

Cycling and Nature: A Look at the Connection Between Cycling and Nature for Older Adults

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This article came about from a presentation on cycling and nature made by Mel Cairns (Centre for Transport and Society at the University of the West of England) on September 8, 2023, at the Cycling & Society Symposium in Dublin, Ireland. Many responses posted to the 50+ Cycling Survey, Year 4¹ (including the online journal), referenced nature, which points to potential connections between cycling and nature. This article adds to the current body of knowledge about cycling and nature.

Cycling and nature connection are both seen in many quarters as desirable activities with untapped potential to improve public health and wellbeing and reduce environmentally damaging activities.²

How do we define nature?

Nature can be easy to conceptualize, but difficult to define. A simple definition is that it includes all the animals, plants, and other things in the world that are not made by people, and all the events and processes that are not caused by people.³ While, people design places with elements of nature, such as a park or a building with ample windows, the simple presence of the sun or rain, or the shining moon shows the presence of nature.

How does nature benefit people?

The Romans acknowledged nature’s role in a healthy life.⁴ A display at the Vindolanda Fort site describes how Romans approached staying healthy: *The Roman physician Galen saw an interplay between mental and physical health. His ‘whole body cure’ focused on a balance between body and soul...Galen suggested that health could be maintained or restored by concentrating on issues such as sensible eating and drinking, getting sufficient exercise and rest, as well as looking after our mental wellbeing. Engaging with the natural environment – water, sunlight, fresh air, flora and fauna – were also seen as critical for good health.* As Figure 1 shows, each season offered mental health benefits and affected the body in some way.

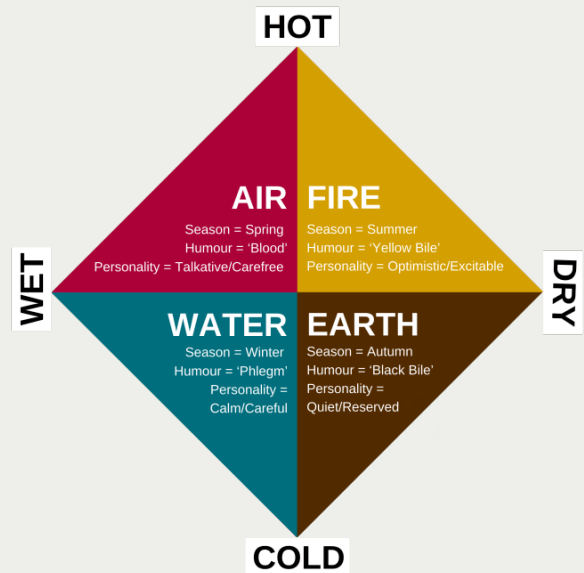


Figure 1. Romans, Nature and a Healthy Life

How do we understand engaging with nature today?

T. Hartig, et. al. diagrammed the interaction of elements of nature with experiences with nature, shown in Figure 2. His diagram shows connections among them and experiences because of them. Note that all boxes, i.e., aspects led to health and well-being for people.⁵

