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Re-placemaking: Constructing a New System of Bonding with Places

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Abstract

Re-placemaking in this study is conceptualized as a form of transaction between the relocated person and the new environment through which the system of bonds with places is reconstructed. Using studies on restorative environments, settings that are supportive of diversity, and place-related theories (e.g., place attachment and place identity), re-placemaking proposes three stages of transaction through which (i) environmental stress is reduced, (ii) intercultural dialogue is promoted, and (iii) investment of identity and emotion is facilitated. A qualitative study including interviews with a sample of international students along with participant observation was conducted on the campus of UW-Madison in the United States. A number of themes emerged related to international students' experience of different places on the campus. The study shows students have a tendency to maintain closeness to places with particular socio-physical features. Finally, seven general patterns are proposed as socio-physical guidelines useful for campus community design.

1. Introduction:
Home and the System of Bonds with Places

A childhood home, a window seat in a favorite café, a nearby lake park, a messy office—these are all parts of the system of places that are somehow tied to our emotions and identities. Some of these places exist in the real sensible world and within a few miles from home, and others exist in our memories and are several years away; to see some of them we can just take a short walk, and to see others we must close our eyes and travel back in time. Moreover, these are not just personal private, experiences, but also experiences that can be shared among members of a family, an organization, or a nation.

People develop bonds with particular places and shape a network throughout their daily routines as well as during exceptional circumstances. These places might satisfy emotional needs, reduce stress, build positive self-esteem or preserve sense of continuity, facilitate daily activities, and so forth. In each of these cases, we need these places, and they also need us; they are dependent on our memories, behaviors, dreams, and ideals to become meaningful.

The home, however, has a central role in relating and orienting all places within the network. Home is a spatial and relational realm from which people venture into the world and to which they generally hope to return (Case, 1996). It embodies our core needs and richest experiences that are ever attributed to place–those that are associated with hearth, shelter, order, self, and center. Thus, home and its dependent system of places can be considered a key to the fundamental question of place identity: "where do I belong?" (Cuba & Hummon, 1993). But what if home becomes displaced?

2. Geographical Relocation:
Negative Consequences

Geographical relocation has been studied in a vast variety of disciplines. In anthropology, geography, sociology, and various areas of psychology such as environmental and community, geographical relocation has been related with other concepts such as acculturation, placelessness, homelessness, uprootedness, mobility, reterritorialization, decentralization, and homesickness.

Over a million young people go abroad to study at a foreign university each year. The experience of studying in a foreign country leaves a powerful impression on young people that may last all their lives (Furnham, 2005). For most students, the excitement and anticipation of experiencing a new environment and opportunity does go some way toward mediating the trauma inherent in the abrupt nature of the transition (Tognoli, 2003).

Negative consequences of geographical relocation are partly associated with the sense of loss and interruption of lifestyle since the process is usually caused by the separation from a familiar socio-physical network of bonds. In the scientific literature for instance, homesickness is frequently defined as a form of separation reaction to people and places (Archer et al., 1998; Thurber, 1999) or longing for home and family while absent from them (Webster's Dictionary). Departure from home and other familiar places, not only decenters the person, but also dislodges him from the system in which his routines, belongings, needs, emotions, and memories are maintained. In this sense, the homeless man is a decentered and disoriented one.

Moreover, the displaced person is also confronted with adjustment difficulties as well as reduced control and role change, mostly caused by the conflicts be-
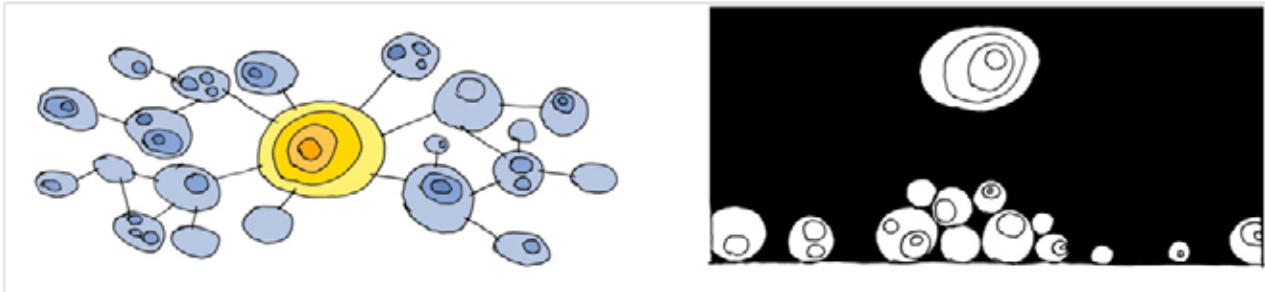
Figure 1: Left: Home, at the center of our map of places, orients our world. Bonds with places have multiple forms and develop in multiple interlinked places in our maps. Right: Relocation dislodges home from its place in the system of places.

