



Place attachment through interaction with urban parks: A cross-cultural study

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ABSTRACT

Globalization and mobile societies challenge large cities to provide not only basic services, such as water or housing, but also places where long-term residents and (forced) migrants are able to form bonds and attribute meanings. The question of what types of urban settings can foster place attachment through interaction has been poorly investigated. To address this research gap, a qualitative study was conducted in Iran to investigate how long-term residents (Persian) and bi-cultural migrants (Afghans who migrated to Iran and stayed there for more than 5 yrs) form bonds with urban parks. Participants were given a standardized round-trip of Persian gardens and a modern urban park. Theory-guided, problem-centered interviews were recorded and analyzed with directed qualitative content analysis. Considerable differences were found among both groups in terms of how people created attachments with the different places. For both user groups both park types enabled links to the place via practical and visual appreciation, social interactions, emotions and garden structure. In contrast to the modern park, the Persian gardens offered many more opportunities to link to the place via shared history, meanings and memories. These three prominent drivers of place identity offered long-term residents excellent means to establish a bond with that place. Shared history and meanings, however, rarely allowed bi-cultural migrants to become attached to the place; for this group, certain elements of Persian gardens triggered memories that enabled them to view the places of origin and relocation as interconnected locations capable of providing different, yet compatible experiences. As theory suggests, such access helps to reduce the disruption of moving to a new place. Our results help to empirically test and broaden current place attachment theories and encourage city planners to preserve and develop parks that satisfy more than the 'place dependency needs' of users.

1. Introduction

1.1. Research gaps

Temporary or permanent migration caused by globalization, armed conflicts or changing climate requires large cities to provide places where long-term residents and migrants can create bonds and to which they can attribute meanings. There is ample evidence that urban parks play important roles in forming place attachment and identity for residents (Kyle et al., 2004; Manzo, 2005; Korpela et al., 2009; Main, 2013; Peters et al., 2010; Hadavi et al., 2018). However, these processes have been researched primarily for long-time residents and high-amenity

recreational communities, and not through the lens of migrant communities. Only a few papers, such as Main (2013) or Rishbeth and Powell (2013), have addressed this topic, by exploring how migrants view parks and everyday urban settings, and establish bonds. To what extent these views coincide with, or differ from, those of long-term residents, and what urban settings enable migrants to become rooted is still largely unknown. With this study we address this research gap by evaluating the influence of historic and contemporary urban parks on the place attachment of users from different cultural backgrounds. This knowledge is crucial to support decision makers to better understand the role of urban parks in developing sustainable cities.

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1.2. Guiding theories of the study

Within the rich place attachment literature, several well-founded theories are available. However, none of them alone is able to fully explain the complex processes that underly the experiences of urban parks and the development of place meaning, especially for forced migration. Three theories, described later in this section, stand out to guide our study: the *space-place theory* of Hunziker et al. (2007), the *person-process-place framework* of Scannell and Gifford (2010) and the *fixity-flow concept* of Di Masso et al. (2019). These three theories have two main aspects in common to serve as a basis for our study. First, they consider tangible elements and intangible values of a landscape as integral and interlinked elements of the landscape experience (see space-place theory below for further details on tangible/intangible aspects of the landscape). Second, they view the processes of linking to a place as the sum of human-environment interactions along a continuum from place dependency¹ to place identity². As an outstanding feature, the fixity-flow concept of Di Masso et al. (2019) departs from the mobility patterns and paradigms of migration of the 1980s and 1990s, that viewed place attachment and migration as mutually exclusive. This conceptual move offers multifaceted forms of place attachment that exist alongside each other.

1.2.1. Space-place theory

It is undisputed that some people feel attached to a location because of the stimulating physical characteristics of a place, or the natural environment (Hammit et al., 2006; Scannell and Gifford, 2010). Others may feel attached to a location because of the close ties they have with their neighborhood, the firm rootedness of their community to that place, the strong religious symbolism of the place or because of social factors (Gieryn, 2000; Lewicka, 2011). This interplay between the physical elements of a location (=space) and the perceived, interpreted landscape (=place) is best addressed in the space-place theory of Hunziker et al. (2007), and is a decisive over-arching theme in our study.

Physical or tangible properties of a landscape consist of either naturally occurring landscape elements, such as trees or streams, or man-made elements like trails or roads as well as what remains after people's interaction with nature (Swensen et al., 2013). Most tangible elements are associated with values and meanings given by inhabitants or social groups (Martorell Carreño, 2003) - the so-called intangible values. The latter may differ depending on the shared values of society and the cultural context (Devine-Wright and Howes, 2010; Müller, 2011). Hartel et al. (2017) provided good examples of intangible values that farmers in Eastern Europe assign to tangible elements, for example, old oak trees: symbols of their centuries-old history or symbols of beauty and relaxation.

1.2.2. Person - process - place framework

In line with the space-place theory, the tripartite organizing framework (PPP) of Scannell and Gifford (2010) emphasizes that place attachment has 3 dimensions: (1) The first is the *person dimension*, emphasizing that attachment to tangible properties is based on either individual or group-specific experiences, memories and meanings. At both levels, shared history and culture can have decisive effects on how places are experienced. (2) The second dimension is the *process dimension* describing how place is experienced, whether through affection, cognition or behavior. In this dimension, we find aspects such as feelings when being at a site, but also the wish to be close to a favored place. (3) The third dimension (*place*) describes the social and physical properties of the place itself. Although the *current structure* of a place is key for place

attachment (Scannell and Gifford, 2010), studies agree that the *history of a place* is key to understanding: (a) how present landscape configurations came about (Rhemtulla and Mladenoff, 2007; Abu-Khafajah, 2010); (b) how people's preferences change and, in turn, shape the landscape (Lewicka, 2011); and, (c) how history plays a role in influencing the contemporary functions of the landscape (Antrop, 2005).

