



Walking as a method for epistemic justice in sustainability

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Abstract We argue that walking as a method provides an integrative approach to advance epistemic justice in sustainability research. The theory and practice of walking as a method has grown quickly within the social sciences and arts but remains underrepresented in sustainability research, where walking is typically an object of study (e.g., urban walkability). We argue that walking should be valued as an important mode of knowledge production that simultaneously widens sustainability knowledge, integrates diverse knowledge systems, and supports transdisciplinary sustainability solutions. In this perspective article, we consider the following questions: (1) Why is walking important to sustainability knowledge? (2) How can walk-based methods advance epistemic justice in sustainability knowledge? (3) What outcomes might we expect from cultivating walking as a method for sustainability knowledge? We reflect on how walking as a method centers equity and the contributions of walk-based sustainability knowledge for research and policy.

Keywords Epistemic justice · Methods · Sustainability knowledge · Walking

INTRODUCTION

Sustainability scholarship draws on multiple ways of knowing from across the natural and social sciences to develop action-oriented solutions for sustainable pathways. A key characteristic of sustainability research is that it is interdisciplinary (Spangenberg 2011) and incorporates differing ontologies, epistemologies, methodologies, and worldviews. These multiple origins have led to problems being defined (and solutions developed) in varied ways

(Haider et al. 2018). Because of this internal epistemic variety in the sustainability domain, there is an ongoing need for scholarship that integrates multiple ways of knowing, and also for work that addresses a wide array of different components of sustainability problems and solutions (Spangenberg 2011). As the urgency to address the climate crisis and other critical sustainability challenges grows, scholars have called for epistemic justice (Temper and Del Bene 2016) and emphasized the need to center diverse ways of knowing to create transformative change (Orlove et al. 2023).

We argue that walking as a method holds potential as an integrative method that can advance epistemic justice in sustainability research that elevates equity and justice. Within the context of sustainability research, walking is primarily addressed as an object of study, rather than a method for producing knowledge. Sustainability scholars see walking as a low-emissions mode of transportation compared to driving or riding in a vehicle (Karjalainen and Juhola 2021) and, in a wider framing, as an activity that contributes to individual and community health (Ettema and Smajic 2015). Subsequently, topics such as urban walkability have been evaluated as a component of sustainable transitions (Aghaabbasi et al. 2018; Patias et al. 2021). However, walking as a *method* of conducting research is underrepresented in the sustainability literature. Conversely, scholars across the social sciences have recently reflected on the importance of walking for knowledge generation (Bates and Rhys-Taylor 2017; Springgay and Truman 2017). This research is not situated within sustainability research, yet because of the way that walking immerses the walker in the landscape, built or natural, these methods present themselves as invitations to deepen sustainability knowledge. Walking can be part of an ethnographic approach, allowing the researcher to become immersed in a place. Others have

noted that walking with others can become a social act that collaboratively generates knowledge about a place (i.e., “place-as-ethnographic knowledge”) (Pink 2008). As a form of affective and emotional geography, walking can change “social forms and norms” (Bhattacharya and Barry 2021), and prompt action on issues of environmental sustainability (Duffy et al. 2019) and social justice (Stratford et al. 2020). There has also been interest in holding walking tours as part of public education to make academic theory more accessible and inclusive (Silver et al. 2021) and as a way of “counter-storying” to decolonize and highlight often erased narratives, such as Indigenous histories (Springgay and Truman 2017).

We argue that walking should not only be valued as the object of study (e.g., urban walkability), but as an important mode of knowledge production that simultaneously widens sustainability knowledge, integrates diverse knowledge systems, and supports transdisciplinary sustainability solutions. In this perspective article, we consider the following questions: (1) Why is walking important to sustainability knowledge? (2) How can walk-based methods advance epistemic justice in sustainability knowledge? (3) What outcomes might we expect from cultivating walking as a method for sustainability knowledge? To address these questions, we synthesize literature on epistemological influences and trends in sustainability and salient literature from social sciences and environmental studies on walking. We conclude with a reflection on the contributions of walk-based sustainability knowledge for research and policy.

