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5 **Generating Meaningful Landscapes for Globalized**
6 **Mobile Societies - Pushing an International Research**
7 **Agenda**

8
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11
12 **Abstract (244 words)**

13 **Context**

14 People's well-being is influenced by the ability to establish a bond with a place and attach meanings to it.
15 Many studies show that the longer people reside in a place, the stronger their place attachment becomes. In
16 today's global societies, the length of residency is vastly reduced because of, e.g., individualistic lifestyles,
17 global workplaces and forced migration (e.g., caused by war or climate change). This trend challenges
18 landscape science: people increasingly need places (landscapes) that can be appropriated easily and quickly
19 by many cultural groups. At the same time, however, these places should not simply become trivial and
20 exchangeable.

21
22 **Objectives**

23 Place attachment/place making studies have become popular in landscape science. However, we have
24 identified a deficit in both the development and application of theory. The research agenda proposed here
25 shall initiate a fundamental discourse on balancing the demands of a global society with the requirements
26 for sustainable landscapes.

27
28 **Methods**

29 Literature review

31 **Results/Conclusions**

32 We propose a research agenda with the following pillars: (1) to expand theories and concepts of place
33 attachment, to accommodate the new and unprecedented drivers generated by 21st century mobile societies,
34 (2) to improve the understanding of how landscapes afford place attachment and identity-building in both
35 long- and short-term resident and migrant groups, and (3) to establish scientific knowledge on the inclusive
36 role of landscapes. Proposed research methods range from qualitative social science studies, in-situ
37 interviews and psychological experiments to the use of social media data and 3D landscape visualization
38 tools.

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40

41 **1. Introduction**

42 It has been widely recognized by geographers and sustainability scientists that landscapes¹ are coupled
43 human-environment systems, most of which, broadly speaking, are cultural landscapes (Bürge et al., 2015a,
44 b; Kienast, 2014; Turner and Gardner, 2015; Verburg et al., 2009, 2013a, b; Wu, 2010, 2013). There is a
45 broad consensus that direct place experiences of these cultural landscapes – together with social integration
46 in the neighbourhood and the local community – defines a sense of place and the strength of place
47 attachments (Low and Altman, 1992; Lewicka, 2011, 2013; Scannell and Gifford, 2010; Risbeth and Powell,
48 2013; Theodori, 2001). Research shows that place attachment is a key component of well-being, involving
49 feelings of safety, belonging, control, self-esteem and a meaningful life (Scannell and Gifford, 2017).
50 Advocates of the ecosystem services concept consider place attachment, sense of place and place identity as
51 subclasses of cultural ecosystem services (<https://cices.eu/resources/>; Hausmann et al., 2016; Lengen and
52 Kistemann, 2012; Wartmann and Purves, 2018). Stobbelaar and Pedroli (2011) emphasize the landscape
53 component as an important pillar or bearer of the identity-building process. Brown et al. (2015) attempt to
54 add a spatially explicit component to the concept by mapping place identity using a participatory GIS.
55 Similar attempts are reported by Kayhko et al. (2011) and Hernandez et al. (2007).
56 Although place attachment research explicitly takes into account how people who are mobile develop a sense
57 of place (Gustafson, 2009), so far the research has not been capable of assessing the impacts of the enormous
58 post-1980 globalization processes and the post-2000 migration patterns caused by megatrends such as the
59 global decoupling of capital (land) and people, the global accessibility of places, global communication
60 technologies and increasing migration of refugees of war and climate change. These megatrends generate
61 mobile societies that entail a strongly reduced length of residency, frequently characterized by an increasing
62 number of people that flip back and forth between the landscapes of childhood and landscapes with no
63 correlation to early phases of socialization or other decisive phases in life (Gustafson, 2009; Kienast et al.,
64 2007; Lewicka, 2011, 2013; Risbeth and Powell, 2012). Manzo et al. (2008) investigated the place
65 attachment of highly mobile people in low-income urban settings. Buijs et al. (2009), Kloek et al. (2015) and
66 Peters et al. (2016) presented interesting comparative studies on how immigrants and natives in the
67 Netherlands, the US, Poland and Germany use “green” areas for recreation. The landscape demands of
68 migrants in Chinese cities were analyzed by Qian et al. (2011). A recent review by Egoz and De Nardi
69 (2017) sheds light on the role of landscapes in promoting inclusion. Migration and establishment of place
70 identity from a more historical perspective were studied by Drozdowski (2007) and by Zückert and Hein-
71 Kircher (2016).
72 Lewicka (2011) found in a survey that “mobility, operationalized by the number of moves, number of
73 different cities in which one lived, and whether one worked abroad or not, contributed to place attachment
74 much less than the pure measure of residence length in the present place. Evidence exists that mobility may
75 change the form of place identity.” Based on the dual-process theory of higher cognition, Raymond et al.

