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Place Attachment and Pro-Environmental Behaviour in National Parks: The Development of a Conceptual Framework

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Abstract

This paper critically examines the concept of place attachment and its likely influence on pro-environmental behavioural intention of visitors. It considers place attachment as a multi-dimensional construct comprising place dependence, place identity, place affect, and place social bonding, and suggests that research investigating this relationship in a national park context is fragmented, scattered, and often does not fully consider its multi-dimensional nature. A coherent and integrated approach is needed to advance the field. By considering place attachment as an attitude and acknowledging the close relationship between attitude and behavioural intention when both are directed toward a particular object or environment, the paper develops a conceptual framework that integrates the different place attachment sub-constructs. It presents their relationship to pro-environmental behavioural intention as a series of propositions. The framework further considers place satisfaction to exert a direct influence on visitors' pro-environmental behavioural intentions in national parks and a moderating effect on the relationship between the different place constructs and pro-environmental behavioural intention in parks. Finally, the latter construct is proposed to influence visitors' general pro-environmental behavioural intentions. The paper's theoretical contributions, its limitations and its practical implications for sustainable tourism in general and national park management in particular, are discussed.

Key words: Place attachment; attitude; behavioural intention; pro-environmental behaviour; place satisfaction

Introduction

Environmental degradation is often considered to be human driven (Halpenny, 2010; Kurz, 2002). While the importance of environmentally responsible behaviour as a tool for enhancing sustainability is generally accepted, researchers are only now beginning to understand the complexities involved. The premise of this paper is that research is needed to better understand the relationships between people and places and their potential influences on pro-environmental behaviour. Place research has attracted the attention of several researchers, particularly within the environmental psychology and environmental management disciplines. This interest stems partly from the environmental problems threatening the existence of places considered important to individuals and society (Sanders, Bowie, & Bowie, 2003; Sennett, 2000). In the case of leisure and tourism research, it also stems from the fact that places are venues for visitor experiences (Snepenger, Snepenger, Dalbey, & Wessol, 2007) and set the context for social and psychological interactions between people and the place. Many scholars argue that place attachment is an area in need of study (Rollero & Picolli, 2010; Scannell & Gifford, 2010a; 2010b).

Attachment to place is referred to in the psychology literature as the emotional bond between people and their environment settings (Mazumdar, 2005) and is widely understood to have originated from attachment theory (Bowlby 1969, 1975, 1980). The attachment relationship develops from the naturalistic observations of an infant forming an attachment to the mother and therefore is biologically rooted and assists the infant's survival (Bowlby, 1982, 1991). Early experiences arising from parent-child relationships formulate the child's initial mental representation of the self, and others (Mennen & O'Keefe, 2005). These mental representations serve to interpret social stimuli which guide the child's expectations and behaviours in relationships throughout his or her life (Bowlby, 1982).

Attachment theory has expanded over the last thirty years to include other social relationships between adults (Hazan & Shaver, 1994) and other social environments (Milligan, 1998; Wiles, Allen, Palmer, Hayman, Keeling, & Kerse, 2009) including one's neighbourhood (Brown, Perkins, & Brown, 2003, Lewicka, 2010) and places (Kyle, Graefe, Manning, & Bacon, 2004a; Kyle, Mowen, & Tarrant 2004b; Garrod, 2008; Morgan, 2010). Environmental psychologists have often referred to the bonding between individuals and places as place attachment (Altman & Low, 1992; Guiliani & Feldman, 1993). Concepts and characterisations of place attachment seem to vary in the literature. It has been challenging for researchers to assimilate the multiple place attachment terms which are used (Raymond, Brown, & Weber, 2010). Viewed as a multidimensional concept (Gustafson, 2001, Scannell and Gifford, 2010a; b), place attachment incorporates several aspects of the people-place bonding of affect, emotions, knowledge, beliefs, and behaviour in connection with a place (Chow, & Healy, 2008) and arises from psychological, social, and cultural processes (Altman & Low, 1992). Place attachment encompasses dimensions of person, process, and place (Scannell, & Gillford, 2010a) and serves as an affective link which people develop with an environment (Hidalgo & Hernandez, 2001; Altman & Low, 1992).

People's attachment to places provides several opportunities to study human behaviour (Dredge 2010; Goffman, 1963). Consequently, researchers from the social and environmental psychology disciplines have investigated the influence of place attachment on pro-environmental behaviour (e.g. Devine-Wright & Howes, 2010; Gosling & Williams, 2010; Hernández, Martín, Ruiz, & Hidalgo, 2010). Results indicate that the concept is potentially important in explaining pro-environmental behaviours across a range of settings and contexts. It appears that such behaviours are more likely to result when the individual is positively attached to a place (Burley, Jenkins, Laska, & Davis, 2007; Walker & Ryan, 2008).

Walker and Chapman (2003) suggest that knowledge about a place increases the likelihood of place-protective behaviours among individuals and can generate a sense of commitment and responsibility vis-à-vis places they are most attached to (Relph, 1976). However, researchers argue that there is a lack of debate on this important topic of investigation, making it difficult to draw definitive conclusions (Scannell & Gifford, 2010b) about why, how and in what contexts place attachment contributes to pro-environmental behaviour. Furthermore, the scant literature available on the relationship between place attachment and environmental behaviour is fragmented, scattered, and 'disorganised' (Jorgensen and Stedman, 2001).