WHY IS WALKING IMPORTANT TO “SUSTAINABILITY KNOWLEDGE?”

While sustainability researchers may already include walking as part of other methods to conduct spatial audits of urban conditions (Aghaabbasi et al. 2018), examine spatial variability along a transect (McDonnell et al. 2008), or conduct walking interviews (Lebowitz and Trudeau 2017), we see walking as a method as more than simply “being-in” a landscape; in our view, this method goes well beyond the “muddy boots” framing of *in situ* fieldwork that a range of disciplines, including ecology, geography, and anthropology, appreciate (Marston 2008; Oleas et al. 2019). In this section, we propose three key reasons that walking as a method provides important insights into sustainability knowledge that complement, extend, and integrate recognized ways of knowing and understanding in sustainability while also sparking research and action that addresses equity and justice (Keeler et al. 2020).

First, sustainability researchers have called for more research on the experiential dimensions of the environment

to catalyze social and environmental change (Shrivastava et al. 2020). Experiential methods are well established and applied to humanistic environmental questions (see Kitson et al. 2021), yet walking is not often included among these approaches, which typically rely on oral histories and storytelling. We advocate for walking as an experiential method because the human scale and context that are defined by walking reveals the experience of the places and processes associated with more or less sustainable environments in ways that dominant forms of research in sustainability science that focus on systems science do not. For instance, the experience of walking is complex with inputs and interactions from multiple sources and factors (Urquijo 2023). A researcher may feel heat from an exposed sidewalk or cool shade from a tree, the smell of a forest or stagnant sewer water, the sound of birds or noise of a passing train, a sense of safety, or perceptions of danger. Walking reveals how these experiences change across a neighborhood or landscape. Compared to other forms of transportation, such as cars, buses, or even bicycles, the slow rhythm of walking immerses people in their environment and allows for a grounded and experiential approach to landscape study (Bhattacharya and Barry 2021; Choi 2022). Throughout this article, we use the term “walking” in reference to a spectrum of pedestrian movement, including walking, wandering, moseying, and running. In addition, we recognize that not all people use their legs for mobility (Springgay and Truman 2017). The concepts, methods, and approaches described herein apply both to walking and those in wheelchairs or other assistive devices, and that the emphasis of our approach lies in the immersive experience associated with grounded movement through different landscapes.

Our position is that this experiential research is central to sustainability knowledge and cannot be replicated using other methods. While some aspects of these experiences can be quantified through sensors, mapped using geospatial technologies, or described through interviews with residents, there is growing recognition in sustainability science that it is challenging to fully capture this experiential dimension with existing methods. For instance, metrics of thermal comfort (a person’s perceived temperature) are often used to complement air or surface temperature metrics (Middel et al. 2016). In addition, virtual and augmented reality are used to simulate physical presence in an environment and support sustainability planning (Jamei et al. 2017). However, there are two limitations to these alternate approaches to capturing the human experience. First, these approaches typically disaggregate each of inputs into discrete factors and subsequently simplify the complexity of the sensory experience. Yet, arguably, it is this complexity that shapes the experience, associations, and decisions people make about their everyday lives that

impact local and global sustainability. For example, how does moderate hilliness combined with heat and street orientation (e.g., hard to walk/ride, sunrise/set) dissuade active travel? In addition, while there is potential for further technological and analytical development to better model this complexity, these developments will also be shaped by the perspectives and biases of the developers and researchers who might lack the direct experiences of the local environments or sustainability processes they seek to model (Portman et al. 2015). In short, walking provides a deep understanding of the human experience in a local environment that is difficult if not impossible to ascertain through alternate methods (Bhattacharya and Barry 2021; Urquijo 2023).

