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Ecotourism, eudaimonia, and sustainability insights

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ABSTRACT

Since ecotourism was popularized in the late 1980s, a focus in scholarly writings on the topic has been its dual *in situ* mandate of biodiversity conservation and community development. As visitor education gained attention, so too did research on how nature-based aspects of ecotourist experiences influence *ex situ* pro-environmental. Yet, researchers have largely neglected culture-based aspects of ecotourism experiences, overlooking the role that experience with communities, people, and local culture have on visitor outcomes, thus bypassing other important sustainability-related outcomes (e.g. systems thinking, humanitarianism). The purpose of this psychological assessment of recent traveler experiences is to explore the distinct influence of the natural and cultural aspects of travel on traveler's understanding of sustainability, and whether these influences are because of particular affective experiences during travel. This study supports the proposal that both nature and cultural-based experiences contribute to sustainability insights by fostering meaning and self-discovery (i.e. *eudaimonia*). Our findings suggest that the positive contribution that natural and cultural components of tourism makes toward sustainability insights may be enhanced when eudaimonic experiences are incorporated into tourism experiences. This work thus implies that more explicit incorporation of eudaimonic elements into the design of (eco-) tourism experiences will increase visitors' sustainability insights.

Introduction

Understanding how to provide meaningful ecotourism experiences that create potent influences on post-trip pro-environmental behavior is an issue of both theoretical and practical interest. Long-standing theoretical debates among scholars have yet to be settled regarding ecotourism's exact nature and consequences (Higham, 2007; Orams, 1997; Weaver & Lawton, 2007; Ballantyne & Packer, 2013; Stronza et al., 2019). Nonetheless, much of the applied research on ecotourism management has focused on *in situ* impacts on environmental conservation. The notion that ecotourism can provide many of the precursor knowledge and experiences needed to support *ex situ* pro-environmental behavior is a topic of research that has only coalesced in the last decade. As such, it remains an area ripe for further investigation. Given the acceleration

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of anthropogenic impact (Steffen et al., 2015) and growing recognition of travel's consequences for the planet (e.g. Gössling & Peeters, 2015), research on how humans' proclivity for travel can be leveraged in support of pro-environmental outcomes remains desperately needed.

Although research is coalescing on nature-based travel's influence on *ex situ* pro-environmental attitudes, knowledge, and behaviors (Ardoin et al., 2015), researchers have largely neglected the culture-based aspects of ecotourism experiences. This absence overlooks the role that experiences with communities, people, and local culture may have on visitor outcomes, and it is also inconsistent with the consistent framing of tourism as one of the primary cultural ecosystem services (MEA, 2005; Milcu et al., 2013; Taff et al., 2019). Indeed, nature-based travel may be one of the primary means of accessing additional cultural ecosystem services (e.g. aesthetic appreciation of natural and cultivated landscapes, MEA, 2005). Thus, research on the outcomes of ecotourism may be neglecting other critical sustainability-related outcomes (e.g. systems thinking) arising from cultural dimensions of travel. We, therefore, know little about the role that ecotourism experiences with communities, people, and local culture have on travel outcomes, or how ecotourism may motivate broader pro-social concerns and behaviors (Jamal et al., 2006; Lengieza et al., 2021).

Recognizing the growing influence of positive psychology in tourism (e.g. Filep & Laing, 2019; Vada et al., 2020), and the role of *eudaimonia* in travel outcomes (e.g. Voigt et al., 2010; Matteucci & Filep, 2015; Hunt & Harbor, 2019; Lengieza et al., 2019), an opportunity exists to clarify how affective elements of ecotourism experiences contribute to sustainability-related outcomes. To capitalize on these opportunities, new research should not only seek to parse out unique contributions of natural and cultural aspects of ecotourism experiences, but it also should aim to integrate emerging lines of research (e.g. Lengieza et al., 2021) on the influence that eudaimonic experiences likely have on the sustainability meta-competencies that serve as precursors to pro-environmental action (Frisk & Larson, 2011; Engle et al., 2017).

Consistent with the benefits of eudaimonia on personal, pro-social, and pro-environmental travel outcomes (e.g. Hunt & Harbor, 2019), the present study proposes that both nature and cultural-based experiences contribute to the formation of traveler's insights into sustainability by fostering meaning, self-discovery, and other characteristics of eudaimonia. Two research questions guide this research: (1) ***Do both nature-based and cultural-based aspects of the on-site ecotourism experience relate to improved sustainability meta-competencies?***; and if so, (2) ***can these pathways to improved sustainability meta-competencies be enhanced by eudaimonic consequences of travel more so than hedonic consequences of travel?*** Bringing insights from the positive psychology of tourism to bear on the analysis of ecotourism outcomes will be of great interest to both scholars and practitioners interested in how tourism can promote sustainability thinking and other pro-social and pro-environmental traveler outcomes.

