

Symposium

Human relationships with nature, restoration and health

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This symposium aims at addressing the interrelation between human relationships with nature, restoration and health. Being in nature positively affects well-being, restoration and health. Positive attitudes and dispositions towards nature facilitate spending time in nature and therefore, to experience the restorative and health promoting qualities of nature.

In the first presentation, Corraliza, Bethelmy, and Collado will present their findings on the cultural dependency of attitudes about nature. Differences between a Venezuelan and a Spanish sample could be found with respect to inclusion of nature in the self (INS), environmental concern and frequency of visits in nature. In a structural equation model, connectedness with nature (CN) is explained by INS, pro-environmental beliefs, affinity toward diversity and the frequency of visiting natural spaces.

Röderer and Cervinka will present findings from a qualitative study on the perception of nature and a quantitative study on motives for spending time outdoors. Not only wild and unspoilt nature, but also well-being related issues were found to be most relevant in the qualitative study. In the quantitative study, participants' motives for spending time outdoors differed significantly according to the participants' level of CN. Recommendations for the progressive design of open and green spaces in cities will be derived from these two different methodological approaches.

Presentation three deals with the influence of CN on the perceived restorativeness of

indoor and outdoor environments. Cervinka and Röderer will present findings from an experimental study, in which participants performed leisure time activities indoors and outdoors and rated the environments restorative qualities afterwards. CN was found to have no significant influence on the perception of the restorative qualities of the settings. Implications for health promotion in order to stimulate outdoor activities will be highlighted.

Kibbe, Byrka and Kaiser will focus on the relationship between a person's health and his or her appreciation for nature. Appreciation of nature and appreciation of health were found to be substantially correlated. Possibilities to promote individual health by means of promoting people's appreciation for nature will be given.

Presentation 1: Connectedness with Nature: a cross cultural study

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Introduction

It has been shown in previous research that the beliefs about nature can differ among people from different cultures as well as their affective identification with nature. In this way, European people show an integrated beliefs system (ecocentric and anthropocentric) (Corral-Verdugo et al., 2009) but in Latino America there is not clear evidence in this respect. However, less interest has been put in assessing whether

intercultural differences exist when other pro-environmental variables are taken into account, such as connectedness with nature, among others. In this respect, an intercultural study is proposed in which the main objectives are: (1) to explore whether there are intercultural differences taking into consideration six variables: connectedness with nature, inclusion of nature in the Self, pro environmental beliefs, affinity towards diversity, frequency of visiting natural spaces and environmental concern, and (2): to propose an exploratory multivariate model that may explain the connectedness with nature throughout the relation between the variables mentioned in objective 1.

Method

The total sample was formed by 425 people ($M=30$ years old; $SD=11.76$); 60.47% female and 39.52% male. The devices used were the Spanish versions of the Connectedness with Nature (CNS) Scale (Mayer & Frantz, 2004; $\alpha=.85$), the Affinity Towards Diversity Scale ($\alpha=.60$), New Human Interdependence Paradigm (NPIH) Scale (Corral-Verdugo et al., 2009; $\alpha=.806$), and the Inclusion of Nature in the Self Scale (Schultz, 2001). Psychometric, comparative and multivariate analysis were done in the Spanish and the Venezuelan sub-samples.

Results and Discussion

According to the results, Venezuelan showed a higher inclusion of nature in the self and they are more environmentally concerned than Spanish. On the other hand, Spanish people visit natural spaces more often. No differences were found when connectedness with nature, the beliefs and the affinity towards diversity were taken into account. A Structural Equation Model was carried out and the model obtained was significant ($\chi^2 = 6.4$ (2df), $p < .05$, RMSEA = .07, CFI = 0.99, GFI = 0.99). In this way, connectedness with nature was explained by the inclusion of nature in the self, the beliefs, the affinity toward diversity and the frequency of visiting natural spaces ($R^2=.307$). Empirical evidences for current discussions about intercultural differences and connectedness with nature are presented.