Second, the close experience a researcher has with the local environment while walking can reveal processes, connections, and transitions across diverse places (Pierce and Lawhon 2015). Sustainability issues tend to span local, regional, and global scales and connect disparate places, yet these connections are often invisible, concealed, or highly complex. For instance, consistent walking through a local place can enable close observations of changes in plant phenology – such as earlier leaf out tied to a warming climate. Indeed, datasets assembled across space and over time by community scientists’ observations have made contributions to understandings of our changing climate (Fuccillo Battle et al. 2022). Further, the immersive experience of walking reveals the boundaries or gradients across a landscape or urban environment. For instance, walking from an urban to suburban area will make clear differences between pedestrian walkability and canopy cover, which shape decisions about local mobility. Walking can also alert the researcher to hidden urban infrastructure (Wintoneak and Jobb 2022), such as pipes, sewer overflows, that may provide insight into a history of planning decisions with ongoing implications for residents.

Third, and as a function of the two points above, walking can bring environmental equity and justice issues to the forefront of sustainability inquiry – depending on place and the normative commitments of the researcher. Sustainability scientists have committed to addressing inequities, yet research on equity lags behind ecological and economic work (Keeler et al. 2020). Researchers have emphasized that advancing equity in sustainability science will require new approaches to knowledge production (Keeler et al. 2020). Walking provides one such approach. Environmental inequities are often visible, pervasive, and geographically specific. Walking through different neighborhoods or landscapes can bring these issues into focus in ways that spatial and ecological data may not. For instance, a city walkability index based on the presence or absence of sidewalks calculated using spatial data may fail to include issues of sidewalk quality

or be limited in its ability to characterize the impact of sidewalk quality on an individual’s ability or willingness to walk, especially considering the multiple factors that shape the experience of walking. Neighborhoods with minimal tree canopy cover will be noticeably warmer than those with tree-lined streets, and neighborhoods adjacent to highways and other transit corridors may be difficult to breathe in during rush hour. Walking can provide an “in-your-face” perspective on inequities that may be difficult to ignore. For instance, a study in Wollongong, Australia found that city walks cultivated a sense of awareness and concern about urban issues that did not directly impact the walkers (Stratford et al. 2020). In addition, walking can also be used to observe social processes at the local scale, including subtle cues in the landscape of caretaking and stewardship that might otherwise be missed in more aggregate analysis of neighborhood demographics collected via desktop research (Svendsen et al. 2015). We suggest that walking can help to center equity in sustainability science and link up with existing research on inequities and environmental justice with other methods and research in sustainability science.

HOW CAN WALK-BASED METHODS ADVANCE EPISTEMIC JUSTICE IN SUSTAINABILITY KNOWLEDGE?

Based on a synthesis of walk-based research in the social sciences, we identify five different ways walk-based methods can be applied in sustainability research to integrate multiple ways of knowing: walking interview, autoethnography, walking to collect data, collaborative walking, and mobile education (Table 1). We align our evaluation of walk-based methods for sustainability with the framework of sustainability knowledge by Apetrei et al. (2021). Their systematic review provides a conceptual reference guide for researchers on the notion of “knowledge” and how the sustainability community uses these concepts. They explain how knowledge may be conceived of as a specific entity, or thing, held by a person, as well as something that is embedded and created through actions and practices. Knowledge has also been conceptualized as the learning process that produces the “thing,” or entity. The interactions across these different approaches to knowledge comprise a system of knowledge, and different systems of knowledge arise from different groups and interactions. These systems interface with each other to investigate how knowledge is created by different systems. Table 2 summarizes these five approaches to set the stage for illustrating how walk methods contribute to different kinds of sustainability knowledge.