Ecotourism & sustainability meta-competencies

Over the last decade, research on the relationship between tourism and the environment has been emerging to account for tourism's influence on pro-environmental attitudes, motivations, and behaviors after returning from travel (see, for example, Ballantyne

et al., 2011a; Ballantyne & Packer, 2013; Ardoin et al., 2015). For example, ecotourism is generally invoked as a mechanism to support efforts to conserve biodiversity in and around destination communities and protected areas (Stronza et al., 2019). Moreover, by providing immersive nature-based experiences that often involve educational interpretation, ecotourism is arguably the form of tourism most likely to yield pro-environmental outcomes (Ballantyne & Packer, 2013). For this reason, research on the educational aspects of ecotourism has focused on learning that occurs in the environmental realm.

However, education occurring during ecotourism experiences also has relevance across broader areas of sustainability-related concerns beyond those related to the environment. In both practice and theory, ecotourism has always reflected a dual mandate of supporting environmental conservation *as well as* local communities' wellbeing (Honey, 2008; Stronza et al., 2019). While community interactions may have a role in improving sustainability meta-competencies, the importance of understanding connections with people living in and near tourist destinations and the social justice implications of ecotourism travel have rarely been addressed (Jamal et al., 2008; Jamal & Higham, 2021). Despite much conceptual and qualitative work that implies that cultural aspects of a trip experience could have an influence on learning and post-trip pro-environmental behaviors (e.g. Fennell, 2001; Donohoe & Needham, 2006; Ballantyne et al., 2011b; Falk et al., 2012; Stone & Petrick, 2013; Hunt & Harbor, 2019), an explicit connection to a broader understanding of sustainability has been missing. Importantly, sustainability outcomes can include *meta-competencies*—as they have been termed in the sustainability education literature (e.g. Engle et al., 2017)—which encapsulate broader awareness and knowledge regarding systems thinking, ethical literacy, climate change, and interconnectivity to nature and other people.

Although sustainability meta-competencies have not been directly studied in the context of ecotourism, prior research has established links with certain aspects of these meta-competencies. Review studies of ecotourism definitions have shown that ecotourism definitions tend to include an ethical dimension (Fennell, 2001), though this again tends to refer to worldviews and values towards the environment (Fennell, 2013). Others have shown that ethical concerns can just as straightforwardly involve awareness of, and sensitivity to, the local human conditions and how tourism may be affecting them (e.g. Hunt & Stronza, 2011). Exposure to local cultures is likely to be essential for influencing ethical evaluations of visitors, and the cultural aspects of ecotourism experiences are therefore likely to influence concern and behaviors supporting the natural environment (Donohoe & Needham, 2008; Jamal et al., 2008) and to facilitate the development of sustainability meta-competencies (Engle et al., 2017; Lengieza et al., 2020).

Eudaimonia: A potential mechanism of change

Eudaimonia has received increased attention among tourism scholars as a potent driver of learning and behavior change. The emergence of this interest in eudaimonia reflects a broader trend of integrating positive psychology and wellbeing into tourism research (e.g. Uysal et al., 2016). Historically, tourist satisfaction and happiness were foregrounded by travel's hedonic qualities (Krippendorf, 1987; Nawijn, 2016)—that is, experiences centered around pleasure-seeking and pain avoidance (Huta & Waterman,

2014). In contrast, *eudaimonia* is characterized by personal growth and self-reflection, a sense of purpose and meaning in life, feelings of authenticity, and engagement (Deci & Ryan, 2008; Henderson & Knight, 2012; Huta & Ryan, 2010; Huta & Waterman, 2014). The growing influence of positive psychology has led scholars to explore alternative frameworks of happiness, mainly shifting their focus from hedonic to eudaimonic aspects of travel (e.g. Filep, 2012; Nawijn et al., 2016; Nawijn et al., 2016; Lengieza et al., 2019; Pearce et al., 2011). Across the growing body of writing, eudaimonia has been established as a potential mechanism of personal growth, self-actualization, and behavior change of travelers across various forms of travel (e.g. Matteucci & Filep, 2017; Voigt et al., 2010; Li & Chan, 2017).

