Sense of community and place attachment: the natural environment plays a vital role in developing a sense of community

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Abstract

Psychological sense of community (PSOC) is an intriguing construct that allows social scientists and psychologists to examine fundamental questions about how individuals are connected and committed to and influenced by the local residents who reside in a particular locality. In this study, initially exploration of sense of community within the chosen locality and population revealed that a ‘sense of community’ (SOC) not only included social bonding aspects but was also related to the bonds people developed with the natural environment. The data reveals that feelings of attachment to the natural landscape proved equally, if not more important than social bonds between residents in the development of a SOC. An extensive body of literature exists that has explored the nature and complexities of people’s emotional experience and relationships to place. The most common concepts are sense of place, place attachment, place identity and place dependence. While these concepts are broadly defined and discussed in theory, much research has concentrated on the notion of the home, limiting our understanding of this multi-faceted phenomenon. This paper intends to demonstrate the need to incorporate the full scale of human place related experiences that enable people to develop feelings of place attachment (PA) and incorporate these feelings into a cognitive structure representing their PSOC.
Introduction

It is generally agreed that community is somehow tied to place because of the powerful relationship that exists between them, so much so, that it is often difficult to separate them in conceptual terms. This difficulty arises because of ‘a shared collectively conditioned consciousness’ which reinforces each entity identity essentially giving the people and places the same identity (Relph, 1976, p. 34). In this way the landscape of the place portrays community held beliefs and values (Relph, 1976; Agnew & Duncan, 1989), and is a backdrop for human activity and interpersonal involvement. In this milieu places are ‘public’ – they are created and known through common experiences and involvement in common symbols and meanings’ (Relph, 1976, p. 34).

Much of the empirical research in social science, in recent years has centred on the erosion of community and the declining significance of place due to the pressures of modernity (Agnew & Duncan, 1989; Williams et al., 1995; Obst et al., 2002). An alternative view is that the meaning of place and community has not been eroded away but has just changed in meaning for many individuals (Williams et al., 1995). There are a variety of explanations for the change in the perception of both community and place. Some scholars claim it has changed because each individual is associated with multiple networks and places making communities more ‘personalised and portable’ (Kingston et al., 1999) transcending local to more global or virtual contexts (Wellman & Gulia, 1997). For some the declining meaning of community and place extends further in that people are left to their own devices to create for themselves meaning and identity in modern life (Williams et al., 1995). Recently in PA literature the ‘freedom’ of leisure is frequently cited as being an important context for meaning making’ (Williams et al., 1995, p.1). This notion may, in part, explain the role the natural environment plays in constructing meaning, identity, attachment and a SOC in the residents’ life within this study.

Recently, steady interest has grown in understanding the deeper feelings, emotional and psychological ties people feel towards a particular place. During the same period, research into an individual’s emotional and psychological ties to their community has rekindled interest in their ability to feel a PSOC. Of interest in this study was the merging of place bonds into peoples concept of SOC and it is this finding that has incited out interest into exploring how this process might occur.

Literature Review

Broadly defined SOC is a theme exploring how individuals interact with, and are connected to, as well as are influenced by their social setting. Several definitions of SOC exist in current literature; however this article uses McMillan & Chavis (1986) theory. Their theory describes PSOC as a feeling of belonging to and being integrated into a community (membership), of having mutual influence, of having needs met as well as sharing an emotional connection with other community members (McMillan & Chavis, 1986).

In trying to understand the origins and strength of community sentiments it is particularly relevant to explore the community’s relationship and interaction with the ‘particulars’ of the residential setting. It seem particularly relevant to investigate individual perceptions of the ‘places’ ability to meet a variety of needs and goals and to uncover what factors may lead individuals to develop a strong PA and incorporate these feeling to their PSOC. The purpose of using PA theories is to identify what process was used to incorporate PA into PSOC.

Place Attachment
After a review of the contemporary thinking about people/place bonds, the most prominent concepts of place bonds within environmental psychology are ‘place attachment’ (PA) (Altman & Low, 1992; Giuliani, 1991; Hidalgo & Hernandez, 2001); and ‘place identity’ (PI) (Proshansky et al., 1978; Proshansky et al., 1979, Giuliani & Feldman, 1993; Twigger-Ross & Uzzell, 1996). Another popular concept is ‘place dependence’ (PD) (Stokols & Shumaker, 1981; Williams & Roggenbuck, 1989), which also has a strong psychological focus. In addition to these popular concepts human geographers promote the concept of ‘sense of place’ (SOP), which incites their interest (Relph, 1976, 1997; Buttimer, 1980; Tuan, 1977; Hay, 1998).