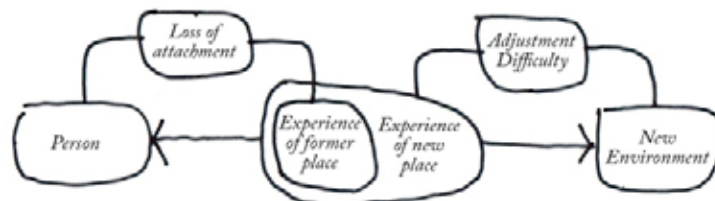**Figure 2:** Interaction with the environment.

Figure 3: Current experience is associated with sense of loss as well as adjustment difficulties.
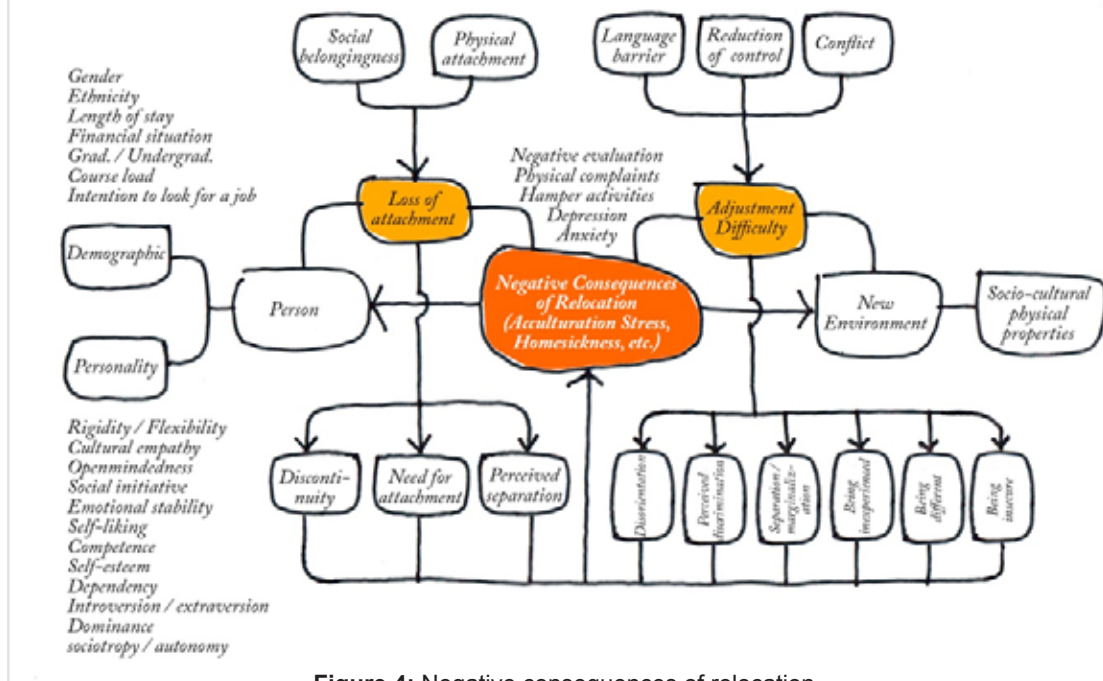

Figure 4: Negative consequences of relocation.

tween socio-cultural entities. These conflicts are not only limited to those of different sets of values, beliefs, and behaviors, but they also include the experience of those existing place types which their hidden program is shaped by the dominant culture. Newcomers' experience of such places might be associated by either high or low preference. For instance, although a crowded dark bar and restaurant—with red and blue lights, loud music, and large displayers—is a familiar image for native students in an American student union, it is undoubtedly a new and strange phenomenon for many international students and thus can be either attractive or repelling.

Different studies on homesickness and acculturation stress on international students have recognized a variety of predictors and variables, as well as their consequences. These factors can be categorized in relation to three main dimensions of interaction with the environment: person, environment, and experience. From a transactional perspective, the person-environment relationship is a dynamic one, so past experiences are projected onto the present situation (Lang, 1987). Thus, it can be understood that the sense of loss due to separation from a socio-physical system of bonds mostly deals with our experience of the former environment projected onto the current experience of the new environment also associated with adjustment difficulties. Diagrams of relationships extracted from the literature are shown in the following:

3. Re-placemaking

Re-placemaking in this study is a form of transaction between the relocated person and the new environment through which the system of bonds with places is reconstructed and also ordered and oriented. This is only possible by addressing strategies to solve those problems that people face in the process of relocation. According to the model presented in Figure 4, three major stages

of transaction are identifiable; transaction in order to (a) reduce environmental stress, (b) promote intercultural dialogue and transaction, and (c) facilitate investment of identity and emotion (Figure 5).

In all three stages, experience of place plays a central role, thus, they can also be considered as general facets of place experience which address main problems regarding negative consequences of relocation. It should be noted that there is a considerable degree of overlap between these three facets, however, they also have distinct characteristics. While each of these stages can stand on its own, they are presented in a suggested sequence under the assumption that each stage represents a level of experience before going on to the next stage.