A focus on eudaimonia in the context of ecotourism seems warranted as this activity often involves formal environmental and cultural interpretation, which is employed to promote meaning-making (Ham, 2003). There is also good reason to believe the previously unexplored cultural element of ecotourism may promote eudaimonia. For example, purpose and meaning in life was a frequent element featured in experiences associated with stress-related personal growth amongst festival tourists (Matteucci & Filep, 2017), and self-discovery has been identified as an impactful element of international travel experiences (Brown, 2009; Habashy & Hunt, 2020). Additionally, self-reflection both appears to be a critical component of these experiences and can easily occur in a variety of culturally intense travel contexts (e.g. Cockburn-Wootten et al., 2006).

There are indications that eudaimonia may be associated with promoting pro-environmental outcomes, including sustainability meta-competencies (Hunt & Harbor, 2019; Lengieza et al., 2019). For example, eudaimonic experiences during travel are associated with concern for members of the environment (Ballantyne et al., 2011b) and increased support for nature conservation (Winkler-Schor et al., 2020). Moreover, eudaimonia is generally associated with societally desirable outcomes characterized by relative selflessness, whereas hedonia is associated with increased selfishness (Huta & Ryan, 2010; Lengieza et al., 2021) and reflecting on eudaimonic elements—as opposed to hedonic elements—of past travel experiences prompts more generous donations to charitable organizations, including pro-environmental organizations (Lengieza et al., 2021). Therefore, it would seem that ecotourism experiences enriched with eudaimonic elements would enhance sustainability outcomes.

Notably, although the focus in tourism scholarship has shifted to include eudaimonia, it remains important to continue considering hedonia as well (e.g. Lengieza et al., 2019; Lengieza et al., 2021). Both hedonia and eudaimonia reflect positive experiences (e.g. Huta & Waterman, 2014) and both forms of positivity can often—but not always (e.g. Henderson & Knight, 2012)—co-occur. Therefore, it is necessary to consider the effects of both types of positive experiences to separate the unique effects of eudaimonia from other positive aspects of the travel experience.

Research model

Figure 1 presents this conceptual model that we use in the present research. First, we anticipate that those who report more nature-based and cultural-based experiences in a particular travel experience will report more eudaimonic experience on that travel
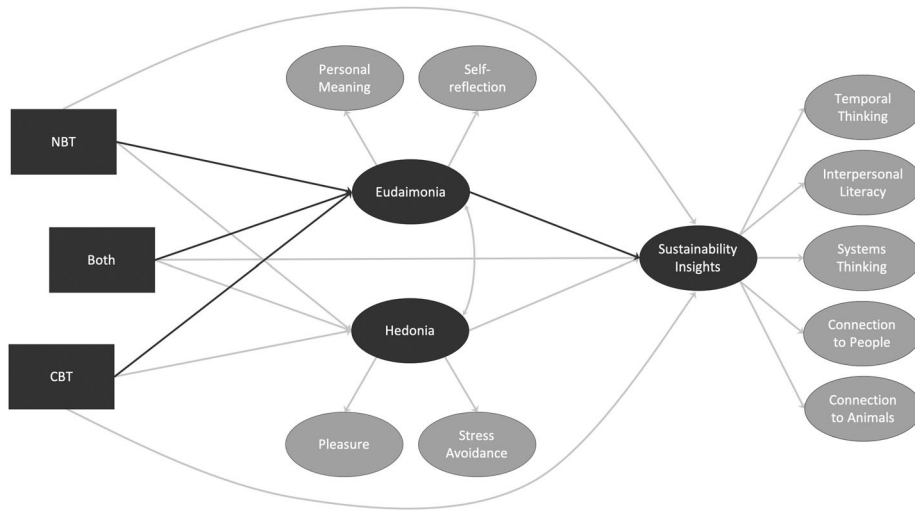
Figure 1. Conceptual Model. Grey lines indicate paths which are included for completeness rather than interest.

experience. We also include an interaction between nature-based and cultural-based experiences to test the possibility of a unique effect of tourist experiences that combine both of these elements. We predict that eudaimonic experience will subsequently be related to endorsement of sustainability meta-competencies. Finally, we include hedonic experience as a comparison with eudaimonic experience and to parse out other positive experiences while testing the effects of eudaimonic experience on sustainability meta-competencies.