1.2.3. Fixity-flow framework

Mobility and relocation are known to impact place attachment. Relocation frequently disrupts personal bonds and social networks. Factors, such as limitations on time available to live at specific locations, the availability of multiple places to become attached to throughout the course of life and a predominantly urban lifestyle, have resulted in a diversity of strategies among people seeking to deal with disruptions in their location (Di Masso et al., 2019). The latter proposed a framework, called "fixity-flow", through which they convincingly illustrate how many forms of place attachment exist alongside each other. In one area, bonds with a place can be oriented around a few fixed places, although at the same time the pattern of areas people are bound to is distinguished by maximum mobility (flow). Within this framework, all possible forms of the combination of fixity and flow are present. For the present study the "fixity FROM flow" sub-concept, described by Twigger-Ross and Uzzell (1996) as "place-referent" and "place-congruent" continuity and further elaborated by Rishbeth and Powell (2013), is particularly important. It describes how places become interconnected and can contribute to self-continuity if the physical and social characteristics of two or more places fit the value systems of a person or group. There is still much to be empirically substantiated with this concept, especially as many "fixity-flow" studies focus on voluntary mobility, with the ability to move freely between places. This underlying assumption very often does not hold true for our respondents, some of whom were forced to migrate.

1.3. Qualitative research design and presentation of research questions

On the basis of the rich and nuanced theory development, we decided to analyze the knowledge gaps mentioned in the Introduction using a qualitative design with directed qualitative content analysis (Mayring, 2000; Hsieh and Shannon, 2005). We opted against a quantitative analysis since, although there is broad knowledge on the main topic, there is limited understanding of the more specific issues, namely, place attachment processes in different types of urban parks as experienced by both long-term residents and bi-cultural migrants. The results of the qualitative study can be considered as empirically grounded hypotheses that can be further analyzed in a quantitative study.

The research questions we wish to address in this study are as follows:

- 1 What is the difference between historical and contemporary parks in selected Iranian cities, regarding the provision of places with which people can build a bond, *independent of their cultural background*?
- 2 How do people *from different cultural backgrounds* - some of them forced migrants - link to historical and contemporary parks in order to establish bonds with these places?

2. Methods

2.1. Study sites

In this study, we selected two types of urban parks: the Persian garden, example of century-old green infrastructure, and a contemporary modern park. Persian gardens represent a successful way of dealing with extreme climates, a diverse set of plants, beautifully arranged structures and cosiness that aims at improving the well-being of people visiting the park (Rostami et al., 2015). The concept of Persian gardens

¹ the degree to which the practical needs of people are satisfied in a place

² place identity is reached when tangible elements of the landscape or the landscape in its entirety are assigned specific meanings or shared values by society or social groups and contribute to self-continuity.

refers to the story of Cyrus the Great, who decided to duplicate heaven on earth (Mahmoudi Farahani et al., 2016). Until the 11th century Persian gardens were not open to the public. As Rostami et al. (2014) point out, this rich historic structure of gardening is now used by residents as a place for recreation and social activity. Modern urban parks in Iran have a considerably different design and pattern, copied mainly from the European garden culture (Rostami et al., 2014). We selected two Persian gardens, one located in Kerman (Shazdeh Mahan) and one located in Tehran (Bagh-e-irani). The latter is a new construction, although the structure matches that of an old Persian garden. For the comparative modern urban park, we selected Abo-Atash Park in Tehran.

2.2. Sampling schemes - participants

Participants were selected according to the theoretical sampling strategy, generating a sample of persons with widely differing attitudes and opinions towards urban parks. The theoretical sample is not representative numerically but covers a wide variety of opinions and values (see Fig. 2 in Hunziker, 1995). In the theoretical sampling, participants are added to the sample as long as their response broadens the range of opinions and values identified. As soon as no, or only few new insights can be extracted on the subject, the sampling process is terminated. For more insight on the design of theoretical sampling and grounded theory studies, see Glaser and Strauss (1967); Hunziker (1995); McCallin (2003) or Home et al. (2010). In our study all participants were interviewed individually in Persian gardens and the modern park, people from Kerman in the Persian garden only. In order to reduce any unwanted bias caused by the sequence of park visits in Tehran, the Persian garden or the modern park was chosen randomly as the first park to be visited. The 14 participants investigated in this study were inhabitants of Tehran and Kerman with either (1) Persian or (2) Afghan background (Table 1). Participant ages ranged from 15 to 45 years old. Participants represented various occupations (teacher, student, real estate manager, retailer, coach, babysitter) and different levels of education, ranging from those with no education to doctoral students. Open-ended interviews (see 2.3 for details) were recorded for all participants, and later transcribed in Farsi and translated into English. The interview in each park lasted for ca. 40 min. Ca. 20 % of the participants had previously visited one of the parks. The interviewer is of Persian origin and has lived in Iran for over 30 years.

To make participants comparable in terms of their length of stay, and to control for the well-known driver “length of residency” (Lewicka, 2011), all participants were required to have lived in Iran for more than five years. The five-year cut-off is the same as that used in Abass and Tucker’s (2018) study. In this way, we selected long-term residents and bi-cultural migrants who not only live in Iran temporarily, but who have moved their centre of life to Iran for a longer period. Participants were compensated for the hours they participated in the interviews. Prior to the interviews, participants read the letter of consent, which, according to the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*, stated that details of their participation would be erased after obtaining the final results. The interviews were conducted in July 2018.

2.3. Directed qualitative content analysis

In the directed qualitative content analysis (Mayring, 2000; Hsieh and Shannon, 2005) we followed the steps described in Fig. 1.

Table 1
Overview of interviewee background data.