Researchers recognise that place attachment is a multidimensional construct (e.g. Scannell & Gifford, 2010a; Hidalgo & Hernandez, 2001), comprising place dependence (Stokols & Shumacker, 1981), place identity (Prohansky, 1978), place affect (Kals & Maes, 2002), and place social bonding (Scannell & Gifford, 2010a, 2010b). However, the few studies which have sought to investigate the influence of place attachment on pro-environmental behaviour have fallen short of integrating the different dimensions into one model and testing their effects collectively as well as separately (Scannell & Gifford, 2010b). Researchers argue that these dimensions or sub-constructs of place attachment are different (Brocato, 2006; Halpenny, 2006; Kyle et al., 2004a, 2005) and their effects on environmental behaviour may differ depending on the levels and types of place attachment (Kyle et al; 2004a; Stedman, 2002; Scannell & Gifford, 2010b). The fragmented and scattered literature indicates the need to consolidate this body of existing empirical work by integrating the different dimensions of place attachment into a single conceptual framework on which future studies on place attachment and environmental behaviour can be built.

This paper draws together previously 'disorganised' literature to build a conceptual model for the relationship between place attachment and pro-environmental behaviour. It is

underpinned by an attitudinal approach to the study of place attachment based on the principles of attitude-behaviour models. Some useful propositions on which future studies could be based emanate from the framework. The theoretical and practical implications of the framework for sustainable national park management and sustainable tourism broadly are also discussed.

The Conceptual Framework: Its Theoretical Basis

The quest for more environmentally sustainable behaviour has meant that there has been a move to investigate environmental problems from a psychological, social, and behavioural standpoint, leading to an increased focus on the study of human attitude and behaviour (Kurz, 2002). A number of studies highlight the importance of psychological research to promote pro-environmental behaviour (e.g. Hines, Hungerford & Tomera, 1987; Bamberg & Moser, 2007). The majority of studies in the environmental psychology literature have adopted attitude-behaviour models (Kaiser, Wolfing, & Fuhrer, 1999). Models used range from simple ones to more complex frameworks such as the Theory of Planned Behaviour (Ajzen, 1989), and the more recent Reasoned Action Approach (Fishbein & Ajzen, 2010). Attitude-behaviour models incorporate the influence of features of the individual as well as features of the conditions in which individuals are operating (Jorgensen & Stedman, 2001).

This paper continues that line of research and uses the attitude-behaviour relationship to analyse the influence of place attachment on pro-environmental behavioural intention. An attitude is defined as an individual's inclination to exhibit certain responses toward a concept or an object (Fishbein & Ajzen, 1975). The affective, cognitive and behavioural realms are regarded as domains of an attitude (Rosenberg & Hovland, 1960) and serve as a starting point for most contemporary analyses (Ajzen, 1989, p. 245). Affect refers to emotional responses,

the cognitive component is represented by beliefs, knowledge structures, perceptions, and thoughts and the conative[1] (action or behavioural) component of an attitude is represented by behavioural commitments (Rosenberg & Hovland, 1960; Jorgensen & Stedman, 2001). Social scientists agree that place-related constructs can be regarded as attitudes, thus providing the basis for integrating the different place components into a single framework (Jorgensen & Stedman, 2001). Places represent a confluence of cognition, emotions, and actions organised around the human agency (Canter, 1991). The latter further argues that places can be viewed as an integrated system comprising of the three attitude domains. Within this conceptualisation, place attachment is considered within a tripartite framework comprising self-referent cognition, emotions and behavioural commitments (Jorgensen & Stedman, 2001; Kyle et al., 2004b). Place affect, which is the emotional bond people share with a place, is largely an affective component. Place identity refers to the connection of the self and a particular setting and has both cognitive and affective elements. The behavioural component of the attitude is represented mainly by place dependence, which refers to the functional use and interaction with a place. Place social bonding, which refers to inter-personal relationship which occurs in a place (and is less established in the literature as a sub-construct of place attachment), appears to be largely cognitive.

In reality, however, each of the four sub-constructs may include elements of all three components of attitude and, in any case, it is less important theoretically and practically to allocate each sub-construct to a particular component of attitude than it is to isolate how each sub-construct contributes to the conative component of place attachment relating to pro-environmental behavioural intention. In other words, because place attachment has been

[1] The conative is, with the affective and cognitive, one of the three parts of the mind. It drives how a person acts on thoughts and feelings, and refers here to behaviour and activities (see Kyle et al., 2004b).

linked to pro-environmental behaviour but is viewed and measured as a second order construct with several recognised underpinning sub-constructs, there is a need to understand the relative contributions of each of these sub-constructs in the place attachment – pro-environmental behaviour relationship. Considering the different place constructs within an attitudinal framework comprising of cognitive, affective, and conative components leads to a stronger theoretical coherence and is linked to established research methods (Canter, 1991; Jorgensen & Stedman, 2001).

Based on the above, a conceptual framework is presented in Figure 1 depicting known and hypothesised relationships between the sub-constructs of place attachment and pro-environmental behavioural intentions in a national park context. National parks both conserve and provide recreation areas offering opportunities for visitors to reconnect with the natural environment. The relationships which visitors share with these natural places are increasingly being recognised as playing an important role in influencing their environmental behaviour, offering scholars different avenues of research to study such relationships (Halpenny, 2010).