Materials & Methods

Respondents

Two undergraduate student samples from psychology classes at a US public university were recruited to participate in the research. Across both samples, 29 participants were excluded for failing an attention check (16 from sample 1, 13 from sample 2). Respondents were asked to complete a survey only if they had recently gone on a vacation. During the fall semester, sample 1 respondents indicated that they had gone on a vacation that lasted at least one week and within the previous six months, presumably covering the respondents' university summer break (N = 372). Two weeks after spring break, Sample 2 (N = 193) respondents indicated that they had gone on a vacation over their spring break. Respondents completed the survey on-line and were reminded to focus on their most recent vacation experiences that were at least a week-long (Sample 1) or were over spring break (Sample 2).

In Sample 1 and Sample 2, most respondents were between the ages of 18–22 (99% & 96%, respectively), were women (87% & 80%), were from the United States (90% & 86%), resided in the United States (98% & 93%) and identified as White (75% & 66%). The remainder identified as Asian (11% & 17%), African American (5% & 6%), Latino/a

(5%, 4%), Multi-Racial (5% & 6%), or "other" (1% & 2%). On a −3 (very liberal) to +3 (very conservative) scale, respondents were neutral in their political orientation (.11 vs. 32). Similarly, there was relatively even distribution in their political party affiliation (Republican: 30% & 22%; Democrat: 34% & 42%; Independent: 12% & 12%; Not interested in politics: 23% & 23%; other: 1% vs. 0%).

There were differences between the vacations' overall characteristics between those in Sample 1 and 2, which reflect whether students vacationed over the long summer break versus the shorter spring break. Summer vacations (Sample 1: $M = 11.45$ days, $SD = 16.48$) were, on average, longer than spring break vacations (Sample 2: $M = 5.66$, $SD = 2.73$), $t(563)$ 4.85, $p < .001$. Relative to vacations over spring break, summer vacations were also more likely to be international—and less likely to be domestic—and more likely to be with children, teens, seniors, other family members, other people, and less likely to be alone and with friends (see Table 1).

Measures

Nature-based and cultural-based travel. Respondents first read the following descriptions of nature-based and cultural-based tourism derived from scholarly writings (e.g. Csapo, 2012; Kuenzi & McNeely, 2008):

> "A NATURE-BASED TOURISM EXPERIENCE involves the specific intention of visiting relatively undisturbed or uncontaminated natural areas. Examples include: Wildlife tourism (e.g. observation of nature through hikes, birdwatching, etc.); Ecological sustainable tourism (e.g. contributes to protection and management of natural areas, does not disturb natural areas, educational); Adventure tourism (e.g. outdoor physical achievements biking, scuba diving, hiking, exporting wild areas such as jungles, forests, lakes, thrill seeking activities); Sport fishing/hunting (e.g. hunting and fishing)."

Respondents then indicated the extent to which their most recent travel experience was Nature-based (0 "not at all" to 100 "very much") and checked if their travel involved each of the five types of examples listed after the description and an "other" option. Respondents then reported the total number of nature-based experiences which lasted a week or more they had over their lifetime (0 "not at all" to 100 "very much).

After reporting nature-based travel experiences, respondents read the following description of culture-based tourism:

Table 1. Logistic regressions predicting destination and companions from time of vacation.

Travel Characteristics	Summer (Sample 1)	Spring Break (Sample 2)	df	b	p
Destination					
International	51%	32%	563	0.79	<.001
Domestic	57%	77%	563	−0.95	<.001
Companions					
Alone	5%	12%	563	−0.98	.003
Friends	32%	48%	563	−0.65	<.001
Spouse	8%	6%	563	0.32	.370
Children	13%	4%	563	1.21	.002
Teens	38%	11%	563	1.58	<.001
Seniors	30%	18%	563	0.70	.001
Other Family	50%	30%	563	0.86	<.001
Other	17%	7%	563	0.98	.002

Notes: Total Sample size = 565

> "A CULTURAL TOURISM EXPERIENCE refers to "trips, whose main or concomitant goal is visiting the sites and events whose cultural and historical value has turned them being a part of the cultural heritage of a community" (WTO, 2012). Examples include: Historical Heritage (experiences related to the history of a culture); Personal cultural heritage (where you learn about your own cultural heritage); Contemporary cultural (experiences related to current cultural practices); Cultural Art (cultural production of, e.g. visual arts, modern architecture, literature); Cultural Lifestyle (e.g. cultural beliefs, cuisine, traditions, folklore); Cultural Creativity (e.g. cultural fashion, design, web and graphical design, cinema media and entertainment)."

