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Access to ecosystem benefits: more than proximity

Citation for published version:

Szaboova, L, Brown, K & Fisher, J 2019, 'Access to ecosystem benefits: more than proximity', *Society & Natural Resources*. <https://doi.org/10.1080/08941920.2018.1556759>

Digital Object Identifier (DOI):

[10.1080/08941920.2018.1556759](https://doi.org/10.1080/08941920.2018.1556759)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Society & Natural Resources

Publisher Rights Statement:

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1 **Title: Access to ecosystem benefits: more than proximity**

2 Running title: Access to ecosystem benefits

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13 **Key words:** ecosystem benefits, environmental spaces, psychosocial access mechanisms,

14 qualitative approach, socio-economic disadvantage, ~~Cornwall~~ [United Kingdom](#)

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20 **Access to ecosystem benefits: more than proximity**

21 **Abstract**

22 This article responds to a gap in existing research on access to environmental spaces in rural
23 and coastal areas, especially of less advantaged members of society who could potentially
24 benefit the most from exposure to such environments but face a whole host of constraints.
25 We build on existing theorisations of access to natural resources and ecosystem services in
26 the development literature and integrate insights from the sociology of access to
27 environmental spaces, health geography and environmental psychology in industrialised
28 contexts. We employ semi-structured interviews and photo elicitation with socio-
29 economically disadvantaged respondents in Cornwall, UK. Participants' accounts reveal four
30 mechanisms that mediate access to ecosystem benefits: rights-based, physical, structural and
31 relational, and psychosocial, and we thus extend Ribot and Peluso's access framework. We
32 conclude that socio-economic disadvantage mediates access to environmental spaces, in
33 particular through psychosocial mechanisms, and highlight the interlinked and
34 complementary nature of the four types of access mechanisms.

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41 **Introduction**

42 Research on access to environmental spaces and ecosystem services can be located within
43 two broad bodies of literature according to geographic focus: (i) the development literature
44 of livelihoods and resource use in the global south, and within the (ii) health geography and
45 environmental psychology of interactions with nature in industrialised countries. A number
46 of limitations in these bodies of literature around how they conceptualise, assess and evaluate
47 access, have attracted criticism and instigated calls for improved social sensitivity in access
48 analyses (Daw et al. 2011; Dawson and Martin 2015; Morris et al. 2011).

49
50 Existing conceptualizations of the ecosystem services and wellbeing relationship in the
51 mainstream ecosystem services literature commonly take an aggregated perspective,
52 assuming that the overall availability of ecosystem services leads to uniform wellbeing
53 outcomes for society (MEA 2005). While some advances have been made towards better
54 understanding access to natural resources by different stakeholders, evident in a number of
55 conceptual and empirical analyses (Leach, Mearns, and Scoones 1999; Ribot and Peluso 2003;
56 Ribot 1998; Schlager and Ostrom 1992; Sikor, He, and Lestrelin 2017), aggregate approaches
57 continue to be applied. These, however, do not sufficiently consider social difference, and fail
58 to recognize access as a prerequisite of the ability to experience wellbeing from ecosystem
59 services. A focus on the aggregate availability of ecosystem services overlooks winners and
60 losers in terms of who derives benefits from which ecosystem services, obscures mechanisms
61 of access that determine who benefits, and fails to take into account individual circumstances
62 that influence people's ability to translate services into wellbeing (Dawson and Martin 2015;
63 Daw et al. 2011).

64

65 Research on access to the environment in industrialised settings evolved around the
66 recognition that human-nature interactions contribute to improved physical and mental
67 health (Hartig, Mang, and Evans 1991; Hartig et al. 2014; Mitchell and Popham 2008). In this
68 body of research, the beneficial effect of nature on human health and wellbeing is often
69 inferred by taking a spatial approach to interactions with environmental spaces (e.g. Mitchell
70 and Popham 2008; MacIntyre, MacDonald, and Ellaway 2008; Jones, Hillsdon, and Coombes
71 2009; Wheeler et al. 2012), where distance is used as a proxy indicator of access. While some
72 of these studies make strides towards including variables that capture socio-economic
73 gradients (Mitchell and Popham 2008; Shanahan et al. 2014; Wheeler et al. 2012) and ethnic
74 minority groups (Morgan Hughey et al. 2016), they are constrained by a number of limitations
75 characteristic of population level survey data. For instance, large scale surveys may overlook
76 the most marginalised groups of the population who are least likely to access and benefit
77 from the environment (e.g. those with no fixed abode), and do not capture more qualitative
78 aspects of the environment and wellbeing relationship, such as people's values and
79 perceptions about the environment (Jones, Hillsdon, and Coombes 2009; MacIntyre,
80 MacDonald, and Ellaway 2008), which are instrumental in shaping *how* or *why* people engage
81 (or not) with environmental spaces. Moreover, a spatial focus on access can lead to the
82 incorrect assumption in policy and planning circles that creating more green spaces will
83 invariably facilitate access to and engagement with these.

