualization of place attachment and related phenomena (cf. Devine-Wright, 2011; Droseltis & Vignoles, 2010; Fornara, Bonaiuto, & Bonnes, 2010; Lewicka, 2011b; Morgan, 2010; Raymond, Brown, & Weber, 2010; Rollero & De Piccoli, 2010a; Scannell & Gifford, 2010; Scopelliti & Tiberio, 2010). This variety illustrates the plurality of concepts that researchers in the field must manage. We revise below a selection of the main proposals in the literature. As shown in Figure 10.1, there are almost as many approaches as combinations of the different elements.

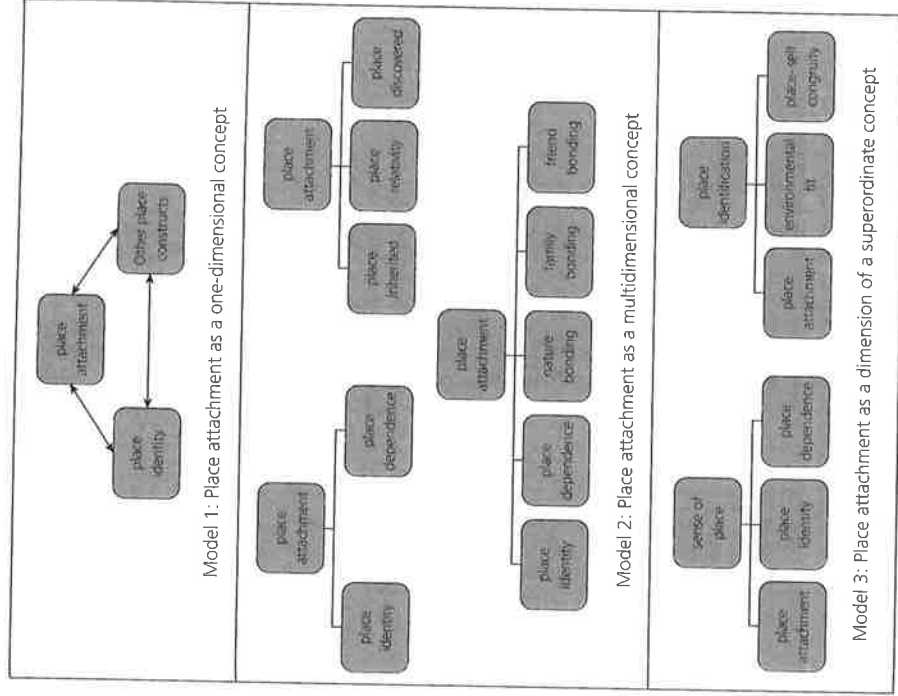
- 1 Several researchers consider place attachment as a one-dimensional concept related, at the same level, with concepts such as place identity or place dependence (Figure 10.1, Model 1. e.g., Fornara et al., 2010; Giuliani, 2003; Hernández et al., 2007; Devine-Wright, 2011; Rollero & De Piccoli, 2010a).

- 2 Other proposals consider it a multidimensional construct that incorporates a number of different factors: two, three, or five (see Figure 10.1, Model 2). For example, based on the approach of Stokols and Shumaker (1981), Williams and Vaske (2003) define place attachment as a superordinate concept with two dimensions: place dependence and place identity. Kyle, Graefe, and Manning (2005) add a third factor, namely social bonds. Scopelliti and Tiberio (2010) propose three factors: identification, lack of resources, and social relations, while Lewicka (2011b) suggests three types of place attachment: place inherited, place relativity, and place discovered. Likewise, Raymond et al. (2010) propose a five-dimensional model of place attachment comprising place identity, place dependence, nature bonding, family bonding, and friend bonding.
- 3 Finally, other authors consider place attachment as a subordinate concept or a dimension of a more general concept (Figure 10.1, Model 3). For example, for Lali (1992), place attachment is a component of urban-related identity. Jorgensen and Stedman (2001, 2006) propose place attachment, place dependence, and place identity as dimensions of sense of place. Likewise, Droseltis and Vignoles (2010), using confirmatory factor analysis, distinguished three dimensions (attachment/self-extension, environmental fit, and place-self congruity) of another concept: place identification.