3.1 Reducing Environmental Stress

Stress is an outcome of incongruence between person and environment, and it is also cumulative. These are two of the many reasons—and perhaps the most important ones—that international students generally experience more stress than native students. Stress associated with homesickness and the sense of loss, or adjustment and acculturation stress, are all one kind of stress. In this sense, any kind of stress-reducing effects of the built or unbuilt environment can mitigate the stress from the language barrier, un-familiar environment, crowding, or not knowing rules.

There are several studies on the role of physical environment on human health. Ulrich's (1983) theory about environmental influences on psychophysiological stress-reduction was a pioneering one. This theory concerns affective and aesthetic responses to visual stimulus and posits that an environment (or scene) with particular qualities, including moderate complexity, moderate depth, the presence of a focal point, gross structural qualities, and natural contents such as vegetation and water, can evoke positive emotions, sustain non-vigilant attention, restrict negative thoughts, and re-

Figure 5: Three stages of interaction with the new environment—place reduces the stress, promotes intercultural dialogue, and ultimately becomes a part of one's [place] identity.

duce physiological arousal (Bringslimark et al., 2009). Ulrich (1999, 2004) also suggests that stress is mitigated when a person perceives unthreatening natural environments such as a forest or garden. As such, the environment affords him or her five factors: (a) sense of security, (b) sense of control, (c) capacity to increase social support, (d) provision to physical movement and exercise, and (e) access to nature and other positive distractions.

Evans (1987) also indicates the role of control and predictability as powerful situational mediators of the stress process. He argues that environmental stressors that are uncontrollable or unpredictable cause greater stress in human beings. Studies on crowding, noise, air pollution, and heat have found complete or partial amelioration of many negative impacts of exposures to these environmental stressors with the provision of instrumental control over the stressor. Based on his study, settings that are unfamiliar or highly ambiguous or difficult to interpret may be stressful. The latter seems to be more probable in the case of international students' experience of new place types.

There are also studies on the mitigating role of nature and restorative environments. For instance, psychophysiology views that human interaction with a natural environment affects his emotional capabilities and responses, either positively or negatively (Werner & Altman, 2000). Within this framework, Hartig (2002) indicates that psychological well-being is attained by visual encounters with the environments dominated by plants that reduce arousal and therefore reduce feelings of stress. The concept of restorative environments also represents places to relax, rest, recuperate, unwind, and feel safe (Kaplan & Ryan, 1998). They are places that offset the effects of mental fatigue. The elements of restorative places are also outlined by Kaplans and Ryan (1998) as follows: (a) being away requires a place other than the source of the fatigue; (b) extent: a place that is different, whole, and has coherence; (c) fascination: a place that relates to thinking, doing, wondering, figuring out things, predicting, and recognizing; (d) compatibility: a place that is a good fit to one's inclinations.

3.2 Intercultural Interaction and Dialogue

Many theoretical and practical components in community psychology, anthropology, and social science emphasize the value of diversity and cultural relativity. Diversity is not a static concept, for it suggests the possibility that people from different cultural or social backgrounds can interact and carry out their daily tasks relatively free of destructive or unproductive social relationships (Kelly et al., 1994). Following this, multi-

culturalism as a byproduct of diversity refers to something crucial in the contemporary world: that people different from one another are in contact with, and must deal with, each other (Fay, 1996).

Two considerable issues regarding differences between systems of values, beliefs, and behaviors of different people and cultural groups are the nature of the interaction and its supportive settings. Addressing these issues, diversity can be viewed as an outcome of creating social settings that enable people to value, embrace, and use differences for their collective good (Kelly et al., 1994). This is not possible unless we understand the ways in which environmental contexts impact all aspects of diversity, including cultural (as well as personal) identity development in multicultural settings and promotion of tolerance and acceptance (as well as understanding, appreciation, and caring) of diverse cultural groups (Townley et al., 2011) while maintaining a fair share of society's material and psychological resources (Rappaport, 1977).

Following this, Fay (1996) suggests not to choose either differences or similarity in relating to others. He writes that if we insist too heavily on dramatic dissimilarity, then we lose the capacity to understand others (and therefore the capacity to appreciate their differences). If we insist on their dramatic similarity, then we lose the capacity to appreciate and understand difference and therefore to see others as something not ourselves; in this case, we would only see ourselves everywhere we turn. In relating to others, the choice is not difference or similarity; it is difference and similarity.

Another framework for addressing settings that support diversity is ecological pragmatism (Kelly et al., 1994). They have named their approach ecological pragmatism for its recognition of the importance of resources for understanding personal differences and its interest in concrete practices that can facilitate mutual understanding among people (Townley, et al., 2011). In their view, creating such settings requires the development of new values, new social norms, and new traditions through which individuals (and differences in general) can be resources for one another. In such settings, differences between people are not explained as deviance but as an expression of plausible and valid alternative customs, traditions, and points of view. In general, it can be argued that the new place represents an opportunity to develop new identities (Hormuth, 1990).