Respondents then indicated the extent to which their experience was Culture-based (0 "not at all" to 100 "very much") and checked if their travel involved each of the six types of examples listed after the description and an "other" option. Respondents then reported the total number of nature-based experiences which lasted a week or more they had over their lifetime (0 "not at all" to 100 "very much").

We used continuous measures, as opposed to a binary indicator, differentiating ecotourism from non-ecotourism for several reasons. Primarily, it allowed us to assess ecotourism from the perspective of participants across a range of experiences and destinations. The scholarly definition of ecotourism is, in some ways, overly strict to the point of making it difficult for layperson participants to actually know whether they have engaged in ecotourism. Moreover, many of the criteria for ecotourism are invisible from the perspective of tourists (Ryan et al., 2000; West & Carrier, 2004; Jamal et al., 2008; Hunt & Stronza, 2011). Thus, participants might not be able to accurately report whether they engaged in objectively ecotouristic travel. Consequently, because we were interested in a range of experiences, we opted to operationalize ecotourism using continuous measures of the two core dimensions of ecotourism.

Because responses to the extent to which their experiences were Nature-based and Culture-based were skewed—few participants indicated frequent amounts of either type of travel—we categorized them into the following categories: Not at all, 1–50, and over 50. Respondents in the first sample reported their nature-based and culture-based at the end of their survey, and the second sample reported these experiences at the beginning of the survey. There were no statistically significant differences between Sample 1 and Sample 2 on the extent to which respondents described their experiences as nature-based or culture-based, suggesting that questions order did not influence their assessment of their experiences. Binary regression analyses indicated no effect of when respondents went on their vacations (i.e. sample 1 in the summer vs. sample 2 during spring break) on the relation between nature or culture-based experiences and the specific types of activities they checked to describe their activities while on vacation. Hence, sample is not included as a variable in analyses. Finally, as would be expected, binary regressions validated that people who reported more Nature- or Culture-based tourism experiences (NBT or CBT respectively, on a scale of 0–100) were more likely to indicate having had engaged in the specific associated nature-based or culture-based activities (See Table 2).

Eudaimonic and Hedonic Experiences. As reported in more detail in Lengieza et al. (2019), we designed and validated a measure of eudaimonic and hedonic experiences during travel with data from the present sample. We created a larger pool of items

Table 2. Logistic regressions with Ratings of Nature and Culture-based tourism as simultaneous predictors of specific tourism experiences.

Outcome	df	NBT		CBT	
		b	p	b	p
Wildlife	562	1.60	**<.001**	0.08	.631
Ecological Sustainable	562	1.29	**<.001**	0.43	.122
Adventure	562	1.97	**<.001**	0.17	.251
Sports Fishing/Hunting	562	1.20	**<.001**	−0.55	.017
Historical Heritage	562	0.24	.159	2.20	**<.001**
Personal Cultural Heritage	562	−0.27	.154	1.75	**<.001**
Contemporary Cultural	562	−0.14	.477	2.24	**<.001**
Cultural Art	562	−0.02	.884	1.70	**<.001**
Cultural Lifestyle	562	0.22	.141	1.70	**<.001**
Cultural Creative	562	−0.02	.900	1.27	**<.001**

Note. No interactions were revealed as significant and were therefore dropped.

assessing two central dimensions of eudaimonia (i.e. meaning and purpose, self-discovery and self-reflection; see Huta & Waterman, 2014) and two elements of hedonia (pleasure and avoidance of pain; Huta & Waterman, 2014). Participants responded on a seven-point scale ranging from −3 (strongly disagree) to +3 (strongly agree). Because of skewed distribution for hedonia, especially pleasure, we dichotomized responses to represent "strongly agree" versus other answers. After validating our expected factor structure, we selected three items from each of the four subscales that maximized the reliability of the subscales (using Hayes's, 2015, alpha max program) and created measures with practical utility for future research.

In the final scale, Eudaimonia is comprised of a six-item measure of personal meaning (e.g. "This trip gave me a sense of purpose in my life") and self-reflection (e.g. "I experienced times where I could self-reflect") during one's travel experience (Cronbach alpha = .91 and .90, Sample 1 and 2). Hedonia is comprised of a six-item measure of pleasure (e.g. "This trip made me happy") and avoidance of pain (e.g. "This trip helped me forget the problems in the world.") during one's travel experience (Cronbach alpha = .78 and .80, sample 1 and 2).

