

Article

Nature and Belonging in the Lives of Young Refugees: A Relational Wellbeing Perspective

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Abstract: This paper explores the relationship between nature contact, wellbeing and belonging in the resettlement experiences of young refugees in Finland. Drawing on qualitative data, including participant-made artworks and semi-structured interviews, it explores the different ways refugees encounter nature in their past, present and (imagined) future. Using a relational wellbeing approach, the paper considers how subjective, material and relational dimensions of wellbeing arise and interrelate within refugees' encounters with nature and how these encounters link with refugees' developing sense of belonging to people and places in Finland. The paper describes how, in the context of refugee resettlement, nature encounters can foster a sense of belonging in three ways: through restoration and attachment in the present, through maintaining links with the past, and through shaping desires about a future in which to thrive. Considering refugees' sense of belonging in Finland as part of the relational wellbeing generated, in part, from their encounters with nature, these three aspects of belonging represent particular interrelations between subjective, material and relational dimensions of refugees' wellbeing.

Keywords: refugee resettlement; relational wellbeing; therapeutic nature; belonging; Finland



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1. Introduction

Due to their forced migration, refugees encounter many different natural environments that shape their wellbeing in both negative and positive ways (Gladkikh et al. 2019). The environment in their home country may be the cause of their migration if it is unsafe or if they no longer have the resources needed for living (e.g., Berchin et al. 2017). However, nature in refugees' home countries can also be a source of comforting memories, a sense of belonging and wellbeing. While their physical bonds to their home country are forcibly broken by displacement, refugees may maintain and carry with them emotional, spiritual, cultural and social bonds with those places through memories and sustained practices. The natural environments through which refugees travel and in which they resettle may also be dangerous. However, nature places in receiving countries can also be sources of peace, safety and restoration that play important roles in refugee resettlement.

A growing number of studies have investigated the ways in which refugees encounter natural environments in their receiving countries and how this nature contact can inform their wellbeing during resettlement there. Echoing the substantial body of broader research highlighting the positive links between nature and wellbeing (e.g., Atkinson et al. 2016; Bay 2013; Russell et al. 2013), studies have found an array of material and non-material benefits that refugees can gain from nature contact in their new environments. Material benefits include opportunities for recreational activities (Rishbeth and Finney 2006) and the provision of food (Coughlan and Hermes 2016), while non-material benefits include better mental health and stronger social relations (Gladkikh et al. 2019), as well as place attachment (Sampson and Gifford 2010).

This paper focuses on the less studied links between the wellbeing refugees derive from nature contact, and their sense of belonging to their new physical, social and cultural environments. Some studies have explored how places such as urban parks and community

gardens foster a sense of belonging by providing respite, social interaction and connection to something beyond community (Rishbeth et al. 2019; Sampson and Gifford 2010). Others note the importance of historical connections to places, the environmental similarity or disparity between the past and present places and the types of social relations associated with the places (Brun 2001; Coughlan and Hermes 2016).

While the interrelatedness of different dimensions of wellbeing is widely recognised, a gap remains in our knowledge about how the various subjective, physical and social dimensions of refugees' wellbeing interrelate in the process of coming to belong in their new places (Dinnie et al. 2013; Keniger et al. 2013). As embodied subjects, people interact with natural environments in simultaneously physical, mental, emotional and social ways (e.g., Biglin 2020). The wellbeing generated from those encounters should, therefore, also be understood in a holistic way as an interplay between simultaneously experienced subjective, material and relational dimensions.

Building on the work of scholars such as Atkinson (2013) and Gergen (2009), Sarah White (2015, 2017), along with her colleague Shreya Jha (White and Jha 2020, 2023), has developed a conceptual approach to wellbeing that draws attention to its material, subjective and relational dimensions as well as to the interconnections between them. The material dimension of wellbeing refers to how the physical characteristics of a person's surroundings—the type of environment and availability of resources, for example, shape the conditions enabling people to live well. The subjective dimension encompasses the ways people think and feel within and about their life situations. The relational dimension refers to how people connect with other people, places and objects physically, emotionally and morally. Wellbeing is thus conceived of as a holistic matrix of materially having enough, subjectively feeling good, and relationally being connected. These interrelated dimensions are furthermore seen as enabled or constrained by the specific personal, societal and environmental contexts in which a person is situated (White and Jha 2020: this volume). This relational approach provides a useful perspective to explore the multiple dimensions of refugees' nature contact in relation to their broader experiences of resettlement and the interrelations between them.

This article employs White and Jha's relational approach to explore the significance of nature contact in the wellbeing and belonging of young refugees who, after arriving in Finland as unaccompanied minors, have begun to build new lives there. Drawing on participant-made artworks and art-informed interviews, it seeks to understand the subjective, material and relational dimensions of the wellbeing generated through young refugees' interactions with nature and how those wellbeing dimensions inform young refugees' sense of belonging in Finland. The aim is to shed light on the complex and multifaceted ways that young refugees encounter and experience nature as they build new lives in Finland. This knowledge is important and timely in terms of both resettlement policy and social work, given the continuing high levels of forced migration to Finland and elsewhere (including those recently arrived from Ukraine) and the continuing need for states to provide conditions to foster their wellbeing (Finnish Immigration Service 2023; UNHCR 2023). The study links to the international Drawing Together project, which is the first major study to explore young refugees' wellbeing through this particular relational approach.

I begin with a short overview of how previous studies have approached the nature—wellbeing nexus and the concept of belonging in refugee resettlement. I then present the relational wellbeing approach and the broader Drawing Together project from which this paper arises. Drawing on visual and textual data from the Drawing Together project, I then explore the significance of nature encounters in refugees' relational wellbeing and belonging, concluding with a discussion on the implications of this study for refugee research, policy and social work.

2. Nature, Wellbeing and Belonging in Refugee Resettlement

Previous research has shown that nature contact has therapeutic benefits for people's subjective, personal and emotional wellbeing (e.g., Atkinson et al. 2016; McMahan and Estes

2015; Reining et al. 2021). Exposure to nature also has other positive psycho-physiological effects, including reduced risk of disease (e.g., Lemieux et al. 2012; see also Kaplan and Kaplan 1989) and reduced anxiety and depression (Bodin and Hartig 2003). More broadly, nature contact has been linked to increased life satisfaction (Hartig et al. 2014) and vitality—the state of having “positive energy available for oneself” (Pasanen et al. 2018).

In the context of refugee resettlement, nature contact is recognised as having additional benefits, such as improved social relations, access to recreational activities, aesthetic and spiritual experiences, as well as facilitating positive attachments to the new places in which refugees settle (Gladkikh et al. 2019). Sampson and Gifford (2010) draw attention to the therapeutic qualities of nature places such as urban parks to argue that the beauty, peace, safety and sociality of nature may contribute to the healing and restoration of refugees and contribute to their sense of belonging. As Dinnie et al. (2013) point out, however, nature contact is not always positive. Depending on the circumstances of the encounter, the experience can also generate negative feelings, such as anger and frustration. Marginalisation can also occur if unequal power relations exist in the social relations connected to the encounter. Additionally, other scholars note how people’s nature preferences and ways of engagement with nature places may be informed by their cultural backgrounds (Askins 2009; Buijs et al. 2009).