84

85 However, it has become increasingly recognized that reducing distance to and/or making a
86 greater number of green spaces available is not a panacea for improved access (Morris et al.
87 2011), and as an alternative to proximity-based access analyses, a group of geographers
88 propose a cultural politics theoretical lens combined with qualitative inquiry (Byrne and

89 Wolch 2009; Byrne 2012). This explores the links between socio-ecological exclusion and
90 underlying power relations embedded in the history of landscapes, land-use systems and
91 'ideologies of nature' (Castree 1995) that shape people's perceptions, meanings and attitudes
92 towards environmental spaces. Their work is inspired by earlier research on the role of
93 discourses of race and place in shaping access to the English countryside, which is branded a
94 'white landscape' where people of colour feel 'out of place' and unwelcome (Agyeman 1990).
95 Indeed, empirical research on access to places has demonstrated the socially constructed
96 nature of (not only environmental) spaces and highlighted a suite of access barriers relating
97 to perceptions of safety, hostility and a lack of belonging among minority groups (Spicer 2008;
98 Tolia-Kelly 2006; Byrne 2012). Additionally, a number of authors studying forest access in the
99 UK, developed a classification of barriers to accessing woodlands (Weldon, Bailey, and O'Brien
100 2007; O'Brien and Tabbush 2005; Morris et al. 2011). They suggest that alongside physical
101 and economic factors, people's emotions, personalities and personal circumstances also play
102 a role in shaping engagement with forests. As such, these studies begin to discuss the role of
103 structural factors in shaping some of the less obvious mechanisms of access, related to the
104 social and cultural histories of people and places.

105
106 Despite the growing body of access literature, relatively little research examines access to the
107 environment and ecosystem services among disadvantaged people in rural or coastal settings
108 in industrialised contexts (e.g. Wheeler et al. 2012), where green or 'blue' spaces are
109 abundant, but the dynamics of access might diverge from urban settings. While rural lifestyles
110 have commonly been portrayed as 'problem-free', happy and healthy, a large body of
111 research emerged around contesting discourses of the 'rural idyll', and highlighted some of
112 the challenges present in rural areas, such as fewer employment opportunities, lower

113 incomes, gaps in service provision, and experiences of isolation (e.g. Cloke et al. 1995; Cloke,
114 Milbourne, and Thomas 1997; Farrington and Farrington 2005; Shucksmith et al. 2000). These
115 constraints are the product of structural factors characteristic of rural areas and they are likely
116 to influence people's access to environmental spaces by creating a system of dispositions, or
117 *habitus* (Bourdieu 1977). *Habitus* is the vehicle through which the objective material structures
118 of a given context become internalised, often sub-consciously, in the subjective tastes,
119 preferences and embodied experiences of people belonging to that context (Bourdieu 1977;
120 Holt 2008). Thus, *habitus* can be a potent vehicle for reproducing existing disadvantage (Holt
121 2008), as people's actions, shaped by dispositions, perpetuate the very structures that
122 produce disadvantage in the first place. Yet there is an evident shortage, particularly, in
123 qualitative work examining the role of rural structures in shaping access to coastal and other
124 environmental spaces, especially of less advantaged members of society, who could
125 potentially benefit the most from exposure to such environments (Wheeler et al. 2012), but
126 face a whole host of constraints.

127
128 To address this limitation, this paper seeks to integrate perspectives from the development
129 literature into conceptualizations of access to the environment within industrialized country
130 contexts. We ~~evaluate~~consider two frameworks of access to natural resources from the
131 development literature: Leach and colleagues' 'environmental entitlements' (1999) and Ribot
132 and Peluso's 'theory of access' (2003), as these contribute to a holistic lens through which to
133 explore access to ecosystem services. We then present a semi-inductive exploratory analysis
134 guided by Ribot and Peluso's theory of access to examine how people living with socio-
135 economic constraints access environmental spaces in Cornwall. Our findings point to intimate
136 links between structural factors and access mechanisms and expand the scope of current

137 access frameworks by explicitly highlighting the role of psychosocial mechanisms in mediating
138 access.

139

140 Theorizing access to ecosystem services

141

142 The need for socially differentiated analyses of access to resources was first articulated by
143 Sen (1976; 1977; 1981) in his work on poverty and famines, which contests the then dominant
144 food availability decline (FAD) hypothesis and proposes ‘entitlements failure’ as an alternative
145 explanation for famine: ‘starvation is a matter of some people not *having* enough food to eat,
146 and not a matter of there *being* not enough food’ (Sen 1981: 434), suggesting that famine is
147 caused by maldistribution, rather than reduction in aggregate availability of food. According
148 to Sen, people gain access to food by means of their endowments (e.g. labour, assets, and
149 other commodities) and exchange entitlement, which involves trading endowments for food
150 (e.g. selling labour, selling off assets). Socially differentiated access analyses have since been
151 adopted by development scholars for a better understanding of who can benefit from
152 environmental resources (Leach et al. 1999; Ribot and Peluso 2003).