¹ *Definition of “Landscape” according to the European Landscape Convention (ELC):* “Landscape” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. Often the term socio-ecological system (Verburg et al., 2009, 2013a; Haberl et al., 2011) is used as synonym for “Landscape”. *Definition of Landscape Character:* The “distinct and recognizable pattern of elements, that makes one landscape different from another” (Swanwick, 2002).

76 (2017) hypothesized that the two types of cognitions – fast and slow – each have an as yet unknown
77 influence on how people establish a sense of place. For the topic of migration, this insight is crucial and
78 could open a broad field of explanation for how quickly place attachment is established and at what scale.
79 Feldman (1990) found that with increasing mobility the attachment to concrete places decreases and is
80 replaced by a “settlement identity”, meaning an attachment to general classes of places rather than to a place
81 endowed with specific social or individual meanings. If this is true, we must indeed initiate a fundamental
82 discourse about the “landscape needs” of mobile societies; we must validate and expand the current theories
83 and concepts of place attachment.

84
85

86 **2. What We Know: Space – Place and Landscape Negotiation**

87 Our considerations are embedded in a well-established theoretical concept of the landscape formation process
88 (Fig. 1) (Kienast et al., 2007; Hunziker et al., 2007). One of the core theories of this concept is the space-place
89 theory (Bourassa, 1991; Hunziker et al., 2007). This divides the conceptual framework into two components
90 as follows.

91 insert Fig. 1 here

92

93 On the left-hand side of Figure 1 is the physical environment or “space” component, represented by physical
94 elements such as urban fabric, infrastructure, fields, roads, etc. The patterns and processes of the “space”
95 side are well understood and are covered in the landscape ecology literature as well as in the ecosystem
96 service concept (Burkhard et al., 2012; Haines-Young et al., 2012; Helfenstein and Kienast, 2014; Kienast et
97 al., 2009, 2015; Turner and Gardner, 2015; Verburg et al., 2013a, b). The right-hand side (“place”) is the
98 life-world in a philosophical sense. Here, people assign and share cultural, social or individual meanings to
99 landscape elements. In agreement with the current ecosystem service literature, the “place” side of the figure
100 encompasses cultural services. Place meaning supports the identity regulation of individuals and societal
101 groups. The unique setting of perceived and interpreted landscape elements forms the landscape character of
102 a given area (Haines-Young et al., 2007; Swanwick, 2002).

103 The process that leads from space to place is often referred to as “place-making”, i.e., the societal
104 construction of place. The latter depends on (1) how people appropriate the physical environment by
105 interactions, and (2) how they socially integrate into the neighbourhood and local community. It is broadly
106 accepted that both factors are influenced by length of residency (see, e.g., Levicka, 2011). An essential
107 component of place making is how people perceive landscapes. Landscape perception has been embedded in
108 well-known theoretical concepts described by, e.g., Dramstad et al. (2001), Fry et al. (2009), Hunziker et al.
109 (2007) and Kaplan and Kaplan (1989). In accordance with current concepts of landscape perception research,
110 we distinguish three pillars that govern perception: (1) a universal/biological/evolutionary pillar, (2) a socio-
111 cultural pillar and (3) an individual pillar. It is debated how strongly each pillar contributes to perceiving the
112 landscape. Pillar 1 is the most contested (Hägerhäll et al. 2018), stemming from theories such as the savanna
113 theory (Appleton, 1975; Orians, 1986), the prospect-refuge theory, and Kaplan and Kaplan’s (1989)

114 information processing theory. These theories claim that a certain part of people's behaviour is universal
115 (biologically/evolutionarily determined). The research in pillar 2 suggests that perception is the result of
116 socio-cultural influences and agreements (e.g., Buchecker, 2009; Kianicka et al., 2006), while pillar 3
117 suggests that individual attitudes and preferences, but also individual outdoor activities, shape perceptions of
118 landscapes (Hunziker et al., 2007; Kienast et al., 2015).

119 The process of assigning meanings to landscapes is described in Brandenburg and Carroll (1995), Stedmann
120 (2008) and Brehm et al. (2013). Place meanings represent cognitions that individuals or groups associate
121 with an area, rather than personal bonds such as place identity and place attachment (Joergensen and
122 Stedman, 2006; Casakin et al., 2008). The latter two concepts clearly belong to the "place" side of the
123 conceptual model, i.e., the side that describes how landscapes are experienced by individuals.