Table 1 Types of knowledge produced by different types of walking

Types of walking	Description	Impacts for research
Walking to Collect Data	Researchers include walking as a means to collect data (e.g., photographs, air quality data, social patterns of human interaction) or as part of complementary data collection techniques that can be triangulated with other methodologies	Researcher gains direct experience of the local environment, observes how people interact with space, and identifies new areas of inquiry
Walking Interview or “Go Along Interviews”	Researchers conduct interviews while walking to encourage place-based, contextually rich narratives that include detailed accounts of the surrounding environment	Enrich interviews with perceptions, attitudes, and behaviors with respect to the local landscape
Autoethnographic Walking	Walking as an ethnographic experience orients participants toward questions of landscape and environment and focuses on the experience of the researcher	Autoethnographic accounts provide research with insight into the interactions between local environments and researcher
Collaborative walking	“Walk with others” as a collective act that has potential to co-create knowledge because of the opportunities for socializing, reflecting, and engaging with different places	Co-produce sustainability knowledge among diverse stakeholders and places
Mobile Popular Education	Walking tours are commonly used to introduce the public, students, tourists, or any other group, to neighborhoods or landscapes within an educational and curated framework	Make sustainability science less abstract and more accessible and inclusive

Table 2 Entry points for knowledge in sustainability science (after Apetrei et al. 2021)

Entry point	Definition	Examples	Types of walking that contribute to sustainability knowledge
Entity	Defined as knowledge that is held by an individual or group, often gained through direct experience or shared knowledge	Traditional knowledge, traditional ecological knowledge, Indigenous knowledge, and local knowledge	Walking interview, walking to collect data, autoethnography
Process	Defined as the flow of knowledge through a system, including how knowledge is collaboratively produced for action and societal relevance	Co-production, knowledge sharing, knowledge exchange	Collaborative walking, mobile popular education (e.g., walking tour)
Knowledge as learning	Defined as the process of developing or updating the knowledge held by individuals or groups	Experiential learning, education for sustainable development	Mobile popular education, autoethnography, collaborative walking (e.g., collaborative or co-created field tours)
Knowledge as a system	Described as 1. a “way of knowing” at the individual or group level, with these ways of knowing grounded in local contexts; or 2. The formal or informal networks in which knowledge is “produced, exchanged or used” (pp)	The translation of knowledge into action or policy	Autoethnography, Collaborative walking
Knowledge as interface	Defined as the boundaries or interfaces between different systems of knowledge and how knowledge is created by different systems	Transdisciplinary research, action research, science-policy	Collaborative walking

Walking interviews

Walking interviews hold potential for advancing knowledge about how people and communities are connected to their local environment, which is essential to advancing sustainability science that produces usable knowledge and creates solutions that reflect local needs. Evans and Jones (2011) describe the benefits of the walking interview—in contrast to a sedentary interview—to encourage place-

based, contextually rich narratives that include detailed accounts of the local environment that link qualitative data from conversations with quantitative data about the location and its characteristics. These methods have a long tradition in “street corner sociology” that engage in ethnography, observation, and interview with research subjects in situ (e.g., Whyte 1993). Walking interviews illuminate how individuals or groups make sense of and understand different sustainability issues, what Apetrei

et al. (2021) describes as “entity” knowledge. Walking interviews are already being incorporated into sustainability research, in areas such as public health and environmental conditions (Amaya et al. 2022), outdoor education research (Heijnen et al. 2022), and perceptions of green infrastructure (Santo-Tomás Muro et al. 2020). This research consistently describes the benefits of the *in situ* interview approach for gaining deeper insights into place and local relationships with the environment. Given that this method is well established and includes multiple variations (Evans and Jones 2011), we see further opportunity for expanding this approach into sustainability research. Walking interviews could be readily incorporated into existing interview protocols by incorporating walks into the interview process. Because interview protocols require expertise in qualitative methods, this approach might be most readily accessible to research teams with training in the social sciences.