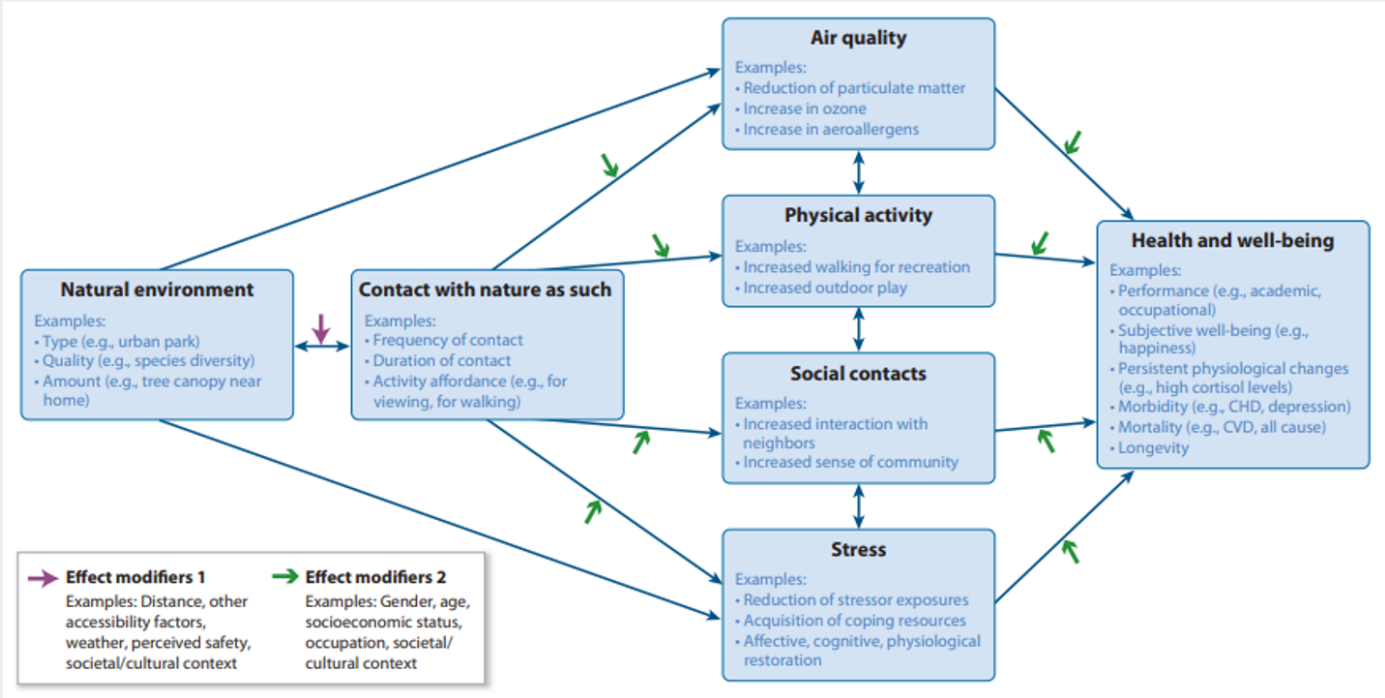


Figure 2. Nature Elements and Interactions.

Subsequent to Hartig’s work, the Nature Connectedness Group at Derby University, UK, identified five different pathways to increase the nature connectedness construct.^{6, 7}

Pathway	It is about...	Connectedness means...
Contact	Turning to nature through the senses	Notice and actively engage with nature, spending time fully experiencing nature with all the senses
Emotion	Feeling alive through the emotions nature brings	Engage emotionally with nature. To find happiness and wonder in nature. To note the good things in nature, the joy and calm that they can bring. To embrace nature at times of sorrow.
Beauty	Noticing nature’s beauty	Find beauty throughout the natural world. Every day, take time to appreciate beauty in nature, engage with it through art or in words.
Meaning	Nature brings meaning to our lives	Explore and express how nature brings meaning to their lives. To notice how nature appears in songs and stories, poems and art. How special places are natural spaces. To celebrate the mystery, signs and cycles of nature.
Compassion	Caring and taking action for nature	Think about what they can do for nature. To take actions that are good for nature. Recognize shared life stories and be part of the community of nature.

The two frameworks offer a way to understand the interaction people have with nature and focus on its benefits to us. Programs that build on these benefits typically include an engagement component. For example, the increasingly popular practice of forest-bathing routinely shows the benefits of spending time in nature.⁸ Further, engaging with nature in a forest is possible regardless of age or ability, ranging from babies sleeping in a pram to people walking or cycling in the forest to those who sit in a forest instead of walking in it.

The benefits of engaging with nature do not diminish as people age. Research shows that whether self-initiated or through structured engagement with nature built around social connections, an older adult's health and quality of life may improve through nature connectedness.⁹

Not surprisingly, older adults connect with nature on a spiritual level, too, contributing to their ongoing quest for a meaning in life. Perhaps the recognition of their shortening lifespan, whether through the meditative features of forest-bathing or simply through experiencing the joy of being outside with nature, older adults can feel a connection to something that is greater than themselves, i.e., an eternal that transcends themselves. In their work on community-residing older adults, Reker and Woo found that Older adults, who derive meaning from self-transcendent sources, overall have a more positive approach to their lives in many respects, including "...a stronger desire to get more out of life..." than those who are more self-serving. This personal meaning orientation included their relationship with nature, along with a variety of other factors.¹⁰ Ackerman's work on transcendence, includes this recommendation for people of all ages: *Get out of the house and go where you are closest to nature; allow yourself to "commune" with nature, finding inspiration, healing, and perhaps a sense of transcendence through nature.*¹¹

Experiencing nature becomes important for our well-being as we age for more than its spiritual benefits. Green space, whether designed by humans or nature¹² provides social connections when experiences with or around other people, a portal to physical activity, and support for good mental health. At life's end, people who want to be cremated may designate that their ashes be spread in places of nature that meant much to them during life. This directive may be to establish an enduring connection with nature, to return to nature, or to find the peace and pleasure nature brought when alive: I have told my adult children and my grandchildren that I want to be cremated and have my ashes spread over the ocean, as that is where I always feel at peace.¹³

How does cycling benefit from nature?