153

154 Building on Sen’s work, Leach and colleagues propose an alternative to the focus on aggregate
155 availability of ecosystem services and introduce ‘environmental entitlements’ as a concept
156 for exploring social differentiation in access to environmental goods and services. Leach et al.
157 focus on the institutions governing access to environmental services (such as statutory
158 legislation, customary rights, or informal institutions). While they recognize that power
159 relations are reflected in institutional dynamics, they define environmental entitlements as
160 ‘alternative sets of utilities derived from environmental goods and services over which social

161 actors have legitimate effective command' (Leach et al. 1999: 233). 'Legitimate effective
162 command', however, suggests that people have already established access to the
163 environment from which goods and services are derived.

164

165 In addition to Leach et al.'s institutional focus, Ribot and Peluso's theory of access highlights
166 the importance of 'bundles of power' alongside 'bundles of rights' in mediating people's
167 *ability* to benefit from resources (Ribot and Peluso 2003). Bundles of power are shaped by the
168 social, political-economic and cultural contexts within which access is sought. Power relations
169 act in parallel with rights-based mechanisms of access (which include legal and illegal means)
170 and comprise several heuristic categories: access to markets, labour opportunities,
171 knowledge, capital, technology, authority, as well as identity and social relationships (Ribot
172 and Peluso 2003) ~~(Table 1)~~. While Leach et al. also recognize that power asymmetries at the
173 household and community level influence people's ability to mobilize their endowments to
174 gain entitlements, they do not fully develop this idea within their framework. While both
175 frameworks examine access to benefits from environmental resources, Ribot and Peluso's
176 (2003) theory of access presents a more comprehensive framework that explicitly accounts
177 for the interaction between people's context and their ability to benefit from environmental
178 resources by differentiating between rights-based and structural-relational mechanisms of
179 access (Table 1). We note that the framework was developed for access analyses in
180 developing contexts, where the mechanisms of gaining access to environmental spaces may
181 not fully resonate with those in industrialised countries. Therefore, while our analysis is
182 guided by Ribot and Peluso's (2003) theory of access, we remain sensitive to insights emerging
183 from the experiences of our participants.

184

185 ~~Table 1. A comparison of environmental elements and theory of access approaches to ecosystem services. Sources: Stead et al. 1999; Roland-Pérez 2008~~

187 **3. Methods**

189 **3.1 Research design**

190 Our access analysis formed part of a larger study exploring the contribution of ecosystem
191 services to wellbeing in Cornwall. Participants were recruited through a gatekeeper
192 organization, Cornwall Neighbourhoods for Change (CN4C), a local social enterprise working
193 with residents of disadvantaged neighbourhoods (CN4C 2018(www.cn4c.org.uk)). Purposive
194 sampling followed the principle of relevance for the research objective (Bryman 2008), with
195 an emphasis on people's characteristics and experiences of a phenomenon (Guest, Bunce,
196 and Johnson 2006; Starks and Brown Trinidad 2007), i.e. socio-economic disadvantage. Rather
197 than aiming for a representative sample of the Cornish population, we wanted to explore in
198 qualitative depth people's lived experiences of the environment-wellbeing nexus, including
199 access to environmental spaces in the context of disadvantage. Our participants experienced
200 various manifestations of disadvantage, including mental health issues (e.g. depression,
201 anxiety) and shocks and stresses (e.g. eviction/homelessness, loss of livelihood), and sought
202 help and support from CN4C. Our study included inland locations, in particular the
203 Camborne/Redruth area, which has been identified as a pocket of deprivation (Cornwall
204 Council 2015a), and a coastal location. Trust building with potential participants took place
205 gradually (Castleden, Garvin, and First Nation 2008; Moreno-John et al. 2004) over four
206 months (November 2013 – February 2014), when the first author became an active volunteer
207 at CN4C. Ethical approval was obtained from the College of Life and Environmental Sciences
208 of the ~~[Removed for SNR blind review]~~University of Exeter. Note was taken of participants'

209 social and cultural context to prevent harm to relationships and wellbeing. To protect
210 participants' identity and privacy, they are referred to using pseudonyms.

211

212 The study involved several research encounters over an 18-month period (Figure 1). We used
213 participatory and qualitative methods to collect contextually rich data to understand how
214 participants' experiences are shaped over time by the social, cultural, economic and
215 environmental context. As commonly experienced in qualitative and participatory research
216 (Castleden, Garvin, and First Nation 2008), participant retention was a key challenge due to
217 the time commitment required, and sometimes, the lack of stability in the lives of research
218 participants. From the initial sample of 25 focus group participants, eleven agreed to be
219 involved in subsequent activities, however, only eight people completed all stages of the
220 study, including the access analysis. This included four male and four female participants
221 whose ages ranged from 30 to 74. Two participants lived on the coast of Cornwall, whereas
222 the other six participants lived in towns and villages not adjacent to the coast. Three
223 participants have been unemployed for some time at the time of the research, two were
224 working part-time, two were retired, and one participant was self-employed. Most
225 participants were affected by multiple forms of socio-economic disadvantage. For example,
226 poor mental health and anxiety (n=3) were in some cases reported by participants who also
227 experienced some unexpected shock (e.g. loss of home or job) or a stressful life episode (n=4),
228 as well as a participant who was affected by a serious physical illness (n=1). Other forms of

229 socio-economic disadvantage affecting the day-to-day lives of our participants included social
230 isolation (n=4) and lone parenting (n=2).