This conceptual diversity implies an associated heterogeneity in evaluation and measurement, which is reviewed in the next section. Undoubtedly, the previous list confirms the need for a qualitative leap forward in the conceptualization of place attachment and other related concepts. Regarding the phases described by Low and Altman (1992), we believe that the scholarly discourse is now in a position to pass from the second phase “in which scholars described the phenomenon with greater rigor, developed taxonomies of sub-types” (p. 3), to the third phase in which “there is a development of systematic theoretical positions” (ibid.).

In this line, Scannell and Gifford (2010) proposed a three-dimensional framework of place attachment intended to integrate and structure the variety of definitions in the literature. The framework treats place attachment as a multidimensional concept with *person*, *psychological process*, and *place dimensions* (PPP). According to the person dimension, place attachment occurs both at the individual and group levels. They define three psychological processes for place attachment: affect (emotion), cognition (identity), and behaviour (action). Finally, the place dimension is divided into two levels: social and physical place attachment. In this model place attachment is defined as “a bond between an individual or group and a place that can vary in terms of spatial level, degree of specificity, and social or physical features of the place, and is manifested through affective, cognitive, and behavioural psychological processes” (Scannell & Gifford 2010, p. 5). This definition is linked to those by other authors (e.g., Brown & Perkins, 1992; Devine-Wright, 2011; Fornara et al., 2010; Giuliani, 2003; Low & Altman, 1992; Manzo & Perkins, 2006; Jorgensen & Stedman, 2006). Nevertheless, the authors of the PPP model consider that previous models are limited, representing only parts of the whole (see Scannell & Gifford, 2010, for a critique of previous models), and that

Figure 10.1 Different models of place attachment.



the PPP framework provides a more inclusive view of place attachment, structures the plethora of existing definitions, and is compatible with both quantitative and qualitative studies.

Additional time and debate is necessary to assess the effect that this model can have on the research and theoretical conceptualization of place attachment. Among its advantages, we highlight the comprehensive approach that tries to integrate existing proposals instead of excluding them. Furthermore, it avoids proposing new terms for components of place attachment, which seems a clear advance over the current situation. Being rather close to most of the existing proposals, the PPP model shows that a consensus can indeed be reached. Maybe the main challenge is to find a common term to refer to the bond between humans and places (place

attachment is the most widely accepted) and to accept the variety of expressions of such a bond (individual, collective, physical, social, affective, cognitive, and/or behavioural) beyond the name we may give to each one of those manifestations.

Methods for Evaluating Place Attachment

The wide variety of conceptual models discussed in the previous section leads naturally to a lack of uniformity in the operationalization of the concepts and the evaluation procedures resulting in some promoting quantitative approaches, others call for qualitative approaches, while others endorse a mixed method approach.

Quantitative Procedures

Quantitative methods for measuring place attachment differ both in content and characteristics. Some authors use one or two items (Dallago, Perkins, Santinello, Boyce, Molcho, & Morgan, 2009; Korpela, Ylén, Tyrväinen, & Silvennoinen, 2009), but the majority use Likert-type scales. Instruments have proliferated in the last decade, but their heterogeneity in scope, size, and range has prevented the unification of results. The following sections present some of the scales that have received significant theoretical or empirical support, classified following the scheme of Figure 10.1, Model 1, and we describe problems related to their reliability and validity.

Scales for Place Attachment

Among the one-dimensional scales (Figure 10.1, Model 1) is the scale by Bonaiuto, Aiello, Perugini, Bonnes, and Ercolani (1999) of attachment to the neighbourhood. A validation study by Fornara et al. (2010) in 11 small to medium-sized urban contexts retained four out of the original eight items; those related to integration, identity, and rootedness. Optimal levels of reliability (over 0.7 alpha) were reported for this scale when applied to studies in a large city (Rollero & De Piccoli, 2010a, 2010b).