124 As we proceed in a clockwise direction in Figure 1, we enter the negotiation realm. Based on life experiences,
125 individuals, groups or entire societies fulfil their needs and determine their landscape demands, which are –
126 in an ideal case – then communicated via multiple forms of landscape negotiation into planning action or
127 changes in land use. We observe that these landscape negotiations go far beyond functional aspects and are
128 increasingly centered around place meanings, involving societal discourses on lifestyles (Stroebele and
129 Hunziker, 2017). As shown by, e.g., Devine-Wright and Batel (2017), place attachment and meanings play
130 an important role in accepting or rejecting infrastructure projects. These demands, which are strongly
131 influenced by meanings, must be balanced with "the capacity of a landscape to consistently provide long-
132 term, landscape-specific ecosystem services essential for maintaining and improving human well-being"
133 (Wu, 2013). The aforementioned link of meaningful landscapes to sustainability science was also broadly
134 discussed by Opdam et al. (2018).

135 Landscape demands are not by any means the only interests that enter the landscape negotiation arena. Since
136 this paper is concerned with landscape aspects, we do not examine these issues more deeply but merely
137 mention economic pressures or policy decisions as external use interests that are as important as landscape-
138 related demands. Negotiation processes differ widely depending on the planning culture of a region. They
139 may be top-down approaches, where planning action is delegated to technical experts trying to fulfil the
140 demands of the population. Many countries also have institutionalized forms of bottom-up participation
141 (Fürst et al., 2010). Alternatively, there is a wide range of spontaneous self-organized planning processes
142 (Portugali, 2000; Portugali and Alfasi, 2008), where citizens initiate planning activities individually, as many
143 cities have become unplannable (Portugali, 2000).

144

145 **3. What We Do Not Know: Will Mobile Societies Be Able to Participate in an Active Discourse on** 146 **Landscape Meanings?**

147 We know that, over the centuries, the process described in Fig. 1 has fulfilled its function in most regions of
148 the world by generating a wealth of authentic and fascinating cultural landscapes. Contemporary migratory
149 effects – whether through voluntary or forced migration – cause some landscapes to lose their resident
150 population. At the same time, the landscapes of the inward migration regions must generate livable

151 environments satisfying a broad array of demands. Their success in providing landscapes that are meaningful
152 to all groups depend on the following questions:

153

- 154 • Will there be an active dialogue on landscape issues between the increasingly mobile landscape
155 users and the (long-stay) providers?
- 156 • How will meanings be assigned to landscapes and be socially shared in mobile societies, and by
157 whom?
- 158 • Which landscape elements provide options or necessary affordances to allow places to be
159 appropriated by migrant groups?
- 160 • Will there be active participation and self-organization in landscape development? Are planning
161 agencies aware of the needs of the migrants and how can migrants be involved in these processes?
- 162 • Can landscapes maintain their inclusive and integrative role in an increasingly urban, suburban and
163 virtual environment?
- 164 • Will landscapes become trivial and exchangeable due to these processes or could their meaning-
165 making function even benefit from the mobile society?

166

167 These unsolved questions for both the theory and practice of landscape stewardship (Penker et al., 2013) and
168 people's well-being (Buchecker and Degenhardt, 2015) are the starting points of this framework proposal.

169

170 **4. Research Challenge: The Formation of Place Attachment in Mobile Societies**

171 The questions raised above challenge the model in Fig. 1 considerably. Is it robust enough and sufficiently
172 process based to mimic landscape development under considerably changed boundary conditions? To answer
173 this question, a multidisciplinary research effort should be initiated, considering hundreds of individuals
174 having different mobility patterns, as shown in Fig. 2.

175

176 insert Fig. 2 here

177

178 This setting is in line with the analyses of, e.g., Gustafson (2009), Lewicka (2013) and Peters et al. (2016),
179 who studied place attachment in mobile segments of the population. Table 1 highlights some examples of
180 population segments that are highly relevant for studying place attachment in mobile societies. There should
181 be a special focus on how mobile people perceive landscapes, either in terms of self-reflection (experiences
182 and achievements) or social integration (values, norms, symbols and meanings) (Hunziker et al., 2007;
183 Ströbele & Hunziker, 2017). In addition, focus-group studies should gather the visual, sensual and social-
184 psychological landscape demands of the target groups.