It should be noted that developing new social norms in settings that appreciate differences is necessarily associated with conscious and intentional collaboration and interaction of diverse cultural groups. In the case

of relocated people or international students, language barriers, perceived discrimination, and the sense of not being accepted in the social group as negative consequences of relocation are major obstacles in the way of their participation. Thus, one way of solving this problem might be empowering all subgroups and promoting collective choice and control, which partly can be achieved by increasing the awareness and understanding of others' emotions (i.e., caring), identities (i.e., cultural appreciation), and actions (i.e., territoriality). In other words, it is more a placemaking process in which members are able to find their own place (both conceptually and physically) and its relationship to the place of others.

3.3 Investment of Self, Embodiment of Place

Promoting control and predictability, supporting collective empowerment, developing new social norms, appreciating diversity, or even regulating the perception of the stressor and distracting undesirable feelings might be helpful in reducing either adjustment or acculturation difficulties. However, they do not seem to be decent answers to that dimension of relocation tied to the loss of an ordered and oriented system of crucial bonds with places. In other words, specific positive bonding with place cannot be developed unless place has the capacity and affordance to embody and maintain one's sense of self and his personal emotions, memories, and dreams.

Numerous authors in environmental psychology and human geography have used a variety of terms to refer to this specific level of interaction with place—place attachment, place identity, rootedness, embeddedness, investment, territorial belonging, topophilia, etc. Place attachment includes interconnections between biological, environmental, psychological, and sociocultural

processes (Low & Altman, 1992). This concept can be defined as a person's tendency to maintain closeness or to keep physical proximity to particular places and is manifested through and resides in affective, cognitive, and behavioral processes; however, its most frequently considered component is its emotional aspect.

Place identity, on the other hand, can be defined as an interpretation of self that uses environmental meaning to symbolize or situate identity. In other words, it can be thought of as those dimensions of self, such as the mixture of feelings about specific physical settings and symbolic connections to place, that define who we are (Proshansky et al., 1983; Cuba & Hummon, 1993; Raymond et al., 2010). A place maintains place identity if it preserves a sense of continuity (both its referent and congruent aspects), distinguishes itself from others, also builds positive self-esteem, and creates a sense of self-efficacy (Twigger-Ross & Uzzell, 1996).

Considering definitions of place attachment, place identity, and other related concepts, it can be argued that there are particular places that are different from the rest; places that make us happy or proud, and evoke memories or meanings. For instance, while a legible and mapable campus reduces the sense of being unfamiliar or inexperienced, a closed small storage or closet in one's room that keeps travel baggage and travel mementos can be a repository of the deepest personal memories and feelings of home and the separation from it. Moreover, while a busy, well-designed student union concourse provides the opportunity to socialize, a safe quiet nook provides a moment to pay an online visit with the family thousands of miles away at home.

In this respect, one considerable issue is the tension between belonging to a place and relocation. It is argued that mobility does not preclude the formation of positive bonds (Feldman, 1996; Gustafson, 2001, 2009)
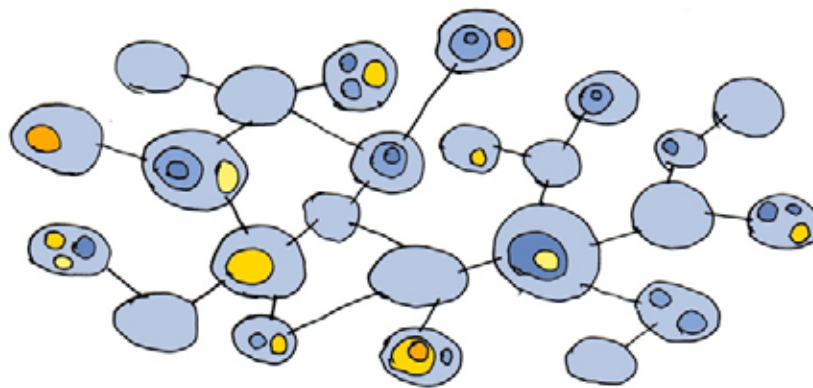

Figure 6: A tapestry of familiar places in a larger geographical space is created. Home-like experiences also develop in multiple forms, and home gradually anchors in multiple places. This process of home-making might ultimately stop somewhere or even continue, it might succeed or fail.