Lewicka (2005, 2010) also proposed a scale with a single-factor structure, originally with 24 items (later reduced to nine items) mostly focusing on feelings and emotions towards places (miss, feel safe, prefer), but it also contained items related to identity (e.g., "this place is a part of myself"). Lewicka (2011b) confirmed that this scale measures a single factor, but also introduced a new scale to evaluate differences in the ways people relate to their place of residence. From an exploratory factorial analysis, three factors were identified: a traditional form of attachment (place inherited); an active form of attachment (place discovered); and no or conditional attachment (place relativity).

The scale published in Hernández et al. (2007) and later confirmed by Ruiz, Hernández, and Hidalgo (2011) also considers place attachment as a one-dimensional concept. The authors developed an instrument to measure place attachment (an emotion) and place identity (a form of self-concept) as two separate related

both variables were confirmed in a confirmatory analysis using the simultaneous group comparison procedure. In an independent confirmatory analysis, Vidal, Valera, and Peró (2010) obtained similar results. Two relevant studies using this scale in a UK context found optimal reliability, thus confirming the consistency of the scale (Devine-Wright, 2011; Devine-Wright & Howes, 2010).

A second category includes scales that evaluate place attachment as a multidimensional construct with different numbers of factors. Among the most adopted ones, the scale by Williams and Roggenbuck (1989) identified potential items related to two main factors: place identity and place dependence (Figure 10.1, Model 2). Several studies focused on the validation of this scale. Williams and Vaske (2003) performed a confirmatory factorial analysis to ratify the existence of the above-mentioned factors and to test the validity of the proposed 12 items. Additionally, the authors substantiated the convergent validity of the scales using three independent variables that they deemed related to attachment: frequency of visits to the place, perceived familiarity, and degree to which the place is considered special. An interesting result of this work is that attachment measurements are found not to be generalizable across dimensions (i.e., scores on the one dimension cannot be generalized to another), suggesting that identity and dependence are phenomena related to place attachment, but not necessarily dimensions of it.

In turn, Kyle et al. (2005) use eight items from the scale by Williams and Roggenbuck (1989), adding four new items to measure a third factor: social bonds. Structural equation modelling is used to compare the relationship among the three potential relation models between the factors. These models are based on three hypotheses: (A) the set of 12 items measures a single factor of place attachment; (B) there are three first-order factors that are combined into a multidimensional measure for place attachment; and (C) a second-order factor exists that can unify the three first-order factors. Although both models B and C have the same levels of statistical adjustment, the authors chose model B because they consider it more coherent with the findings of previous works (i.e., that the three factors behave independently against other variables). Therefore, their scale measures three different factors: place identity, place dependence, and social bonds. Assuming that these are three independent factors as the authors claim, why are they presented as measures of place attachment?

The work of Raymond et al. (2010) is also based on the scale by Williams and Roggenbuck (1989), adding items focused on social bonds and nature bonds. After performing a factorial analysis, they select 19 items, grouped in five dimensions: place identity, place dependence, nature bonding, family bonding, and friend bonding (see Figure 10.1, Model 2). Some of these items are related to restoration, others are related to memories, and others to the bonding to the place inhabitants. Again, the question is whether these five factors are indicators of place attachment or independent interrelated variables. It is important to note that no confirmatory analysis has grouped those five factors together in a second-order factor that could be identified as place attachment.

Finally, there are scales in which place attachment is a component of a superordinate concept. Jørgensen and Stedman (2001, 2006) consider place attachment

dependence) of a second-order factor that they call *sense of place* (Figure 10.1, Model 3). To measure place attachment, they use four items related to the emotions produced by staying in a place (happiness, relaxation, e.g., "I feel relaxed when I'm at my lake property") or by having to leave (anxiety, nostalgia, e.g., "I really miss my lake property when I'm away from it for too long"). In the same line, Droseltis and Vignoles (2010) include seven items in their scale of place identification (Figure 10.1, Model 3): emotional attachment/self-extension (three items), environmental fit (two items), and place-self congruity (two items). Again, no empirical confirmation is provided for place attachment being part of a superordinate concept.