Autoethnography and walking to collect data

Autoethnography, or ethnography regarding one’s own lived experience, builds on the longer literature regarding ethnographic research, including the idea that the researcher can act as an instrument, synthesizing social and environmental experiences. Autoethnographic walking is sometimes regarded as part of a more generic autoethnographic research practice, reporting out one’s own *dasein*-like “being-in” the world (Heidegger 2008). After all, walking is often inseparable from participating in the experience of a place or a community (Ingold and Vergunst 2008). Walking as an ethnographic experience also orients participants toward questions of landscape and environment (Curtis 2016; Jung 2014). For instance, Wylie’s (2005) ethnographic walk along the South West Coast Path in North Devon, England shed light on the coastal landscape and his own experience in it, from a sense of anxiety in the woodlands to the connection between the “pain of footsore walking” and the rocky cliffs. Wylie (2005) proposes the term “post-phenomenological” to describe how the walk revealed how the self and landscape were “intertwined” that the landscape was more than his perspective of it and more than something to be observed.

Walk-based autoethnographic research has potential to illuminate multiple types of sustainability knowledge, including reflection on the knowledge held by a researcher, the way that a researcher develops and updates their knowledge, and how this knowledge translates into action. Autoethnographic methods are notable in that they support multiple ways of knowing based on Apetrei et al.’s (2021) framework. Autoethnography has already been incorporated into environmental research to identify pro-sustainability or pro-environmental behaviors (Lam 2022; Manolas et al.

2013; Nicol 2013), particularly within the fields of outdoor studies and environmental education. These studies emphasize the connection between autoethnography and the potential for societal change. We also see potential for researchers who already include walking as a means to collect data to include autoethnography to widen their epistemological perspective. We suggest that including autoethnography alongside other methods has potential to enrich researcher understandings of data collected, and improve data interpretation. For instance, a researcher may walk to collect geospatial data (e.g., georeferenced air quality data), or visual data (e.g., photographs), or to observe local conditions (e.g., quality of a sidewalk, social patterns of human interaction). While collecting data in a transect or conducting a spatial audit, researchers may benefit from widening their view to observe their surroundings and to note their personal experience. Researchers could include walking in advance of their data collection to develop local literacy prior to finalizing their research protocols. Additionally, researchers can appreciate the broader context surrounding their data through walking, which may reveal new connections to local conditions and to facilitate the interpretation of their data. Finally, data collected while walking can be enhanced through qualitative research practices that enhance rigor and reliability such as using paired research teams, following protocols for writing structured field notes, and conducting research team debriefs (see, e.g., Auyeung et al. 2016).

Collaborative autoethnography has also been incorporated into transdisciplinary research to reconcile disciplinary divides across the natural and social scientists (Haeffner et al. 2022). Lam’s (2022) duoethnography highlights how place (among other factors, like identity, belonging, and relationships) influences beliefs, emotions, and actions with respect to the local environment. We see value in incorporating walking into autoethnography and collaborative autoethnography for sustainability research to prompt deeper engagement with the geographic context of places, build local environmental literacy, and reflect on how knowledge can translate into action.

Collaborative walking

Walking collaboratively holds potential for co-producing sustainability knowledge based on a shared experience of specific places and environments. The concept of collaborative walking is emerging, yet multiple researchers have described approaches that include walking with others as a collective act that has potential to co-create knowledge because of the opportunities for socializing, reflecting, and engaging with different places (Bhattacharya and Barry 2021; Kowalewski and Bartłomiejewski 2020; Pink 2008). Wintoneak and Jobb (2022) formally introduce the concept