and that it is not necessarily opposed to belonging (Sager, 2006). In fact, no matter how mobile a person may be, some form of attachment to places is always present in our life (Cuba & Hummon, 1993; Gustofson, 2001; Williams & McIntyre, 2001; Lewicka, 2008). Maybe that is because home-making is a basic trait of human nature (Tucker, 1994). As Sager (2006) suggests: "Mobility may be ... about creating a pattern, a tapestry of familiar places, in order to gain knowledge of, master, and feel at home in a larger geographical space." It, like relocation, blurs the boundaries and blends the experience of places of the former network (even places with different scales like the former dwelling place, city, and the country) and shapes a united experience of former *home*. And this experience of former home derives the person's expectations and also shapes those attributes of place that contribute to the process of home-making in the new place. In this sense, home is not the place the person grew up in anymore, but it is a place that should be grown by him. And it does not reside in a setting called dwelling or house, but it is invested in multiple forms in multiple places (since the self is invested in multiple places). Eventually, the relocated person reterritorializes his home within a greater territory.
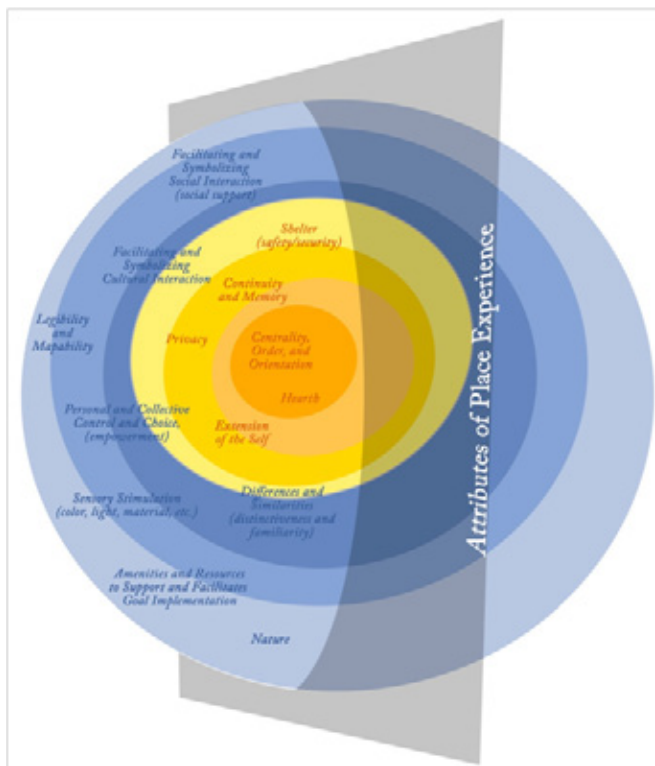

Figure 7: Attributes of place experience are generated from three stages of interaction. Each stage includes several attributes. Be mindful that the holistic experience of each pattern should be examined in terms of its parts as well as a whole.

4. Attributes of Place Experience

Place can be defined in terms of three interrelated components—people, program, and physical setting—organized in a coherent fashion; at the intersection of these three components is place experience (Moore et al., 2006). Experience of place refers not simply to the character of places and regions (Cloutier-Fisher, 2009), but rather to the consciousness people have of places holding a special significance for them (Kearns, 1993). Accordingly, place experience resides in people's interpretations of the place.

There is a tradition within psychology of defining people's experience in terms of what we might call modalities: perception, cognition, behavior, emotion, and meaning (Weisman, 2001). However, Weisman (2001) proposes that a different, and potentially more productive, approach considers attributes rather than modalities of place experience. According to him, the focus of this approach is on those qualities that we attribute to places in the context of our interaction with them. Borrowing from a variety of studies on home (Cooper Marcus, 1974; Hayward, 1975; Appleyard, 1979; Dovey, 1985; Sixsmith, 1986; Tognoli, 1987; Despres, 1991; Terkenli, 1995) place theories (Giuliani, 2003; Twigger-Ross et al., 2003; Lewicka, 2008, 2010; Stokols & Shumaker, 1981; Twigger-Ross & Uzzell, 1996; Scannell & Gifford, 2010; Knez, 2005; Low & Altman, 1992; Hidalgo & Hernandez, 2001), environmental stress reduction, and cultural diversity, concepts shown in Figure 7 are represented as those attributes of place experience that contribute to three stages of transaction between international students and the new environment.

As noted earlier, these three stages can be considered as general facets of international students' experience of the new place. While each of these stages can stand on its own, they are presented in a suggested sequence under the assumption that each stage represents a level of experience before going on to the next stage.

5. Patterns

A pattern is a construction that states a relationship between an intention and the material world required to support that intention. Each pattern states a problem, identifies the context in which this problem exists, gives evidence as to the importance of the problem, and provides a solution. These patterns are purposeful and provocative. It is not the aim of the author of a pattern to dictate the solution, but to provoke thinking about each intention so that the makers of each place can decide to include and/or exclude both the problem and the proposed solution. Thus, in general, each pattern has to

name the idea, explain what the problem is that the idea was to address, and explain how the problem might be resolved (Schneekloth & Shibley, 1995). The following patterns are samples of many other socio-physical strategies that might encapsulate desired attributes of place experience and ultimately reduce negative consequences of relocation.