Recreational activities in national parks can have significant negative impacts contributing to the deterioration of the park's environment (Sterl, Brandenburg & Arnberger, 2008), leading to calls to promote environmentally sustainable practices in national parks (Stockdale & Barker, 2009). Encouraging environmentally responsible behaviours by visitors is now an important strategy for promoting sustainability (Ballantyne, Packer & Hughes, 2009; Brown, Ham & Hughes, 2010; Halpenny, 2010) and thus long-term benefits for the tourism industry (Lopez-Mosquera, & Sanchez, 2011). If well managed, visitation to national parks can also generate significant positive impacts. Environmentally responsible behaviours can allow visitors to better value natural resources (Baral, Stern & Bhattarai,

2008) while enjoying the physical and psychological benefits the parks' environments offer (Korpela, Ylen, Tyrvainen & Silvennoinen, 2008). Fostering pro-environmental behavioural responses among visitors may further help to preserve national parks' natural and cultural resources for future generations.

Another construct which deserves investigation in a nature-based context is that of place satisfaction. Consistent with theories of attitude, Stedman (2002) argues that place satisfaction is strongly based on cognitive attributes about the place's settings. The framework further considers the moderating effect of place satisfaction on the relationships between the different place attachment sub-constructs and pro-environmental behavioural intention in national parks, as well as a direct relationship on the latter. The framework also draws from the environmental psychology literature (e.g. Thogersen & Olander, 2003; Vaske & Kobrin 2001) and proposes that visitors' place-specific pro-environmental behavioural intention in national parks can influence their general pro-environmental behavioural intention.

INSERT FIGURE 1 ABOUT HERE

Place Attachment and Pro-Environmental Behaviour

The following subsections of the paper provide a rationale for each relationship included in the framework. Each subsection includes literature regarding the conceptualisation of the sub-construct, examples of studies that have found relationships between the sub-construct and other constructs, studies that have focused on the relationship between the sub-construct and pro-environmental attitudes, behavioural intentions and behaviours, and finally, research undertaken in the context of national parks.

Place Dependence

Place dependence (Stokols & Shumacker, 1981) is described as visitors' functional attachment to a specific place and their awareness of the uniqueness of a setting which contributes to meeting their visitation goals (Williams, Patterson, Roggenbuck, & Watson, 1992). It can be conceptualised as a bond individuals form with the physical characteristics of a place. The greater an individual's level of dependence on the place, the lesser he/she is willing to change the place for another (Scannell & Gifford, 2010a), suggesting greater loyalty. Derived from a transactional view, place dependence suggests that people evaluate places against alternatives (Yuksel, Yuksel, & Bilim, 2010). The literature indicates that place dependence arises from one's attachment to a place (Halpenny, 2010; Raymond et al., 2010). Places visitors find meaningful include a broad range of settings from built attractions to natural environments such as parks, trails, forests, mountains, and lakes (Manzo, 2003, 2005). Examining the level of visitors' dependence on built and natural settings is essential to understand the consumption patterns of such products. Place dependence has particular meanings in natural settings and natural resource areas (such as national parks) which provide an ideal setting for developing place dependence among individuals (Vaske & Korbin, 2001). Research indicates that people's interest in natural settings is driven by the desire to satiate specific needs (Kaplan & Kaplan, 1989) and experience specific desired outcomes (Kyle et al., 2004b).

Past research has addressed ways in which people relate to places (e.g. Moore & Scott, 2003; Snepenger et al., 2007) and the relationship between place dependence and participation in interpretive programs at the Isle Royal National Park in Michigan, USA (Harmon, Zinn & Gleason, 2005), level of attraction (Kyle, Bricker, Graefe & Wickham, 2004c), and loyalty with places (Yuksel et al., 2010). However, research investigating the relationship between this sub-construct of place attachment and pro-environmental attitudes

and behavioural intentions of visitors in a park setting remains scant in the literature. Bricker and Kerstetter's (2000) study of white-water recreationists on the South Fork of the American River revealed that place dependent recreationists were more concerned with resource development and maintenance. Kyle, Absher and Graefe (2003) attempted to analyse the moderating effect of place dependence on visitor attitude towards the use of recreational fees and support for spending the money on environmental protection, facility and service development, and environmental education. Findings revealed that place dependence did not exert a moderating relationship between attitude and environmental behavioural intentions. The scant literature on place dependence and environmental behaviour, as well as the contradictory findings with respect to its influence on the latter imply that the relationship demands further investigation. Based on the preceding discussion but taking into account the evidence for an overall positive relationship between place dependence and pro-environmental behaviour, the following proposition is developed and is shown as P1 in Figure 1.

Proposition 1: Visitors' place dependence positively influences their pro-environmental behavioural intention in national parks.

Place Identity

An important area of place scholarship in the recreation, leisure, and tourism literature is that of place identity. When people visit natural attractions, the physical and social attributes of the place may give rise to a strong sense of place identity (Gu & Ryan, 2008) involving not only the specific, localised experiences but also more specific memories about the place (Devine-Wright & Clayton, 2010).

There is a plethora of conceptual terms defining the relationship between place and identity in the literature, including sense of place (Lim & Barton, 2007), connectedness to

nature (Gosling & Williams, 2010), environmental identity (Clayton, 2003), rootedness (Tuan, 1980), and place identity (Raymond et al., 2010). Place identity describes a profound connection between a place and one's personal identity (Prokansky, 1978). Budruk, Thomas and Tyrrell (2009) argue that places offer an individual the opportunity to both express and affirm his/her identity. Jorgensen and Stedman (2001) describe Prohansky's concept of place identity as a cognitive structure referring to global self-identification with a place. Individuals tend to develop a strong identity with a place when the place provides a sense of uniqueness or facilitates distinctiveness from other places (Twigger-Ross & Uzzell, 1996).