231

232 **Figure 1.** Timeline of research activities: the research process consisted of multiple
233 encounters with the same participants over 18 months.

234

235 Access to environmental spaces was explored through photo elicitation (Collier 1957; Collier
236 and Collier 1986) and semi-structured interviews. Participants were presented photo cards
237 containing a collage of photographs taken by them during the photovoice encounter,
238 representing eleven environmental spaces. Participants were then asked to sort the photo
239 cards into three piles according to their use of the environmental spaces depicted on them
240 (use on a regular basis, use infrequently or rarely, do not use at all). Each pile was discussed
241 in turn, eliciting information about access to, motivations for use, and experiences of
242 environmental spaces. Interviews were audio recorded, transcribed and thematically
243 analysed. We employed a semi-inductive coding approach, thus some categories (e.g. rights-
244 based access) were derived from Ribot and Peluso's Theory of access, while others (e.g.
245 psychosocial access) emerged from the data through open coding (Ryan and Bernard 2003).

246

247 **3.2 Case study Background and key concepts**

248

249 Our case study location, Cornwall UK, features an extensive coastline and several areas of
250 outstanding natural beauty. Over 90% of Cornwall's total land area is classified as green-space
251 with rich biodiversity and a number of important habitats (Bromley 2010). This is coupled with

252 a high incidence of socio-economic disadvantage, including several ‘pockets of deprivation’,
253 as measured by the Index of Multiple Deprivation (Cornwall Council 2015a). As a result,
254 Cornwall has qualified for development related financial support from the European Union
255 (Convergence Cornwall 2018). At the time of this research, the UK Happiness Index placed
256 Cornwall in a prominent second place for happiness, life satisfaction and the worthiness of
257 things people do in their everyday lives (ONS 2012). This paradoxical coincidence of economic
258 deprivation and relatively high subjective wellbeing could be explained by the positive impact
259 of exposure to the natural environment (MacKerron and Mourato 2013). A recent study on
260 the effect of coastal proximity on self-reported health in Cornwall indeed concludes that
261 disadvantaged communities experience greater benefits from coastal proximity (Wheeler et
262 al. 2012). However, aside from spatial proximity, it remains unclear whether and how
263 disadvantaged communities access such spaces, especially given that research has already
264 highlighted a number of barriers for such communities (Weldon, Bailey, and O’Brien 2007;
265 O’Brien and Tabbush 2005; Morris et al. 2011; Byrne 2012). To address this gap, our study
266 explores whether and how participants experiencing various types of socio-economic
267 disadvantage gain access to the environment.

268
269 We used the term environmental spaces for framing discussions with participants about
270 access to ecosystem services during interviews. Earlier research encounters elicited a range
271 of ecosystem benefits – the actual improvement of wellbeing (Daw et al. 2011) - derived from
272 interactions with the environment (~~Removed for SNR-blind review-2016~~[Szaboova 2016](#)), thus
273 we consider access to environmental spaces to enable benefits from ecosystem services. Fish,
274 Church, and Winter (2016) define environmental spaces as the geographical settings, such as
275 places, localities, landscapes and seascapes, that foster people-nature interactions. As there

276 is no universal taxonomy of such spaces that can be applied across the board (Church et al.
277 2014; Fish, Church, and Winter 2016), we developed a contextually relevant list using data
278 from earlier photovoice and photo elicitation interviews with the same participants. We have
279 elicited eleven types of environmental spaces: home garden, woods, fields, public footpath,
280 coast path, park, sea, beach, harbour, and freshwater (river, pond, stream). Building on Ribot
281 and Peluso's (2003) definition, access is conceptualised as people's *ability* to benefit from
282 ecosystem services provided by environmental spaces.

283

284 **4- Accessing environmental spaces**

285 Our analysis yielded four categories of mechanisms that mediate participants' access to the
286 Cornish environment: rights-based access, physical mechanisms, structural and relational
287 mechanisms, and psychosocial mechanisms.

288

289 **4.1 Rights-based access**

290 Following Sikor, He, and Lestrelin (2017), we identified two forms of rights-based access. First,
291 participants' *use rights*, which entail the use of direct and indirect benefits from
292 environmental spaces. Second, *control rights*, which are exercised by state and non-state
293 actors (e.g. government agencies, conservation or heritage trusts) or private land owners, and
294 include the right to grant use rights, and to regulate, monitor or constrain use (Sikor, He, and
295 Lestrelin 2017).

