Webcam travel:
A preliminary examination of psychological well-being

Abstract
Travel has been identified as a significant contributor to psychological well-being. The recent COVID-19 global pandemic disrupted travel patterns and behaviours, thereby negatively affecting the psychological health and well-being of those involved. With accelerating technology use, multiple forms of virtual tourism have emerged as alternatives to physical travel, including travel via webcam. Webcam travel has received limited scholarly attention, despite the unique capacity of global place-based webcams to offer cost-free, real-time viewing of places and destinations. Similarly, there has been limited research on how participation in webcam travel influences psychological well-being. This research note examines how the digital experience accelerates the hedonic and eudaimonic psychological well-being of webcam viewers by proposing a new model – Webcam Travel DREAMA (detachment-recovery, engagement, affiliation, meaning and achievement) model. The findings provide a better understanding of webcam travel and psychological well-being, establishing potential directions for future researchers.

Keywords: Webcam travel, digital experience, psychological well-being, DREAMA

Introduction
Physical, non-virtual, tourism experiences frequently have a restorative effect on individuals, providing rejuvenation and enhancing the sense of psychological well-being amongst tourists (Yang and Wong, 2020; Uysal et al., 2016). However, changing work-life practices, major geopolitical events and the continuing impacts of the COVID-19 pandemic are prompting an acceleration in the adoption of new technologies that complement, and sometimes replace physical leisure travel (Repo, 2021). Engagement in virtual tourism, or tourism in a simulated environment, is thus becoming increasingly popular (Deng et al., 2021). Mattila et al. (2020) found that restorative experiences generated by virtual tourism closely resemble those attributed to physical tourism. This prompts the question of whether tourism in its virtual form is capable of contributing to the psychological well-being of virtual tourists? To address the gap, this research note presents an exploratory investigation into the role of webcam travel in generating psychological well-being amongst online viewers.

In addition to pre-recorded visuals, virtual tourism extends to live, real-time virtual reality (Deng et al., 2021; Jarratt, 2021b; Repo, 2021). Hu et al. (2017) defined live virtual tourism as online activities that allow streamers to broadcast videos to viewers in real-time. Deng et al (2021) noted an increase in the popularity of live virtual experiences offering engagement in real-time online travel, especially in China. Webcam travel involves an online act of viewing places or attractions through placed-based webcams in real time (Jarratt, 2021b). Suitable webcam locations include city centers, resorts, landmarks, beaches, and wilderness areas which deliver a distinct experience through high resolution webcam footage (Jarratt, 2021b). The digital travel user experience involves multiple touchpoints on different devices, platforms, and interactions (Rosenzweig,
2015), with the journey combining cognitive experiences (perceptions), emotional experiences (affective reactions), and ergonomic factors (ease of use experiences) (Berni and Borgianni, 2021).

Accessibility is a significant distinguishing feature of webcam travel which is a differentiator from other forms of virtual tourism. While the use of webcams can be contentious because of privacy issues, the growing popularity of webcams in tourism is evident (Bradley and Clarke, 2011). For instance, there have been more than 150 webcams installed in major national parks in the United States since 2019 (Gray and Wikle, 2021), thereby providing viewers with opportunities to watch flora and fauna several times a day (Richardson, 2022). Webcam travel capitalizes on the unique capacity of global place-based webcams to offer cost-free viewing. The only required equipment is a device (laptop/cellphone) with Internet connection (Repo, 2021). Additional benefits for webcam viewers are the absence of time constraints and flexibility to switch between places and destinations. These characteristics give webcam travel the advantage of compatibility with the short attention span of online viewers (Richardson, 2022). Timothy and Groves (2001) recommended further research on adopting webcams as a tool in the tourism discipline, though there has been very limited subsequent scholarly examination of the webcam travel experience (Repo, 2021) and none on webcam travel and psychological well-being.