Previous research has investigated the relationship between place identity and perceptions of environment and social setting (Mesch & Manor, 1998), incivilities in one's daily life (Felonneau, 2004), one's bonding with nature (Raymond et al., 2010), one's attachment to neighbourhood and public lands (Clark & Stein, 2003), and residents' support/opposition to physical changes in their neighbourhood (Mesch, 1996). Other studies, though few in numbers, have investigated the relationship between place identity and pro-environmental attitudes and behaviours. Walker and Ryan's (2008) study indicated that individuals who strongly identify with rural landscapes exhibit high tendencies to support and engage in conservation initiatives to protect them. Similarly, residents' sense of identity with Cleveland Park was found to influence their volunteering intentions to the park (Moore & Scott, 2003). Stedman (2002) also noted that individuals holding a high level of place identity were more willing to advocate place-protective behaviours. Walker and Chapman's (2003) study findings also revealed that visitors' place identity influenced their volunteering intentions in the park, as well as other site-specific best practice behavioural intentions such as picking up other peoples' litter and poaching reduction. Bricker and Kerstetter (2000) reported that recreationists with high levels of place identity were keener to maintain the

primitive settings of the place and protect its resources.

Given the prominence that the place identity construct holds in natural settings (Clayton, 2003; Gosling & Williams, 2010) and its potential influence on environmental behaviours within the overall conceptual framework, further investigation is required. Gosling and Williams (2010) noted that, to date, there is only partial evidence of how pro-environmental behaviour increases with people's connectedness to natural places of interest. Based on the above discussion from the literature, the following proposition is developed with the aim of progressing the literature on place identity and pro-environmental behavioural intentions in a national park setting (P2 in Figure 1).

Proposition 2: Visitors' place identity positively influences their pro-environmental behavioural intention in national parks.

Place Affect

Another aspect that has been overlooked in literature is the role of place affect as an important dimension of place attachment and its influence on individuals' pro-environmental attitudes and behavioural intentions. A number of researchers conceptualise place attachment as place affect. Halpenny (2006), Kyle et al. (2004b, 2005) and Brocato (2006) emphasise the distinction of place affect from the other dimensions of place attachment. While it is widely acknowledged in the environmental psychology and leisure recreation literature that places are grounded in environmental and social experiences (Felonneau, 2004; Moore & Graefe, 1994), they also relate to an affective link which individuals develop with these places (Rolero & De Picolli, 2010). Place affect is conceptualised as the emotional bonds individuals share with settings in their framework. In his conceptual paper, Tuan (1977) defined this bond as 'topophilia' or 'love of place'. He further argued that this affective bond may vary in intensity from a sensory delight to a deep attachment with the place. Relph

(1976) also conceptually argued that individuals usually develop an emotional bond with the environment to satisfy fundamental human needs such as a general sense of well-being (Brown et al., 2003). These bonds can be deeply emotional (Kyle et al., 2004b), giving meanings to the settings by building up an individual's sentiments about the place (Tuan, 1977).

Place affect gains particular meaning in a natural environment context. Wilson (1993) argues that people experience a need for natural environments. Affective connection with natural locations generates a sense of psychological well-being for park visitors (Herzog, Black, Fountaine, & Knotts, 1997; Kaplan & Talbot, 1983; Korpela, Ylem, Tyrvainen, & Silvennoinen, 2009) and may foster pro-environmental behavioural intentions. Evidence suggests that natural settings tend to increase positive emotions in individuals about the setting (Hartig, Book, Garvill, Olsson, & Garling, 1996; Ulrich, 1979). Individuals with greater experience with natural environments may express stronger emotional connections than those with lesser experience (Hinds & Sparks, 2008).

While there has been some research investigating the ways in which places and people are emotionally tied (e.g. Altman & Low, 1992; Manzo, 2003), to date only limited research has investigated how place affect influences visitors' pro-environmental attitudes, intentions and behaviour in national parks. Clayton (2003) and Orr (1993) argue that one's caring emotions for the natural environment may be the most important influencing factor in influencing commitment to protective behaviours towards nature. Empirical research in the field confirms the important role of affect in fostering the human-environment relationship (Kals & Maes, 2002; Kals, Shumaker & Montada, 1999). Pooley and O'Conner (2000) also noted that place affect is an important predictor of environmental attitudes towards logging native forests. There is also evidence which suggests that affective connection with nature

leads to environmentally friendly behaviour such as increasing commitment to environmental organisations (Kals et al., 1999). Comstock et al., (2010) emphasised the need for further research on the affective component of place attachment and its link to sustainable behavioural change. Having received only scant attention to date, examining the role of affect in fostering environmentally moral and sensitive behaviours is an area worthy of attention (Mayer & Frantz, 2004; Oskamp, 2002). Based on the preceding discussion, the following proposition (P3 is Figure 1) is developed.

Proposition 3: Visitors' place affect positively influences their pro-environmental behavioural intention in national parks.