While early theorists provided the grounding theories, orientations and terms of discourse in relation to people/place bonds, and are still popular and widely used theories in current research, there is still some debate about the similarity of these concepts. Some theorists (Brickner & Kerstetter, 2000) claim that SOP, PD and PI are forms of PA. Others disagree with this notion and argue that SOP while having a similar meaning as PA is a more wide-ranging concept than PA (Hay, 1998). In an endeavour to clarify our position, we adopt Williams et al., (1992) multidimensional approach, which considers SOP and PA as having a similar meaning, and PI and PD to be two important dimensions of PA.

Despite a multidisciplinary focus of people’s affective relationship with place, there has been a limited consensus reached on how PA is conceptualised. Place attachment occurs through a positive affective relationship between people and place because of people’s satisfaction with, evaluations of, and identification with a specific place (Bonnes & Secchiaroli, 1995). Place bonds occur through an ‘interplay’ of affect, emotions, knowledge, beliefs, behaviors and actions in relation to a particular place’ (Proshansky et al., as cited in Altman & Low, 1992 & Bonnes & Secchiaroli, 2003).

Place Identity, as a dimension of PA is considered an emotional attachment and is concerned with the ‘symbolic importance of a place as a repository of emotions and relationships that give meaning and purpose to life’ (Williams & Vaske, 2002). Place Identity has been described as a ‘sub-layer’ or component of the self-identity and refers to the bonds between people and place (Proshansky et al., 1983) which people develop through an increase in sense of belonging to a community (Relph, 1976). Other aspects that may influence PI are a history of continual or repeated visitation and interaction due to PD (Moore & Graefe, 1994; also see Williams & Vaske, 2002) and PI in general builds over a time from experiences and is influenced by an individuals’ psychological and emotional outlay in relation to place (Giuliani & Feldman, 1993).

The functional component of PA is referred to as ‘place dependence’ (Stokols & Shumaker, 1981). This reflects the importance of the perceived strength of the connection (Stokols & Shumaker, 1981) and a continual relationship with a particular place due to its ability to be congruent with desired activities and goals (Williams & Vaske, 2002).

Numerous theorists acknowledge the need for a psychosocial perspective in psychological research because environmental psychology should not only be concerned with the physical environment but also the social setting (Bonnes & Secchiaroli, 1995). Relatively recent studies have linked the physical environment to psychosocial well being being mainly focusing on the relational aspect of the neighbourhood, home and college environment (Chavis & Pretty, 1999). Yet, this overlooks the interdependence of people and the surrounding natural environment on the development of PSOC. To date there has been a dearth of research exploring the broader psychosocial factors that cause people to bond with the natural environment.
as readily as they have do to one another and then incorporate these feelings into their SOC concept.

Initially it seems relevant to define what the natural environment means within the context of this paper. The most popular definitions of natural environments which are consistent with the views of this studied describe ‘everyday nature’ as including ‘trees, roadside views and backyard settings’ (Kaplan, 1977, 1992) and ‘near-by-nature’ as consisting of ‘meadow settings’ and ‘open green spaces’ (Kaplan & Kaplan, 1989). Other definitions refer to natural environment as ‘wilderness areas’ and ‘plants growing in the wild’ which are natural features of interest in this study (Driver & Greene, 1977, p. 64).

Currently, two popular perspectives may partly explain the process involved in forming attachment to natural settings, in particular theories on restoration and preference. Research exploring environmental preference indicates most people tend to prefer the natural over built landscapes (Kaplan & Kaplan, 1989). More significantly, preference may be partly explained by the degree to which each environment holds the potential to be of functional significance to the perceiver and has the ability to restore ‘attentional fatigue’. Some studies have suggested that ‘environmental preference and restoration are closely related’ (van den Berg et al., 2003; Kaplan, R., 2001; Kaplan, S., 2001). Attention Restoration Theory (ART) is built on the premise that ‘directed attention’ can be fatigued by overuse’ (Kaplan & Kaplan, 1989, Kaplan, 1995) and natural environments are said to offer individuals an opportunity to recuperate from ‘attentional fatigue’ (Herzog et al., 1997; van den Berg et al, 2003). In drawing together the above theories, we can argue that the combined processes of preference, restoration, and achievement of needs and goals in combination with personal experiences and a shared history of the area will strengthen individual and group identity creating feelings of PA.