It has been well established that psychological well-being is both hedonic and eudaimonic (Seligman, 2004). Hedonic well-being connotes immediate happiness and enjoyment (Ryan and Deci, 2001; Gilbert and Abdullah, 2004). As the key form of well-being, hedonia is a more peripheral and fleeting sense of well-being akin to pleasure (Lengieza et al., 2019), whilst eudaimonia reflects a more profound sense of well-being. Eudaimonic well-being refers to concepts of personal growth, self-actualization and purpose of life (Ryan and Deci, 2001; Ryff, 1989). Hybrid, multidimensional, hedonic-eudaimonic models have emerged and have been applied to the understanding of tourism experiences (Filep and Laing, 2019). These have included the PERMA (positive emotions, engagement, relationships, meaning and achievement) model which comprises five building blocks of well-being (Seligman, 2004) and the DRAMMA model which proposes five well-being dimensions of the leisure experience (including tourist experiences): detachment-recovery, autonomy, mastery, meaning, and affiliation (DRAMMA) (Newman et al., 2014). Recently, Filep et al. (2022) proposed a new model entitled DREAMA (detachment-recovery, engagement, affiliation, meaning and achievement) that adopts a holistic perspective to explain eudaimonic and hedonic psychological well-being. DREAMA extends beyond PERMA and DRAMMA by applying the relationship (affiliation) dimension to both social and natural environments. These relationships would be applicable to virtual tourism, and particularly in the case of webcam travel, which offers real-time and unaltered viewing of the natural environment. Though research on how psychological well-being can be affected via webcam travel experiences is absent, it is increasingly important to understand these effects in light of the scale and growth of the webcam travel phenomenon. According to a major webcam travel website, Webcamtaxi, a new viewing record was set on March 2020, with 1,138,170 views of nature in a single day (Webcamtaxi, 2021). Other popular webcam travel websites such as EarthCam, Skyline webcams, and Explore.org have seen similar significant increases in viewership. For example, an 85% increase in Explore.org’s virtual nature webcam usage has been reported over the past two years (Granville, 2020). Although Jarratt (2021a) has recently noted that webcam travel can play a useful role in alleviating the psychological distress that arises from a sense of loneliness, there is further scope to understand the psychological impacts of webcam travel.
Analysis approach
The current study adopts an integrative literature review approach in acknowledgment that the relationship between webcam travel and psychological well-being has received no prior attention (Jarratt, 2021a). This approach involves reviewing, critiquing and synthesizing a body of literature in the pursuit of new understandings, frameworks and perspectives on the field of interest (Torraco, 2005). It is especially useful for addressing new or emerging topics offering the potential for preliminary conceptualizations (Snyder, 2019; Torraco, 2005). The current researchers have followed three stages – identification, analysis and synthesis. The first stage involved identifying (locating and familiarizing) with the concept of virtual tourism experience through a keyword search. This entailed searching Web of Science and Google Scholar platforms for the following phrase that fits the aim of the study: virtual tourism experience connecting to nature. Google Scholar as a web-search engine like the Web of Science (Harzing, 2017) allows free access to scholarly literature across disciplines and databases (Zientek et al., 2018). The search was conducted in February 2022 and a total of 109,025 published works were identified, including English peer-review papers, conference papers, theses, books on virtual tourism experiences and connections to nature. In this initial exploration, webcam travel emerged as an identifiable research interest while Jarratt (2021a, 2021b) was identified as the scholar who first introduced the term webcam travel into the literature. A critical analysis of the existing literature on webcam travel was adopted in the second stage. The researchers in this second stage entered the following keywords on the two platforms: well-being of webcam travel. Although 1,411 results were generated in aggregate, the process involved discussions amongst the authors to select only those items that refer to well-being, webcam travel as well as virtual nature. This severely narrowed down the scope and generated only 16 relevant published works, perhaps because of the relative novelty of the topic. The third, final stage involved the pursuit of consensus amongst the authors to synthesize the preliminary concept of webcam travel and its contribution to psychological well-being (as opposed to social, ecological or other forms of well-being). Five published works on webcam travel and psychological well-being (analysed through DREAMA) were ultimately identified on the basis of quality, relevance, and clarity (see Table 1).
### Table 1 Key literature related to psychological well-being of webcam-travel