of a “walking collaboratory” as a way to “walk with” others (contrasted with “walking to” a destination). Their approach to “walking with” provides insight into people’s relationships with their local environment at different places and times and provides moments for reflection on environmental processes. Their collaborative walk with adults and children around the Derbarl Yerrigan river in Australia featured the co-production of knowledge stemming from attunement with complex landscapes (polluted waterway) and reflection on the “small moments” that foreground living with pollution and climate change. Children discussed why a blowfish has died, considering various reasons, from old age, algal blooms, or a shark. The walks created opportunities to uncover, question, and discuss things in everyday landscapes that are typically hidden or unnoticed (e.g., gas well, buried trash). From a sustainability knowledge perspective, collaborative walking shed light on how groups develop sustainability knowledge and how different groups of people produce different knowledge systems. Because walking collaboratively creates an opportunity for transdisciplinary research teams to have a shared experience of the local landscape, this method can be powerful in its ability to reveal the boundaries or interfaces between different knowledge systems. For instance, a collaborative walk across a low-canopy neighborhood will yield different insights and reflections from researchers in different disciplines, community members, or practitioners.

Collaborative walking could be incorporated into different phases of a project. A team of researchers could collaboratively walk through prospective study areas in the early phases of their project to develop research questions that reflect the local context and different perspectives and disciplinary approaches. During the data collection phase, researchers could invite local stakeholders (community members, policymakers, local institutions) to join the walk and discuss the data being collected or work together to address research questions. At the end of a project, researchers could use collaborative walks either with the research team or with other stakeholders to validate and interpret their data. We recognize that some of these steps are already taken by research teams (e.g., site visits to become familiar with the study area, ground truthing and validation, conversations with local stakeholders), and we seek to highlight the benefits of walking together as part of these research phases. To be direct, we think that walking collaboratively will enhance each phase of the project because the knowledge will be co-produced based on shared experiences and observations of the local environment.

Mobile popular education

Walking tours are commonly used to introduce the public, students, tourists, or any other group, to neighborhoods or landscapes within an educational and curated framework

(Evans and Jones 2011). For example, walking tours in Basque Country, Spain, brought participants together to walk a route to investigate the history of water in the region (Urquijo 2023). The tour discussed the transformation of the region and its waterways through references to historic maps, their observations of the landscape, and through sharing memories of the places they visited. Participants generated experiential, analytical, and relational knowledge of the route (Urquijo 2023). Like many community-engaged or participatory approaches, the impacts of these field tours depend on the power dynamics at play in their construction. Critical questions to ask about these dynamics include: who funds, who leads, who attends, and what narratives are shared? In some instances, researchers have critiqued walking tours for turning neighborhoods into spectacles (Opfermann 2021) and spurring gentrification (Lyons, Crosby, and Morgan-Harris, 2018), but have also appreciated the way that these educational walks have raised awareness and understanding of complex urban processes (e.g., redlining, financialization) (Johnson 2019; Silver et al. 2021). Community-led field tours that center local perspectives and narratives offer chances for storytelling and intercultural learning (Bates and Rhys-Taylor 2017). Benefits of popular mobile education include broader dissemination of research, making academic research more accessible to the public and therefore more inclusive of diverse perspectives (Silver et al. 2021).

We see potential for this mode of popular education to advance knowledge as a learning process in sustainability. First, public walking tours are often used to educate the public about cultural heritage, urban development, or environmental hazards (Alessio and De Lucia 2017; Markwell et al. 2004), thus one application of a sustainability walking tour could focus on educating the public about local environmental processes. Such a walking tour would also provide researchers with a way to disseminate results that is more grounded in an experiential approach than holding a presentation or producing a public-facing report (Bates and Rhys-Taylor 2017). Inviting the public on walking tours also has potential to diversify sustainability science. Building on Silver et al.’s (2021) discussion of the potential for mobile population education to make urban theory more accessible and representative of diverse opinions, we see the same opportunities for sustainability science. Including the public in walking tours alongside researchers will provide more insights into how different people experience the same environment and may provide researchers with valuable feedback on their interpretation of the data.

Researchers who engage in such a walking tour should also be cognizant of ethical concerns around bringing tour groups into vulnerable neighborhoods (Giddy and Hoogendoorn 2018) and should seek to minimize any burdens to local communities and should avoid this method

if walking tours will pose a risk to these communities. Before developing a new field tour, researchers should seek to understand neighborhood context by attending already established tours led by neighborhood leaders and local groups. Participatory and collaborative research processes are opportunities to listen to local expertise and knowledge and to resource neighborhood leaders – so that research processes are co-produced, rather than extractive (Beyond 2019).