296

297 Cornwall has over 300 beaches, of which 86 are managed, leased or delivered services on by
298 Cornwall Council. The rest are owned privately by the National Trust, the Duchy of Cornwall,

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299 Ministry of Defence, and private landowners (Cornwall Council 2015b). The South West Coast
300 Path is accessible under public rights of way (Countryside and Rights of Way Act 2000), and
301 extends over 491km along the scenic Cornish coast (Cornwall Council 2005). Some fields,
302 woodlands and beaches in Cornwall are privately owned, rendering some places that people
303 attach meaning or value to not accessible to the public. For example, Wendy reported regret
304 over losing access to Trevarno Woods due to a change in land tenure - now private property
305 and closed to the public. However, private land is not always clearly demarcated or physically
306 closed off, leading to uncertainty around use rights. This creates a psychological inhibition to
307 access, due to a fear of confrontation and feeling of wrong doing, as in David's case:

308 'I stepped into that field. [...] The fellow that was cutting this hay in another adjacent
309 field and when he saw me in there...I could feel that I wasn't welcome in that field. [...]
310 He was too far away to say anything, but I got the feeling that I was trespassing in a
311 way.'

312

313 Access to other environmental spaces, such as home gardens, was mediated by participants'
314 residential status - whether owned, rented, or Council accommodation. In some cases,
315 participants were housed by the Council to prevent homelessness, and as such did not have
316 the choice of desired amenities, such as a garden. For example, Wendy was left without
317 shelter with two young daughters due to no fault of her own:

318 '...he [ex-husband and father of children] managed to lose us our home, because he
319 didn't pay the mortgage, and I couldn't get work with a good enough pay at the time
320 because I had the children. SoSo, the Council housed us...And then...I was offered the
321 flat here. First time I saw it, it was greyygrey, and it was dull. It was raining, and it was
322 November. And I looked at it from the outside and I just cried.'

323 Likewise, David had to take what was being offered by the Council following the passing of
324 his partner. While Wendy and David both value home gardens, their social accommodation
325 either does not have a garden or the garden is shared. Wendy's use of the shared garden is
326 minimal due to the problems she experienced over the years:

327 'Unfortunately, because we have a communal garden, I only really use it for washing,
328 because there is no way that we could do anything with this, because it would be all
329 wrecked by somebody else.'

330 This resonates with Ellaway, Macintyre, and Kearns' (2001) finding that the allocation of social
331 housing leads to the creation of mixed communities where residents' visions about standards
332 of living diverge, leading to social and environmental problems. The high turnover of residents
333 and subsequent low levels of cohesion and community feel within Wendy's estate hindered
334 her use of shared outdoor spaces. This finding indicates that in addition to social actors, use
335 rights are sometimes also constrained by underlying structural factors such as socio-economic
336 disadvantage.

337

338 **4.2 Physical mechanisms**

339

340 Physical mechanisms comprised all those factors that facilitated participants' ability to
341 physically access environmental places, and included transport and other forms of mobility,
342 personal characteristics, and geographic and environmental factors. Participants' narratives
343 indicated that access to transport becomes more salient with age, due to declining health and
344 fitness. Although public transport is available across Cornwall, participants typically expressed
345 dissatisfaction with the poor connections, infrequency of services, and expensive fares.
346 Charlie and Marie experienced regular frustrations over the inefficient delivery of this vital

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347 service. Charlie felt that: 'the public transport is not as good as it could be in Cornwall, because
348 the trains and buses don't connect with each other...[I] have to spend hours hanging around
349 for connections'. As concessions to assist with travel costs were not available to people on
350 low incomes¹ (Department for Transport 2013), participants in low-paid part-time work were
351 often unable to reach desired environmental spaces, such as beaches. An example were Laura
352 and her family of five who live on a low and irregular income, as both her and her husband
353 are self-employed artists. Their access to the Cornish coast was constrained by a mixture of
354 economic and physical constraints: 'To put a whole family [on the bus] to say go to Redruth,
355 it costs up to £20...we definitely miss out as a family on all these lovely places. But we know
356 they're there, we just can't get there' (Laura).

357
358 Access through other forms of mobility (e.g. cycling or walking) was found to be intrinsically
359 linked to people's physical condition, such as health, fitness, age and the implications of aging.
360 Additionally, the distance to places was cited as common barrier where participants lacked
361 access to transportation. Besides acting as a physical constraint, poor health and a lack of
362 fitness were found to also cause a psychological inhibition, e.g. the fear of facing a journey
363 because it is perceived long or challenging. Such inhibitions, however, were not always a fair
364 reflection of ~~the~~ participants' physical ability, but instead mirrored social perceptions of the
365 aging process. For example, David's perception of the trip to the beach has changed over the
366 years, thus presenting not only a physical (due to the topography of the place) but a
367 psychological constraint: 'As you get on in years, a ten-minute walk is not short...Because of

¹ Concessions are available to children from low-income families, but not adults at present.

368 the return journey to look forward to as well. To get there is downhill and the return journey
369 is uphill.'