Problems Related to Validity

The methodological problems posed by the evaluation of place attachment are not only caused by the diversity of proposed scales for measuring the same concept, but by different foci on behaviours, attitudes, and beliefs even while using the same definition of place attachment. This also introduces problems of validity of the measurement. Place attachment is sometimes defined as an emotional bond, but the proposed scales include items related to other aspects such as identity, preference, or restorativeness. Korpiela et al. (2009) for instance propose two items to measure place attachment: "I would miss this place if I moved somewhere else", consistent with their interpretation of place attachment as an emotional bond, and "Even if I visit this place frequently I don't get tired of it," which is normally used to evaluate perceived restorativeness. In the same line, Dallago et al. (2009) conceive place attachment as an emotional bond related to the perception of safety, but use two items that are related to the quality of life, e.g., "Do you think that the area in which you live is a good place to live?" The fact that a place can offer a good quality of life does not necessarily mean that people must have attachment bonds to it.

Another frequent problem is that even the same authors use different scales in different studies. Hidalgo and Hernández (2001) used a scale to evaluate attachment to home, neighbourhood, and city, with a distinction between physical and social components, but they later proposed an improved scale (Hernández et al., 2007) focusing on generic emotions associated to the place (miss, feel, desire to return). Likewise, Brown, Brown, and Perkins (2004) measured place attachment based on unhappiness associated with moving, but Brown, Perkins, and Brown (2004) based the measurement on how proud people are of their homes. Scopelliti and Tiberio (2010) established a differentiation between attachment and identity, but they used a "multiple place attachment" scale to measure neighbourhood attachment, in which they included items related to identification, lack of opportunities, and social relations, and a different scale to measure city attachment based on two factors: emotional bonds and personal development. Similarly, Jørgensen and Stedman (2001, 2006) proposed a three-factor scale for sense of place, considering place attachment as an emotional bond, but in another study Stedman (2003) used a different scale including items related to identity and dependence, which he considered separate factors.

Another aspect worth noting is that place attachment has been operationalized

differently in different topical contexts. For instance, the scale by Williams and Roggenbuck (1989) has been applied especially for rural environments, while other scales (Bomaiuto et al., 1999; Hidalgo & Hernández, 2001; Lewicka, 2005, 2008) have been mostly adopted for urban environments. All these problems have hindered the theoretical and methodological convergence in this field.

Qualitative Procedures

Although less frequent than the psychometric studies, qualitative studies have increased in the last decade. These studies seek to capture reality in a comprehensive way, achieving a high degree of involvement of the participants. Lewicka (2011a) establishes two main categories: those based on verbal measures and those using graphical representations (images), either provided by researchers or by participants. Examples of these two categories are presented below, analysing their problems.

Interviews are the most common method used for data collection in qualitative place attachment studies. In-depth interviews can provide detailed information on particular aspects of place attachment. In Manzo (2005) in-depth, qualitative interviews with 40 participants were used to explore the nature of emotional relationships to places. Using a grounded theory approach, participants' responses were recorded and analysed to identify significant themes in relationships to place, and to determine the prominence of those themes. Another example is the study of Chow and Healy (2008), who use data obtained from in-depth semi-structured interviews in order to determine how feelings of attachment and identity are affected during the transition from home to university. This study proposes an interesting longitudinal design to compare measurements of place attachment in two different moments in a period of five months. Some problems of this methodology arise when different interviewing procedures are used for the same study, when the objects of the questions are not well defined, or when the analysis of the responses is not replicable. In this sense, it is frequent that the analysis is carried out by the authors themselves and that studies do not provide percentages of inter-rater reliability.

Other qualitative studies use images to trigger place attachment manifestations. While this methodology enriches the information obtained, they may suffer from the same problems as interviews. For instance, Beckley, Stedman, Wallace, and Ambard (2007) carried out research for measuring place attachment based on the photographs provided by the participants depicting people, locations, and objects that they considered responsible for their attachment to the place. Then, participants were asked to explain how the portrayed people, locations, and objects affected their attachment to the place. In the second phase of the methodology, the photographs and the explanations provided by the participants were classified in categories that correspond to two main groups: biophysical elements and socio-cultural elements. The proposal of a methodology that supports the categorization of the elements that originate people's attachment to a place is very interesting. Unfortunately, this work has some procedural problems. For instance, the scheme used in the interviews is not explained. Moreover, it is not clear what definition

place attachment was provided to the participants in order to allow them to identify the elements that they must photograph (the authors use the terms sense of place and place attachment indistinctly within the paper).