The significance of place in people’s sense of belonging is well recognised within broader scholarship. As Lähdesmäki et al. (2016) note, belonging is seen as not only “a social relationship between people or people and abstract territories” but is “constituted as an intimate interaction with nature, a material relation to the physical environment and biosphere” (p. 238). In refugee studies, encounters with and in nature places, such as parks and community gardens, have been linked to the positive development of belonging (e.g., Chen and Schweitzer 2019; Nunn 2022; Van Liempt and Staring 2021). Within these encounters, refugees create a sense that they belong to their new physical environment or to their new social and cultural environment through nature encounters. Refugees’ sense of belonging has also been shown to have significant temporal dimensions, informed by nostalgia for past nature connections and desire for future nature contact (e.g., Chen and Schweitzer 2019; Nunn 2022).

The spatial dimensions of belonging have important implications for refugee wellbeing, yet the connections between nature encounters, wellbeing and belonging remain understudied in the context of refugee resettlement. In exploring these connections, I conceptualise belonging in the following way. People can have and develop a sense of belonging to particular nature places, as well as to people, communities and cultures within and through encounters with nature places. People’s sense of belonging emerges from the holistic, simultaneously experienced, physical, affective, cognitive and social dimensions of encountering people, objects and places. The strength of people’s sense of belonging (or not belonging) depends on the extent to which those dimensions generate circumstances of feeling good, having enough and being connected. In other words, I see belonging as not external to, but an aspect of, a person’s relational wellbeing.

3. Relational Wellbeing

White and Jha (this volume, also White and Jha 2020) conceptualise wellbeing as a holism of subjective, material and relational dimensions which together manifest in, and are enabled and constrained by, the personal, environmental and societal context of the subject. It is through the interrelations between these dimensions that wellbeing can be understood to be generated relationally; that is, within the relationships between people, things and places rather than within individuals (see also Atkinson 2013).

White and Jha’s approach to wellbeing builds on Kenneth Gergen’s (2009) conceptualisation of people as relational beings, meaning that, like wellbeing, their identities, thoughts and emotions are formed from and exist within social and environmental relations. There are two aspects of relating at work here. One aspect reflects the notion that people are always and inescapably situated within a place. Within this place, people are constantly exposed

to, interacting with and dependent upon the physical environment and the objects located within it (e.g., Macnaghten and Urry 2000; Plessner 2019). At the same time, a person is always and inescapably part of and dependent upon familial, social, and cultural ties that mediate the ways in which they engage with and make sense of the world (Haswell et al. 2023). The other aspect of relating concerns the changes that occur in the qualities and objects of a person's relations. While a person is always embedded in social and environmental relations, the relationships that they share with particular people, places and objects can be made, unmade and transformed throughout the shifting circumstances of their life.

These dual aspects of relational wellbeing are well reflected in the resettlement experiences of refugees. Wellbeing, as a multidimensional process of feeling good, having enough and being connected, can be conceived as both emergent from social, cultural and environmental relationships and also dependent on (and sensitive to) the qualities of these relationships. Understanding how nature contact informs refugees' wellbeing thus requires an understanding of the way that nature fits into and interrelates with the broader web of environmental, social and cultural relations that define them.

Another important quality of White and Jha's relational approach is its focus on the particular characteristics of the environment being encountered, as well as the subjects' personal histories and experiences and the broader cultural and societal context in which they live. By emphasising the situatedness of natural environments and the subjects encountering them, the approach draws the focus of inquiry to how particular people in particular circumstances experience and understand wellbeing (White 2015) and how those experiences and understandings tie into and are informed by the broader contexts mentioned above. While this embracing of complexity makes generalisation difficult (if not impossible), its benefit lies in the increased understanding of young refugees as socially and morally responsible people with unique and multifaceted backgrounds finding their way towards living well in equally unique and multifaceted environments (Haswell et al. 2023). Through understanding the way that subjective, material and relational dimensions of wellbeing interrelate within young refugees' nature experiences, more insight can be gained into their broader resettlement experiences and how they actively and purposefully care for themselves and the people and places important to them.

Relational approaches to wellbeing are particularly useful in understanding the significance of nature in young refugees' wellbeing and belonging within the broader multifaceted contexts of their resettlement. While its emphasis on the multidimensionality of refugee resettlement resonates with other frameworks of belonging (e.g., Peters et al. 2016), it centres the focus of inquiry on refugee wellbeing itself, allowing its qualities and the interconnections of its dimensions to be clarified.

4. The Drawing Together Project

This article's focus on nature contact and relational wellbeing derives from an unforeseen finding from the broader Drawing Together project¹. The participants in the project were a mix of male and female 18–30-year-old former unaccompanied asylum-seeking minors who have received permission to remain in their respective receiving countries of Finland, Norway and Scotland (UK). During a series of three art workshops², participants were invited to create artworks expressing wellbeing in their lives, focusing on important social, familial and professional relationships. In the first workshop, we encouraged participants to express what made them feel well in the present. In the second workshop, we focused on what they imagined would make them feel well in the future, and in the third workshop, we focused on what made them feel well in the past. At the end of each workshop, participants gave a short verbal explanation of their artworks. Following the workshops, semi-structured interviews were conducted with each participant. In these interviews, each approximately 1 h long, participants discussed in more detail their artworks as well as other themes related to the broader research objectives of the project. The interviews focused on important relationships participants had with family, friends, community groups and professionals. In particular, participants were asked to talk about the

reciprocity of these relationships, about what these important people meant to participants, and what participants meant to them.

As expected, most of the participants' artworks displayed references to connections between people as well as to other objects and symbols signifying relationships (see Figure 1)³. Unexpectedly, and despite minimal instruction and guidance beyond the focus on relationships, approximately half of the resulting artworks also contained prominent environmental themes. Many of these contained individual nature-related objects, such as a flower, a tree or the sun, while others displayed an entire landscape either as the artwork's main focus or as a visual frame for other social or material elements (see Figure 2). Others contained fusions of both natural and built/cultural environments.



Figure 1. A DTP artwork displaying familial relationship themes. In the artwork the same text is written in English and Arabic.



Figure 2. Samir's Workshop 1 artwork displaying nature-related themes.

The emphasis on nature elements and landscapes was apparent in the artworks of participants in all three countries involved in the Drawing Together project. This suggests that the natural environment is in some ways significant in participants' wellbeing, or

at least significant to the ways they wanted to express their wellbeing to us. Created in the context of expressing important relationships with other people, these artworks also suggest that, to these participants, the natural environment is somehow significant to the manner and meaning of their relationships with others.