370

371 **4.3 Structural and relational mechanisms**

372

373 People's ability to engage with the environment was also shaped by the political-economic
374 and social-cultural context through a set of structural and relational mechanisms (Ribot and
375 Peluso 2003). Our analysis suggests that these consist of an economic and relational
376 dimension. Economic mechanisms are reflective of underlying structural factors, while
377 relational mechanisms gain importance through the negotiation of social affiliation and
378 relationships.

379

380 On the one hand, economic characteristics closely interacted with aspects of physical and
381 psychosocial mechanisms of access to the environment. Money and the cost of things (e.g.
382 transport, admission fees) were key factors in shaping participants' perceptions of what is and
383 is not possible. For instance, Sam was concerned about cost, as 'most places like that [public
384 gardens], unless you go there on a free day, they cost quite a bit of money to get to anyway.
385 I tend to just keep it very rarely going to places like that.'

386

387 Social relationships and networks, on the other hand, became instrumental in offsetting some
388 of the effects of economic constraints. Affiliation to individuals or groups supported
389 participants' engagement with places that they valued. Visiting these with others helped
390 them overcome inhibitions linked to the perception of certain places being unsafe. For
391 example, Wendy was wary of venturing out to remote areas on her own but belonging to the

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392 RSPB meant that she could go bird watching with others on a regular basis. Companionship
393 and family were explicitly referred to as important mediators of access. Whereas, tThe lack
394 of company deterred some participants from pursuing activities they favoured, leading to
395 feeling lonely and socially isolated. For example, David who lives in a small coastal town has
396 not set foot on the beach for 15-20 years, despite it being within walking distance:

397 'I would like to go swimming, but I don't have anyone to go down to the beach with...I
398 just wished I had somebody else, or something else, to take along with me and I'd
399 probably do it more regularly.'

400 This suggests that although places might be within physical reach, a social barrier may
401 discourage people from utilising them.

402

403 ***4.4 Psychosocial mechanisms***

404

405 Psychosocial mechanisms encompass perceptions of people and places, preferences and
406 attitudes. Places embody more than simply a physical setting, and are attached a meaning
407 and value through participants' personal experiences and cognitive interpretation (Relph
408 1976, 1985; Sack 1997; Tuan 1977). Thus, it is crucial that the conceptualization of access to
409 places goes beyond the physical and considers people's psychologies, including preferences,
410 attitudes and perceptions. These are shaped by social and cultural values, people's relations
411 with nature, and the practices associated with environmental spaces (Fish, Church, and
412 Winter 2016), and lead to positive or negative perceptions (Mesch and Manor 1998; Stedman
413 2003).

414

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415 The recall of memories and past experiences resulted in positive or negative connotations,
416 which shaped participants' willingness to engage with places. For instance, Marie's
417 experience of public gardens has led her to seeing these as isolating, artificial and pretentious,
418 and she avoided visiting them: 'I'm not very keen on public gardens...There's too many signs
419 saying, "keep off the grass"...I just think it's too gentrified often, and too organized.'

420 While Wendy's perception of the coastal path was overshadowed by bad memories: '...it
421 wasn't until I've actually slipped on the path and looked down and I thought "oh, nobody
422 knows where you are"...I won't do it again.'

423

424 ~~On the other hand~~Whereas, pleasant memories created and strengthened a positive
425 emotional bond between participants and places, also referred to in the literature as place
426 attachment (Low and Altman 1992). This was evidenced by participants' narratives:

427 'The whole area is kind of my home...'cause I remember as a child swimming on the
428 beach in the harbour... I was born by the sea and I spent my childhood on the beaches.
429 It's my kind of area.' (Charlie)

430 'That's a picture of Gwithian beach, where when I was a child, I used to spend a lot of
431 time. Just playing on the beach in the rock pools, swimming, building my sandcastles,
432 looking out over St Ives...It's part of where I was born, where I was brought up. Yeah,
433 the beach is my life, really!' (Sam)

434 These memories facilitated access and, on occasions, outweighed the negative effect of some
435 physical and economic barriers (e.g. lack of transport, distance, finances). For example,
436 despite financial constraints, Charlie made a determined effort to return to the place where
437 he grew up as much as his means allowed him: 'Again it's all about money...I don't go quite
438 so much to St Ives now.' Similarly, Sam, who struggled to afford public transport, was willing

439 to walk miles to visit Gwithian beach, because it held happy childhood memories: 'it's about
440 4 miles. It's in between Hayle and Porthreath, so you've gotta walk the whole length of Hayle
441 beach'.

442

443 Perceptions about the safety of places varied across people and were largely shaped by
444 personal experiences. While some participants associated remoteness with feelings of calm,
445 others felt exposed and vulnerable unless they were accompanied by others. For example,
446 group walks instead of lone rambling were preferred by some. According to Charlie '[t]he
447 footpath is nice, but they're dangerous.' Wendy shared this sentiment:

448 'I wouldn't walk on my own...Nobody knows where you are... You just don't know, do
449 you? ~~w~~Who you gonna meet! I would be very wary of walking on some footpaths,
450 certainly. I just think it's fairly remote and you're on your own'.