Combined Methods

Combined qualitative and quantitative measurements have been proposed in an attempt to evaluate more precisely the manifestations of place attachment (Blaike, 2000; Boğaç, 2009; Ryan, 2009; Devine-Wright & Howes, 2010).

Boğaç (2009) analyses the degree to which people feel physically and socially attached to the place where they have been forced to move, compared with children who have always lived in the same place. Questionnaires, semi-structured interviews, and exercises of mental cartography (i.e., drawing tasks) are used. It is not clear, though, how the analysis of the data gathered and the interpretation of the results have been performed. No inter-rater reliability system or predetermined categorization is used to ensure the objectivity of the analysis of the drawings.

Using a combined methodology, Ryan (2009) analysed the impact of place attachment on shopping behaviour in a rural town in Australia. Similarly to Beckley et al. (2007) in a qualitative phase they use photographs provided by the participants and interviews. The results of this phase are then used in a quantitative phase to develop a questionnaire to gather the necessary data to validate a model of relations between variables expressed as structural equations. However, the publication does not describe the type of questions used in the questionnaire, nor does it provide statistics of the obtained model, apart from the percentage of explained variance.

The combination of qualitative and quantitative methods can improve understanding of the psycho-environmental process when structured systems for data collection and appropriate strategies for exploiting the data gathered are combined, as in the study of Devine-Wright and Howes (2010). This study combines interviews, discussion groups, and questionnaires for measuring the disruption in place attachment in an area where a project for installing a wind energy park has been presented. Discussions were recorded to ensure adequate transcription and to enable further analysis based on a category system. The responses were analysed using inter-rater reliability and reaching a 97% agreement, allowing the authors to obtain frequencies for each category and a ranked list of the most frequent topics. Quantitative data, however, show only correlations or ANOVA for each variable, although a theoretical model of relationships between variables is proposed. Path analysis could have been used.

Statistical Analysis in Place Attachment Research

From the perspective of the research design, we highlight the correlational character of most of the studies. In general, the data analysis performed in these works uses non-inferential statistical techniques and have a univariate character. The objectives of those statistical analyses can be structured in four categories.

First, we find those analyses aimed at revealing the psychometric properties of

the instruments used to measure place attachment. Studies of this type usually report the global scoring of the participants in the scale, and the obtained reliability, mainly based on the internal consistency calculated through Cronbach's alpha coefficient. However, they seldom include data about the validity of the procedures used.

A second category includes statistical analyses aimed at establishing relations between place attachment and other bonds with place (e.g., rootedness, place dependence, place identity) and to identify correlates (including both predictors and consequences) of place attachment. In the analyses of the antecedents of place attachment the goal is to identify variables that influence the magnitude of the established bonds. The most frequently analysed predictors are socio-demographic (time length of residence, age, socioeconomic level) and socio-environmental (noise, overcrowding, type of housing, etc.) variables. With regard to the consequent variables, the impact of place attachment on attitudes such as public acceptance of policy measures or behaviours such as mobility, pro-environmental behaviour, and community participation has been studied. The most frequently used statistical analyses are simple linear correlation and multiple regression, in which place attachment can take the role of predictor or the role of consequent variable, as well as path analysis and structural equations (Jørgensen & Stedman, 2006; Bonaiuto et al., 1999; Droseltis & Vignoles, 2010; Rolloero & De Piccoli, 2010a).

The third group of analyses is formed by those that compare the degree of place attachment between different groups, normally defined by socio-demographic variables like place of origin, sex, or place of residence. This type of analysis is also used to compare the degree of place attachment of the participants towards different places. For instance, comparing attachment between residential and wilderness areas (Williams, Patterson, & Roggenbuck, 1992) or between neighbourhood, city, region, and country (Shamai & Ilatov, 2005; Hidalgo & Hernández, 2001). Variance analysis and average contrast, normally of a univariate nature, are the most usual statistical methods in this type of analysis. However, it is important to highlight that analysis of mediators and modulators and multivariate analysis are increasingly being used (Hernández et al., 2007; Vaske & Kobrin 2001; Gosling & Williams, 2010).

