

Symposium

Environmental Connectedness: What is it and how may it help in the prediction of wellbeing and pro-environmental behaviours?

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Introduction

This symposium will bring together five speakers involved in the study of the relatively recent concept of environmental connectedness in its various forms and applications. Although there has been some conjecture regarding the content of these measures, it is important to assess the utility of these approaches within the discipline of environmental psychology for a number of different reasons, some of which will be explored during this symposium.

Broadly, environmental connectedness has been shown to have empirical significance in two main areas of investigation. First, there is some evidence that environmental connectedness has predictive utility in research investigating pro-environmental intentions and behaviours.

Second, research now emerging has demonstrated the relationship between environmental connectedness and psychological wellbeing and happiness. There is, within these measures of environmental connectedness, a distinct affective quality that may be able to tap aspects of decision making and human functioning that previous measures have been suboptimal in doing.

The following overviews of the contributing papers set out how the various issues and concerns surrounding both human and environmental wellbeing may be addressed through the study of environmental connectedness. In the course of the presentations and the subsequent debates that they will provoke, it is hoped that further

clarity and substance will be given to the idea of environmental connectedness and enable productive future research.

Individual contributors

The first of the presentations (Kaiser & Brügger) will argue for the need to differentiate between an appreciation of environmental protection and the related concept of appreciation of nature.

The second (Sparks, Hinds, & Curnock) will present a measure of environmental connectedness that, independently of standard theory of planned behaviour variables, is able to predict intentions to reduce energy consumption.

The third presentation (Hinds, Magadley, Edwards, & Lockwood) gives some indication of the experiential factors that might influence environmental connectedness as well as giving further credence to the notion of the link between wellbeing and connectedness.

The fourth presentation (Nisbet, Nealis, & Zelenski) employing an experiential methodology, will demonstrate the moderating effect environmental connection (nature relatedness) can have on the nature-happiness relationship.

The final contribution to this symposium (Mayer & Frantz) will present an overview of research using their own connectedness to nature scale and the usefulness this measure has in the prediction of pro-environmental behaviours and its relationship to wellbeing.

Presentation 1: Environmental attitudes, attitudes toward nature, and environmental protection

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Introduction

Classical notions of environmental attitude do normally not distinguish between appreciation of nature and appreciation of environmental protection. In this presentation, we argue that this involves a misconception. Is "nature" the object, the attitude is rather self-interested and becomes apparent in one's personal appreciation for and, thus, consumption of nature. Is "environmental protection" the object, the attitude inevitably is rather selflessly aiming at conservation of resources. To date, attitude research has found that self-interested attitudes grounded in personal benefits about using nature have added only marginally, if at all, to the prediction of ecological behavior when the more selfless attitude has been considered simultaneously (e.g., Milfont & Duckitt, 2004).

The aim of our research is to capture and to empirically distinguish appreciation of nature and appreciation of environmental protection, the two attitudes, which in theory are correlated. We frame the attitude-behavior relationship in terms of the Campbell paradigm, and we measure the two concepts and test our hypothesis accordingly (see Kaiser, Byrka, & Hartig, 2010).

Methods

We used survey data from Swiss adults. The mean age of the 1,336 participants' was 36.62 years. The percentage of females was 44.80%. The sample was disproportionately younger with more males than the Swiss population as a whole.

Two competing attitudinal models--a one-dimensional model and a two-dimensional model--were implemented as Rasch scales and confirmatorily compared to test the two theoretically anticipated item-factor structures.

Results

We found appreciation of nature and appreciation of environmental protection to represent two distinct but correlated attitudes ($r = .50$). Despite some only modest gains in reliability and model accuracy, separating the two attitudes holds remarkable theoretical and practical implications. For example, if the intention is to promote more environmental engagement, then attitude toward nature might be the more malleable target and thus the critical factor for behavior change.