Linking Place Identity with Social Identity

In a recent article Chavis and Pretty (1999) drew attention to the need for researchers to understand the differences in levels of SOC associated PA. They stipulated the need to identify the ‘degree’ to which people have the ability to identify with and form attachment to place’ (Chavis & Pretty, 1999, p. 639). It is commonly believed that individual place identities are formed over a time from place related personal experiences. Multiple individual place identities coalesce over time to form a common group place identity as many individuals experience similar qualities, objects and problems associated with a locality (Relph, 1976). This process may play a role in maintaining group identities through symbolic shared memories.

Early thinking in this area seems to link place identity into a social category because ‘it is seen as being subject to the same rules as social identification within social theory’. In earlier work by Hogg and Abrams (1988, as cited in Twigger-Ross & Uzzell, 1996) place identification was found to ‘express membership of a group of people who are defined by location’. If this is the case ‘place identification can be seen as a type of social identification’ ….which allows ‘the concept of place to be subsumed into social identity, and then subsequently ignored’ (Twigger-Ross & Uzzell, 1996, p. 206). In an attempt to qualify this notion, the processes involved in formulating both social and place identities are closely related and seen as similar processes because ‘it explains an individual’s socialisation with the physical world’ (Proshansky as cited in Twigger–Ross & Uzzell, 1996, p. 206). Moreover, Twigger-Ross and Uzzell (1996) stress PI is not merely a ‘separate part of identity’ but that ‘all aspects of identity have place related implications’ (p.206). Consequently, there is an assumption that the same process occurring between identity and place are similar to the process occurring between group and identity.
Traditionally, social theorists have overlooked the importance of the both the built and natural (physical) environment in binding groups together. Therefore they have ignored the role the physical environment plays in ‘processes of social influence’ (Wright & Lyons, 1997, p. 35; Twigger-Ross & Uzzell, 1996). In support of this position, Hull et al., (1992, 1994 as cited in Van Zandt, 1997) findings suggest ‘the physical environment of the neighborhood can contribute to a positive sense of community by symbolising the social group to which people belong’ (p.2). Similarly, Jacobs & Stokol’s (1983, as cited in Wright & Lyons, 1997) theoretical framework of tradition stresses the importance of place in ‘binding individuals together and for binding individual to a particular place’ (p.35). This model postulates that the more people engage in traditional activities in the setting, the more intense the bond between the individual and other group members and between the individual and place associated with the group (Wright & Lyons, 1997). In further linking attachment and social identity (SI), Chavis and Pretty (1999) suggest ‘perhaps attachment and identity mediate between the geographical community and whether the resident has a sense of community there’ (p. 639).

The outcome that emerges from the discussion above is that place identity is subsumed into social identity via the identification process because place is seen as being part of a social category. It is therefore argued that this process provides a vehicle for the natural environment to be incorporated into the PSOC concept via group membership.

Linking Place Attachment to Sense of Community

Recent empirical research indicates that the neighbourhood context plays a significant role in the development of PSOC and environmental factors should be incorporated into the SCI to provide a valid measure of PSOC (Chavis & Pretty, 1999: 638; Chipuer & Pretty, 1999). A few researchers have begun to develop qualitative indicators that consider environmental factors (Plas & Lewis, 1996). Although many scholars do not stipulate what type of environment they are referring to, Chipuer & Pretty (1999) stress the importance of the inclusion of the physical environment in the SCI, which we take to mean both built and natural. Over the past few decades several studies have either linked natural and built landmarks to neighbourhood identity (Guest & Lee, 1983) or confirmed that aspects or attributes of the physical space (physical place, quality of environment) should be explored for their effects on SOC (Doolittle & MacDonald, 1978) and included into measures of PSOC (Buckner, 1998).