Cultural background	Number of participants	Place of residence		Gender	
		Tehran	Kerman	M	F
Afghan (bi-cultural)	7	3	4	2	5
Persian	7	5	2	3	4
Total	14	8	6	5	9

2.3.1. Steps S1-S2: operationalizing the theories of place attachment

On the basis of the theories outlined in Section 1.2 we were able to derive: (1) a fully theory-compatible set of preliminary sub-categories along a gradient from *place dependency* to *place identity*; and, (2) a *theory-compatible interview guideline* (Table 2). Place dependency categories describe the degree to which the practical needs of people are satisfied in a particular place. Place identity is reached when tangible elements of the landscape are assigned specific meanings or shared values by society or social groups (Devine-Wright and Howes, 2010; Cresswell, 2015), which then provides individual mental self-regulation (Korpela et al., 2009; Degenhardt and Buchecker, 2012). Between these two poles, various forms of place attachment can be found, i.e., when places are individually interpreted and the social interactions attached to them are developed (Main, 2013). All forms serve to make people bond or link with places.

2.3.2. Steps S3-S4: theory-guided problem-centered interviews on standardized round trips

Participants were taken on a standardized round trip to the parks, a method that has been successfully applied in social sciences when full immersion with all senses is required (for more details see Hunziker, 1995; Kusenbach, 2003; Mellqvist et al., 2013; Rishbeth and Powell, 2013). The interviewer generated a stimulating discussion environment using an interview guideline consisting of the topics and stimuli found in Table 2. Topics were designed to embody the theoretical framework underlying the study. The aim of the open-ended interviews was to encourage the interviewees to reflect on the different topics and to start sharing their thoughts and emotions (Home et al., 2010). Combining the interview with the round trip was beneficial, as each participant experienced the same tangible elements (stimuli) in the same spots with the same view. Furthermore, walking and thinking are common philosophical practices (Rishbeth and Powell, 2013).

2.3.3. Steps S5-S8: content analysis

After transcription, the main author translated the interviews into English and extracted key statements. Steps S6 to S8 were iteratively repeated during the course of the content analysis, to refine the theory-guided preliminary sub-categories or to generate new sub-categories with important statements (final number of statements: 186, see Appendix A). Since we had a theory-based preliminary coding scheme (Smith, 2007) and sufficient resources were available, we opted for the data to be coded by multiple coders as suggested by Scannell and Gifford (2017). We had four independent coders and two languages – encoding was done twice in English and twice in Farsi – to ensure no translation bias in the coding process. Three coders were familiar with place attachment research. The less-experienced coder was trained and provided with a manual, giving instructions on how to encode with examples from the three trial interviews. Coders could assign statements to more than one preliminary sub-category or suggest new sub-categories. Complete codings were passed to the main author who is fluent in both Farsi and English. At the end of the review process, a final set of sub-categories emerged (see Results), to which each of the 186 interview statements were assigned, based on majority consensus. For ties, the main author’s own coding was used.

3. Results

Over the course of the iterative process (Steps S6-S8, Fig. 1), the content of the interviews could be grouped to ten theory-supported sub-categories. All of them enable people to establish a bond with a place:

- *Place dependency* with the sub-categories (1) practical use, (2) visual appreciation, (3) linking to place via tangible elements
- *Place attachment* with the sub-categories (4) feelings and emotions, (5) safety and privacy, (6) individual preferences, (7) social bonding and gathering

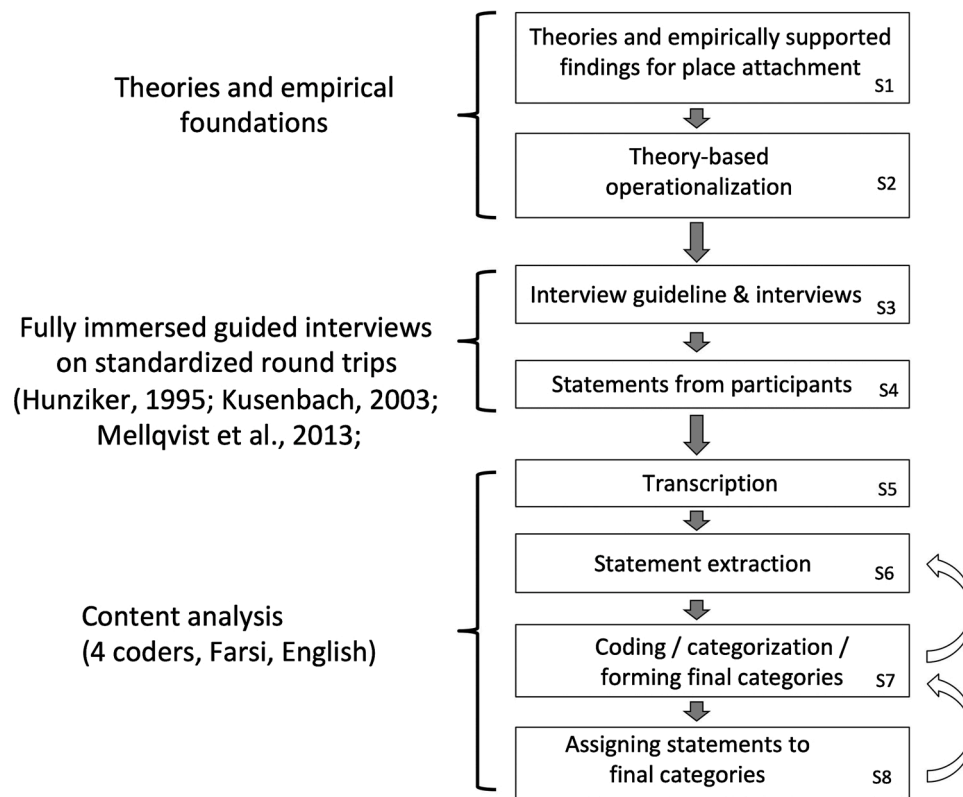


Fig. 1. Schematic view of the directed qualitative content analysis applied in this study, containing eight steps.

Table 2

Topics of the theory-guided problem-centered interview (Witzel and Reiter, 2012) with discussion stimuli covered during the standardized round trip.