Conclusion

Our research helps to conceptually clarify the distinction and the theoretical link between people's appreciation of nature and their appreciation for environmental protection, as apparent in their behavior. Still, this is only the beginning of a more pressing and timely empirical endeavor: that is, to comprehend how the appreciation of nature develops and what kinds of experiences enhance this appreciation.

Acknowledgements

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References

- Kaiser, F. G., Byrka, K., & Hartig, T. (2010). Reviving Campbell's paradigm for attitude research. *Personality and Social Psychology Review*, 14, 351-367.
- Milfont, T. L., & Duckitt, J. (2004). The structure of environmental attitudes: A first- and second-order confirmatory factor analysis. *Journal of Environmental Psychology*, 24, 289-303.

Presentation 2: Connecting with connectedness: (Why) does it help our predictions?

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Introduction

The recent upsurge of interest in people's connection to, and engagement with, the natural environment has spawned a variety of proposals about conceptualization and empirical measurement. In this presentation, we (i) construe *connectedness* as an experiential–affective construct, and (ii) assess the predictive usefulness of a simple measure of connectedness within the framework of an extended theory of planned behaviour (TPB; Ajzen, 1991) application to people's intentions to reduce their energy consumption.

Method

In Study 1 ($N = 71$), we made a (questionnaire) assessment of the extent to which people associated walking in ten different natural environments with eighteen different psychological states (taken from the literature on environmental identity). As a part of this process we constructed measures of *connectedness* and *caring*.

In Study 2 ($N = 163$), in a standard questionnaire design, we assessed the predictive usefulness of each of these measures ($\alpha = .94$ and $.89$, respectively) in an application of an extended TPB to people's attitudes towards reducing their energy consumption by 10% in 2010.

Findings

From Study 1, PCAs pointed to the existence of *connectedness* and *caring* dimensions. Measures of each of these constructs were subsequently constructed from 5 items each for use in Study 2.

In Study 2, a multiple regression of people's intentions to reduce their energy consumption by 10% in 2010 revealed a significant predictive effect for the measure of connectedness (independently of the significant effects of attitudes, social norms, perceived behavioural control and moral norm). That is, higher levels of reported connectedness to the natural environment were associated with stronger intentions to reduce energy consumption.

We suggest that the measure of connectedness may capture some affective

experience that impacts (independently of more cognitive predictors) upon people's motivation and may have considerable overlap with measures of identity (cf. Hinds & Sparks, 2008; Sparks, in press). Various pointers for further research and application are outlined.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, (2), 179-211.
- Hinds, J., & Sparks, P. (2008). Engaging with the natural environment: The role of affective connection and identity. *Journal of Environmental Psychology*, 28, (2), 109-120.
- Sparks, P. (in press). The psychology of sustainability: attitudes, identities, actions and engaging with the welfare of others. In D.A. Stapel & H.C. van Trijp (Eds.), *Angels and demons: How to increase sustainable behaviors*. Psychology Press.

Presentation 3: Experiential factors in the prediction of environmental connectedness

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Introduction

There has been some considerable research investigating various measures of environmental orientations such as identity, place attachment, and attitudes. In particular, there has been a recent and growing interest in the concept of environmental connectedness as a measure of environmental orientation. This concept, in its various manifestations, has been shown to have importance for research concerned with both wellbeing and pro-environmental behaviours.

However, relatively little has been said about how these orientations may be positively affected. In other words, it is important to ask which factors may be influential in promoting stronger bonds with the natural environment, specifically, environmental connectedness.

One line of enquiry has focused on early life events as catalysts for developing pro-environmental orientations. For instance, urban and rural childhood places of residence

have been shown to have differential effects on emotional connectedness with nature (Hinds & Sparks, 2008).