451 Contrary to Charlie and Wendy, Marie was not fazed by remote places:

452 'I have been quite a few miles on the coastal path on my own and haven't seen
453 anyone... I'm happy to go on my own...I'm much more scary than anything else along
454 that coastal path.'

455

456 The ambience of places acted as an important mediator of psychosocial access, as feelings of
457 calm, tranquillity and relaxation were experiences participants often sought in remote
458 settings. Tourism was seen as the primary cause of changes in the overall atmosphere of some
459 environments, particularly the beaches and coastal areas. Charlie felt that holidaymakers
460 spoil the tranquil idyll of picturesque beaches: 'One of the best walks, I think, is
461 Porthcurno...Unfortunately, all the tourists have found the place now, so it's always packed

462 out with tourists.' Similarly, while Marie found a sense of satisfaction in relaxing on the beach
463 whilst observing visitors, she did still prefer solitary places:

464 'I like to get a quiet place, I guess, when I go to the beach...And I quite like to sit
465 listening to all the different holidaymakers. I quite enjoy that aspect of it, but best of
466 all I like a nice quiet place.'

467

468 Access to places was also affected by participants' attitudes, motivation and preferences,
469 because places take on different identities through human experience, which shapes the
470 ambience and feelings that different individuals attach to them (Relph 1976). Despite her love
471 of all things natural, Wendy was sceptical about woods and forests, because she was 'not a
472 lover of a lot of trees together'. Being surrounded by trees gave her a sense of claustrophobia,
473 therefore she preferred open spaces. A qualitative study in the North of England revealed
474 similar findings in regards to woods and concluded that people experience natural
475 environments in diverse ways - what some may find therapeutic and calming, others might
476 regard off-putting or even scary (Milligan and Bingley 2007). While decisions about
477 engagement might be a matter of preference, it is also possible that participants were
478 drawing on a mixture of prior personal experiences and cultural beliefs associated with a given
479 environment. For instance, Milligan and Bingley (2007) cited the representation of forests in
480 folklore and myth as culturally significant determinants of how these places were viewed and
481 utilised.

482

483 Often physically accessible places were not utilized due to the absence of motivation.
484 Motivation here was intimately linked with structural and relational attributes, including
485 social isolation and poor social networks, as well as a result of character traits, such as a

486 negative predisposition or a 'can't do' attitude. Charlie, a native Cornishman, has never visited
487 the Lizard peninsula. He perceived the 20-mile journey as quite some effort: '...it's quite a trek
488 from here, because the roads are quite windy, and I'd take couple of hours, three or four
489 hours anyway, by the time you get down there...' Charlie was one of few participants who
490 had their own transport, and the journey from his home to the Lizard would take
491 approximately 40 minutes by car, or two hours by public transport. Conversely, other
492 participants were highly motivated to visit even less accessible places, because 'it's going to
493 be memories we going to have to live on in the end, [...] when you can't get out and about
494 yourself' (Wendy). ~~For instance, An~~ injury made Marie realise the importance she attributed
495 to remote natural places:

496 'A while ago I hurt my foot and I wasn't able to walk too far, and I found that...missed
497 those places. [...] I would have to find a different way to get to those places, or to find
498 similar places somewhere else more accessible.'

499
500 Finally, places that participants did value and feel affinity to were frequently 'forgotten' or
501 simply taken for granted. A complacent attitude towards places thus acted as yet another
502 psychosocial barrier to access. When talking about places he visited and places he wished to
503 get to, Dan admitted that '...when you live in places that people go to visit on holiday...When
504 you live there and it's down the road, you tend not to go there. You just think: tomorrow.' ~~Or~~
505 ~~a~~As Charlie has put it: '...when it's on your doorstep you sometimes don't go.'

506

507 Discussion

508

509 While rights-based mechanisms are at the forefront of Leach et al.'s (1999) and Ribot and
510 Peluso's (2003) work, these emerged as less significant in our study, relative to the other three
511 access mechanisms. This is potentially due to the differences in property rights and tenure
512 arrangements between the UK and developing countries, where much existing research on
513 access to ecosystem services and natural resources takes place (Schlager and Ostrom 1992;
514 Leach, Mearns, and Scoones 1999). Moreover, a series of legislation authorises public access
515 to environmental spaces, including privately owned beaches (e.g. Countryside and Rights of
516 Way Act 2000), and a well-established network of public footpaths and coastal paths makes
517 these physically more accessible.