<table>
<thead>
<tr>
<th>Author (year), aim</th>
<th>Journal</th>
<th>Title</th>
<th>Evidence of well-being</th>
<th>DREAMA Dimension</th>
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<tbody>
<tr>
<td>Jarratt (2021b) aims to define the experience of webcam-travel based on the findings of COVID-19 lockdown.</td>
<td>Annals of tourism research</td>
<td>Webcam-travel: Conceptual foundations</td>
<td>“feeling connected with the place through watching in real-time” (2021b:3); “a day-dreamlike state in which one feels present &amp; transported” (2021b:3); “a sense of freedom” (2021b:3).</td>
<td>Affiliation</td>
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<tr>
<td>Jarratt (2021a) aims to explore the experience of webcam-travel during COVID-19 lockdown.</td>
<td>Tourism and hospitality research</td>
<td>An exploration of webcam-travel: Connecting to place and nature through webcams during the COVID-19 lockdown of 2020</td>
<td>“uplift in mood” (Positive emotion, 2021a:162); “offers potential wellness benefits” (Subjective well-being, 2021a:156); “brought back happy memories” (Happiness, 2021a:165); “83% felt more positive” (Positive emotions, 2021a:165); “90% found it to be relaxing” (Relax, 2021a:162); “a feeling of connection, nostalgia and a sense of freedom”(2021a:163); “it offers meaning and purpose in times of anxiety and loneliness…It gives us something to look forward to, to savour and to focus on.”(2021a:158);</td>
<td>Detachment-Recovery, Detachment-Recovery, Detachment-Recovery, Detachment-Recovery, Detachment-Recovery, Affiliation, Meaning &amp; Achievement, Meaning</td>
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Darcy et al. (2022) aims to explore deeper understanding of nature engagement in relation to health and wellbeing.

<table>
<thead>
<tr>
<th>Affiliation &amp; Achievement</th>
<th>Engagement</th>
<th>Meaning</th>
<th>Detachment-Recovery &amp; Achievement</th>
<th>Detachment-Recovery</th>
<th>Detachment-Recovery &amp; Achievement</th>
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<tr>
<td>“90% felt a sense of connection the place or nature” (2021a:162);</td>
<td>“fascination/engagement” (2021a:162);</td>
<td>“webcam of natural environments (specifically blue spaces) brought optimism, hope, and nostalgia” (2022:11)</td>
<td>“demonstrates a strength of feeling of release and escapism, which often contrasted to feelings of ‘being stuck’ or ‘trapped’” (2022:11)</td>
<td>“digital nature engagement (i.e., webcams) can foster psychological resilience during lockdowns” (2022:19)</td>
<td>“digital nature engagement may serve as viable health supporting interventions through facilitating mindfulness, social engagement, and nostalgia.” (2022:21)</td>
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**Understanding the Role of Nature Engagement in Supporting Health and Wellbeing during COVID-19**
<table>
<thead>
<tr>
<th>Source</th>
<th>Journal</th>
<th>Study Title</th>
<th>Summary of Findings</th>
<th>Themes of Interest</th>
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<tbody>
<tr>
<td>Skibins et al. (2022)</td>
<td>Human Dimensions of Wildlife</td>
<td>Aims to examine the viewer’s mental health and pro-conservation attitudes via wildlife-oriented webcams</td>
<td>“very relaxing and rejuvenating I’m going to save this page for work break.” (2022:5)</td>
<td>Detachment-Recovery</td>
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<td>“viewing the bears helped reduce stress and improve overall mood and well-being.” (2022:7)</td>
<td>Detachment-Recovery</td>
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<td>“viewing the bears and Alaska landscape has educated me tremendously and given me more of an understanding of an animal which I knew nothing about before I began watching the cams.” (2022:7)</td>
<td>Achievement</td>
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<td>“since I can’t afford to go in person, I am extremely happy to be viewing these beautiful bears!” (2022:8)</td>
<td>Detachment-Recovery</td>
</tr>
<tr>
<td>Loomis et al. (2018)</td>
<td>Journal of Environmental Economics and Policy</td>
<td>Aims to find out brown bear viewer’s viewing value via nature-related webcams.</td>
<td>“informational value: wildlife media as providing scientific information in a pleasure way to oneself, and if a parent, to their children” (2018:454);</td>
<td>Achievement, Engagement &amp; Affiliation</td>
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<td></td>
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<td>“entertainment value: seeing wildlife in its natural habitat was enjoyable” (2018:454).</td>
<td>Detachment-Recovery &amp; Affiliation</td>
</tr>
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</table>
Webcam travel and hedonic and eudaimonic well-being