The present study

Utilizing a sample of university staff ($N = 236$), the present study was interested in the predictors of environmental connectedness using a recent conceptualization (Sparks, Hinds, & Curnock, *manuscript in preparation*). Using the perceived restorativeness scale (PRS; Hartig et al, 1997) applied to the work environment and an exploratory measure of early experience, the present study was able to gauge both current and previous environmental experiences on environmental connectedness. Moreover, given the reported relationship between environmental connectedness and wellbeing, a measure of eudemonic wellbeing was also included. In addition, the present sample was divided into two distinct groups based on geographical location of the two campuses that make up the university sample: City Campus ($n = 128$) and Collegiate Campus ($n = 108$) - a green suburban campus.

Results

First, environmental connectedness (EC; $\alpha = .94$) was regressed on the 4 subsections of PRS (fascination, $\alpha = .82$; compatibility, $\alpha = .82$; coherence, $\alpha = .76$; & being away, $\alpha = .76$), early experience ($\alpha = .72$), eudemonic wellbeing (EWB; $\alpha = .83$), and age. The model was significant $F(7,222) = 8.09, p < .001$, accounting for 20% of the variance in environmental connectedness. Early experience, age and EWB were significant and positive predictors but PRS was not.

Additional regression analyses revealed that for City Campus, EC was predicted by age and EWB whilst for Collegiate Campus EC was predicted by early experience and EWB. There were no gender effects.

Discussion

It is suggested that although early experience may be an important factor for forging stronger environmental connections, current work-based environments may be influential in maintaining those early

experiences. Furthermore, the present results are able to substantiate the important link between psychological wellbeing and environmental connectedness.

References

- Hartig, T., Korpela, K., Evans, G. W., Gärling, T. (1997). A measure of restorative quality in environments. *Scandinavian Housing & Planning Research, 14*, 175-194.
- Hinds, J. & Sparks, P (2008). Engaging with the natural environment: The role of affective connection and identity. *The Journal of Environmental Psychology*.

Presentation 4: Nature related people benefit most from nature contact: Trait connectedness moderates the happiness benefits of time in nature

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Introduction

Nature contact has physical and psychological health benefits (e.g., stress reduction, relaxation; Frumkin, 2001). In addition to these restorative effects, nature may also be a source of happiness. Individual differences in subjective connectedness (nature relatedness) are associated with positive affect, vitality, and dimensions of psychological well-being (Nisbet, Zelenski, & Murphy, 2011). Spending time in nearby nature may enhance personal happiness, but the strength of these effects may vary, depending on individual differences in

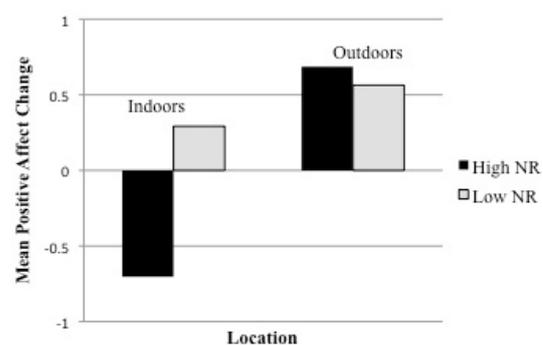


Fig. 1: Positive affect change by location and nature relatedness (NR)

connectedness. Experience sampling data indicate nature relatedness is associated with more regular nature contact and, as a result, greater happiness. Here, we test the moderating effects of trait connectedness on the nature-happiness relationship by immersing people in natural and built environments and tracking changes in positive affect.