Theoretical concept and topics	Discussion stimuli
<u>Place dependency</u>	
Physical appearance, practical use	explain physical elements of the place; dominant features; guess main idea behind building this park; ability to easily find way around the park; activities permitted/forbidden
Perceived visual appearance	visual attractiveness; likes, dislikes; missing elements
<u>Place attachment</u>	
Feelings and emotions, safety	feelings when staying in this place; feelings when imagining being alone in this park; satisfaction, happiness
Social bonding and gathering	preference to come to this park alone or to meet with other people, e.g. family
<u>Place identity</u>	
Memory, meaning, history, identity	former visits in this park; familiarity with park type; participant's roots, childhood experiences when visiting the park; historical elements of the park interpreted with own cultural background in mind, links to own history

- *Place identity* with the sub-categories (8) memory and meaning, and (9) identity building with reference to history, and
- *Recreation* (10) treated as a separate category, although rarely mentioned as a single topic by interviewees.

In the following, we develop the grounded hypotheses for the two research questions by illustrating the theory-guided sub-categories with the nuanced statements of the respondents. The aim is to show how users establish bonds with urban parks along the gradient from place dependency to place identity, and to demonstrate what is shared or consistent between users and what is different.

3.1. Historical versus modern park: shared and divergent effects on place attachment (research question 1)

Both the Persian garden (PG) and the modern park (MP) prompted similar responses in the category *practical use* which is core to place

dependency (Reed et al., 2010). Participants described how the parks satisfy their (physical) needs independent of whether it is a PG or MP. For example, the park is near their place of residence or close to work, has or has no shade or provides opportunities to perform physical activities. This category was often closely associated to recreation (Kienast et al., 2018). A typical comment related to this category was: “*This park meets all our needs when we are outside our home*” (MP) or “*It is worth walking a greater distance to the Persian garden, rather than going to the modern park*” [...]. *This area is like a path for going to the other side of neighborhood* (PG).

Beauty and the appreciation of beauty are among the core aspects for the sub-category *visual appreciation*. In this sub-category, broadly addressed by the attention restoration theory (Kaplan and Kaplan, 1989) and by landscape aesthetics theories (Appleton, 1975; Bourassa, 1990; Hunziker, 1995; Wynveen et al., 2015), our interviewees mentioned the composition, coherence and harmony of physical elements in certain locations, but also features that reduce the quality of natural beauty. The

PG was praised much more than the MP for its visual quality and design. Typical expressions in this category include: *"I'm impressed with the area and scale of this place"* (PG) and *"The line of trees and the sound of water is amazing to me"* (PG), or *"The entrance is attractive, inviting me to enter the park"* (PG). Contrasting statements include *"metal doesn't fit with the other elements"* (MP), or unease with the design of the park, in terms of both the natural and the built environment: *"A hard landscape dominates, but what I want is shade"* (MP).

In the sub-category *Linking to the place via tangible elements*, interviewees explained that specific elements of the urban parks offered them the chance to make links to the place and experience positive feelings, more so than in other environments. This was an opportunity highly valued by them. These tangible elements included not only objects such as plants, but also the physical scenery of the park and the clearness of the whole structure. Typical expressions in this category were: *"The woods, along with this stream, give me a great feeling that I would like to stay here forever"* (PG) or *"The structure is clear for me and I can recognise where I am"* (MP).

The category *feelings and emotions* was quite prominent, and we found many emotional statements were fairly independent of the type of urban park and user group, e.g. *"I have a constant smile on my face when I am in the Persian garden"* (PG) or *"I feel free in this park"* (MP). Nevertheless, some respondents report some negative feelings in the modern park, experiencing the park as a restless and busy place or even unnamed negative influences.

Safety and privacy statements were recorded but not frequently, e.g. *"Everyone accepts my nationality here"* (PG). As Scannell and Gifford (2013) point out, a sense of safety and privacy can be one direct benefit to people who are attached to a place. Examples included interviewee references to being able to move easily around in urban parks alone, without being bothered, and being able to do what they want. The latter element can also be found in Kaplan's attention restoration theory. A typical statement was: *"Here I can do anything, and nobody cares about it"* (MP). As we explain in section 3.2, the Persian garden appears to have more "dos and don'ts" than the modern park, especially for migrants.

Social bonding and gathering is mentioned largely independently of the park type. This category concerns aspects of social capital. Theory suggests that the more people are embedded in a social context, the more they are able to attach themselves to a place (Scannell and Gifford, 2010, 2017; Lewicka, 2011; Di Masso et al., 2019). In this category, interviewees expressed the possibility of interaction with others, and spending time with a diverse range of people. A typical comment in this category was: *"I would like to have my first date in this park, because it's cosy"* (PG) or *"I would like to have a lot of interaction with people when I'm here"* (MP).

The most prominent differences between the two park types can be found in the place identity categories *memory* and *meaning* and *identity building with reference to history*, that have some overlap. In both categories, there were literally no comments in the modern park. *Memory* and *meaning* have much in common as they are strongly influenced by social structures (e.g., family, nationality and ethnic group, Lewicka, 2011). Thus, although an individual's memory of a certain place has a personal component, it is also dependent on traditions and oral transmissions of these memories. The same is true for meanings, that is, the symbolic significance of a place as a shared value among groups of people (Devine-Wright and Howes, 2010). In the PG participants often referred to memories from childhood in connection with family or relatives. A typical comment in this category is: *"This place reminds me of Grandma's place, where we had fun with my cousins"* (PG). Participants often referred to tangible elements in the Persian garden which reminded them of home, or memories related to childhood. One participant explained: *"Once I entered the garden, I saw my mother cooking a meal for us below the trees and I was playing with my siblings [...] here is a part of my identity"* (PG) or *"The diversity of plants and the cloudy sky, the vibrant leaves with the sound of the wind reminds me of childhood in a place similar to this"* (PG). In the modern park only one interviewee mentioned

memories about being there with a friend, *"I have good memories here with my boyfriend"* (MP).

It appears that the sight of tangible historical elements triggered thoughts and statements about shared values and identity assembled in the sub-category *identity building with reference to history*. This identity building via historical structures was only evident in the group with Persian background, even among those who had never seen a Persian garden before. Interviewees expressed this feeling with statements such as *"I can see the depth of history here"* (PG) or *"I belong to this kind of garden"* (PG), meaning the culture-historic aspects of Persian gardens.