Similarly, Chavis and Pretty (1999) suggest ‘theory and research are needed to determine the composition of physical and systemic components of community that affects an individual’s perception of his or her group on SOC’ (p, 638). One study by Canter (as cited in Skjaeveland & Garling, 1997) identified place can be defined ‘as a result of relationships between actions, physical attributes and conceptions of actions in physical localities…place as a construct is capable of linking environment to social processes’ (p.182). Therefore according to Chipuer & Pretty (1999, p. 955) the indicators that measure the significance of the physical environment should be incorporated on the SCI.

Incorporating feelings of PA into PSOC may be complex, as the internal emotional arousal that a natural landscape brings may be difficult to integrate into the SOC concept. Past research on both community and SOC and place and PA has taken a one-dimensional view of the relationship between individuals and place, overlooking the relationship of place to people (Fredrickson & Anderson, 1999). Such an approach has overlooked the existing powerful interrelationships between people and place.
While the built environment of a ‘geographic locale’ has been said to influence peoples attitudes and behaviours (Hallman, 1984; Plas & Lewis, 1996; Rapoport, 1982), and contribute to a SOC (Hallman, 1984) there is logic in questioning whether the natural environment is equally influential.

This paper confines its discussion to the natural environment, which has been identified as being more significant than social aspects in creating a PSOC. While an extensive literature exists on both the multi-faceted phenomenon of SOC and PA, the concept of integrating the two constructs into a standard measure of SOC is novel at best, and therefore its originality presents an ideal opportunity to argue for its inclusion into the SCI.

The purpose of the paper is to extend the psychological study of SOC and PA by exploring the importance and the impact of people’s psychological, physical and emotional experience of place on the development of SOC. We explore how people might evaluate and develop a cognitive preference for natural landscapes and incorporate this into their PSOC concept. This paper demonstrates the need to incorporate the full range of human/place related cognition’s and experiences into the SCI enabling the development of more reliable and valid measures of PSOC.

Methodology
The principle aim of the study was to collect base line data about housing choice, interaction with the built and natural environment, sustainable behaviours and aspects of human, social and physical capital. A focus group methodology was used specifically to draw discussion on what factors and behaviours influence urban water quality and its interrelationships with the community and housing density factors. Collecting this information increased our understanding of how we can approach sustainability problems and work towards making communities sustainable.

Highland Park catchment area at the Gold Coast was chosen for the study because of the location, resident demographic and recency of development. The demographic profile of Highland Park estimated resident population, as 30th June 2000 was 4,091 persons with a higher proportion of persons under the age of 40 years (approx. 69.2%). The proportion of residents 65 years and over residing in the catchment area was 6.4% (Donkin, 2001:3).

The structure of housing in the Highland Park area can be characterised as low density detached dwellings and the separate houses comprise 90.5% of all private dwellings. There are no flats, units or apartment dwellings in Highland Park and the area contains 9.2% of semi-detached dwellings or townhouses (Donkin, 2001: 9).

The Participants
Participants for the current study were drawn from the Highland Park catchment area. A letter of introduction to the project was delivered to 400 household explaining the project and extended an invitation to participate.

Residents who were interested in joining the focus group contacted the Gold Coast City Council and volunteered their time. The criteria for participation in the focus group were that residents be over the age of 18 years and reside in the Highland Park area.

The focus group consisted of eleven participants, including seven males and four females. The median age was 51 (with ages ranging from 18 to 76 years) and all
participants lived in single detached dwellings located within the catchment area. The participants represented family units consisting of five couples, six couples with children and one single person households.

**Data Collection**

A semi-structured discussion group lasting two hours was held to collect data. The focus group technique utilised open-ended questions and was selected as an appropriate tool to gather information on issues about which we had little understanding. To the best of our knowledge, residents of this catchment have not previously been asked their views on community and neighbourhood life or their interactions with the natural and built environment. In addition, we did not have basic information on possible internal and external barriers to engagement in sustainable behaviour.

The focus group format enabled the team to explore in-depth attitudes and behaviours of community members towards sustainable behaviour. A set of clearly defined questions drawn from the literature review was presented to a focus group for discussion. The questions were divided into four categories:

- Demographic Information;
- Built and Natural Environment;
- Social Capital; and
- Housing

The focus group provided valuable information not only about their interaction with the natural and built environment but also in relation to environmental issues and concerns the residents saw as being important to them at the local level.