WHAT OUTCOMES MIGHT WE EXPECT FROM CULTIVATING WALKING AS A METHOD FOR SUSTAINABILITY KNOWLEDGE?

We anticipate scholarly and policy outcomes from embracing walking as a method for sustainability science. Walking offers ways to deepen transdisciplinary research and advance cross-disciplinary and cross-sectoral research by linking knowledge co-production with shared experiences of the local environment. The benefits of such walking may be reflected in the ways that research questions and related research designs are developed, as well as the ways that data are analyzed and interpreted. Rather than being guided by conventional, academic disciplinary approaches, research projects will be connected to the on-the-ground experiences of sustainability. Walking methods also have potential to elevate the perspectives of communities or individuals who are not typically included in research projects (Duffy et al. 2019; Murray and Järviloma 2020; Silver et al. 2021; Bazuñ and Kwiatkowski 2022). In addition to benefitting research, such methods can empower participants and provide mutual benefit. Integrating the local experience into the framing of sustainability projects will open opportunities to advance research at the intersection of knowledge systems, an important goal of transdisciplinary research (Apetrei et al. 2021), and center equity in sustainability science, an ongoing need (Keeler et al. 2020).

From the perspective of policy and practice, we anticipate that walk-based sustainability knowledge will support and advance meaningful social and environmental change, a key objective in sustainability science (Spangenberg 2011; Keeler et al. 2020), by producing knowledge at the scale that policymakers and practitioners need. Research on knowledge co-production has indicated that the types of knowledge produced by scientists may not be well aligned with the knowledge that policy makers need to advance effective policy (Lemos and Morehouse 2005). There have been calls to make sustainability knowledge usable and relevant for policy development and decision-making to better support positive change (Clark et al. 2016). While there are multiple

ways of doing knowledge co-production (Wyborn et al. 2019), we see walk-based sustainability knowledge as one such way that scientists and policymakers can improve this alignment based on the shared experience of observing real, lived urban problems at the scale that people experience them.

Despite these benefits of walking, it is important to acknowledge the limitations of walking as a method. Walk-based methods will not provide a thorough understanding of historical, social economic, or ecological factors shaping local environments that occur with less visibility in the landscape or at longer temporal scales. However, we suggest that walking can raise important questions that require further inquiry (Pierce and Lawhon 2015). Further, walking methods may help attune the researcher to the local context and lived experience, yet be less effective at capturing regional, national, and global processes and scales. Finally, including or adding walk-based methods may require more time from the research team. As with all social science methodologies, it is crucial to triangulate walking-based methods with other methods, datasets, and approaches to capture multiple dimensions and scales of the object of inquiry.

CONCLUSION

Given increasingly urgent sustainability challenges, such as climate change and environmental injustices, we argue for walk-based methods to directly address critical needs in sustainability research. Specifically, we see potential for this suite of methods to advance transdisciplinary work at the intersection of different knowledge systems and to center equity in sustainability science. The epistemological tendencies of sustainability science are well known, and walk-based methods are not the only way to bring human experience into sustainability scholarship. Our contribution is more specific: that walk-based methods are particularly well-suited to sustainability knowledge. Walking synthesizes knowledge about the relationships between landscape, multiple dimensions of environmental amenity, and social interactions between individuals and communities that are difficult to capture within a more conventional sustainability knowledge framework. Walking does not replace other sustainability methods, but centering walking-derived knowledge is likely to move the locus of sustainability debates toward questions of human experience, justice, and differential impacts.

This is to say: promoting walking as a sustainability method is likely to help scholars to understand the potential for more sustainable outcomes and work together to enact those outcomes.

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Declarations

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