5.1 Nooks

Definitions of privacy have one thing in common. They stress that it has to do with the ability of individuals or groups to control their visual, auditory, and olfactory interactions with others (Lang, 1987). Due to the lack of social skills (Eurelings-Bontekoe et al., 1994 & Van Tilburg et al., 1996), long presence in an unfamiliar crowd is more stressful for international students. Thus, they need readily available retreats to regulate their social relationships. Nooks are settings with proper light, scale, and degree of enclosure which provide visual access without gaining attention, promote voluntary interactions, and contribute to the sense of being anchored and sheltered. Thus, they support emotional investment and development of place identity. Nooks might take different forms and types due to the different levels of privacy, i.e., those proposed by Westin (1970). However, all different types of nooks should encapsulate common qualities such as: having proper enclosure and visual access to the outside as well as to other people, not being pretentious, not being too exposed to the flow of traffic, etc.

5.2 Place of Others

It is important to understand the ways in which a community impacts all aspects of diversity and promotion of tolerance, acceptance, understanding, appreciation, and caring. But members of a community would not be able to perform any of these unless they start knowing each other.

Providing distinctive, recognizable, labeled, territories for international students might be too deterministic, but hoping international groups will territorialize on their own and in a more consensual manner is also very optimistic. It seems that most international students are more timid to territorialize in a way to be recognized and known in the community; such a presence does not increase awareness. However, it seems some places can be designed in a way to afford and convey the value and appreciation of diversity without labeling it.

The main goal of these places is to provide an in-between climate for intercultural dialogue and interaction, and to increase mutual awareness and understanding. Being free from language barriers (as the main obstacle in the way of communication), visual arts and music can act as effective mediators for vitalizing these places. A place with community-themed murals or local music that is evocative of collective memories of a particular nationality is more effective in promoting familiarity. On the other hand, a place which its walls are covered by different brands of fast food, drink, or coffee chains (which are common in most university student unions) is, in fact, an advertising space and consequently, unfamiliar and repelling.

Moreover, a place's ability and success to attract international students is cumulative, since it seems they are more likely than natives to express a sense of affinity with people in other countries (Weibull, 2004). Thus, such a place that conveys the right message from day one can increasingly become a popular location among international students and provide them with psychological and social support. It might eventually serve as

Figure 8: A well-designed gathering place with community-themed murals, but still too exposed to become a Place of Others; Memorial Union, Madison, WI.

a place for ethnic events and celebrations. Considering these issues, its physical properties, location, and relationships to other places become more important. Another study on international students' social relationships can help to determine these factors.

5.3 Moderate Program of Social Places

Sometimes designers tend to overload the program of a common space or a concourse by jamming a variety of activities and requesting multiple functions so that these spaces seem to be more active and alive. However, there is a fine line between a social place and a crowded one. Crowding is stressful because it is associated with a feeling of lack of control over the environment (Lang, 1987). Moreover, in the case of international students, stress of the crowding is multiplied by other factors such as hearing incomprehensible conversations between other people (in a different language), seeing unfamiliar faces, and perceiving inference of multiple activities.

Concepts of competence (Lawton & Nahemow, 1973) and demand are other issues regarding negative consequences of heavy programs. Fisher (1989) put forward a multicasual model of homesickness in which the balance between social and environmental demands and personal control are critical. According to this model, if the environmental demands are high, then there is a good chance of developing homesickness. Thus, considering the fact that environmental demands are already challenging for most relocated people's competencies, overloading the program makes things more problematic.

5.4 Places for Regulars

Regulars are important; they are the ones that make the space come to life and give a place its character (Oldenburg, 1989). A regular not only has a particular bond with place but also starts developing ties with other regulars and familiar faces even without verbal communication. Thus, it seems regulars are more likely to have a dialogue with each other. This is an effective strategy for international students to develop social relationships and provide social support by the means of place. However, an attractive place might ultimately bring the right people in, but it might be so overscaled, crowded, or unauthentic that it never provides the chance for regulars to even see each other or realize each other's presence. Considering this, a small spatially confined café in the second floor of a student union would be more authentic than the whole combination of a concourse surrounded by several coffee stands and fast-food chains. And a big recreation center is less suc-

cessful than several smaller ones in different locations of a campus.

5.5 Intimate informal seating

Relationships between young adults in a university are mostly informal; such relationships also require informal settings. Moreover, informal places are leveler, so they reduce the sense of being different. Inside the building, built-in benches, and window seating have always been considered by designers as means of promoting these interactions. However, it seldom happens that an international student will choose an exposed built-in window seat or the edge of the only fireplace of the concourse as a place to sit. In fact, informal seating is more proper for a native person who has higher familiarity with place and feels more at-homeness, thus, he tends to extend his self in the place. Intimate seating, on the other hand, is comfortable, friendly, and not pretentious, so international students don't get too exposed and don't gain much attention while using it. Movable cushy chairs that provide a flexible and safe sittable place seem to be more popular among international students.