Mel Cairns' work exploring relationships between cycling and nature draws on existing research and expands our understanding of the two. She concludes that the desire to experience nature while cycling demonstrates nature's motivational characteristics. For example, included in her literature review, is the work of Stefansdottir, 2014; and Taylor and Carr, 2021, who find that nature offers some of the most valued and motivating aspects of cycling experiences. Drawing on this work and reflecting the nature connectedness pathways in Figure 3 above, Cairns notes how nature motivates and benefits cycling by:

- Enhancing the enjoyment cycling brings by having direct contact with multiple aspects of nature.
- Increasing a cyclist's overall sense of wellbeing
- Influencing route preference and choice.
- Helping to experience a connection with nature (i.e., nature connectedness).
- Contributing to a broad range of desirable states or experiences, including the feeling of escape, of getting away, feeling the challenge and reward of cycling in various contexts rich with nature, and experiencing a novel or memorable cycling experience because of nature.
- Mitigating some of the negative aspects of cycling such as improving perceived safety, reducing perceived traffic conflicts, noise that disrupts the cycling experience, and air pollution that can cause health concerns. Engaging with nature while cycling can also distract a rider from the effort of turning the pedals and following a route.

How does nature affect cycling for older adults? Findings from the 50+ Cycling Survey and accompanying on-line journal

While the 50+ Cycling Survey and on-line journal did not ask specifically about nature, older adults completing one or both shared their experiences and connectedness with nature, such as the following comments from the online journals:

- *A dedicated bike/pedestrian trail in a forest preserve. Along a river, no traffic.*
- *Being out on a bike...Birds singing, seeing other cyclists and joggers.*
- *The enjoyment of nature and a total of over 2,000 miles.*
- *Beautiful winter day, watched a coyote hunting.*
- *Beautiful day for a ride with husband.*
- *Scenery ...animals...*
- *Cycling at night helps me clear my head from the day.*

While nature offers positive experiences for older cyclists, its features can lack spirituality when the person must adapt to darkness, less-than-perfect weather, and a challenging terrain. We made the following observations from survey responses and on-line journals:



Figure 3. Photo from on-line journal response.






- Older cyclists have a love-hate relationship with nature. They love it when weather conditions allow them to cycle and enjoy the surroundings with trees, birds, beautiful air, etc., but hate it when it creates uncomfortable conditions such as excessive heat or cold, air pollution from forest fires, or slippery conditions from rain, snow and ice. As a result, less than ideal nature conditions can be a primary reason for cycling decreases or one of many. Rain heat and cold just made it uncomfortable (76-year-old man).
- The design and placement of the built environment affects how we all engage with nature. Sidewalks and trails, roads, bridges, etc., can help or hinder older adults from engaging with nature when cycling.
- Moving to a location where nature is harder to enjoy can result in less motivation to cycle.
- Natural conditions when cycling in a nature setting can affect older cyclists. Falls often happen along a trail with a fallen tree; where leaves and other vegetation accumulate on a trail or a roadway; or when the bright sun affects visibility (love that bright sun).
- Trails are a favorite because they offer a way to connect with several aspects of nature including plants, animals, water, and air.
- Some enjoy cycling on a trail in the moonlight, others enjoy nighttime cycling when temperatures are lower during times of hot weather.

The five pathways to connect with nature are evident in the survey responses.

Turning back to the five pathways for nature connectedness, we find survey and on-line journal responses that match up to each pathway, as shown in the table below.



Figure 4. Photo from on-line journal response.