185

186 insert Table 1 here

187

188 The following foci should be of special relevance in the proposed research agenda.

189

190 *Landscape meanings and the role of early phases of socialization:* It would be useful to know what
191 landscape elements carry negative or positive connotations, depending on where people grew up, where they
192 are currently living and what outdoor activities they engage in. One might concentrate on well-established
193 perception concepts such as authenticity, fascination and the four Kaplan and Kaplan dimensions of
194 complexity, coherence, mystery and legibility, as well as landscape beauty (Hunziker et al., 2007; Kienast et
195 al., 2015), or, it might be challenging to explore the role the remembered physical space of childhood and
196 other decisive phases in life play in landscape perception and forming place meanings in new places (Adevi
197 and Grahn, 2012; Shamai, 1991; Sebba, 1991). Considering the currently increasing forced migration,
198 special attention should be given to war refugees. Links to trauma research are possible and should be
199 intensively sought. The papers of Taylor (2008), Risbeth and Powell (2013), Powell and Risbeth (2012) and
200 Egoz and De Nardi (2017) give some indication of how this research could be focused and directed towards
201 the novel theme of the role of landscapes in facilitating inclusion in (forced) migrations.

202

203 For all mobile groups, the meanings of the landscape elements seen or experienced at the place of origin and
204 at the current place could be analyzed, as was done in an earlier study on local long-term residents and
205 tourists in Alpine settings (Kianicka et al., 2006). This is aimed at identifying landscape elements with
206 different physical appearances but similar self-related meanings in the new environment. Various forms of
207 visualization should be explored to gain insight into various cognitive, psychological and cultural aspects of
208 assigning meanings and establishing a bond with a place. Nowadays, such visualizations range from simple
209 hand drawings to visual 3D video labs with devices to measure physiological reactions (Grêt-Regamey et al.,
210 2013; Shinazi and Thrash, 2018).

211

212 *Social interactions (Manzo et al., 2006, 2008):* Despite the strong focus on landscape, we do not neglect the
213 fact that place-identity development is strongly influenced by social networks, both at the individual and the
214 community level. Some authors, (e.g., Hidalgo and Hernandez, 2001) even suggest that social interactions
215 are more important than attachment to physical places. We argue that many social interactions evolve while
216 engaging in landscape-related activities, such as gardening or taking part in outdoor activity groups, and that
217 social interactions and landscape-related activities are mutually dependent on each other. As shown by
218 several authors, leaving traces of one's own activities in a landscape can support place attachment and the
219 identity-building process (Buchecker, 2009; Buchecker et al., 2003; Manzo et al., 2006). It would be
220 interesting to investigate what activities are possible in the various study regions that allow mobile people to
221 leave traces, thus appropriating places. In urban environments this could be activities such as urban
222 gardening or ways of being involved in landscape stewardship. In rural environments it could consist of
223 participating in farming activities or even having one's own piece of land. The latter has been suggested as a
224 driver of place attachment by Jorgenson and Stedman (2006) (ownership predictor) and the former in a study
225 by Mühlmann and Buchecker (2013).

226

227

228 **5. Impacts**

229 This research will improve our theoretical understanding of the landscape-forming processes of increasingly
230 mobile, global societies. The findings will contribute considerably to the implementation of the
231 recommendations of landscape conventions, (e.g., the European Landscape Convention (ELC)) and show
232 how the public can be involved in a participatory way in protecting, managing and designing sustainable
233 landscapes that balance demands and capacity of a landscape properly (Opdam et al., 2018; Wu 2013).

234 The research agenda should also be supported by the Global Land Project (GLP), the International
235 Association for Landscape Ecology (IALE), the International Association People-Environment Studies
236 (IAPS) and the Global Landscape Forum. The knowledge gained in the proposed research will not only be
237 crucial for establishing and expanding theories of landscape experience and place attachment, but also for
238 establishing novel forms of landscape planning, ranging from very formalized strategic master plans to
239 spontaneous planning activities (Portugali and Alfasi, 2008). These planning activities should be able to
240 incorporate – besides the current negotiation rules – the newly gained knowledge about the landscape
241 demands of mobile groups and novel planning rules and incentives. Technically, the foreseen models come
242 closest to the “Pimp your landscape” tool developed during an Interreg III A project (Fürst et al., 2010) or
243 other multiple-criteria platforms, e.g., those described by Koschke et al. (2012), Brown and Robinson
244 (2006) or Villa et al. (2014). Finally, the knowledge gained will contribute considerably to understanding
245 the role of landscapes in the migration process. At present, leading think tanks such as the MPI (Migration
246 Policy Institute) ascribe inclusive and integrative potential almost exclusively to urban areas. Investigating
247 the inclusive potential of all landscapes – including rural areas – is considered an innovative step forward.