Based on the literature analysis it was observed that webcam users find enjoyment from the feeling of being transported to the viewing place (Jarratt, 2021b). The experience offers a pastime, creates feelings of joy and a feeling of an escape from hectic lives. Webcam travel is considered as entertainment when physical disability, financial problems, or lack of time make physical travel inadvisable (Loomis et al., 2018). Webcam travel brings back happy memories for those who are viewing places where they have made previous physical visits, thereby generating positive emotions. Webcam travel also allows viewers to be transported away from lockdowns and/or immobilities by presenting nature in its real, live, esthetic, unedited scenery. It has been noted that people are more optimistic, hopeful and nostalgic when connected to nature (Darcy et al., 2022). Several studies have suggested that natural environments can offer significant relaxation, positive feelings, and calm (Hakoköngäs and Puhakka, 2021; Bimonte and Faralla, 2014; MacKerron and Mourato, 2013). Jarratt (2021a) revealed that in webcam travel 90% of webcam viewers felt relaxed and connected to the places they visited, while 83% expressed uplifted spirits and feelings of freedom.

However, tourism activity offers participants not only pleasure and hedonic well-being but more profound well-being rewards (Su et al., 2020). In Jarratt’s (2021a) study, it was noted that a sense of freedom is an important outcome of webcam travel. Webcams facilitate access to otherwise constrained travel destinations by providing views of highly restricted areas, like active volcanos and endangered species. Webcam viewers form real-time connections with places. They enhance their understandings of purpose in life when journeying via a webcam, thereby accelerating feelings of personal growth and self-acceptance. Webcam travel serves as a window into real environments, contributing a feeling of connection with the outside world, and this is especially important after the global pandemic with human movements restricted due to safety concerns (Jarratt, 2021a). Participation in webcam travel generates feelings of togetherness when viewing lakes, mountains, rivers via webcams and strengthens relationships between participants and nature. Webcam travel may also be considered a social networking activity that can strengthen relationships with friends and family (Loomis et al, 2018). Online viewers are able to acquire new knowledge about destinations, culture and/or wildlife (Skibins et al., 2022).

A conceptual model of webcam travel and DREAMA psychological well-being

A viewer-oriented conceptual model which has been guided by the literature review is proposed to illustrate the relationship between webcam travel and psychological well-being (see Figure 1).
The novel Webcam Travel DREAMA model offers the capacity to examine the influence of webcam travel on psychological well-being. When viewing places and attractions through webcam travel, viewers become immersed in a virtual world and have feelings of daydreaming and nostalgia for places and attractions that they have visited virtually (Jarratt, 2021a; Repo, 2021). It has been observed that such experiences generate positive emotions and are associated with an escape from daily lives (Jarratt, 2021a, 2021b). The virtual experience through webcam travel stimulates stress reduction and restoration as well as relaxation (Repo, 2021; Skibins et al., 2022). These hedonic effects resemble the dimension of detachment-recovery in the model since viewers separate or detach themselves from their everyday settings and relax, restore or recover from stress when immersed in a virtual environment.

When webcam viewers experience this hedonic well-being through detachment recovery, the process has a ripple-effect to underlying eudaimonic well-being dimensions (Engagement, Affiliation, Meaning and Achievement). For example, the sense of separation or detachment-recovery influences the well-being dimension of engagement in the model. The viewer detaches from everyday worries and engages in the experience. As a newer form of digitally mediated
leisure activity, webcam travel therefore requires focused attention, independence and self-direction (Newman et al., 2014). The sense of engagement allows viewers to explore different places and attractions through the course of the digital journey. In Jarratt’s study (2021a: 162) webcam travel experiences were found to lead to “a sense of fascination and engagement”. The remaining DREAMA (Filep et al., 2022) dimensions are also generated by the virtual experience, notably affiliation to nature and other people, meaning and achievement. Affiliation with the digital nature has been identified as an important quality of webcam travel experience (Darcy et al., 2022; Jarratt, 2021a). Social connections are equally evident. In Loomis et al’s (2018) study, parents guided their children when viewing brown bears via webcams. Such interaction strengthened relationships between parents and children. Webcam travel has also been identified as offering “meaning and purpose in times of anxiety and loneliness” (Jarratt, 2021a: 164), most recently during the COVID-19 pandemic. Finally, the achievement dimension was found in webcam travel through the mastery of new knowledge. In prior studies, the webcam virtual experience allowed viewers to master new knowledge about virtual destinations and settings, (Repo, 2021), including wildlife species (Loomis et al., 2018; Skibins et al., 2022).