The last category comprises the studies intended to evaluate the structural dimension of the construct with an emphasis on the validation of the theory and of the instruments used (Hernández et al., 2007 Droseltis & Vignoles, 2010; Kyle et al., 2005; Raymond et al., 2010; Lewicka, 2011b; Vaske & Kobrin, 2001). In this sense, we are witnessing an increase in the use of more robust statistical methods, with the goal of validating the accuracy of theoretical models. Confirmatory factorial analysis and structural equation models are among the most widely adopted analyses in this category. The increasing popularity of these procedures reveals a certain advance in this area of research because they require the existence of a previous theoretical conception that was not indispensable in statistical analyses of a descriptive or exploratory nature.

Starting in the 1980s, and in parallel with the increase in the use of confirmatory statistical techniques, we have witnessed a significant proliferation of procedures and tools to analyse data gathered using qualitative methodologies. This type

of software, generally known as CAQDAS (Computer Assisted Qualitative Data Analysis Software), offers a wide catalogue of tools to facilitate the analysis of qualitative data, allowing a systematic collection and analysis of the information, without limiting the interpretation of the results. ATLAS.ti and Cohers SPAD are relevant examples of this category of software.

Conclusions

The analytic review of the literature presented in this chapter highlights the need for place attachment studies to be founded on a precise definition of the concept and a consistent correspondence between the theory and the measurement procedures adopted. Research in this field should progress from analysing *what* and *how much* to analysing other questions such as *how*, *where*, *when*, and *why*. Lewicka (2011a) and Droseltis and Vignoles (2010) suggest that the Person dimension of the PPP model has received more attention than Place and Process, and that the emphasis put on the differences among individuals has probably inhibited the development of a theory of place attachment. We share their view and consider that it would be interesting to know more about the psychological process dimension (what are the properties of this bond, how it contributes to the identity, and what are the related behaviours) and about the place dimension (what types of places generate more attachment, what are the characteristics of those places, etc.).

With respect to the measurement procedures, it would be desirable to use scales with adequate psychometric properties. When proposing new scales, their need must be justified, detailing why existing scales were not used, the theoretical model that underpins the new scale, and demonstrating adequate psychometric reliability and validity properties. In particular, the validity property is a weak aspect in operationalization of place attachment.

The continued use of qualitative methods, with appropriate systems for data collection and data analysis, and the adoption of other methods (e.g., walking interview, secondary data studies) commonly used in other related disciplines (e.g., anthropology, geography) could also contribute to the development of the research on place attachment. Likewise, the use of combined methods would facilitate the transfer of information between different disciplines, provided that standard methods for obtaining and interpreting the data are used.

Regarding the statistical analyses, our recommendation is twofold. On the one hand, they must ensure consistency between the theory and the measurement procedures adopted. On the other hand, we recommend the use of multivariate analysis and statistical procedures to validate the accuracy of the theoretical model proposed. Additionally, path analysis and structural equation modelling allow researchers to test complex relationships between variables and confirm indirect relationships between them. Finally, a dynamic conception of the relation between people and places along the lines proposed by Manzo (2003) could be useful. In this sense, the use of longitudinal studies could contribute to a better understanding of place attachment. Correlational and qualitative studies, characteristic of research in place attachment, are in most cases based on information obtained at a single point in time. From the point of view of the research design, the limited number of

longitudinal studies is surprising, especially if we consider that the developmental aspects of the bonds between people and places were highlighted already in the seminal studies of the area (Hay, 1998).

In fact, some recent works have tried to capture changes in place attachment bonds (Ruiz et al., 2011; Korpela et al., 2009; Taberner, Briones, & Cuadrado, 2010; Chow and Healy, 2008). Despite their limitations (comparing samples with different length of residence, carrying out short follow-ups, or collecting data at only two specific times), these results confirm that research on the development of place attachment is hopeful.

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