Sustainability meta-competences. We similarly created and validated a scale to measure sustainability meta-competencies with data from the present sample and the full validation is reported in Lengieza et al. (2020). We factor-analyzed a larger pool of items created to reflect the five (initially four) dimensions of sustainability insights (Engle et al., 2017). We selected three items from each subscale that maximized the reliability of the five subscales (Hayes, 2015) in order to create a scale with practical utility for future research. Thus, sustainability insights were assessed with the 15-item Sustainability Insights Scale, which assessed future thinking (e.g. "This trip helped me see how actions we do today can have profound consequences for future generations."), interpersonal literacy (e.g. "On this trip, I saw the importance of the ability to negotiate among people with different interest in using and protecting natural resources."), systems thinking (e.g. "I gained insights into the interconnections between economic, social, and environmental health and well- being."), connection to animals (e.g. "I felt a sense of connection between myself and nature."), and connection to people (e.g. "My empathy for the needs of other people was increased by this trip.").

Results

Model testing

Confirmatory structural equation modeling was used to test the proposed model (see Figure 2). Hedonic experiences, eudaimonic experiences, and sustainability insights were treated as nested latent variables in line with prior approaches (Lengieza et al., 2019; 2020). Because the pleasure items for the hedonia subscale scale were dichotomous, we used Weighted Least Square Mean and Variance (WLSMV) estimators as our estimation method. We control for participants' self-reported lifetime experience with nature-based and culture-based tourism, trichotomized similarly to the ratings of the nature-based and culture-based tourism for the current experience. We control for these variables to minimize the influence of self-selection on these types of experiences and to isolate effects of the *current* travel experience.[1] Lifetime ratings and current ratings, as well as eudaimonia and hedonia, were allowed to correlate. Overall, the model had acceptable fit, $X^2(437)$ 1002.16, $p < .001$, CFI = .83, RMSEA = .061, SRMR = .065. Figure 2 summarizes the relationships tested in the model.

Having more nature-based experiences, $B = .14$, $SE = .10$, $p = .003$, more culture-based experiences, $B = .36$, $SE = .10$, $p < .001$, and having experiences that included higher levels of both types of elements, $B = .34$, $SE = .06$, $p < .001$, was positively associated with eudaimonia. The interaction indicates that having more nature-based *and* culture-based elements in the experience was associated with greater eudaimonia. In turn, eudaimonia was associated with increased sustainability insights, $B = .73$, $SE = .08$, $p < .001$. In contrast to the effects for eudaimonia, none of the paths to hedonia were significant, and hedonia was negatively associated with sustainability insights, $B = -.12$, $SE = .25$, $p = .044$.
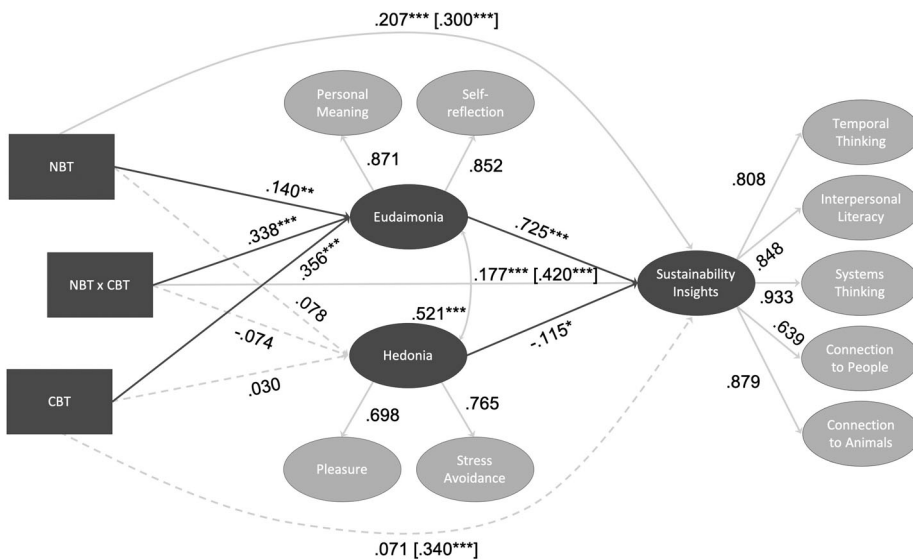

Figure 2. Eudaimonic and hedonic experiences as mediators between the dimensions of the tourism experience and sustainability insights. Dashed lines represent non-significant paths. Values in brackets reflect total effects from the model without internal paths. Not depicted in the figure is the paths controlling for the effect of prior experiences. * $p < .05$, ** $p < .01$, *** $p < .001$

Confirming the proposed causal pathway via eudaimonia, tests of indirect effects indicated that nature-based experiences, $B = .10$, $SE = .07$, $p = .003$, and culture-based experiences, $B = .26$, $SE = .09$, $p < .001$, increased sustainability insights *through* eudaimonia. Additionally, the index of moderation, $B = .25$, $SE = .05$, $p < .001$ (Hayes, 2015) indicated that the indirect effect of the experience through eudaimonia was stronger as the travel experience included more of both nature-based and culture-based elements. Thus, the paths and indirect effects indicated that nature-based and culture-based elements are important for the formation of sustainability insights, and they are especially potent when the travel experience combines both of these types of experiences.