Place Social Bonding

Place social bonding is another under-researched dimension of place attachment. Researchers have argued that people become attached to places which facilitate interpersonal relationships (Scannell & Gifford, 2010a; 2010b) and foster "group belonging" (Hammitt, Kyle & Oh, 2009). Place belongingness evolves when individuals develop communal bonds with other people through the people – place interaction (Hammitt, Backlund & Bixler, 2006). These communal relationships hold important meanings in outdoor recreation settings (Hammitt, 2000). Fried (1963) argued that the desire to remain close to a place stems from interpersonal interactions and, as Low and Altman (1992, p. 7) argue, "Places are repositories and contexts within which interpersonal, community, and cultural relationships occur, and it is to those social relationships, not just to place qua place, to which people are attached." This is referred to by Scannell and Gifford (2010b) as a socially-based place bond. Several other authors in the environmental psychology literature, noting that this bonding consists of social ties, use terms such as belongingness (Milligan, 1998; Hammitt, Kyle & Oh, 2009), sense of community (Perkins & Long, 2002; Pretty, Chipuer, & Bramston, 2003) and

neighbourhood attachment (Brown et al., 2003; Lewicka, 2005) to conceptualise place bonding.

A number of studies confirm the importance of place social bonding to people. Kyle and Chick (2007), in their investigation of place meanings and agricultural fairs highlighted the importance of place experiences shared with family and friends. Researchers also argue that the social involvement of family, friends, and community are equally, if not more important than the physical settings of the place alone (Cooper-Marcus, 1992). Hidalgo and Hernandez (2001) in their measurement of physical and social place attachment in three spatial contexts (houses, neighbourhoods, and cities) concluded that the social attachments were stronger than setting attachments. Spatial bonds become important since they symbolise social bonds (Lalli, 1992) with the social group the place represents (Scannell & Gifford, 2010b). Hunter (1974) and Woldoff (2002) argued that attachment to a place rests on local sentiments and ties. Thus, place social bonding is symbolic of one's social group within a place. Raymond et al. (2010) found that natural settings set the context for social experiences and the bonds which are consequently formed. Kyle et al. (2004b) also argued that places provide a context for social relationships. Whilst these studies have shown the importance of the place social bonding, the concept still demands further attention (Kyle & Chick, 2007; Sampson & Goodrich, 2009). While there have been a number of studies examining constructs of place identity, place dependence and place affect in the leisure literature, what remains poorly understood is how place social bonding may play a prominent role in determining people's attachment to natural settings.

Another line of research, though limited, has been the role of place social bonding in influencing pro-environmental attitudes and behaviours. Nye and Hargreaves (2009) argue that meanings of pro-environmental behaviours are constructed through the social interaction

of people which are then further translated into action in different settings. Georg (1999), in her study on three different eco-communities, noted that social interactions are significant in influencing the respondents' behaviour. The group adopted new norms collectively and members were influenced individually not only "by what they think is expected of them [but also] by their expectations that others will behave in a similar fashion as themselves" (Georg, 1999, p. 462). This reinforces the premise that social bonding among individuals can encourage and promote pro-environmental behavioural intentions and behaviours (Nye & Hargreaves, 2009).

Further research is needed to understand how social contexts influence the reflexive actions of individuals and shape the outcomes of their environmental attitudes, intentions and behaviour. Future research in a specific context such as a national park is considered to be a fruitful step to expand knowledge in the field (Nye & Hargreaves, 2009). Raymond et al. (2010) also highlighted the need for further research on place social bonding in a natural environment setting. When social bonds occur and are maintained in a specific national park setting, pro-environmental behaviours may be influenced by these social encounters. The preceding review of literature informs the following proposition (P4 in Figure 1).

Proposition 4: Visitors' place social bonding positively influences their pro-environmental behavioural intention in national parks.

Place Satisfaction

Place satisfaction is defined as a multidimensional summary judgment of the perceived quality of a setting, meeting an individual's needs for the physical characteristics of a place, its services, and social dimensions (Stedman, 2002). The concept plays an important role in understanding visitors' psychology of behaviour. C. Chen and F. Chen (2010) noted that when the visitors' experience results in feelings of gratification, he or she is satisfied, and

that visitors tend to be dissatisfied with a place when they feel displeased with the experience (Reisinger & Turner, 2003). Visitor satisfaction is perceived as key to the success of destinations in today's competitive market (Bosque & Martin, 2008) and as such is a critical issue not only for visitors but also for managers. Consequently, scholars have long been interested in satisfaction as a response to consumption experience (Oliver, 1997), though only recently have they begun to explore the relationships between satisfaction and behavioural intentions of visitors (e.g. Chi & Qu, 2008; Williams & Soutar, 2009, Yuksel et al., 2010; C. Chen & F. Chen, 2010). The general agreement is that an individual's level of satisfaction with a place setting is likely to influence his/her future travel, destination choice and produce choice behaviour. Research also suggests that visitors' place satisfaction is likely to influence their environmental behaviour. While some scholars have wisely investigated this relationship, such studies are few.

Stedman (2002) hypothesised that satisfaction with the setting can have an effect on respondents' willingness to engage in behaviours which enhance the settings of a place. He found that place satisfaction exerted an independent influence on the pro-environmental behaviours of respondents. His results showed that respondents with lower levels of satisfaction were more willing to engage in place protective behaviours, more precisely, that respondents who were displeased with physical conditions such as the scenery, water quality, and atmosphere were more willing to engage in environmental preservation. Another important finding emerging from Stedman's (2002) study was that respondents with higher levels of place attachment and lower levels of satisfaction showed greater willingness to act to counter environmental changes to their lake. Furthermore, it is interesting to note that "pristine" and "impacted" conditions of the lake did not significantly predict respondents' intentions to protect the lake. Halpenny (2006) investigated the relationships between place

attachment, place satisfaction and pro-environmental behaviours. While visitors' place satisfaction with Point Pelee National Park's (Canada) natural environment positively predicted place attachment, it failed to predict pro-environmental behavioural intentions.