Summarizing the descriptions of the respondents, we may formulate the following results that can be considered grounded hypotheses to be validated with quantitative analysis: both types of parks ranked high in the place dependency and feelings and emotions categories. Independent of the users' group, the Persian garden was praised for its visual appearance, more so than the modern park. The statements confirmed the important role of near-natural elements, such as water, trees and shade, in making links with a park and establishing a bond. The prominent finding for this research question is that the historical park provoked many more statements about place attachment and identity than the modern park. This was shared among the different user groups and confirmed the positive impact of historical buildings and garden structures in the establishment of emotional bonds and place-related identity. However, the type of childhood memories, group-specific meanings and the history behind these meanings varies considerably between the cultural groups, as will be shown in the next section.

3.2. Cultural background matters (research question 2)

We were interested in any evidence of cultural preferences which might affect both perception and the level of place attachment in the two types of parks. Both park types enabled links via practical and visual appreciation, social interactions, emotions or the garden structure, and this for both user groups. The biggest differences were found in the category *"identity building with reference to history"* where bi-cultural migrants rarely made statements in the Persian garden. It appeared that this park type was, in contrast to participants of Persian background, of limited historical significance or possessed low identity building potential for individuals from this cultural background, as stated by one interviewee: *"I do like historical scenery, but I don't feel attached or a sense of belonging to it"*. Interviewees of Afghan background could easily recognize, describe and appreciate impressive structures, such as vegetation or buildings of both parks, but the historical structure of the Persian garden as a whole appeared to impress them only superficially, as they could not relate to the shared values found in Persian culture.

However, both groups were able to make links with the Persian garden via memory, as expressed by this participant with Persian cultural background: *"This garden is a part of my childhood because it is one of our recreation areas in Kerman"*. Most importantly, the memories allowed bi-cultural migrants to link the experience in the park with a different period in their lives in a different cultural setting. Examples included statements such as: *"That view from the windows to the garden is the same as what we had in my parents' garden"* or *"This old house is similar to my parents' place"* and *"I felt all the time that I was in my hometown when I walked through this garden"*. Many park elements in the Persian garden reminded them of their own childhood or the landscape characteristics in their country of origin. The bi-cultural migrants repeatedly referred to old houses, plants or views that enabled them to recall the past and made such references more frequently than long-term residents. The important role of memories has been emphasized in the findings of Main (2013) and Rishbeth and Powell (2013); the latter described the perceptions of public open spaces among refugees in the UK, highlighting the emotional impact of recognizing plants and natural patterns within natural and semi-natural landscapes. According to Boym (2008), remembering is a reflective, creative process. Even though remembered

elements are not required to be identical (although there may be aspects of similarity), they are archetypes of built and natural landscape forms; sounds and emotions which are reminiscent of a former home (frequently including plants, the rural countryside and green infrastructure). One Afghan participant expressed this as: *"I have no idea about this type of design but it reminds me of home"*.

A less prominent aspect, but worth mentioning, was diversity and inclusion. Despite the fact that bi-cultural migrants felt accepted as a foreign person in both parks and reported no discrimination, they expressed general unease in the Persian garden concerning permitted social behaviors, as expressed by one participant: *"I cannot do anything. I'm not allowed to do what I want to do" or "I should follow the rules and I do not have permission to do what I want to do"*. For interviewees with Afghan backgrounds, these constraints about "dos and don'ts" seemed to be slightly less prominent in the modern park.

4. Discussion

Before reaching any final conclusions, we take a critical look at certain methodological aspects of the study and revisit research questions and guiding theories.

4.1. Methodology

The mix of directed qualitative content analysis (Mayring, 2000; Hsieh and Shannon, 2005), theoretical sampling and standardized round trips (Hunziker, 1995) described in the methods section was an appropriate approach given the existing theoretical knowledge. The 10 theory-guided sub-categories that emerged from interviewees of both cultural backgrounds proved useful for comparing reactions to the various settings. The sub-categories of *place dependency* are theoretically well-founded and concurrent with the findings of, for example Sugihara and Evans (2000), who reported that among the residents of continuous care retirement communities, one of the best predictors of place attachment was access to a shared, enclosed, outdoor garden. Hence it was not surprising that the sub-categories *practical use* (Reed et al., 2010) and *visual appreciation* (Kaplan and Kaplan, 1989; Hunziker, 1995; Wynveen et al., 2015) had high discriminatory power. This was not the case for the category *linking to place via tangible elements*, implicitly suggested by Scannell and Gifford (2010 and 2017) or Lewicka (2011).

Three out of the four sub-categories for place attachment seemed to be robust: *feelings and emotions* (Jorgensen and Stedman, 2006; Scannell and Gifford, 2010), *safety and privacy* (Wynveen et al., 2015) and *social bonding and gathering*. They are concurrent with the review of Lewicka (2011) and Di Masso et al. (2019) and are the classical drivers for place attachment. The fourth sub-category of place attachment, *individual preferences*, was often a "leftover" category for statements that were difficult to assign. Nevertheless, we included it in the analysis to show that there was an individual and hard-to-explain component in how people felt attached to a place. At the core of our analysis are the two *place identity* sub-categories *memory and meaning*, supported by Devine-Wright (2009) and Rishbeth and Powell (2013), and *identity building with reference to history*, inspired by Twigger-Ross and Uzzell (1996) and Lewicka (2011). Although the two sub-categories have some theoretical overlap, they could discriminate the statements from the two user groups effectively.

Recreation aspects, found prominently in Kienast et al. (2012) or Buchecker and Degenhardt (2015) as drivers of place attachment were rarely mentioned as a single topic, making it difficult to justify the use of an independent recreation category in future studies. Moreover, there was not a completely consistent relationship between leisure activities and bonding with a particular place (see, for example, Williams, 2002). People may be simply fascinated by a place's physical attractions without being attached to it. On the other hand, some authors have observed a strong link between identity and restoration (Korpela et al., 2009; Main, 2013).