Our analyses revealed significant total effects from the type of experience to sustainability insights, controlling for lifetime experience. More nature-based experiences, $B = .30$, $SE = .08$, $p < .001$, more culture-based experiences, $B = .34$, $SE = .08$, $p < .001$, and experiences which included more of both, $B = .420$, $SE = .05$, $p < .001$, were associated with greater sustainability insights. After controlling for the mediating effects of eudaimonia and hedonia, the degree of nature-based tourism was still directly associated with sustainability insights, $B = .21$, $SE = .07$, $p < .001$. Additionally, the more culture-based the experience was, the greater the direct effect from the nature-based qualities of the experience to sustainability insights, $B = .18$, $SE = .05$, $p < .001$. However, there was no residual direct effect for culture-based experiences after controlling for the effect of culture-based experiences via eudaimonia, $B = .07$, $SE = .09$, $p = .149$.

Discussion

Both nature-based and culture-based experiences increased sustainability learning via eudaimonic consequences, especially when both were present. These results suggest that both elements of ecotourism take people out of their everyday thinking patterns with the potential benefit of increasing their sustainability meta-competencies, highlighting connections across time, and seeing oneself as being a part of interconnected systems (Engle et al., 2017). Evidence of these relations remained after controlling for individual characteristics that could potentially influence self-selection into the travel activities (e.g. lifetime tourism experiences) and potentially the types of affective experiences one might have (e.g. demographics or other characteristics of the trip). The findings with these variables controlled suggest that the ability of nature and culture-based tourism to provoke meaningful emotional and cognitive outcomes was not a sole function of prior travel experience. Thus, additional travel may still continue to positively sustainability outcomes over the course of the lifespan (Benckendorff & Moscardo, 2013).

Other ecotourism researchers have invoked positive psychology to note how transcendent emotions of awe, wonder, and excitement can be purposively programmed into travel experiences in order to optimize the pro-environmental behavioral implications of travel (Packer & Ballantyne, 2013; Hunt & Harbor, 2019; Wang & Lyu, 2019). The current work contributes to this growing body of evidence regarding the role of emotions as an important source of experiential knowledge (Staus & Falk, 2013). Specifically, the findings reinforce the conclusions drawn elsewhere that encouraging travelers to intentionally reflect on their experiences and its meaning for their lives may provoke more extensive environmental and societal benefits (Packer & Ballantyne, 2013; Ballantyne et al., 2011a; Ballantyne et al., 2011b; Lengieza et al., 2021). Emotional responses may

be even more powerful for provoking pro-environmental and pro-social behaviors when paired with specific encouragement to reflect on self-transcendent emotions experienced during travel (Hunt & Harbor, 2019; Lengieza et al., 2021).

In comparison to eudaimonic experiences, hedonic experiences did not serve as a pathway from nature- and culture-based tourism to sustainability insights, suggesting that such experiences do not explain the positive effect that travel can have on environmental and societal outcomes. Moreover, hedonic consequences were negatively associated with sustainable learning, suggesting that hedonically centered experiences may distract from, and even actively inhibit, societally and environmentally positive outcomes of travel. This finding brings into question whether we can afford to promote "pleasure travel" that neglects to also incorporate eudaimonic qualities.

Limitations & future research

Early research on ecotourism may have exhibited an overemphasis on cognitive aspects of learning during the visitor experience (e.g. the content of educational materials and on-site environmental interpretation), with comparatively less research attention given to the emotional aspects of ecotourism experiences. In highlighting the role of emotions during travel, prior researchers have noted that emotions are the primary mechanism humans use to support their identity-making navigation throughout trip experiences (Falk et al., 2012; Falk & Staus, 2013; Hunt & Harbor, 2019). As the recognition of the role of emotion as a complement—or even a behavioral catalyzer—for education and learning has grown, some researchers have honed in on the particular emotion of empathy as an important component of environmental attitude formation and eventually pro-environmental behaviors (Berenguer, 2007). Interpretive practice in ecotourism would therefore also benefit from explicit attention to the role of this, and other, emotions.