5.6 Campus Edge Housing

Home is a critical locale for investing, developing, and maintaining place identity. In the case of international students, although family is dislodged from the meanings of home, the new dwelling place still serves as an anchor (if not a center) and a locus of emotion, memory, meaning, and dreams. However, physical features of most dormitories preclude the formation of home-like experiences (mostly due to their density and scale), and on-campus housing seems not to be the best choice for international students. Research (McCormack, 1998; Phenice & Griffore, 1994; Poyrazzli & Lopez, 2007) shows the major factors involved in some students being a victim of discrimination were (a) belonging to a group that has historically been discriminated against, (b) spending more time at the university, and (c) living on campus.

A home located at the campus edge serves as a bridge between the inside familiar world of the campus and the outside urban life. Developing connections with local community happens while shopping at a nearby grocery, going to a bar, and eating in a family restaurant. In fact, campus edge housing provides the opportunity to be in touch with the land across the border. However, at the same time, international students need to be close to the place of the campus, which embodies a vast part of the new system of bonds with places.

5.7 Restorative Places

Restorative places have a variety of scales and degrees of sociability. As mentioned earlier, Ulrich (1999, 2004) suggests access to nature and other positive distractions are important factors in mitigating stress. One positive distraction that is likely to happen in universities is watching other people while they are happy or enjoying life. Students dancing and playing drums, playing Frisbee in common areas, or even rock climbing are all interesting and joyful scenes that catch the eyes of passers-by. It also seems young adults like to have spectators while doing sport activities. This pattern suggests that these places should be designed in a way to be more exposed to traffic flow. For instance, the location of recreation centers in a campus or in a student union and their relationships to the main pathways or corridors, as well as the main quad or concourse, becomes important.

Unlike this kind of positive distraction that should be more exposed, there are other types of restorative places that are better to be more private. For instance, this pattern suggests that not all natural places should be at the center of attention. It seems people sometimes interact with nature in the same way they interact with people—in a more solitary and intimate mode. People need moments to be alone with nature; for instance, green high places and sittable places under trees or with a view to the lake are popular places. Thus, considering the facet of experience represented by these settings, their location might be far away from the main quad or any other place that does not intersect with more public spaces.

6. Discussion

It is clear that seven patterns are not enough, but it seems the process can produce more. Within a holistic approach toward three stages of interaction with environment (regarding international students), re-placemaking engages all members of the community in its process. An important issue that was not discussed in this study is the language and the interrelationships of these patterns. However, in most cases, well-established patterns find their relationships and evolve eventually. In this study, current guidelines suggested by other authors, planners, and designers for campus planning and design were not addressed either. The reason was that these guidelines mostly have general approaches and do not stress the interaction of a particular group (i.e., international students) and the environment as a design concern. Future studies can focus on developing more patterns, introducing their language, and integrating current guidelines on campus planning and design with findings regarding the literature on relocation.

7. Acknowledgments

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Improved Public Health Through Better Design of Community Toilets: A Case of Universal Access to Community Toilets in India

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Abstract

Worldwide there are 1.1 billion people, who defecate outdoor daily. The public health consequences of open defecation are serious and results in transmission of many infectious diseases. In India, despite the increase in toilets, open defecation remains the single largest threat to public and community health. An estimated 55% of all Indians do not have access to toilet, those who live in urban slums and rural areas are most affected by lack of toilets. This paper reports the results of an ethnographic research involving real life slum people to learn about problems related to community toilets and what promotes open defecation. Over 150 people participated in interviews and they include men, women, children, elderly and people-with-disabilities, caregivers, managers and cleaning personnel. The study uncovered user needs and aspirations for better design of community toilets and how to offer universal access to everyone. The universal design of community toilets in India must focus on self-empowerment, offer personal assistance, and be socially inclusive. They must offer flexibility through interchangeability of parts and allow personalization and mass-customization.

Background

India's economic growth rate is among the fastest in the world, chiefly due to information technology and knowledge-based industries. However, open defecation is widespread due to the absence of toilets, inaccessible toilets, and abandonment of existing toilets. An estimated 55 percent of all Indians, or close to 600 million people, still do not have access to any kind of toilet (ADB, 2009). Among those who are most affected are those who live in urban slums and rural areas. Toilets are unavailable to most Indians; 54 percent of urban slum dwellers do not have access to toilets, and 74 percent of the rural population defecates outdoors (Bonu and Kim, 2009).

The absence of toilets results in open defecation, an everyday practice among 1.1 billion people worldwide. According to the World Health Organization, open defecation presents "the riskiest sanitation practice of all," and the public health consequences are related to transmission of infectious diseases like cholera, typhoid, infectious hepatitis, polio, cryptosporidiosis, ascariasis, undernutrition, pneumonia, and worm infestations. An India Human Development Report (2011) states that despite an increase in the number of toilets, open defecation remains the single largest threat to health and nutritional status in India. While everyone is susceptible to infectious diseases, in children under the age of five these diseases cause reduced physical growth, weakened physical fitness, impaired cognitive function, and even death. Poor sanitation and lack of hygiene from open defecation is known to contaminate drinking water, responsible for annual deaths of about 535,000 children (Bonu and Kim, 2009).