4.2. Revisiting the research questions and the guiding theories

Both research questions yielded answers that contribute to the validity and further development of the guiding theories, as encouraged by Scannell and Gifford (2010, p. 8) in their discussion about the PPP concept: "Research might compare the effects of personality types, cultures, and environments with objectively different properties on the different levels or typologies of place attachment". Our empirical research can contribute to this knowledge in four main ways:

- (1) Cross-cultural drivers of place attachment in parks: Appreciating the practical benefits of park elements and expressing positive feelings and an aesthetic appraisal of, for example, flowers, water, trees and shade seem to be cross-cultural drivers of place attachment, even if meanings and the historical depth of a park is not fully understood by for instance bi-cultural migrants.
- (2) Social bonding and gathering in parks: his core property of the P (place) dimension by Scannell and Gifford (2010) - appears to be a key driver of establishing a bond for both parks and both user groups. The Persian garden, however, seemed to not fully develop an inclusive environment for bi-cultural migrants. Some of them mentioned that they did not know what is allowed and what is not, and some experienced feelings of restriction and unease. Given these results, we suggest incorporating diversity and inclusion as a driver of place attachment in our guiding theories, as it has been rarely found.
- (3) Historical structures, memory and identity: The result that historical structures allow people from the same cultural background to link to the place and develop self-identity is generally acknowledged in the literature (see, e.g., Mazumdar and Mazumdar, 2004; Abu-Khafajah, 2010; Taha, 2014; Tan et al., 2018) although only a few studies, like the present one, empirically establish a nuanced connection between historical structures, memory and identity. Our findings confirm those of Siow-Kian (2018) who interviewed residents of the old towns of George Town and Melaka, Malaysia, whose cultural heritage is threatened by mass tourism. In their category "sense of loss" very similar items as in the Persian gardens were mentioned, among others the historical buildings, which stimulate childhood memories.
- (4) Childhood memories and interconnectedness of places: The core finding of our work, that historical structures stimulate childhood memories, was prominently expressed by both user groups and fits well with Rishbeth and Powell (2013) who claim that memories connect different periods in life. While the long-term residents remember events in the same cultural settings, the bi-cultural migrants recall memories of their homes, highlighting that memory is not just a simple act of nostalgia, but a form of finding normality in a new place (Rishbeth and Powell, 2013). Our results appear to confirm the "fixity FROM flow" subconcept reported by Twigger-Ross and Uzzell (1996) and Di Masso et al. (2019). It claims that migrants may become attached to multiple places throughout the course of their lives, and overcome disruptions of moving to a new place, if "places become interconnected because their physical and social characteristics 'fit' with the person's values" (Di Masso et al., 2019). We also see similarities to the "fixity AND flow" sub-concept, that views compatible experiences in two places as a prerequisite for "willingness and ability to travel" between the two places. Whatever sub-concept might apply, the quasi-implicit assumptions in Di Masso et al. (2019), that there is merely free movement between home and relocation, is decisive when applied to place attachment studies involving forced migration. Many of today's migrants, quite apart from the expected climate migrants of the future, cannot return home, so the disruption of places is not temporary but a fixed element in their lives. That the migrants we

interviewed made clear mention of the interconnectedness between home and specific elements of relocation, suggests that the “fixity FROM flow” sub-concept is also applicable to forced migrants with very limited ability to return home. Further our results can contribute to (methodological) *refinement of the fixity-flow theory* in two aspects: (1) childhood memories aid in understanding temporal aspects (past/present) of fixity-flow processes, and (2) standardized, fully immersed round trips (“go along” sensu DiMasso et al., 2019) allow us to study the influence of all senses on place identity.

5. Conclusion

This study aimed to investigate whether and how place dependency, place attachment and place identity in bi-cultural migrants and long-term residents are fostered in historical and contemporary urban parks. To achieve this, we used the rich theory on place attachment in a slightly different context and applied it in a directed qualitative content analysis to generate grounded hypotheses. Through iterative content analysis and the repeated consultation of relevant theory, we achieved a stable framework of ten sub-categories that describe how people express themselves when moving in different urban park structures. We found that historically rich parks enabled interviewees to associate with the place and establish bonds. The opportunities to form bonds via memories, meanings and history were much more limited by contemporary green structures. Although the historically rich park structure has no or little meaning for bi-cultural migrants, it triggers memories of their origins. Persian gardens appear to have the potential to act as interconnected places where origins and relocation become complementary and provide different yet compatible experiences. We consider this finding to be an empirical validation of the “fixity-from-flow” concept of Di Masso et al. (2019).

This study offers new insights for the planning of public spaces and the design of parks, particularly considering increasing future mobility. Park designs that satisfy more than just the place dependency needs of users should be encouraged, as should the protection of historical structures. The latter offer opportunities for both long-term resident and bi-cultural migrants to form attachments to places, and establish individual-personal and group-specific aspects of identity. Although this result was established with a very prominent historical structure (the

Persian garden), we hypothesize that even smaller and less prominent historical structures would facilitate similar bonding to places. We therefore advocate park management that takes the place attachment of their long-term resident and bi-cultural migrants into account. Such strategies for park management should be based on a broad and public discourse on place identity for long-term & bi-cultural residents, followed by studies of the city-specific drivers of place attachment in urban parks. The ten sub-categories of place attachment proposed in this paper offer an initial starting point from which these drivers could be determined. Further, specific park elements that enable both long-term & bi-cultural residents to connect to multiple places (from their childhoods) should be identified and receive special attention in park management strategies.

Author statement

Mahsa Bazrafshan: conceptualization, methodology, formal analysis, investigation, data curation, writing - review, funding acquisition.