**Propositions for future research**

Based on the evidence reviewed, it is proposed here that webcam travel facilitates both hedonic and eudaimonic psychological well-being for viewers. Following the COVID-19 pandemic, the United States National Alliance on Mental Illness (2020) estimated that one in five of American adults experience mental illness annually, with 26.3 million adults receiving virtual mental health services. Webcam travel stands out from other forms of virtual tourism for a number of qualities: it is live, offers unaltered natural images (Jarratt, 2021b), is cost-free, easy to use, and disseminates sustainability and conservation values (Skibins et al., 2022). This suggests that an examination of the psychological well-being that is generated through webcam travel experiences can extend scholarly discussion and is both timely and relevant (Brazão et al., 2022). Based on the conceptual model, the following propositions may guide future research.

Proposition 1: conduct research on well-being impacts of viewing nature through webcams. It is understood that most webcams in webcam travel are used to observe natural settings (mountains, rivers, wildlife) (R-Toubes et al., 2020). As an example, the iconic natural attraction of Niagara Falls in Canada is observed via cameras located at a nearby resort which broadcast footage through Earthcam (a major webcam travel website), with accumulated 10,976,139 views in the year 2022 (Earthcam, 2022). Webcam viewers can compare changes in the scenery of the Niagara Falls (see Illustration 1), facilitating a variety of psychological responses. The model can be applied to study and analyse the psychological effects of viewing nature on viewers.
Proposition 2: apply the DREAMA dimensions to understand the impacts of digital environments on tourists post-pandemic. Growing digitalization in tourism will continue, especially post-pandemic. Based on work by Utkarsh and Sigala (2021) there are three reasons for this trend: 1) growing open-mindedness about technology adoption amongst tourists after COVID-19 as opposed to pre-pandemic; 2) tourists believe that technology provides a touchless and safe service environment compared with more physical forms of travel; and 3) tourists expect a more sustainable and responsible form of travel which is provided through digital environments (Utkarsh and Sigala, 2021). However, despite this accelerating adoption of technology, and post-pandemic changes in tourist preferences, the psychological impacts of engaging in webcam travel are not well understood.

Conclusion

Note has been made of the limited research on webcam travel in the virtual tourism literature. Despite encouragement by Timothy and Groves (2001) to conduct more research on webcams in tourism over two decades ago, there have been few subsequent contributions (Jarratt, 2021a). This research note suggests a need for more research on webcam travel with particular reference to the psychological well-being of participants (virtual tourists). Such forms of virtual tourism merit promotion as a prospectively beneficial alternative to physical tourism. Noting that most current webcam travel involves viewing nature and wildlife, it is suggested that coverage should be extended to other leisure tourism activities. For such purposes, it is recommended that empirical data should be applied using the proposed model and that researchers should explore the psychological well-being of webcam travel in leisure tourism activities by applying the Webcam Travel DREAMA model. Considering the novelty of the psychological well-being of webcam travel, a mixed-methods design is proposed that can provide depth and breadth to the
research topic. Adopting this approach would allow researchers to obtain rich, first-hand information about the topic (Sundler et al., 2019), while also developing quantitative measurement scales consistent with the DREAMA dimensions (Filep et al, 2022).

It will likely become the norm post-pandemic for the adoption of technologies to accelerate along with concern about sustainability and tourist well-being (Utkarsh and Sigala, 2021). Webcam travel offers promising potential as a cost effective and financially viable alternative to physical leisure travel. It also serves as a supplement or alternative to some tourism experiences. Research is now needed to examine how webcam travel can benefit various tourism stakeholders and where progress is being made towards this end.

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