Prester, Rohrmann and Schellhammer's (1987) study revealed that individuals with low levels of satisfaction with their environment were more willing to engage in environmental activism and pro-environmental behaviours. Pelletier, Legault and Tuson's (1996) research on satisfaction with environmental conditions and government policies concluded that dissatisfaction with government environmental policies may lead residents to engage in environmentally friendly behaviours. They confirmed that individuals with lower levels of satisfaction with local environmental conditions and those who were dissatisfied with government environmental policies engaged more frequently in pro-environmental behaviours such as recycling, conservation and purchasing of environmentally friendly products. Uzzell, Pol & Badenas (2002) explored the relationships between place identification, social cohesion and residential satisfaction and attempted to test their effects on environmental behaviours in two different neighbourhood villages. Place satisfaction did not generate pro-environmental behaviours in Onslow village, and the opposite was observed in Stroughton village.

In spite of the general agreement of the above scholars on the importance of the satisfaction construct in research, limited work has been undertaken to define the satisfaction construct in nature-based settings (O'Neill, Riscinto-Kozub & Van Hyfte, 2010). Furthermore, it appears that no study has investigated the relationship between place satisfaction and pro-environmental behaviour in national parks. The relationship between the two constructs still needs to be systematically documented in the literature. Gaining an understanding on how satisfaction influences pro-environmental behaviours is important for

managers, researchers and scholars seeking solutions to environmental problems in parks. Based on the above discussion, the following proposition (P5 in Figure 1) is developed to bridge the gap in the literature arising from a comparative lack of studies on place satisfaction and pro-environmental behavioural intentions in national parks.

Proposition 5: Visitors' place satisfaction influences their pro-environmental behavioural intention in national parks.

In addition to the direct influence of place satisfaction on visitors' pro-environmental behavioural intentions, the conceptual framework also captures the moderating effects of the place satisfaction construct on the relationships between the sub-constructs of place attachment and pro-environmental behavioural intention in national parks. While the tourism literature reveals an abundance of studies on satisfaction, researchers have focused on its antecedents or direct effects on outcome variables such as repurchase intentions and recommendation. Very little research has analysed the moderating effects of satisfaction on behaviours. Homburg, Hoyer and Koschate (2005) investigated the moderating effect of satisfaction on the relationship between a price increase and customers' repurchase intentions. They noted a strong positive moderating effect of satisfaction on customers' repurchase intentions after a price increase. They concluded that the moderating role of satisfaction plays an important role in influencing behaviour. The researchers suggested the need for future research on the moderating effect of satisfaction in other contexts. The conceptual framework proposes that place satisfaction exerts a moderating effect on the relationship between place dependence, place identity, place affect, place social bonding and pro-environmental behavioural intention. It is argued that an investigation of the concept as a moderating construct would provide a clearer understanding of visitor satisfaction in national parks and make an interesting and fruitful contribution to the literature. In line with the

above discussion, the following proposition (P6 in Figure 1) is developed.

Proposition 6: The relationships between place dependence, place identity, place affect, place social bonding and pro-environmental behavioural intention in national parks are moderated by visitors' levels of place satisfaction.

General Pro-environmental Behaviour

Place attachment to natural resources in a specific setting may generate positive consequences in one's general life, which in turn may influence an individual's responsible behaviour in general in his/her everyday life (Hines et al., 1987; Relph, 1976; Tuan, 1974). Based on this idea, the conceptual framework includes the notion that visitors' pro-environmental behavioural intention in a specific park setting influences their general environmental behaviour. There is some evidence in the environmental psychology literature exploring the spill-over effects of pro-environmental behaviours (e.g. Thogersen, 1999; Thogersen & Olander, 2003). This relates to how individuals' engagement in pro-environmental behaviour in a specific setting increases their propensity to engage in pro-environmental behaviours in other domains. The spill-over effects of pro-environmental behaviours in a specific setting to a more generalised context is supported by Bem's (1972) self-perception theory. The theory claims that an individual's environmental behaviour in one area influences his or her attitude and self-image which increases his or her preparedness to exhibit environmentally-friendly behaviours in other areas. Thogersen and Olander (2006) in their investigation of spill-over effects argued that individuals are fairly consistent with similar types of behaviours. They further argued that people have specific concerns which lead them to behave in an environmentally responsible manner in their everyday lives. This reflects how closely the behaviours are associated in one's mind (Thogersen, 1999). While it was evidenced that there was the transfer of environmentally-friendly conduct between

similar behavioural categories (behaviours that seem to go together, for example, one could compare writing petitions to the local congresswoman about a favourite national park to writing petitions about managing a national park system in general), the transfer process was rather slow (Thogersen and Olander, 2003).