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Declaration of Competing Interest

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Appendix A. Full set of statements of interviewees

Statement (italic: mentioned in the paper)	Persian garden (1) or modern park (2)	Cultural background: Persian (1) or Afghan (2)
If I wish to meet someone, where I do so depends on the type of meeting. In the case of a romantic meeting I will come here.	1	1
<i>This area is like a path for going to the other side of neighborhood</i>	1	1
<i>It is worth walking a greater distance to the Persian garden rather than going to the modern park.</i>	1	1
The Persian garden creates a microclimate area which is needed in Iran.	1	1
The structure of the park makes sense to me.	1	1
This garden is a long way from my home.	1	1
I do like to visit this garden once a year.	1	1
There is not much to do in the Persian garden.	1	1
<i>The entrance is attractive, inviting me to enter the park.</i>	1	1
The diversity of people is lower compared to the other parks in the city.	1	1
This type of gardening is great.	1	1
When you visit a Persian garden, you can think about other gardens and imagine how they should be.	1	1
These are all Persian garden elements but they do not fit well in this area. This structure is not suitable here.	1	1
I cannot do anything else here except sit. I am not allowed to do anything else here.	1	1
This is not a place for a picnic, I do not know why they have built picnic platforms here.	1	1
<i>The structure is clear for me and I can recognise where I am.</i>	1	1
This is not just a park, I feel as though I am walking in a traditional house.	1	1
In the Persian garden, there is a feeling of being close to other people and a desire to start chatting with them.	1	1
Flowers, trees, water and the sound of water are the important parts of the Persian garden.	1	1
I can easily find my way around the Persian garden.	1	1
I can walk and enjoy the scenery which is the same in all gardens.	1	1

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Statement (italic: mentioned in the paper)	Persian garden (1) or modern park (2)	Cultural background: Persian (1) or Afghan (2)
Water and wooden material always create a friendly and cosy atmosphere.	1	1
Old trees near a stream help me to relax.	1	1
I would be scared to visit this park during the night if I went alone.	1	1
It is not a real Persian garden but I feel relaxed, as if it were a real one.	1	1
I can feel a positive energy from the environment here in the Persian garden.	1	1
The sound of water is really soothing in this park.	1	1
I think that the combination of water and wood is always pleasant.	1	1
If an area of this park disappeared tomorrow, I would be upset.	1	1
<i>I have a constant smile on my face when I am in the Persian garden.</i>	1	1
It is a pity that I did not visit this park before.	1	1
It is my kind of park in which I can rest and relax.	1	1
I have no fear when I am walking in this place.	1	1
I have the impression that I would love this place and would visit it more often.	1	1
This garden makes me feel alone and makes me think about my future.	1	1
What will happen to me and my family 100 years from now?	1	1
The sound of water is awesome here in this dry area.	1	1
It is wonderful that I can listen to this sound when I am walking in this green area.	1	1
I cannot feel secure here, everyone is able to see what I am doing.	1	1
I do not regard this park as a Persian garden.	1	1
The light is less than usual but I like it.	1	1
I prefer to stay in this park alone and relax.	1	1
I prefer to be alone here in this garden.	1	1
I do like the wooden benches and water bodies in this garden.	1	1
I can make reasonable decisions in this place because the environment does not have an effect on my mind.	1	1
<i>I would like to have my first date in this park, because it's cosy.</i>	1	1
There are plenty of friendly people here.	1	1
The sound of water in parks reminds me of good memories.	1	1
<i>This place reminds me of Grandma's place, where we had fun with my cousins.</i>	1	1
You cannot feel that boundary within an urban area while you are in the heart of city.	1	1
For me, the definition of a park is the same as the Persian garden, however, I was born in the desert and I do not have any images from my childhood.	1	1
<i>The diversity of plants and the cloudy sky, the vibrant leaves with the sound of the wind reminds me of childhood in a place similar to this.</i>	1	1
<i>This garden is a part of my childhood because it is one of our recreation areas in Kerman.</i>	1	1
The blue sky reminded me of my childhood when I was playing with my father here in this garden.	1	1
I cannot see any relationship between this field and the structure of the Persian garden.	1	1
For sure I will bring a foreign guest here but I will let her know that it is just a structure of a Persian garden.	1	1
I do not feel that there is a great deal of history in this place.	1	1
Whenever I want to relax and think about my life, I prefer to go there.	1	1
I feel more attached to this kind of place.	1	1
<i>I can see the depth of history here.</i>	1	1
I can easily find my way around the Persian garden when it is full of vegetation and mature trees.	1	1
<i>I belong to this kind of garden.</i>	1	1
Even people from different cultures and countries like to respect nature when they move around a Persian garden.	1	1
I have the impression that I have known this place for a long time.	1	1
I belong in this place and I do like to visit this place often.	1	1
<i>here is a part of my identity.</i>	1	1
I prefer to go to this park with my family.	1	1
The quality of the park is below my expectations.	1	2
It is not that easy to figure out how I can find my way back to this spot in the park.	1	2
The key feature of this park is the stream which is not natural.	1	2
I guess that they have created this place so that I and other Afghan people feel at home.	1	2
I wish to be able to visit this place without having to pay an entrance fee.	1	2
I see that some areas have been improved, therefore it is worth paying money to use it.	1	2
The sound of water and the combination of trees and shadows is another element of the Persian garden structure.	1	2
I can sense a kind of structure in this park but it is not that obvious.	1	2
The entrance is amazing in my view.	1	2
The fountain in the centre is so beautiful.	1	2
<i>The line of trees and the sound of water is amazing to me.</i>	1	2
<i>I'm impressed with the area and scale of this place.</i>	1	2
This park is small, and I feel restricted. I feel some constraints that I have to respect.	1	2
I cannot do anything wrong in this place.	1	2
<i>I should follow the rules and I do not have permission to do what I want to do.</i>	1	2
Nothing will happen if one part of this park is detached from the whole structure.	1	2
Diversity of activity is a vital element of parks.	1	2
<i>I cannot do anything. I am not allowed to do what I want to do.</i>	1	2
I can sense boundaries in this place and rules that I should respect.	1	2
<i>Everyone accepts my nationality here.</i>	1	2
I can rest and feel free in this park.	1	2
This park is going to be my favourite place to rest and relax with my family.	1	2
If I come here twice a month, my worries will disappear.	1	2
<i>The woods, along with this stream, give me a great feeling that I would like to stay here forever.</i>	1	2
I am sure that I can have a great deal of enjoyment in this place.	1	2