The lack of toilets is closely linked to women's "security and pride." Since they sometimes have to walk miles to reach a toilet, they are prone to attack, violence, and rape. Filthy community toilets, often clogged in slums, are responsible for serious infections in women. For those who are menstruating, the lack of this basic facility is a hygiene problem. Defecating in the open also mars dignity for women and causes embarrassment. It is still common to see people toileting by railway tracks and along the river banks. The Wall Street Journal reports that [in India] there is not a single toilet or latrine for its 10,000 people, yet almost every destitute family in the slum has a cell phone. Some have three ("India: the Land", 2010). The state of toilets in India paints a grim picture of a nation that has made huge strides since independence.

Project Focus and Research Questions

The project focused on learning from real-life users about problems related to community toilets and the factors that promote open defecation so contextual designs of community toilets firmly rooted in Indian culture and practice can be developed. This paper reports the results of ethnographic research that involved slum-dwellers who use community toilets and/or practice open defecation. The study helped to learn about user needs and aspirations for better design of community toilets and offer universal access to everyone. User information was captured through in-depth interviews with researchers who built a strong relationship with users through prolonged engagement and interaction. The trust built by engaging with users allowed delving deeper into personal, family, gender, community, human, and environmental issues. The research employed

many important questions to solicit responses: (1) Why do people defecate outdoors? (2) What are some of the biggest problems with community toilets that deter use? (3) How universal are the current designs of community toilets? (4) Can community toilets be designed for independent/ dependent/ interdependent use for universal access? (5) Why are community toilets dirty and ill maintained? (6) How culturally compatible are community toilets? (7) What socio-cultural factors influence sanitary practices among slum dwellers?

Methodology

The interview technique employed for this study is grounded in Focused Ethnography, which has been widely used, particularly in researching contemporary society, which is socially and culturally highly differentiated and fragmented. This form of ethnography is better suited to study contemporary activities, experiences, and lifestyle, and to understand the genesis of human problems, how important social practices are formed, and how new cultural habits result from interaction in modern society (Erickson, 2004). Focused Ethnography is characterized by relatively short-term field visits and intensive use of audiovisual technologies of data collection and data-analysis. Writing is complemented by photography and audio diaries, and subsequent data analysis is undertaken in the form of collective data sessions.

Semi-structured interviews were conducted in ethnographic slum settings whose inhabitants either use community toilets and/or practice open defecation. The interviews were organized around a set of predetermined open-ended questions, with other questions emerging from dialogue between interviewer and interviewees. Few users of personal toilets were also interviewed on their journey from open defecation to personal toilets, and references to community toilets were made during the interviews to learn about their satisfaction and concerns. Interviews were conducted in a conversation-like manner using talking points derived from research questions and beliefs about open defecation and community toilets. The conversation-like interview style (Palmer, 1928; Douglas 1985) helped develop rapport between interviewer and interviewees, and allowed learning about such a personal subject as open defecation and community toilet use. Holding interviews in slums helped establish a safe and comfortable environment for the participants to share personal experiences and opinions. However, careful attention to gender and privacy issues was maintained.

Over 150 people participated in interviews, though an accurate number of participants is hard to determine as there is a tendency among people living in slums to gather around group activities. However, the interview debriefs indicate the number of people present. Both individual and group interviews with men, women, children, the elderly, and people with disabilities who were carefully selected from the community were conducted. Also, users living close to community toilets and close to open defecation sites, and those spread throughout the slum, were interviewed. Group interviews were conducted in organized places such as slum corners and in temple courtyards; a group representative provided a voice for the rest; several individuals took up positions as representatives during the course of the interview. One-to-one interviews were held on streets, in front of homes, and in verandahs. Other stakeholders, including caregivers of children and disabled adults, community toilet managers, and cleaners were interviewed to learn about their needs and the importance of universal design in community toilets.

Research Tools

Research questions were used to develop talking points and were pre-tested in field trials before being finalized. Talking points were open-ended probes that allowed participants to respond, narrate their personal experience, and maintain a smooth connective flow. A total of seven sets of different talking points were developed, one questionnaire for each of the following user groups: men, women, children, the elderly, people with disabilities, caretakers, and maintenance-people of community toilets. Though some talking points were common among users, many uncommon questions unique to their situation were also asked. All the interviews were audiotaped with help of unobtrusive voice recorders (though informed), and the life in the slum and use of community toilets were photographed. The interviewers were conducted at ease in a conversational manner, and talking points helped to ensure that all issues were discussed, though the order of conversation often changed to follow the natural rhythm and pace of conversation. Not all interviews asked same set of questions, and the talking points varied depending on the participant's willingness, temperament, and time. The talking points were revised four times as new issues emerged, and they were used as probes to direct the interviews and conduct open- ended discussions.

Findings

Open Defecation

Open defecation is not a choice; for most people it is a compulsion. It is perceived as not having the option