Vaske and Kobrin (2001) noted that individuals' environmentally responsible behaviour in a natural resource setting led to more general pro-environmental behaviours in their everyday life such as sensitising friends on environmental and conservation issues. Building on Vaske and Kobrin's (2001) findings, Halpenny (2010) sought to examine how pro-environmental behavioural intentions in parks may contribute to the general welfare of the environment. She argued that park visitors may transfer their attachment and importance they assign to parks to the general environment. However, Halpenny (2010) also noted that there might be other factors influencing park visitors to engage in general pro-environmental behaviours such as the ease with which such behaviours could be performed as well as the costs of the behaviours (Halkier, 1997). In a more recent study, Whitmarsh and O'Neill (2010) examined whether specific behaviours predict other behaviours. Their findings revealed that the respondents' pro-environmental behaviour was a significant predictor of other general pro-environmental behaviours such as engaging in regular water and domestic energy conservation programs, waste reduction schemes, and participation in eco-shopping. In general, environmental psychologists are unclear on the relationship between specific and general environmental behaviour. Arguments both in favor of (Berger, 1997) and against (DeKruijk & vanRaaij, 1991) the spill-over effects have been put forward. The relationship between the two types of behaviour still needs to be clarified. Moreover, with the exception of a few, studies investigating the spill-over effect of visitors' pro-environmental behaviours in a national park setting on their general pro-environmental behavioural intentions and

behaviour remain scant in the literature, calling for more research in the area (Halpenny, 2010; Vaske & Kobrin, 2001). The present paper seeks to expand the knowledge base in the field by developing the following proposition (P7 in Figure 1) which aims at investigating the spill-over effect of pro-environmental behaviours from a nature-based setting to the general environment.

Proposition 7: Visitors' pro-environmental behavioural intention in national parks positively influences their general pro-environmental behavioural intention.

Conclusion

Environmental problems are considered to be human driven and, consequently, social scientists generally agree on the importance of including the 'human' variable in any solution to environmental problems (Oskamp, 2000; Oskamp & Shultz, 1998; Stern, 1992). Researchers and scholars have studied environmental degradation from a psychological, social, and behavioural standpoint (Kurz, 2002). Thus, the study of human behaviour, and specifically research that seeks to better explain and predict pro-environmental behaviour, is considered highly relevant to fostering the sustainable use of natural resources (e.g. Gonzales, Aronson, & Constanzo, 1988; Seligman, 1986) including those associated with tourism.

Place attachment, which is a multi-dimensional construct, has received considerable attention in the environmental psychology literature over the past two decades. Researchers have been interested in investigating the influence of place attachment on pro-environmental behaviours. However, scholars have rarely integrated the different sub-constructs into a single framework to analyse their relationships and effects on pro-environmental behaviour. Having the attitude-behaviour model as its theoretical base, a conceptual framework has been proposed that considers the concept of place attachment as a multi-dimensional construct comprising place dependence, place identity, place affect, and place bonding and examines

how these various constructs may influence pro-environmental behavioural intention of visitors to national parks. The conceptual framework is further extended and proposes that visitors' pro-environmental behavioural intention in national parks influences their general pro-environmental behavioural intention. The moderating effects of place satisfaction on the relationships between the different place constructs and pro-environmental behavioural intention in parks, as well as the direct influence of place satisfaction on the latter construct, are also included in the conceptual framework. In doing so, the paper makes a theoretical contribution to the literature on place attachment and pro-environmental behaviour.

A literature review demonstrates that place attachment lacks mature research in nature-based settings. An investigation of this socio-psychological construct in a national park context would bring further contribution to knowledge in the field. By encompassing place dependence, place identity, place affect, and place social bonding, the framework consolidates the increasingly fragmented empirical work on place attachment. This ensures that the influences of each nuance of place attachment on visitors' intentions to engage in pro-environmental behaviour in nature-based settings such as national parks can be captured. Another theoretical contribution relates to its investigation of the place satisfaction construct in a national park setting as well as its moderating role between place dependence, place identity, place affect, place social bonding and pro-environmental behavioural intention. The paper further contributes to the lack of debate on the spill-over effects of pro-environmental behaviours in a specific context (national parks) to general pro-environmental behaviours. It is hoped that empirical testing of the conceptual framework proposed in this paper will progress the nature of debate on place attachment and pro-environmental behavioural intention in the tourism research community. Future researchers investigating place attachment can thus invoke the proposed framework as a theoretical basis for their

research.

The framework also has some useful practical implications for park managers striving to promote sustainability. It offers important insights for managers in understanding the role of place attachment in promoting environmentally responsible behaviours. The framework can assist in the planning and marketing of environmentally responsible activities in national parks. It is hoped that once tested empirically, the findings would be of use to park managers in fostering visitors' pro-environmental behavioural intentions in park settings. In particular, it can help identify the elements of place attachment that are most important in influencing visitors' specific pro-environmental behavioural intentions in national parks. The discussion also implies that national park managers may see value in offering increased opportunities for visitors to form an attachment with the place, if this could lead to an enhanced appreciation for a park's environment and cultivate a spirit of protection, preservation, and conservation among visitors. This could be used in combination with current management strategies for safeguarding and protecting a park's resources and enhancing park sustainability.

Park agencies have also expressed a keen interest to understand whether visitors' specific pro-environmental behaviours in national parks influence their general pro-environmental behaviours towards the environment. The lack of conclusive evidence demands more investigation of the spill-over effects. It would be valuable for park managers to know whether park visitors transfer their attachment in park settings to the general environment. This might help park managers in developing environmental sensitisation and social marketing campaigns to encourage environmentally responsible behaviour.

This paper has some limitations despite its theoretical and practical contributions to the field. It does not empirically test the framework and the emerging propositions. A second limitation relates to the spill-over of specific park behaviours to general pro-

environmental behaviours. Readers are cautioned that this is meaningful only across perceived similar behavioural categories and would not necessarily apply across different pro-environmental behavioural categories. Future researchers should also integrate other factors in the framework likely to influence the pro-environmental behavioural intentions of visitors. Inclusion of other determinants will provide further insights and enhance the predictive power of the framework. For instance, non-attitudinal dimensions such as the physical elements of place could be integrated into the framework in order to investigate its effects on visitors' pro-environmental behavioural intentions.