518

519 Spatial analyses of access are common in industrialised contexts where distance to green
520 spaces, parks or the coast is used as a proxy for access. While participants in this study indeed
521 described distance as a mediator of access, it only constituted one dimension of physical
522 access. Several interrelated factors determined mobility and physical access, and perceptions
523 of distance varied depending on age, personal abilities and transport. MacIntyre, MacDonald,
524 and Ellaway (2008) suggest that people's evaluations of distance are often at odds with
525 objective measurements used in many large-scale survey methods. This is exemplified by
526 Charlie's account of the distance between his home and the Lizard Peninsula, which he
527 perceived as a three- four-hour journey, rather than the likely 40 minutes by car or two hours
528 by public transport. Evidently, physical distance can evoke psychological barriers of access,
529 through judgements about what is attainable or feasible given one's characteristics and
530 circumstances. Jones, Hillsdon, and Coombes (2009) also find that despite the geographic
531 proximity of green areas, residents of deprived neighbourhoods tend to perceive access to
532 these more difficult, resulting in less frequent visits.

533

534 Our participants cited lack of companionship and negative prior experiences (such as
535 accidents or overcrowding) as inhibitions to visiting the beach or walking the coast path. This
536 demonstrates that physical mechanisms are also closely linked to structural and relational
537 factors. We found that physical access to more remote places is also conditioned by socio-
538 economic factors, which were generally referred to by participants as barriers, and included
539 low incomes, costly transport and the lack of concessions for low earners. However, our
540 findings also indicate that place attachment (Low and Altman 1992), manifest in a strong
541 emotional bond with places, can outweigh some physical and structural access barriers. This
542 is evidenced by participants' accounts of proximity maintaining behaviour in the face of
543 transport and financial constraints, such as Sam walking miles to his favourite beach, or
544 Charlie's regular visits to St Ives to reminisce about childhood memories.

545

546 Although research on access to woodlands in the UK has highlighted the role of people's
547 perceptions and emotions in mediating visits to forest, psychosocial access mechanisms as
548 important mediators of people's ability to engage with natural environments remain poorly
549 documented in the environment-wellbeing literature. Meanwhile, other fields - such as health
550 psychology, social work and social psychology - have explicitly recognized the role people's
551 psychologies play in the acceptance of medical help, care or treatment (Cook et al. 1999;
552 Freeman 1999) or the uptake of physical exercise (Sallis et al. 1990). Our findings reveal that
553 psychosocial factors are interlinked with all other access mechanisms. For example,
554 perceptions of places and participants' attitudes mediate physical access. This is evident in
555 narratives of complacent attitudes towards places on one's doorstep.

556

557 Importantly, psychosocial mechanisms resonate with the idea of Bourdieu's *habitus*
558 (Bourdieu 1977), or the system of dispositions linked to objective structures (e.g. age, gender,
559 class, economy) that shape aspirations and practices. Indeed, participants enact internalized
560 rules and behaviours, because of their dispositions, which are manifest in their perceptions
561 of places, people and phenomena, as well as attitudes and preferences. For example, social
562 isolation and a lack of companionship are found to preclude participants' use of public
563 footpaths and beaches, as these are perceived inappropriate and even unsafe for lone
564 wandering. These observations confirm Kessel et al.'s (2009) suggestion that how people
565 perceive particular environments and the behaviours they associate with these can act as
566 symbolic barriers to access.

567

568 Conclusion

569 Building on Ribot and Peluso's Theory of Access, as well as insights from analyses of access to
570 environmental spaces and ecosystem services in developing and industrialised contexts, our
571 study addressed a gap in the literature concerning access to environmental spaces in rural
572 and coastal environments by participants with some form of socio-economic disadvantage.
573 Informed by advances in the fields of rural sociology, the sociology of access to (not only)
574 environmental spaces, health geography and environmental psychology, we investigated the
575 nature of mechanisms through which socio-economically disadvantaged participants
576 negotiate access to ecosystem services. These mechanisms emerged not as discreet
577 categories that shape access independently; rather they were closely intertwined and as such
578 also conditioned one another. Participants' accounts revealed four types of access
579 mechanisms (rights-based, physical, structural and relational, and psychosocial), which

580 extend Ribot and Peluso's theory and existing empirical research on access, by explicitly
581 identifying and discussing psychosocial mechanism.

582

583 In conclusion, our findings reveal that socio-economic disadvantage penetrates the
584 mechanisms that mediate access to environmental spaces. Hence, in order to realise the
585 positive impact that exposure to natural environments could have on the health and
586 wellbeing of disadvantaged members of society, we must disentangle the complex web of
587 interrelations between underlying structural conditions linked to disadvantage and
588 mechanisms of access, as well as develop an enhanced understanding of the interaction
589 between different types of access mechanisms.

590

591 Acknowledgements

592 We would like to thank Cornwall Neighborhoods for Change for facilitating our work with
593 members of the community, and our study participants for their time and openness. We are
594 grateful for helpful feedback from Jesse Ribot and Marja Spierenburg on an earlier draft of
595 this paper, as well as for insightful discussions with colleagues during our workshop in
596 Utrecht. We are also thankful to the reviewers for their thoughtful and constructive advice.

597

598 Funding

599 This research was funded by the College of Life and Environmental Sciences of the University
600 of Exeter.

601

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