In the current study, I focused on the group of 17 Drawing Together project participants resettling in Finland to clarify the ways in which they visually and verbally conceived nature as significant to their wellbeing, and how nature contact, and the wellbeing derived from it, linked to their sense of belonging in Finland. Participant details are listed in Table 1 below.

Table 1. Participant details.

Number of participants in Finland	17
Age range	18–30
Gender	Female (8), Male (9)
Country of origin	Afghanistan (7), Somalia (6), Iran (2), Pakistan (1), Congo (1)
Year of arrival in Finland	2014–2016 (11), 2008–2011 (4), 2003 (1), 2018 (1)

5. Data and Methods

The data used for this article consists of:

1. The participants' artworks ($N = 43$);
2. The participants' transcribed explanations of their artwork;
3. The transcribed, semi-structured interviews in which the artwork was used as a visual prompt.

My role in the workshops was to assist in the artmaking process, drawing on my professional background as a visual artist and art educator, as well as a researcher. Participants spent several hours in each workshop creating their artwork. In their explanations of the artworks, participants gave concise summaries of the creative deliberation and reflection that went into their creation. Using the artworks as a visual prompt in the interviews (Liebenberg 2009) elicited deeper and more detailed discussion about significant themes that arose both visually in the artworks and verbally in the explanations. All participants were at least partially fluent in Finnish and/or English, and we conducted the interviews in Finnish (28) or English (15), depending on which they felt most comfortable using. Being fluent in both English and Finnish, I translated the relevant Finnish transcript data into English and had them checked with a native Finnish Drawing Together project colleague.

To sample the data (see Figure 3), I first selected the artworks which contained visually explicit nature elements. Drawing on Russell et al. (2013) conception of nature as encompassing living and non-living elements of ecosystems that exist outside of, yet sometimes within and as part of, human-modified environments, I included artworks that depicted environments and elements ranging from what I termed “wild” (without any visual traces of human-modification) to “semi-modified”⁴. Figure 2 shows a selected artwork that I located within this range, showing a variety of ecosystem elements with some visually explicit human-modified elements (the roads between the river and mountains). In the sample, I also included artworks that contained isolated elements of the natural environment, such as trees, flowers, birds or the sun, such as in Figure 4 below.

In the second analysis stage, I conducted a two-step thematic analysis of the transcript data that corresponded to each of these artworks. To understand and categorize the ways in which participants spoke of relating with nature and also to screen out metaphorical references to nature⁵, I used Russell et al.’s (2013) conceptualization of “four channels of human interactions with ecosystems”. These are:

- (a) *Knowing*: thinking about an ecosystem or just the concept of an ideal ecosystem;
- (b) *Perceiving*: remote interactions with ecosystem components;
- (c) *Interacting*: physical, active, direct multisensory interactions with ecosystem components;

(d) *Living within*: everyday interactions with the ecosystem in which we live.
 (Russell et al. 2013, p. 477)

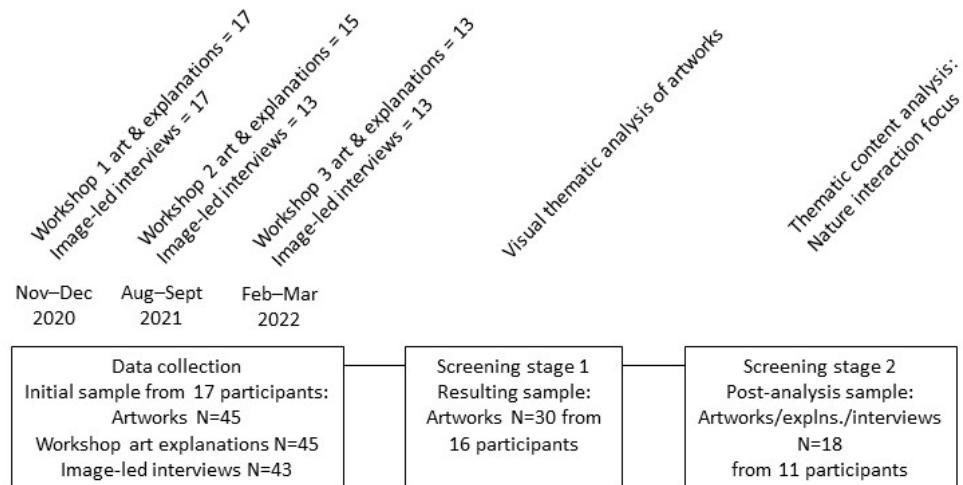


Figure 3. The process of data collection and sampling.



Figure 4. Malalay's Workshop 2 artwork. In the artwork the same text is written in Persian, English and Finnish.

After screening the transcripts for discussions relating to one or more of the interaction channels⁶, I conducted a more detailed thematic analysis guided by White and Jha's Relational Wellbeing model. Moving iteratively between the data and theory (Srivastava and Hopwood 2009), I analysed participants' references to nature interaction in terms of how these experiences linked to their sense of belonging in Finland and considered how the subjective, material and relational dimensions of participants' wellbeing emerged from and interrelated within those experiences.

6. Findings: Linking the Past, Present and Future through Nature Encounters

In their artworks and explanations about wellbeing in the past, present and future, participants⁷ referred to a variety of nature encounters occurring as children in their homelands, as youths and young adults resettling in Finland, and as adults in imagined futures. These interactions included all four channels of human interactions with ecosystems. Participants referred to *thinking about* nature in general ways related to their memories of home

environments and desired destinations for future travel. They also referred to *perceiving* nature remotely, in cases such as watching sunsets and mountains, as well as to *interacting* with nature through their physical visits to nature places. Finally, they referred to *living within* nature in cases such as remembering childhood homes in nature and bringing nature elements into present homes.

Due to the participants' experience of forced migration, the nature encounters they discussed were connected to many geographical locations and were temporally dispersed. However, in one way or another, they all related to their broader process of resettlement in Finland. Three main themes emerged from the data regarding the temporal dimension of wellbeing, as well as participants' developing sense of place and belonging: *restoration and attachment*, *maintaining links with the past*, and *imagining a future in which to thrive*.

6.1. Restoration and Attachment

In discussing their encounters with nature in Finland, four participants spoke of visiting particular places for therapeutic and restorative purposes. These were intentional and regular visits made, at least in part, to process feelings of sadness or negativity. Malalay, for example, living in a Finnish coastal city, described nature as a peaceful place in which she felt able to manage emotions. "*If I'm sad or angry, feeling bad about something, I go to the seashore to sit, and there I listen to some music and sometimes cry, but it feels good*" (see Figure 4). Masoud, who lived in an inland Finnish city, interacted with nature through exercise: "*[W]hen I was a little bit sad, like when I had some kind of problem, I just went jogging in the forest or [some] good nature*". Within these descriptions, nature is seen as a safe space in which participants feel able to both distance themselves from stresses or problems and also to process emotions. These examples show a link between participants' thoughts and emotions and the physical characteristics of the particular natural environment with which they interact. As Masoud explained, these therapeutic encounters in Finnish nature places led to him feeling that "*nature came so much closer to me, and I think therefore that I love it*". This suggests a connection between Masoud's therapeutic natural encounters and his broader feeling of connection to Finnish nature.