**Analysis**

Qualitative content analysis was used as a basis for analysing this data. Core categories were identified through the reading of the respondents’ responses. The categories were identified as those broad categories that reappeared consistently throughout the discussion. Two researchers repeatedly read the transcripts until agreement was reached that the chosen core categories were ones that clearly emerged from the data.

The entire data set was coded under the four core categories, including natural environment, built environment, interaction with neighbours, and responsibility for environment. Two researchers coded the data set independently, which also assisted the process of consistently identifying sub-categories.

**Results**

**Sense of Community**

The community was commonly identified as consisting of the people, place, services and amenities. For some residents, the community instilled in them a sense of pride, while others felt that community consisted of a complex web of relationships continually occurring between people and place. The community was seen as having no fixed geographical boundaries often extending past the physical features of the neighbourhood and the immediate social setting to adjoining suburbs where external connections were fostered. The majority of participants indicated a strong connection to the natural environment and many indicated they moved into the area because of it. The natural environment played an important role in their perceptions of what makes up their SOC.
The natural environment is a part of SOC as well. Virtually everything that has been said (provides a SOC), the streets, parks. I just love living there I mean I love it, sitting outside.....seeing the beautiful trees and birds.

In Highland Park we still have lots of greenery and trees and that is why were are here to keep close to nature which provides us with a SOC

Group Place Identity/Attachment – emotional and affective components in relation to the Natural Environment

The natural environment was described as having “plenty of wildlife”, including birds, snakes, fish, spiders, and lizards, and “lots of greenery”, trees and bushed located in parks and natural bushland settings.

Lots of wildlife

I enjoy the natural bushland, particularly the trees.

Little parks everywhere

Many parts of Highland Park are elevated and the residents valued this elevation not only for the panoramic mountain and sea view but also for the cool breezes that are often present in the summer. Some participants had easy access to open green space and others lived on the edge of parkland where they enjoyed observing a vibrant array of green shrubbery. It was noted the area lent itself to walking and enjoying the views, which are particularly lovely during sunrise and sunset. In general Highland Park was considered to be near the hub of the Gold Coast, but still close enough to Brisbane, New South Wales, mountains and water. Most residents enjoyed the fact that it was out of the way, offered a village like atmosphere and was an exceptionally beautiful place to live.

We enjoy the scenic views, which are particularly beautiful during sunrise and sunset.

The area lends itself to walking and enjoying the views.

Duck pond and good attribute of a waterfall.

Place Dependence – fulfilment of psychological and physical activities and goals

The participants and other community members, particularly young families regularly used the natural environment for a variety of activities. The duck pond and the many local parks were particularly singled out as popular recreational areas, especially for feeding ducks and walking the family dog. Most active residents indicated they interacted in the natural environment almost daily by taking walks and enjoying the views. Generally, it was thought that the nearby natural area offered a lot of activities to all age groups.

I walk in the parks.
Behind the big water tower on top of the hill there is a track leading down to the bottom where you see natural streams which do hold fish.

The duck pond is very popular for children, I see parent quite often there feeding the ducks.

I think the whole environment invites a lot of young people to area, although all age groups use the area.

**Individual Place Identity – Emotional and affective attachment**

Even when the participants were looking at moving into the area, most chose their present location over that of an alternative location because they could easily access or view nearby nature. Some chose to purchase properties that either offered northeast views over state forest or provided an ideal secluded bushland setting. Other properties offered panoramic sea and mountain views and enjoyed cool summer breezes. Perhaps of greater significance for participants was the enjoyed gained from the seclusion their bushland setting offered.

I came from Melbourne, it was hot and humid, as soon as I felt the breeze and saw the view and North East aspect over state forest, I built on patios.

When I purchased the land, I was told that the land would be surrounded by bushland forever. I purchased the land because of the natural setting and views.

I suppose I am pretty lucky really, I live right on the edge of the park…… we flow into the garden which is the park. We love it and sit there and gloat, really, I love it.

**Place Identity/Attachment – cognitive and emotional attachment developed through long history and knowledge of the area.**

There was a growing recognition emerging from the discussion that some residents had a long history in the area. They remembered how the natural bushland and wilderness areas had been reduced by the expanding settlement. While this was the dominant view, of particular concern was the reduction of wildlife, in particular kangaroos, rabbits and wild cattle as a result of deforestation due to development. The prevailing view was that deforestation has left once fertile forest areas bare of trees.