Nature Relatedness as Moderator

Highly nature related people may need nature to be happy, and thus benefit more from contact, but also suffer more when nature contact is inhibited. We tested this by asking students ($N = 116$) to complete a personality questionnaire, which included the short-form nature relatedness scale (6 items; $\alpha = .85$) and a measure of state positive affect (PANAS; $\alpha = .80$). They were then randomly assigned to spend 15 minutes immersed either outdoors ($n = 57$) on a walking path between a river and campus buildings, or indoors ($n = 59$) in the campus tunnel system. State positive affect was reassessed after 15-minutes ($\alpha = .88$). A repeated measures ANOVA tested how positive affect changed over time (pre and post immersion) according to environment (indoors versus outdoors) and trait nature relatedness (high versus low; $Mdn = 2.83$, $SD = 0.84$). There was a significant nature relatedness x location interaction, $F(1,112) = 5.23$, $p = .02$, $\eta^2 = .05$ (Figure 1). For highly connected people, being outside provided the greatest increase ($M\Delta = 0.69$, $SD = 1.25$) in positive affect; being inside also led to the greatest declines ($M\Delta = -0.70$, $SD = 1.36$). Less connected people benefitted from being outdoors, but did not suffer the same detrimental mood effects when indoors.

Conclusion

The positive emotions associated with nature contact (and the deficits associated with deprivation) may be what motivates nature related people to spend time outdoors – they need nature to be happy. Results are discussed in terms of the implications for motivating environmental concern and

behaviour in those who are disconnected via the happiness benefits of nature contact.

References

- Frumkin, H. (2001). Beyond toxicity: Human health and the natural environment. *American Journal of Preventive Medicine*, 20, 234-240.
- Nisbet, E. K., Zelenski, J. M., & Murphy, S. A. (2011). Happiness is in our nature: Exploring nature relatedness as a contributor to subjective well-being. *Journal of Happiness Studies*, 12(2), 303-322.

Presentation 5: Determinants of connectedness to nature, pro-environmental behavior, and well being

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Introduction

The Connectedness to Nature Scale (CNS; Mayer & Frantz, 2004) is designed to measure individuals' experiences of feeling that they are plain and simple members of the natural world. Our work has focused on three primary areas: determinants of connectedness to nature (CN), the impact of CN on pro-environmental behavior, and the impact of CN on well-being. The present talk will provide an overview of our past and current work and discuss the implications of our work for environmental education programs and environmental activists concerned with climate change to create messages that are more influential.

Determinants of CN

We consistently find that even relatively brief exposure to natural settings can increase CNS scores. Moreover, we observe no difference in CNS scores for individuals exposed to more or less dramatic views of nature. Viewing videos of natural settings, looking out onto green space, and exposure to indoor plants has also been shown to increase CNS scores. Lastly, increased focus on the object self, especially when the individual is high in narcissism or holds anti-

environmental attitudes, has been shown to decrease CNS scores.

CN and Pro-Environmental Behavior

Our work consistently demonstrates that the CNS is a better predictor of pro-environmental behavior than the NEP or other knowledge based measures. With both self-report measures and actual behavioral measures, we find that controlling for NEP scores, that the CNS still predicts pro-environmental behavior, while controlling for CNS that the NEP does not. Similar findings are obtained for other knowledge-based measures.

CN and Well Being

In a series of studies we find that the CNS is consistently associated with measures of well being, such as positive affect, vitality, and meaningfulness in life. In one study we surveyed people who had just participated in an outdoor adventure activity. We found that CNS was related to reduced stress and anxiety, and increased joy and vitality.

Contrasting the CNS with a measure of attention restoration, we find that the CNS mediates the exposure to nature/well being effect, while the attention restoration measure did not. Additionally, we find a

similar pattern in the relationship between exposure to nature and the ability to solve a personal problem.

Implications for Environmental Education and Climate Change Messages

In light of our findings, we argue that environmental education programs, if their intent is to increase pro-environmental behavior, should focus more on increasing CNS scores and less time focusing on solely knowledge factors related to climate change or sustainability issues. Furthermore, we suggest that instead of using fear communications to promote action around climate change, we suggest that messages that highlight the benefits of feeling more CN might promote both individuals' well being and their pro-environmental behavior aimed at reducing climate change.

References

- Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology, 24*, 503-515.
- Mayer, F. S., Frantz, C. M., Breuhmann-Senecal, E. & Dolliver, K. (2009). Why is nature beneficial? The role of connectedness to nature. *Environment & Behavior, 5*, 607-643.