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Statement (italic: mentioned in the paper)	Persian garden (1) or modern park (2)	Cultural background: Persian (1) or Afghan (2)
I miss my parents when I am here.	1	2
They (the parents) could come here and we could have an enjoyable time.	1	2
The weather is similar to that of my hometown, which is great for me.	1	2
Greenery with the sound of water makes me happy.	1	2
I am really impressed with this garden.	1	2
I was incredibly happy in this place.	1	2
I had a feeling of happiness inside when I was in this park.	1	2
I can say that I experienced real freedom here.	1	2
I cannot feel at home here because I am always thinking about my own problems.	1	2
Here I feel relaxed and I care about nobody and nothing.	1	2
I would like to be able to do some sort of activity, not just walking or sitting.	1	2
I enjoy it here because I am with my family and that is what is important.	1	2
I was dreaming about visiting this garden.	1	2
I do like to visit here with all my children and have fun with them.	1	2
Once I entered the garden, it brought back memories, images of Afghanistan.	1	2
<i>I have no idea about this type of design but it reminds me of home.</i>	1	2
This old house is similar to my parents' house.	1	2
<i>Once I entered the garden, I saw my mother cooking a meal for us below the trees and I was playing with my siblings.</i>	1	2
The old house reminds me of our house in Afghanistan.	1	2
<i>That view from the windows to the garden is the same as what we had in my parents' garden.</i>	1	2
<i>I felt all the time that I was in my hometown when I walked through this garden.</i>	1	2
When I was in this garden, I saw my mother feeling happy.	1	2
<i>This old house is similar to my parents' place.</i>	1	2
This park will work for me when I feel depressed.	1	2
You should not take your time in this park when you are alone, I do not feel safe in this park.	1	2
This place is completely manmade and I do not feel as though I am walking in a historical park or garden.	1	2
I cannot feel an identity or experience history in this park.	1	2
<i>I do like historical scenery, but I don't feel attached or a sense of belonging to it.</i>	1	2
This place is embedded in history which is why I liked it.	1	2
I have the impression that I am in a garden in Afghanistan, the images are the same as those that my cousin sent me.	1	2
I would like to visit every weekend or every two weeks.	1	2
There is a clock close to the entrance that you cannot find anywhere else.	2	1
When I have a lot of energy I will visit this park.	2	1
It is too crowded during the summer evenings, therefore, I would not come here.	2	1
I can easily feel detached from reality in the different areas of this place.	2	1
Hardscape does not belong in any park!	2	1
1. These two parks cannot be compared.	2	1
I can call this place a park; here is a public space or a square.	2	1
Shadows are missing in this park.	2	1
The diversity of plants is amazing but not that impressive.	2	1
There is a particular view in all areas which is not nice.	2	1
<i>Metal doesn't fit with the other elements.</i>	2	1
It is interesting because you can look at different views in the same place.	2	1
<i>A hard landscape dominates, but what I want is shade.</i>	2	1
I cannot make a connection between the wooden elements in this modern park.	2	1
This does not match with my definition of a park.	2	1
It is a transition place for me and I do not stay here alone.	2	1
This is a place of recreation and not a park.	2	1
This park fits nicely with the definition of a public space, rather than an urban green area.	2	1
This park is a market-place and not a place to have fun, etc.	2	1
There are no connections between the elements of this park.	2	1
It would not make any difference if one area was sealed off.	2	1
The modern elements leave a bad touch in this place.	2	1
It is just a transition area/space	2	1
I will miss this place.	2	1
<i>Here I can do anything, and nobody cares about it.</i>	2	1
A lot of sun light is reflected from the hardscape. I do not like it.	2	1
I miss this park and even encourage my friends to visit it. They can find the park easily using Google Maps.	2	1
I have the feeling that I have to go away from this park.	2	1
I feel exhausted here when I look at this hardscape.	2	1
The hardscape in this park annoys me.	2	1
I cannot feel relaxed in this park.	2	1
I have the impression that certain forces are at work in this place.	2	1
There is an energetic environment in this park. I have to do something, I cannot just sit down and watch other people.	2	1
I cannot understand the reason for those fountains in the centre of the park.	2	1
I prefer to be in an area with handmade elements!	2	1
I do not regard this park as a park or an urban green space.	2	1
<i>I would like to have a lot of interaction with people when I'm here.</i>	2	1
I will go here on for my first date for sure.	2	1
<i>I have good memories here with my boyfriend.</i>	2	1
I really feel attached to the pond in the centre of the restorative area.	2	1
I could not make a connection in this park.	2	1
Some elements did not match nicely. Is it a traditional design or modern one?	2	1

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Statement (italic: mentioned in the paper)	Persian garden (1) or modern park (2)	Cultural background: Persian (1) or Afghan (2)
In this place, I can go to a café for tea with my friends.	2	1
<i>This park meets all our needs when we are outdoors.</i>	2	2
I will definitely visit this park with my friends or I will go to a café near our home.	2	2
Space is abundant in this park.	2	2
It is a modern park and I do like this park.	2	2
Elevation in this park is very important.	2	2
Hardscape is a difficult idea.	2	2
I can easily find my way this park.	2	2
<i>There is too much space here without any planning.</i>	2	2
There are no trees here.	2	2
<i>I feel free in this park.</i>	2	2
Open spaces remind me of a sense of being free, away from any stress.	2	2
There is nothing to feel here.	2	2
I can feel that I am stuck in this place	2	2
My definition of an urban green space matches with this park.	2	2
I would like to spent time in this park with my husband and friends as it gives me a good feeling.	2	2
I will miss this park because I had fun with my friend here.	2	2
The hardscape in this park annoys me.	2	2
This is not a place to rest and relax, I have to be active and do some kind of activity.	2	2
I will come here early in the morning to go running.	2	2
I would not want to visit this park again.	2	2

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