The characteristics of peace and solitude make these nature sites "*kind of a meditation place*" (Masoud) for the participants. Their artworks show these places to be relatively wild and "*beautiful nature country*" (Masoud) with little or no visually explicit human mediation (see Figure 5). There is an emphasis on mountains, trees and bodies of water, such as lakes and rivers, as well as blue skies and sunshine. Birds are by far the most common animals included in the images. These artworks suggest that, for these participants, beauty and wilderness are also significant characteristics of nature sites. For example, Sara, describing a vivid sunset painted into the background of her artwork, noted that sunsets "*make me feel good straight away when I see them*", adding that "*nature is important to me*".

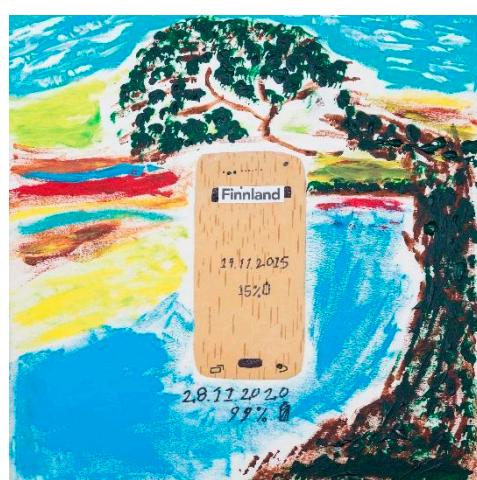


Figure 5. Masoud's Workshop 1 artwork.

In their artworks and explanations, some participants also described positive childhood associations with peaceful and wild places, such as mountains, lakes and forests. Samir, for example, described the peacefulness of the lake he used to go fishing in as a child, with its “*sounds of . . . birds and water*” (see Figure 2). For Samir, it was a good place to “*sit alone and think about this life*”.

In some cases, when participants thought about nature, they compared the physical qualities of Finnish nature places and their subjective responses to them with those in their place of origin. For Masoud, the Finnish nature areas accessible to him made him feel “*quite the same*” as the mountains near his childhood home, which were “*so good for me*”. Samir, on the other hand, described Finnish nature as different to that of his place of origin and that he missed those places of his past which he felt connected to: “*in Finland there are no mountains. I miss mountains. If there were mountains it would be nice, I really miss those kinds of places a bit*”. Masoud’s and Samir’s examples reveal the complex connections between the physical characteristics of nature places in refugees’ past and present and their sense of attachment to them through thinking about, perceiving, interacting with and living in them. These examples also hint at the importance of physical access and proximity to nature places in which participants feel well.

In both Samir’s and Masoud’s descriptions of past and present nature interaction, the relational dimension of those encounters included both socialising and solitude. For Samir, the lake of his homeland was a place to go fishing with others or to find a peaceful place different from cities where there “*are so many people and so much noise*”. For Masoud, the mountains surrounding his childhood home were a place not only “*for calming down*” but also “*for having fun with friends*”, although, in Finland, he socialised in the forest “*only a few times*” with friends.

6.2. Maintaining Links with the Past

As alluded to above, aspects of participants’ past informed their present encounters with nature. In their artworks and explanations, several participants drew links between the affinity they felt for natural places in the present and the nature-related experiences and practices of their childhood. Masoud’s abovementioned practice of finding peace in the forest in Finland, for example, is linked to his past practice of going to the mountains near his childhood home to “*calm down*”. Similarly, Sara, for whom “*nature is so important*”, recalled a memory of being taken as a young child on a family trip to see snow for the first time as “*the best experience, that I’ll never forget*”.

These examples reveal not only the interrelationships between material and subjective dimensions of participants’ nature contact and the wellbeing arising from it but also the centrality of relationships in the experience. In Masoud and Sara’s examples, nature visits were experienced with others. They comprised perceptions of and interactions with the physical characteristics of the places as well as the emotional, cognitive and aesthetic responses to them. In Masoud’s example, nature is alluded to as a peaceful space within which to socialise with others, while in Sara’s example, it is a source of shared wonder.

The connection between nature contact and relationships was not only seen in the ways participants visited nature places but also in the way that participants incorporated elements of nature into their home life. Masoud, for example, described the connections he felt with his family and childhood home when he ate mandarin fruit in Finland. The smell of mandarin, he explained, “*... reminds me of when I was in my homeland with my family . . . every time I eat mandarin, . . . like a flash . . . I remember. Also this mandarin was a favourite fruit of my father when he was alive. And he also loved this fruit. When I was child, in our home there were all these mandarins in the winter. So we ate together with my father and mother and also my sister and brother*” (see Figure 6). Masoud’s eating of mandarins in his new life in Finland can be seen as a way of him maintaining emotional bonds with his family and childhood. It can also be seen as a way for him to find a place for these bonds in the context of his present life.

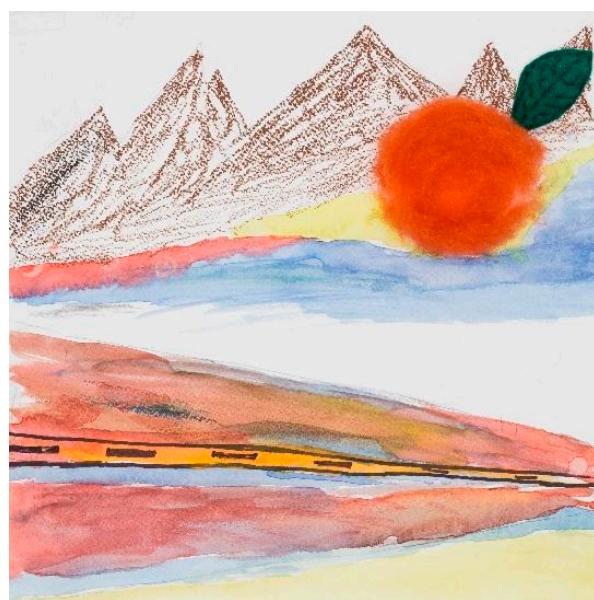


Figure 6. Masoud's Workshop 3 artwork.

For Lilith, it is the pothos houseplant she bought for her new home in Finland that sustains memories of her family and childhood home: “*This plant... was in our home regardless of which city or country we lived in. The plant reminds me that I belong to my own family, even though we don't legally belong anywhere*” (see Figure 7). Of significance here is the intentionality of Lilith making this plant part of her new home. By continuing her family's practice of having those plants in her childhood home, Lilith's action can, like Masoud's, be seen as a way to both maintain bonds to her family and childhood as well as find a place for significant practices of the past in her present life.