This conceptual framework focuses on visitors' pro-environmental behavioural intentions and not actual behaviour. It has been widely acknowledged that intentions are poorer measures of behaviours than the behaviour itself (Jang, Bai, Hu & Wu, 2009), and people's intentions and actual behaviours often differ (Sheeran, 2002; Webb & Sheeran, 2006). Thus it should not be taken for granted that a visitor's pro-environmental behavioural intentions would necessarily reflect his/her actual pro-environmental behaviour. Future researchers can consider extending the framework further to include visitors' actual pro-environmental behaviour as an additional construct in order to understand the divergence which exists between stated behavioural intentions and actual behaviours of park visitors.

Despite the limitations of the framework, the attitude-behaviour approach used in this paper has allowed the integration of different disorganised place constructs into a single framework with linkages made to established literature (Jorgensen & Stedman, 2001). It is acknowledged that operationalisation of the framework implies a post-positivist paradigm, the use of existing scales and quantitative methods. It is beyond the scope of this paper to enter into a debate on the epistemological and research approaches which may be adopted in the study of place attachment, and readers are referred to Patterson and Williams (2005) and

Lewicka (in press) for a thorough discussion of such matters. Notwithstanding these issues, this paper offers researchers a framework that is grounded in theory and past research, and has the potential to deliver valuable theoretical and practical outcomes for the sustainable management of tourism generally and national parks in particular.

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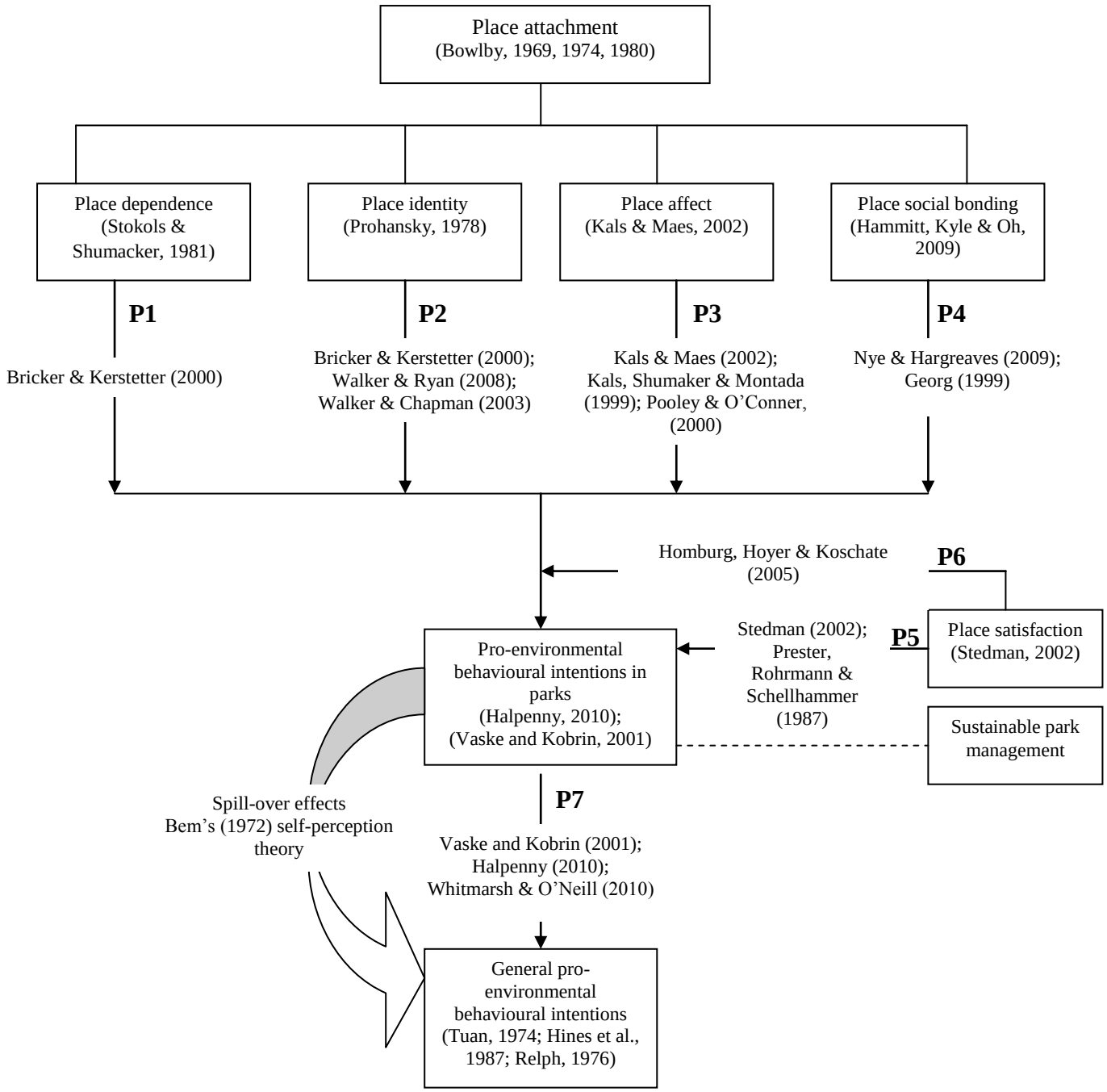

Figure 1: A conceptual framework depicting relationships between attitudinal dimensions of place attachment, place satisfaction, and pro-environmental behavioural intention.