Before the developers when up on the hill we used to chase wild cattle, rabbits and kangaroos up there, however the developers have destroyed what wildlife was there.

Up at the lookout, at one stage you could see all the trees, but not anymore it is just bare land, there are no trees around, which have spoilt views.
Residents, however, were not completely satisfied with their natural environment. They felt most creeks had deteriorated significantly as a result of development and lack of care. Numerous accounts were provided about the Council perceived lack of interest in monitoring the developers and contractors work practices. Of particular concern was the fact that developers were not working in harmony with the natural environment.

*Run off silt from development has killed creek.*  
*The creek is not running over the rocks like it used too. Developers are not working with the environment.*  
*We used to have kangaroos across the road at the creek, but that's all gone now. When they built the highway, the kangaroos went.*

**Environmental Management**

When asked who they thought was responsible for the natural environment, most participants agreed it should be a shared responsibility between Council and residents. While this was the overriding view, some areas were singled out to be the sole responsibility of Council. For instance Council should maintain and protect public space and natural pristine areas. The Council should be responsible for beautifying the streets with trees and installing concrete footpaths. There was consensus about residents being responsible for maintaining their own properties and for not littering public spaces. It was noted some local organisations have taken an active role in caring for natural pristine areas by regularly conducting clean up campaigns in the area.

*I think Council, but everyone has to contribute.*  
*Local organisations, such as schools, environmental clubs, they go out at Nerang High School, not just on Australia Day, but they go out working with the Nerang Community Association and they have clean up stretches along the river.*

**Discussion**

The community was commonly identified as consisting of the people, place, services and amenities. For some the community instilled in them a sense of pride, while others felt the community consisted of a complex web of relationships between people and place. Community was thought to have no geographical boundaries extending past the physical features of the neighbourhood and the immediate social setting to adjoining suburbs where external connections were fostered.

The participants demonstrated a fondness for natural environments. In-fact most moved into the area because they had the opportunity to be close to nearby nature. The natural environment played an important role in their perceptions of what elements make up their SOC. Even when they were looking at moving into the area, most chose their present location over that of an alternative location because they could easily access or view nearby nature. So even before they moved, in their search for a new home and neighbourhood setting, they may have started to form an
attachment to the area. In this case, maybe the participants were able to automatically identify that this particular place was congruent with their needs and goals and had the potential to improve their quality of life and well being.

Apparently PA was nourished by frequent encounters with the natural environment in combination with home ownership and upkeep. Given the strong empirical evidence that people are showing an increasing preference for natural over built environment it is important to explore the reasons the participants showed a strong preference for and sought repeated opportunities to interact with nature and turned this preference in emotional feelings of SOC.

Group Place Identity/Attachment –Emotional and Affective Components in relation to the Natural Environment

Clearly, the participants invested emotional energy in the intrinsic beauty of the natural landscape. In particular, vibrant variations of rich greenery of shrubs seemed to stand out for most participants and perhaps it was this feature that brought the landscape alive. Some properties overviewed adjoining parklands, while other’s enjoyed natural cool breezes and captured scenic sea and mountain views. Other properties gave participants access to bush walking tracks leading to pond areas where wildlife could be enjoyed and observed.

What emerged as being important were the high levels of satisfaction participants gained from just knowing they were surrounded by ‘nearby nature’. They did not feel they had to be active in that environment but could feel its restorative effects through just viewing it from their home setting. Views from bay-view window or purpose built patios and easy of access to nearby nature greatly improved the participant’s quality of life and level of satisfaction with the area. In the past much research (Fried, 1982, 1984) has found a significant association between neighbourhood satisfaction and ease of access to natural areas. It is, only natural that people will gain high levels of satisfaction from the presence of ‘nearby nature’, which they observed from their dwelling (Kaplan, 1992). When individuals have the opportunity to view natural settings from windows, patios or backyard settings it not only improves feelings of ‘well-being’ but enhances peoples perception of ‘being at peace’, ‘feeling effective’ and ‘not being distracted’ (Kaplan, 2001).