Figure 7. Lilith's Workshop 3 artwork. The blue text, in Finnish language, reads (from top to bottom): Since the day I was born I've always been a foreigner. I've never belonged anywhere, never officially existed. But I've always existed and nobody and nothing has stopped me growing, like nature. The pothos has been my childhood and past nature, houseplant, and it reminds me that I can always develop and grow even though I'm in a dark place. The red text, also in Finnish language, reads: I exist and I belong to the whole world.

Also significant in the houseplant example is the affinity Lilith describes having with her pothos plant itself. Describing how “*it always grew and stayed strong in difficult circumstances*”, she explained that the plant “*taught me that I can manage in difficult circumstances*.” What is significant in Lilith’s explanation is her acknowledgement of the plant as a living entity, which led to her speaking of the broader interdependence of humans and nature: “*We humans are part of nature and the plant is also part of nature. That’s why it reminds me a bit that we are nature, maybe*”. This point is important because it speaks not only of relating to people in or through nature; it also speaks of relating to nature itself. The relationship Lilith has with her plant is one of reciprocity; while nurturing it physically with water, sunlight and care, it, in turn, provides her with emotional strength through its presence and the connection to the family it represents: nurturing and being nurtured. Here, too, the entwinement of relational, subjective and material dimensions can be seen to constitute wellbeing.

This example highlights that nature is not only a site in which wellbeing emerges but can also be a constituent of the web of intersubjective relatings that generate wellbeing. This notion is also alluded to in Mathieu’s discussion about his childhood interactions with nature; “*My home country is huge. And there we have a big forest. I remember that, as a child we went on holidays to a place where there is nature. And there we went fishing. We saw animals and those kinds of things. Then there was born the relationship between me and nature*” (see Figure 8). For Mathieu, as a young refugee, this relationship with the nature of his home country aided him in his resettlement in Finland: “*It was easy when I came to Finland*”, he said; “*here, as well, nature is quite important to many people. It’s the kind of point that connects my home country and Finland*”. This statement suggests that Mathieu’s nature relationship made his resettlement process easier not only because of the physical similarity between the nature of his homeland and Finland but also because of a perceived similarity between the socio-cultural attitudes towards nature in the two countries. Returning to the notion that one’s wellbeing, consisting of subjective, material and relational dimensions, is informed by broader personal, socio-cultural and environmental contexts, this example shows Mathieu’s sense of wellbeing and belonging in Finland is informed by his perceptions of how people in Finland and in his homeland felt about nature as well as the characteristics and abundance of nature in both countries. What can also be seen in this example is the co-mingling of these broader personal, societal and environmental processes and structures.

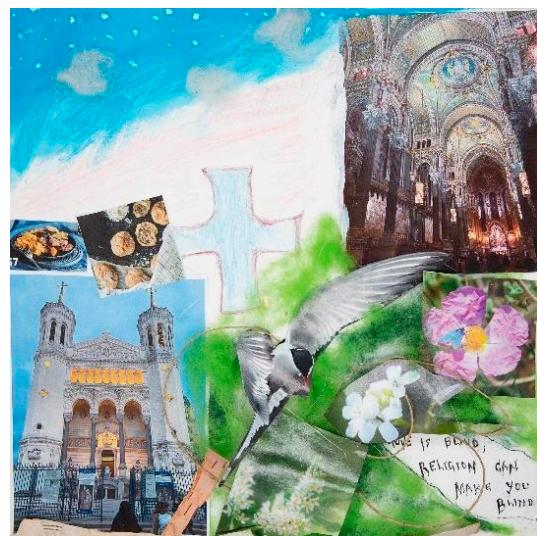


Figure 8. Mathieu’s Workshop 3 artwork.

6.3. Imagining a Future in Which to Thrive

Also significant in participants’ development of a sense of belonging in Finland is the way in which they imagine a future which allows them to thrive. In expressing their resettlement experiences through art and word, the participants articulated clear goals

about where, how and with whom they would like to live in the future. Nature, again, featured prominently in many of these imaginings, some of which related to a desire to live in or near nature-rich areas. Samir, continuing his abovementioned discussion about missing the mountains of his childhood, spoke of his desire to live in a place that “reminded me a bit of my homeland”. For Arman, the key aspect of the nature he desired to live in is that it is “safe and healthy”. Nala, when discussing the presence of a surfing figure in her artwork, expressed a wish to “live in that kind of warm country, near the beach”. In these examples, again, the participants’ holistic wellbeing can be seen to be informed by the particular personal, societal and environmental contexts that converge on it, including the legal requirements of living permanently in the country and having enough money and work opportunities to buy and maintain a house.

Other future-oriented examples related to participants’ desire to travel to places of natural beauty. While some participants spoke of their appreciation of Finnish nature in their local surroundings, others expressed a desire to travel abroad to experience different kinds of natural settings. Nala, for example, spoke of the need to study so that “*I could have a good job, not in Finland but overseas. I want to visit every corner of the earth, learn how to surf and . . . to go everywhere, every cold, warm place, enjoy there*”. Arman explained that, in order to visit the kind of “*beautiful nature*” represented in his artwork (see Figure 9), he would need to “*work hard and be successful, then I can go to these places. And I think my wellbeing depends on how hard I will work. I think the harder I work, the better I feel*”. Arman added that part of this desire to explore places of natural beauty was to share these experiences with a wished-for partner. Describing his artwork’s collage of forest, lake, plains and coral reef, Arman notes that “*here are two chairs, and this means that my girlfriend, or wife, and I are together in all of these*”. This wish to share a desired experience with a desired partner once again highlights the interrelations between the subjective, material and relational dimensions of the wellbeing Arman associates with the experience, where feeling good in and from nature interrelates with having enough resources to enjoy it and sharing the experience with others.

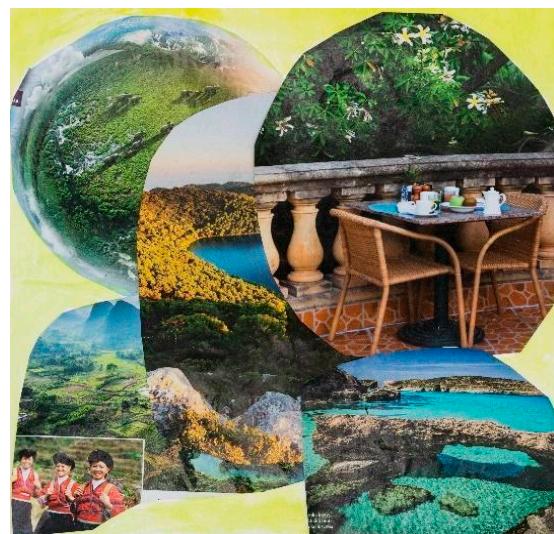


Figure 9. Arman’s Workshop 2 artwork.