Pathway		It is about...	Connectedness means...
Contact		Turning to nature through the senses	I cycle alone, especially...as fall approaches and the weather changes to cooler and wetter and windier, fewer people can be found on the trails (62-year-old woman)
Emotion		Feeling alive through the emotions nature brings	We began tandem cycling to share the joy of cycling and the outdoors (69-year-old man)
Beauty		Noticing nature's beauty	I cycle at night because I prefer the full moon on traffic free trails, no electric lights (73-year-old woman)
Meaning		Nature brings meaning to our lives	I cycle at night if I need a nature connection (69-year-old man)
Compassion		Caring and taking action for nature	I've cycled more in the past year because of my concern for climate change. (71-year-old woman)

Guide to nature and cycling

The 50+ Cycling Survey and on-line journal offer a way to relate how aspects of nature affect what older adults do to cycle and their reaction to the cycling experience. For example, temperature affects what older adults wear when cycling, how long they cycle, and how often they stop to rest. While some experience wild animals while cycling along forested trails, fear of these animals is uncommon. There is more fear being hit by people driving cars. Comments such as the following show how older adults find solutions to all elements of nature that allow them to cycle and bring a sense of pleasure to the trip: I enjoy commuting so much that I wanted to do it even in “poor” weather. Bought suitable cycling clothes for wet, cold, and snowy weather. (71-year-old woman)

The guide below is drawn from the Survey and on-line journal responses.



Figure 5. Photo from on-line journal response.

Element of nature	Affects	Older cyclists reaction
Temperature, Precipitation, Time of Day	<ul style="list-style-type: none"> • What clothing to wear • Length of cycling trip • Rest stops • Bicycle features such as tires, heated handlebars, windshields • What clothing to wear • Length of trip • Bicycle features such as light, reflective elements 	Satisfaction in being able to cycle in various weather conditions and time of day (not a sense of conquering nature, but cycling compatibly with it)
Topography (admittedly, some topography is designed by humans)	Choice of bicycle type, e.g., <ul style="list-style-type: none"> • Flat topography may be a road bike • Hilly or mountainous topography may be an e-assist bike 	Consideration of the purpose of cycling, including: <ul style="list-style-type: none"> • pure pleasure of being outdoor cycling • fitness goal for trip length, strength, agility
Sights and sounds	Route choice, such as trails	Sensory contact with trees, water, birds, animals
Animals in the wild	Respect for being in their habitat	Joy of hearing birdsong, seeing animals they don't see at home, experiencing their natural habitat Desire to avoid cycling alone for fear of encountering large wild animals such as a bear or moose.
The whole experience	Desire to continue cycling, with adaptations as needed	Mental health benefits, physical well-being; transcendence or spiritual connection of my concern for climate change. (71-year-old woman)

Mel Cairn's Selected Bibliography

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Endnotes

1. <https://transweb.sjsu.edu/research/2157.1-Older-Adults-Cycling-Active-Mobility>
2. <https://people.uwe.ac.uk/Person/MelCairns>
3. [https://www.collinsdictionary.com/dictionary/english/nature#:~:text=\(ne%C9%AAt%CA%83%C9%99%CA%B3%20\),are%20not%20caused%20by%20people](https://www.collinsdictionary.com/dictionary/english/nature#:~:text=(ne%C9%AAt%CA%83%C9%99%CA%B3%20),are%20not%20caused%20by%20people)
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8. <https://www.verywellmind.com/what-is-forest-bathing-5190723>
9. <https://www.psu.edu/news/health-and-human-development/story/time-nature-may-help-older-adults-improved-health-purpose-life/>
10. https://www.researchgate.net/publication/258187314_Personal_Meaning_Orientations_and_Psychosocial_Adaptation_in_Older_Adults
11. <https://positivepsychology.com/self-transcendence/>
12. https://www.researchgate.net/publication/258187314_Personal_Meaning_Orientations_and_Psychosocial_Adaptation_in_Older_Adults
13. <https://www.quora.com/If-you-re-cremated-can-you-choose-to-have-your-ashes-spread-anywhere-including-space>
14. Admittedly, less cycling can also result from things such as life becoming busy, an increase in care-taking responsibilities, opportunities to or the need for travel and other things, too.

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About the Author

Carol Kachadoorian has a breadth of knowledge and expertise in transportation planning and operations, which began in Alexandria, VA, where she served as a transit analyst before leading the City's first Office of Transit Services. After several years working with a family design-build company and at a major university, Carol returned to the transportation industry with the Washington, DC region's transit agency. There, she worked in operations and communications before focusing on pedestrian and bicyclists access to transit. Carol's work with Toole Design from 2008 to 2020 focused on school- and community-based active transportation plans. She started dbITilde Collaborative in 2020, specializing in older adult mobility and wellness. She describes the motivation for this work this way: "At age 60, I began to consider what my professional and personal life would look like during the next 30+ years. Now in my late 60's, I am working to improve mobility for people as they age.

This report can be accessed at
transweb.sjsu.edu/research/2465



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