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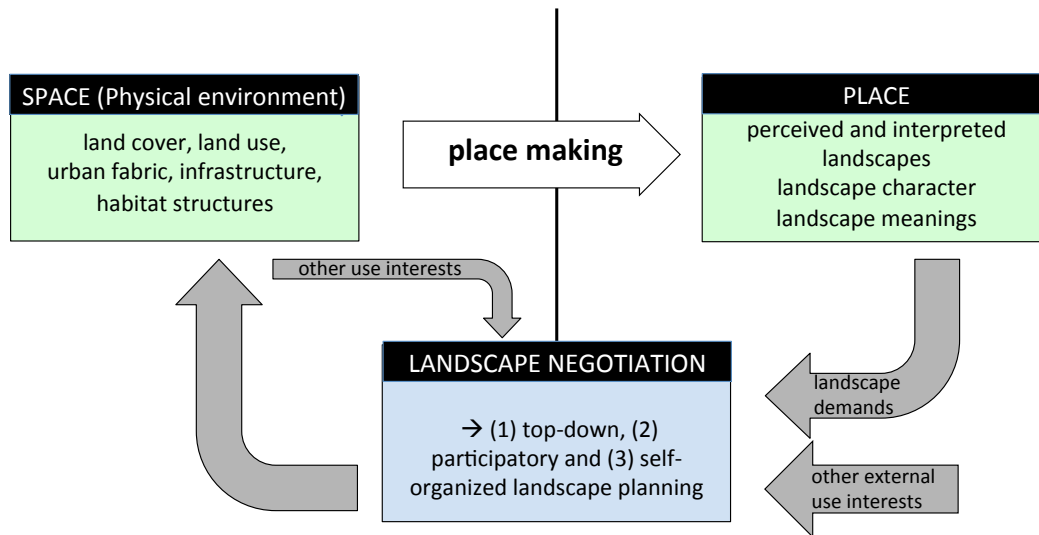
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397 **Figure Captions**

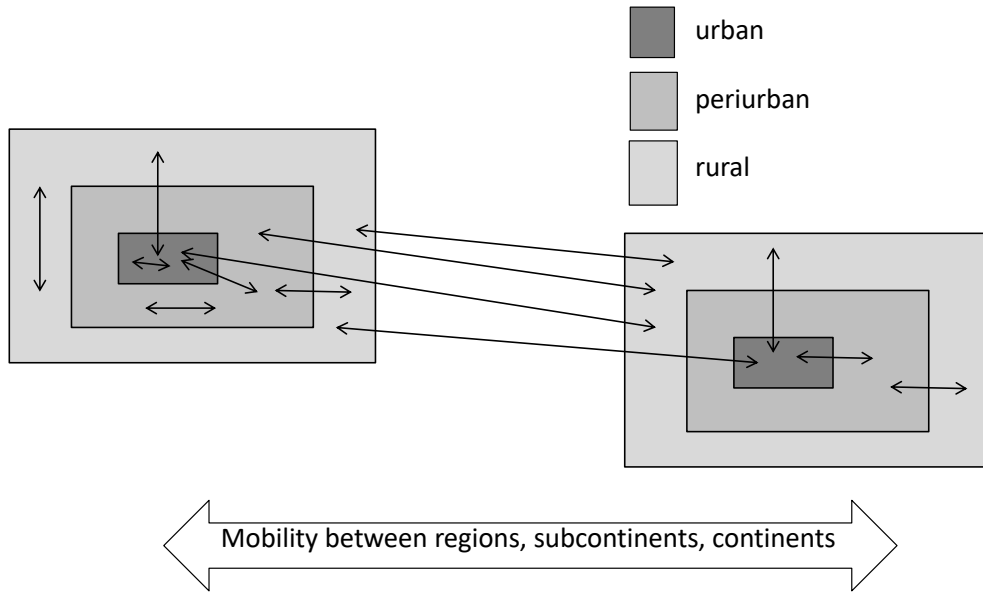
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399 Fig. 1: Conceptual framework.



400

401 Fig. 2: Schematic mobility patterns of the population.



402
403

404 Table 1: Proposed segments of the population that are highly relevant for place attachment studies in the
405 context of mobile societies.
406

voluntary migration	short-term stay	skilled	retired	moving within the same culture	young	male	Socially integrated
forced migration	long-term stay	unskilled	active	moving to different culture	old	female	Not integrated

407