The participants’ desire to travel to experience nature locations abroad can be seen as linked to broader socio-cultural notions of freedom, leisure and affluence, and it may be that the pursuit of these notions, as much as the encounters with the nature destinations, which drives the participants’ desires to travel. In these examples, nature has a perhaps more utilitarian role in participants’ wellbeing as an object to enjoy, and the ecological impact of travelling to see them contrasts with other participants’ concerns that if “*nature is not in good shape we can’t live here in the world*” (Aaqil). Set within these participants’ contexts of forced

dislocation from the natural environments of their childhood and present resettlement in the new environments of Finland. However, these examples can also be seen as linking to a broader process of imagining, seeking and exploring new natural settings in which to be well and belong.

7. Discussion and Conclusions

The aim of this paper was to explore the complex ways that refugees encounter nature in Finland during resettlement and how these encounters inform their wellbeing and their sense of belonging. It showed that refugees encounter nature through thinking about it, perceiving it, interacting with it and living in it. It considered their nature experiences through a relational wellbeing perspective and showed that they encounter nature in simultaneously experienced physical, emotional, cognitive and social ways. The particular physical characteristics of the nature being encountered, the affective and cognitive responses to the encounters and the social connections fostered with and within nature together informed the wellbeing and sense of belonging these young people gained in and from the encounter.

This study found that in the context of refugee resettlement, nature contact can foster a sense of belonging in three ways: through *restoration and attachment, maintaining links with the past, and shaping desires about a future in which to thrive*. The temporality of the findings resonates with previous research highlighting the significance of nostalgia and desire in refugee resettlement (Chen and Schweitzer 2019; Nunn 2022; Rishbeth and Finney 2006). The first theme relating to the therapeutic and restorative benefits of nature interaction also resonates with the larger body of research on the positive effects of nature on subjective wellbeing (e.g., McMahan and Estes 2015; Reining et al. 2021; Russell et al. 2013). The study's findings relating to the significance of past connections with nature places, the similarities and differences between past and present places, and the types of social relations associated with the places are in line with previous studies on migrant and refugee belonging and resettlement (Brun 2001; Coughlan and Hermes 2016; Peters et al. 2016). The emphasis on natural beauty resonates with previous studies on its significance in the context of healing and restoration in refugee contexts (e.g., Sampson and Gifford 2010).

From a relational wellbeing perspective, the three aspects of refugees' belonging identified above represent particular interrelations between subjective, material and relational dimensions of refugees' wellbeing. The subjective dimension was seen in the way that the encounters made refugees feel good through the positive feelings and thoughts generated by and within the encounter. The material dimension was seen in their having enough access to, as well as enough time and resources to visit, particular nature places with characteristics important to them. The relational dimension is seen in the way that the encounters made these young people feel connected, either with other people through social interactions in nature or with nature itself. These wellbeing dimensions were not generated independently or in isolation from each other but simultaneously within the multifaceted experience of the nature encounters.

Subjectively feeling well in nature was seen as dependent upon the materiality of having enough proximity to and access to nature, which makes them feel well, as well as the kinds of relating that take place in the encounters. Participants stated that the need for money, study, and work was linked both to their capability of accessing nature as well as to more general material necessities for resettlement and living well in a new country, which is recognized as significant in broader research on refugee resettlement and adaption (e.g., Ryan et al. 2008). The significance that participants placed on having access to the kind of nature that makes them feel well resonates with broader research on the importance of nature access to physical and psychological wellbeing (Rishbeth et al. 2019).

The relational dimension of being connected in, through and with nature can also be seen as intrinsically related to the subjective and material dimensions. While in the broader Drawing Together Project, participants also discussed social relations in other environments, the nature-related examples seemed to occur mainly in the kind of nature

that otherwise felt good for them to be in and to which they had the material means to access. Participants' feelings of being connected to nature suggest that the significance of nature in relational wellbeing seemed, in some cases, to extend beyond the role of a setting for social or therapeutic experiences to being part of refugees' environmental relations of wellbeing. This draws links to Atkinson's (2013) notion of wellbeing as comprising "complex assemblages of relations not only between people, but also between people and places, material objects and less material constituents of places including atmosphere, histories and values" (p. 142), as well as to Cartwright et al.'s (2018) suggestion that nearby nature elicits "feelings of connection or relatedness" similar to that of social connection (p. 3). More broadly, it resonates with literature on the reciprocal relations with nature found in indigenous contexts (e.g., Arnold et al. 2021). As pointed out by Chen and Schweitzer (2019), feelings of connection to nature are a significant aspect of belonging that extends beyond social membership to an experience of belonging to something greater.

It is not possible from these findings to draw any deep conclusions about what it means for participants to feel "connected to nature", nor what "nature" itself represents for them when they speak of it. At the very least, however, we can see in these examples how aspects of refugees' sense of belonging can be understood in terms of the interplay between subjective, material and relational dimensions of refugees' wellbeing.

Other examples shed light on how refugees' wellbeing is informed and shaped by their personal histories as well as the broader socio-cultural and environmental contexts in which they resettle. These "drivers" of wellbeing (White and Jha, this volume) were themselves seen to interrelate. An example of this was Mathieu's discussion in which he described, on the one hand, his personal childhood history of nature interaction informing his present subjective nature experiences, and on the other hand, the respect for nature he saw in Finnish society easing his resettlement experiences. This intertwining of environmental, personal and societal factors is in line with White's (2017) conceptualization of environmental as well as personal and societal structures and processes driving relational wellbeing. Importantly, this example shows how these drivers do not work on the wellbeing dimensions separately; rather, they inform the wellbeing dimensions as a holistic experience.

The temporality of the findings suggests that, while belonging is something experienced in the present, it includes the capacity to reconcile the past with the present, as well as envision a positive path into the future (Chen and Schweitzer 2019; Vitus 2022). Through this temporal perspective of belonging, refugees' encounters with nature can be interpreted as active and intentional movements towards building those capacities for looking to the past and the future. In another way, the temporality of the findings resonates with previous studies on refugee belonging, which highlight the processual nature of belonging. Belonging is not a state to which one arrives but a continual process of becoming (Chen and Schweitzer 2019). This is in line with other understandings of wellbeing, including White's (2015) relational approach, which stresses the "dynamic inter-relations" of wellbeing dimensions over time (p. 11). Refugees' sense of belonging can, in this sense, be seen as a continual process of interrelating over time between the multiple dimensions of their wellbeing. This may mean, for example, that the ways that refugees encounter particular nature places might change over time depending on the shifting levels of feeling good, having enough and being connected that are generated from the encounter.