Moreover, these restorative experiences play a part in an individuals' emotional and self-regulation process, that is, ‘the physical environment is used to regulate pleasure/pain and self-experience’ (Korpela & Hartig, 1996). The idea in brief, is to some extent PI is formed by the experience and cognitions produced in those regulatory processes (Korpela & Hartig, 1996). These processes provide a possible link between PI and Attention Restoration Theories (ART) (Korpela, 1989, 1992). It can then be suggested that regulatory processes play a role in developing a sense of identity and PA with the natural environment.

Efforts were clearly being made by residents to use the calm of nature to help unravel the feeling of information overload gathered throughout the day’s activities. It is suggested ART would ‘complement' feeling of overload (Hartig et al., 2003) because ‘it works towards reducing stress and fatigue brought on by periods of unbroken ‘directed attention’ (Kaplan 1995, 2001). To recover from the effects of ‘attentional fatigue' requires an individual to have a break away from their usual routine (Hartig et al., 2003; Bell et al., 2001). For most participants the natural environment was an ideal setting in which ‘to get away from it all’ (Herzog et al., 2003) because it offered an opportunity to recuperate from the stress of modern day life (Kaplan & Kaplan, 1989; Korpela, 1991). Participants enjoyed and were engaged and fascinated by the abundance of wildlife, greenery, walking tracks, water views and sunrises and sunsets. This period of effortless concentration may have had a calming psychological effect instilling a feeling of well being. The benefits gained
through interaction with the ‘nearby nature’ may be associated with psychological and physical well being and achievement of desired activities and goals, reinforcing PD and feeling of PA.

Some active participants regularly used the natural environment setting for a variety of activities with family and friends. Family gatherings may have provided opportunity to strengthen family ties, which was of personal benefit to participants. Socially, it provided an arena to build community ties, because participants took the opportunity on their walks to interact spontaneously with other parkland users. Open green space and natural resource areas are ideal venues for establishing the functional component of PA, because these settings are congruent with needs and goals (Williams & Vaske, 2002).

Over the course of time, the sites, sounds, smells, activities and experiences associated with the natural environment may enable the participants to develop a cognitive structure of stored memories of these special environmental images and experiences. Supporting this notion Proshansky et al., 1983 (cited in Vorkinn & Reis, 2002, p. 2) suggests that from the process of humans interacting with the physical environment, people develop a cognitive structure comprising memories, ideas, feelings, values, preferences, meanings and conceptions of behaviour and experiences related to the physical environment’ which are developed over time. These experiences maybe associated with the sensory stimuli encountered through people’s interaction with the natural environment. Recent research supports the notion that people perceive the environment through all their senses, including sight, sound, smell and touch (Scott & Canter, 1997). All this stimuli influence how people respond to and experience the whole environment (Scott & Canter, 1997), which in turn may make the landscape experience more meaningful enabling PA to develop.

In evaluating PA in relation to achievement of activities in the natural environment, the residents were highly satisfied with the activities the natural environment offered (bush walking, scenic views, observance of wildlife and areas for socialising), which may have enhanced their sentiment and attachment to the setting. The setting was significantly rich enough in natural elements and wildlife that it may have promoted fascination, opportunity for exploration and attainment of desired activities.

The participants certainly demonstrated that they had formed their own identity of place because of the importance placed on the achievement of goals and activities within this setting. The participants depended on these environments (PD) to continually fulfill their social and individual recreational needs. Perhaps these activities and landscape features were symbolically important to participants by keeping them closely associated with the natural setting and advancing their life quality. In short it can be suggested that the combined effect of recollection of sensory stimuli, personal experience, achievement of desired activities and feelings of restored well being in the natural environment is the pivotal point where PA is subsumed into PSOC.

**Place Attachment/Identity – affective and emotional attachment in relation to environmental issues.**

The strength of the residents’ attachment to the natural environment was clearly demonstrated when the participants voiced their concerns about environmental problems within their local area. In evaluating PA in relation to environmental problems (e.g., local ponds being overgrown and treated as rubbish dumps; silted up creeks through over-development, deforestation; reduced wildlife populations and spoilt scenic views) most residents expressed their concern about natural pristine areas not being properly maintained which demonstrated their feelings of attachment to nearby nature. Land developers were of particular concern because they were not
working in harmony with the natural environment. This situation was compounded by the Council’s perceived lack of interest in monitoring the developers’ and contractors work practices. Most of the participants held the perception that in order for them to be able to maintain a continuous relationship with the natural environment, the Council and the local residents had to protect, nurture and preserve the natural ecosystem from any further environmental degradation. They wanted Council to invest more time and money into the upkeep of these pristine areas. Their environmental values may have been influences by their long history in the area, beliefs and experiences with the natural environment.