Likewise, with the inclusion of cultural elements of ecotourism in the model tested here, this research points to the possibility that empathy towards the environment may be more likely to be provoked when nature is experienced with a socio-cultural component included. Revelation of how local communities interact with and depend on local environments could lead to visitors feeling an even more heightened concern for them and nature (i.e. empathy) and thus be more motivated to support its protection via their pro-environmental behavior. Future research conducted with ecotourists would be wise to include measures of the socio-cultural aspects of the ecotourism experience. Additionally, future research may wish to test the effects of cultural dimensions of travel on other culture-oriented sustainability outcomes such as individuals' appreciation for other cultural ecosystem services (e.g. Milcu et al., 2013; Taff et al., 2019).

One limitation in the present study regards a sample consisting of college students. This sample was not simply convenient, but represented a group of people who had the time and financial resources to go on vacations, including many who traveled internationally. Developmentally, these experiences may be particularly impactful, with many of them expanding students' experiences from those with their familial bases to a variety of new experiences. Moreover, volunteer and service travel are of much interest to this generational cohort (Pendergast, 2010; Habashy & Hunt, 2020). As such, these experiences may be particularly beneficial for this age group and might not be as potent for

older individuals (Benckendorff & Moscardo, 2013). However, future research should address the limits to the generalizability of the findings presented here by studying these phenomena in a more diverse set of samples.

There are also limitations to some of our measures. First, although there was variance in the amount of pleasure experienced on vacations, most respondents reported having very pleasurable experiences. The absence of a range of pleasure ratings makes it challenging to test the differential effects of types of travel on hedonic emotions and the consequences of these emotions on sustainability insights. Second, we do not have measures to indicate the implications and durability of the sustainability insights participants reported. Even so, other research suggests that many elements of sustainability insights predict desirable pro-environmental outcomes, such as pro-environmental behavior (e.g. Lengieza et al., 2021). Third, our research is correlational. We cannot definitively conclude that nature and cultural-based experiences cause sustainability insights or that eudaimonic experiences cause this association to emerge. However, other research which manipulates eudaimonic experiences, including within a tourism context, has found indirect effects on pro-environmental and pro-social behavior (e.g. Lengieza et al., 2021), supporting the possibility of causal relations for the associations reported here. Qualitative studies likewise imply such causality (e.g. Hunt & Harbor, 2019).

Conclusion

The tourism industry faces major post-COVID sustainability challenges (Gössling et al., 2020), not the least of which involve confronting its environmental implications. If tourism is to continue to serve as a source of benefit for the environment and for the people that rely upon tourism in specific destinations, increasing awareness of the types of pro-environmental and pro-social contributions it can make is essential (Ardoin et al., 2015; Gössling & Peeters, 2015). To do so, it is vital to determine whether the costs of engaging in ecotourism and other forms of responsible travel are outweighed by long term benefits to the environment (Stronza et al., 2019). Tourism's linkage to consumption patterns can no longer be ignored, yet nor can the positive impacts that well-managed ecotourism can bring to the protection of the environment (Ballantyne & Packer, 2013), to pro-environmental behavior change (Ardoin et al., 2015; Ballantyne et al., 2011a; Ballantyne et al., 2011b), and as our research suggest broader sustainability goals.

This research takes a new step toward understanding a broad array of consequences that ecotourism can have via the potentially beneficial influence of nature and culture-based experiences on the meta-competence needed to further sustainable activities and work with others to protect people and the planet (Engle et al., 2017). This research also suggests that meaning-making and self-discovery are mechanisms for gaining such insights, which may be able to be intentionally built into tourist experiences. These cultural and affective dimensions of ecotourism experiences have received less relative attention than the environmental components of ecotourism and the hedonistic elements of travel in general. This work suggests much in the way of opportunity to further explore the role of socio-cultural factors during nature-based tourism that may contribute to optimizing post-trip pro-environmental—and potentially pro-social behaviors (Lengieza et al., 2021)—of recent travelers via the sustainability insights they can

gain during travel. The improved understanding that would result from such work is much needed if the tourism industry is to move toward improved sustainability in the future.

Note

1. Adding sample, length of trip, destination and companions, and demographic information (gender, being white versus not, year born, and political orientation) as covariates predicting hedonic and eudaimonic did not alter the significance of the paths in the model.

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