Using a combination of artmaking and interviews was an effective way of shedding light on the complex links between nature, wellbeing and belonging. The study was, however, limited in various respects. In terms of framing, this study was centred on the particular context of Finland with its own specific range of physical, social and cultural environments. The participants' places of origin were limited to particular regions in central and south Asia as well as central and eastern Africa. In terms of methodology, being sensitive to the importance of privacy in participants' resettlement experiences, I examined only the kind of nature encounters that participants wished to talk or create art about. Similarly, the study only considered the kinds of subjective, material and relational

responses to nature contact that the participants wished to reveal. Additionally, while participants' artworks and interviews contained a wide variety of details related to their wellbeing and resettlement experiences, this study focused only on those with explicit visual or verbal reference to nature contact. Also, while my interpretation of the artworks was based as much as possible on participants' own descriptions and explanations of them, the conclusions I drew from them were nevertheless, and unavoidably, mediated by my own cultural (Anglo-Australian) lens. Lastly, participants were encouraged to focus primarily on the positive aspect of relational wellbeing. This decision, following the broader methodological framework of the Drawing Together project, meant that potentially significant negative aspects of the nature–wellbeing nexus highlighted by previous research (see, e.g., Bates 2002; Rishbeth et al. 2019) remained unexplored.

Future research could build further on this study by examining the significance of nature in refugee resettlement experiences in other country contexts. Further investigations into the negative aspects of nature contact for refugees' senses of belonging would also provide valuable additional insights into how aspects of nature encounters can inhibit as well as foster a sense of belonging. More research on the links between Finnish built environments and relational wellbeing would also be of great value in complementing this study's focus on natural environments.

While there is still much to learn about the complex ways that natural environments impact and relate to refugees' wellbeing and belonging, I hope that the insights presented in this paper lead to more consideration of how the physical, as well as social, characteristics of places can be improved to shape their resettlement experiences. Improvements in the health and integrity of local natural environments, for example, as well as increased access to a range of natural environments, would benefit not only newcomers to Finland but also those already living there. Increased opportunities for learning about and encountering natural environments in social and therapeutic ways would also be of benefit. Another hope is that this chapter stimulates further discussion about the processual nature of being well and coming to belong. As forced migration to Finland and elsewhere continues at high levels, states need to provide continual and sustainable conditions to foster the wellbeing of all migrants, including refugees and asylum seekers. Included in these conditions is the opportunity to imagine a future in which to thrive.

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Notes

- 1 The Drawing Together project is an international NordForsk-funded study investigating relational wellbeing in the lives of young refugees in Finland, Norway and Scotland. The total participants for each country were Finland (17), Norway (17), and Scotland (17). See the Drawing Together website for more details: <https://www.drawingtogetherproject.org/> (accessed on 1 November 2023).
- 2 Each workshop ran for approximately 6 h during a single day. They were mainly held on the premises of participating research institutions. In Finland, these were Tampere University and the Migration Institute of Finland, Turku.
- 3 Participants have all given consent for their artworks and interview texts to be published. All artwork images and interview texts were checked and approved by participants before publication.
- 4 Acknowledging the complex debate regarding the defining of nature (Vining et al. 2008), the distinctions I drew at this stage between natural and non-natural were necessarily simplistic and artificial. They were used here merely as an analytical tool to narrow the data sample to that which I anticipated would yield the most relevant verbal data in the explanations and interviews.

- 5 In several cases, participants described nature elements in their artworks, such as trees, as metaphors for family or social relations. Although interesting, these cases were considered as lying outside the scope of this study.
- 6 To ensure rigour, I also analysed the transcripts corresponding to the artworks excluded in the first sampling stage to check for any general discussions on the nature–wellbeing nexus. As expected, those transcripts did not yield any relevant data.
- 7 To preserve participants' privacy, all names in this paper have been anonymised.

References

- Arnold, Crystal, Jennifer Atchison, and Anthony McKnight. 2021. Reciprocal relationships with trees: Rekindling Indigenous wellbeing and identity through the Yuin ontology of oneness. *Australian Geographer* 52: 131–47. [[CrossRef](#)]
- Askins, Kye. 2009. Crossing divides: Ethnicity and rurality. *Journal of Rural Studies* 25: 365–75. [[CrossRef](#)]
- Atkinson, Sarah. 2013. Beyond components of wellbeing: The effects of relational and situated assemblage. *Topoi* 32: 137–44. [[CrossRef](#)] [[PubMed](#)]
- Atkinson, Sarah, Sara Fuller, and Joe Painter. 2016. *Wellbeing and Place*. London and New York: Routledge.
- Bay, Uschi. 2013. The natural environment and wellbeing. In *Social Work Practice for Promoting Health and Wellbeing*. London and New York: Routledge.
- Bates, Diane C. 2002. Environmental refugees? Classifying human migrations caused by environmental change. *Population and Environment* 23: 465–77. [[CrossRef](#)]
- Berchin, Issa Ibrahim, Isabela Blasi Valduga, Jéssica Garcia, and José Baltazar Salgueirinho Osório de Andrade. 2017. Climate change and forced migrations: An effort towards recognizing climate refugees. *Geoforum* 84: 147–50. [[CrossRef](#)]
- Biglin, Josephine. 2020. Embodied and sensory experiences of therapeutic space: Refugee place-making within an urban allotment. *Health & Place* 62: 102309.
- Bodin, Maria, and Terry Hartig. 2003. Does the outdoor environment matter for psychological restoration gained through running? *Psychology of Sport and Exercise* 4: 141–53. [[CrossRef](#)]
- Brun, Cathrine. 2001. Reterritorializing the relationship between people and place in refugee studies. *Geografiska Annaler: Series B, Human Geography* 83: 15–25. [[CrossRef](#)]
- Buijs, Arjen E., Birgit H. M. Elands, and Fransje Langers. 2009. No wilderness for immigrants: Cultural differences in images of nature and landscape preferences. *Landscape and Urban Planning* 91: 113–23. [[CrossRef](#)]
- Cartwright, Benjamin D. S., Mathew P. White, and Theodore J. Clitherow. 2018. Nearby nature 'Buffers' the effect of low social connectedness on adult subjective wellbeing over the last 7 days. *International Journal of Environmental Research and Public Health* 15: 1238. [[CrossRef](#)]
- Chen, Shiqi, and Robert D. Schweitzer. 2019. The experience of belonging in youth from refugee backgrounds: A narrative perspective. *Journal of Child and Family Studies* 28: 1977–90. [[CrossRef](#)]
- Coughlan, Reed, and Sarah E. Hermes. 2016. The Palliative Role of Green Space for Somali Bantu Women Refugees in Displacement and Resettlement. *Journal of Immigrant & Refugee Studies* 14: 141–55. [[CrossRef](#)]
- Dinnie, Elizabeth, Katrina M. Brown, and Sue Morris. 2013. Community, cooperation and conflict: Negotiating the social well-being benefits of urban greenspace experiences. *Landscape and Urban Planning* 112: 1–9. [[CrossRef](#)]
- Finnish Immigration Service. 2023. *Forecasts about the Number of Applications*. Available online: <https://migr.fi/en/forecasts> (accessed on 1 March 2023).
- Gergen, Kenneth J. 2009. *Relational Being: Beyond Self and Community*. Oxford: Oxford University Press.
- Gladkikh, Tatiana M., Rachelle K. Gould, and Kimberly J. Coleman. 2019. Cultural ecosystem services and the well-being of refugee communities. *Ecosystem Services* 40: 101036. [[CrossRef](#)]
- Hartig, Terry, Richard Mitchell, Sjerp De Vries, and Howard Frumkin. 2014. Nature and health. *Annual Review of Public Health* 35: 207–28. [[CrossRef](#)]
- Haswell, Nick, Mervi Kaukko, Marte Knag Fylkesnes, and Paul Sullivan. 2023. Keeping each other safe: Young refugees' navigation towards a good life in Finland, Norway, and Scotland. In *Living Well in a World Worth Living in for All (Vol. 1): Current Practices of Social Justice, Sustainability and Wellbeing*. Cham: Springer Nature.
- Kaplan, Rachel, and Stephen Kaplan. 1989. *The Experience of Nature: A Psychological Perspective*. Cambridge: Cambridge University Press.
- Keniger, Lucy E., Kevin J. Gaston, Katherine N. Irvine, and Richard A. Fuller. 2013. What are the benefits of interacting with nature? *International Journal of Environmental Research and Public Health* 10: 913–35. [[CrossRef](#)] [[PubMed](#)]
- Lemieux, Christopher J., Paul F. J. Eagles, D. Scott Slocombe, Sean T. Doherty, Susan J. Elliott, and Steven E. Mock. 2012. Human health and well-being motivations and benefits associated with protected area experiences: An opportunity for transforming policy and management in Canada. *Parks* 18: 71–85.
- Liebenberg, Linda. 2009. The visual image as discussion point: Increasing validity in boundary crossing research. *Qualitative Research* 9: 441–67. [[CrossRef](#)]
- Lähdesmäki, Tuuli, Tuija Saresma, Kaisa Hiltunen, Saara Jäntti, Nina Sääskilahti, Antti Vallius, and Kaisa Ahvenjärvi. 2016. Fluidity and flexibility of "belonging" Uses of the concept in contemporary research. *Acta Sociologica* 59: 233–47. [[CrossRef](#)]
- Macnaghten, Phil, and John Urry. 2000. Bodies of nature: Introduction. *Body & Society* 6: 1–11.