Given the life experience and history of participants in the area, each had their own stories to tell which were influenced by their own attitudes, knowledge, and perspective. Some participants remembered that before development occurred up on the hill, wild cattle, kangaroos and trees were abundant and now due to deforestation and over development the wildlife population had been drastically reduced and land left bare. The act of expressing their tale encouraged each individual to connect with other participants and express common interests in and concern about environmental issues facing their local community. Some human geographers believe that ‘each individual experiences a place through their own eyes, attitudes, beliefs and intentions and from their own unique circumstances’ (Relph, 1976, p. 36). Similarly, the participants, through expressing their concerns found that they shared similar concerns, feelings, activities and experiences gained through their interaction with the natural environment.

Throughout the discussion participants described the same issues, activities and features in relation to the setting, as a result of such open debate a common-place identity began to emerge giving support to Relph (1976) notion of all individual PI are eventually integrated into a common group PI. Consequently, within this particular group of residents, once their individual place identities were shared they seemed to merge into a commonplace identity.

It was evident that participants had developed a strong attachment to the natural environment because they were concerned and cared for these pristine areas, as suggested by Relph (1976 as cited in Vorkinn & Riese, 2002) before people can become attached to a place they must care for that environment. The residents were well aware of the environmental issues facing their community, and even though it had affected their sense of satisfaction with the area it did not lessen their sense of belonging and strong affection for the place and its people, which may enable a PSOC to develop.

Within this setting, both individual and group experiences may become of symbolic importance for both group and place identity. Participants may have developed a positive set of cognition’s, emotions and feelings formed from personal experiences, knowledge, interest and shared history in the area. Proshansky (1978) suggests people form “a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioural tendencies and skills relevant to this environment” (p.155). The feelings of attachment may have encouraged the participants to identify with, develop a sense of belonging to and identification with the natural environmental setting creating a feeling of SOC.

**Conclusion**

In summary, the evidence suggested the participants’ feelings for place were structured from daily routine and experiences with the natural environment. The participants’ attachment to place may be the result of the recollection of past personal experiences and events that have occurred over their lifetime in
combination with specific qualities comprising the natural landscape which have entwined people to place in this particular setting. This paper argued that places are socially valued and both collectively and individually experienced and shared. Arguably, people’s satisfaction with the place primarily arises from the place’s ability to meet a variety of needs and goals fulfilling requirements of PD. Moreover, places are public in that they belong to the community and are assigned a common place identity, but can provide special places for individuals to enjoy and recuperate from modern day stress, which strengthens PA and self-identity. Places are an expression of a community’s held beliefs, values and knowledge and therefore attachment is both emotionally and cognitive based. Arguably, places provide meaning and purpose in people’s life and become a part of one’s sense of self and group and therefore part of group identity. Additionally it is stressed that when people care for a place and its people they develop a feeling of belonging and identification to the locality and its people, which encourages a PSOC to develop. Perhaps assimilation of place identity into their self and group identity was the mechanism used to incorporate PA into their concept of SOC.

Therefore, there seems a need for further investigation into determining what influence the natural environment has on an individual’s ability to develop a PSOC. Several research studies have shown the importance the residential setting has on PSOC. Research has also uncovered a significant relationship between history, attachment and identity (Chavis & Pretty, 1999, p. 635). This study illustrates that all these factors may influenced peoples’ ability to develop a PSOC and there is a need to speculate about the total nature and process of the internal experience that accompanies the emotions, cognition and feelings associated with developing a true PSOC. It is hoped that our preliminary findings will encourage future research to exert more interest into developing a more vigorous measure of PSOC. Indicators need to not only measure the impact of the natural environment, but also incorporate all aspects of human experiences in relation to sense of belonging to a place and its people. As Chavis and Pretty (1999, p. 638) indicated, researchers need to search for ‘environmental and systemic indicators relevant to geographically based communities’ which it is hoped can be incorporated into the SCI.

References


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