- McMahan, Ethan A., and David Estes. 2015. The effect of contact with natural environments on positive and negative affect: A meta-analysis. *The Journal of Positive Psychology* 10: 507–19. [[CrossRef](#)]
- Nunn, Caitlin. 2022. ‘A Quiet Place’: The Natural Environment as a Sphere of (Non) Belonging for Refugee-background Young People in Regional Resettlement Locations. In *Youth Beyond the City*. Bristol: Bristol University Press, pp. 96–115.
- Pasanen, Tyyti P., Marjo Neuvonen, and Kalevi M. Korpela. 2018. The Psychology of Recent Nature Visits: (How) Are Motives and Attentional Focus Related to Post-Visit Restorative Experiences, Creativity, and Emotional Well-Being? *Environment and Behavior* 50: 913–44. [[CrossRef](#)]
- Peters, Karin, Monika Stodolska, and Anna Horolets. 2016. The role of natural environments in developing a sense of belonging: A comparative study of immigrants in the US, Poland, the Netherlands and Germany. *Urban Forestry & Urban Greening* 17: 63–70.
- Plessner, Helmuth. 2019. *Levels of Organic Life and the Human: An Introduction to Philosophical Anthropology*. New York: Fordham University Press.
- Reining, Catherine E., Christopher J. Lemieux, and Sean T. Doherty. 2021. Linking restorative human health outcomes to protected area ecosystem diversity and integrity. *Journal of Environmental Planning and Management* 64: 2300–25. [[CrossRef](#)]
- Rishbeth, Clare, and Nissa Finney. 2006. Novelty and nostalgia in urban greenspace: Refugee perspectives. *Tijdschrift Voor Economische en Sociale Geografie* 97: 281–95. [[CrossRef](#)]
- Rishbeth, Clare, Dominika Blachnicka-Ciacek, and Jonathan Darling. 2019. Participation and wellbeing in urban greenspace: ‘curating sociability’ for refugees and asylum seekers. *Geoforum* 106: 125–34. [[CrossRef](#)]
- Russell, Roly, Anne D. Guerry, Patricia Balvanera, Rachelle K. Gould, Xavier Basurto, Kai M. A. Chan, Sarah Klain, Jordan Levine, and Jordan Tam. 2013. Humans and Nature: How Knowing and Experiencing Nature Affect Well-Being. *Annual Review of Environment and Resources* 38: 473–502. [[CrossRef](#)]
- Ryan, Dermot, Barbara Dooley, and Ciaran Benson. 2008. Theoretical perspectives on post-migration adaptation and psychological well-being among refugees: Towards a resource-based model. *Journal of Refugee Studies* 21: 1–18. [[CrossRef](#)]
- Sampson, Robyn, and Sandra M. Gifford. 2010. Place-making, settlement and well-being: The therapeutic landscapes of recently arrived youth with refugee backgrounds. *Health & Place* 16: 116–31.
- Srivastava, Prachi, and Nick Hopwood. 2009. A practical iterative framework for qualitative data analysis. *International Journal of Qualitative Methods* 8: 76–84. [[CrossRef](#)]
- UNHCR. 2023. *The 1951 Refugee Convention*. Available online: <https://www.unhcr.org/about-unhcr/who-we-are/1951-refugee-convention> (accessed on 1 February 2023).
- Van Liempt, Ilse, and Richard Staring. 2021. Homemaking and places of restoration: Belonging within and beyond places assigned to syrian refugees in the Netherlands. *Geographical Review* 111: 308–26. [[CrossRef](#)]
- Vining, Joanne, Melinda S. Merrick, and Emily A. Price. 2008. The distinction between humans and nature: Human perceptions of connectedness to nature and elements of the natural and unnatural. *Human Ecology Review* 15: 1–11.
- Vitus, Kathrine. 2022. Forming the capacity to aspire: Young refugees’ narratives of family migration and wellbeing. *Journal of Youth Studies* 25: 400–15. [[CrossRef](#)]
- White, Sarah C. 2015. *Relational Wellbeing: A Theoretical and Operational Approach*. Bath Papers in International Development and Wellbeing No. 43; Bath: Centre for Development Studies (CDS), University of Bath.
- White, Sarah C. 2017. Relational wellbeing: Re-centring the politics of happiness, policy and the self. *Policy and Politics* 45: 121–36. [[CrossRef](#)]
- White, Sarah C., and Shreya Jha. 2020. Therapeutic culture and relational wellbeing 1. In *The Routledge International Handbook of Global Therapeutic Cultures*. London and New York: Routledge, pp. 203–14.
- White, Sarah C., and Shreya Jha. 2023. Exploring the Relational in Relational Wellbeing. *Soc. Sci.* 12: 600. [[CrossRef](#)]

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