Acknowledgements

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Presentation 2: Images of nature and restoration

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Introduction

Empirical evidence highlights the positive effects of natural experiences on health, well-being and restoration. In times of increasing densification, urbanisation, and technologisation, stress levels are rising. To utilise the positive effects of nature on well-being and health in urban environments, it is essential to know, what conceptions of nature people have in mind and what motivates them to spend time outdoors. How can the restorative potential of green spaces in urban areas be used to optimally foster human health and well-being?

Method

Two psychological studies were carried out in the Vienna region, a qualitative ($n=133$, 52.6% female, mean age 34.9 years) and a quantitative one ($n=120$, 62.5% female, mean age 39.9 years). In the qualitative study, participants answered questions in open response format concerning their inner conceptions of nature (e.g. "What comes to

your mind, when you think of nature?"). Responses were analyzed using the method of qualitative content analysis (Mayring, 2007). In the quantitative study, participants were asked to choose their motives for spending time outdoors from a list of 13 items.

Results

In the qualitative study, most responses were given in favour of unspoilt nature (landscapes unaffected by the influence of humans, wilderness areas). Also, well-being and recreation played a major role in respondents' mental representation of nature. In the quantitative study, participants' motives for spending time outdoors differed significantly according to the participants' level of connectedness with nature (CN; CNS: Mayer & Frantz, 2004). While these low on CN spent time outdoors for utilitarian or social reasons, participants high on CN went outdoors mainly for restorative reasons, such as "to recover from stress" or "to contemplate life".

Discussion

Open and green spaces in cities should be designed according to peoples' expectations of natural environments to make them feel comfortable. Neatly arranged park environments should be transformed into more nature-like areas. Natural green spaces incite people high on CN to go there and make use of the restorative opportunities. For people low on CN, greens spaces do not have this incitement. Therefore, urban green spaces should also address social or other needs to stimulate people low on CN to visit them. By experiencing natural outdoor spaces, people low on CN have the possibility to learn the link between nature and restoration. Naturally designed parks would facilitate restoration nearby peoples' homes in a sustainable way and by this increase well-being and health in urban areas.

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Presentation 3: Connectedness with nature and indoor vs. outdoor restoration

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Introduction

Spending time in nature enhances well-being and health. Frequent users of green outdoor environments feel healthier and experience less stress. Outdoor settings are superior to indoor settings regarding restoration. Prior research indicated the influence of connectedness with nature (CN) on the motivation to spend time outdoors (Röderer et al., 2010). People high on CN spend more time in nature and showed a more restorative motive pattern compared to those low on CN. Does CN influence the perception of the restorative qualities of indoor and outdoor environments?

Method

To address this question, an experiment was conducted (n=36 psychology students) in Vienna. Participants were instructed (1) to select a leisure time activity suitable for indoors as well as outdoors. They were asked (2) to perform this activity away from their homes, on two separate days, (3) each beginning at the same time of day. The activity (4) should be maintained for at least 30 minutes. (5) Half of the participants started the experiment indoors, the other half started outdoors. Immediately after performing each activity participants (6) had to fill in a semi-structured questionnaire containing a German version of the Perceived Restorativeness Scale (Hug et al., 2009). Additionally, participants should take a picture displaying them in the setting while performing the activity. In this way, we were

able to check that they followed the instruction.

Results

The outdoor setting scored significantly higher on the factors *Being Away* and *Fascination* compared to the indoor setting. For *Coherence*, the indoor setting scored significantly higher. Splitting CN by median and including it as a second factor in the analysis had no effect on these results.

Discussion

In line with prior research, participants in this study perceived the outdoor condition as more restorative as the indoor condition. However, CN had no significant influence on peoples' perception of the restorative qualities of the outdoor setting. The participants in our study had to go outside; this was part of the experimental design. Hence, we conclude that people low on CN need external impetus to experience restoration in nature. A prominent concern of health education and health promotion is to stimulate outdoor activities. This has two reasons: (1) to combat health impairment caused by sedentary lifestyles and (2) to counterbalance progressing alienation from the natural environment.

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Presentation 4: Restorative Natural Environments, Appreciation for Nature, and People's Health

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Introduction

The aim of our research was to substantiate a link between a person's health and his or her appreciation for nature (i.e., attitude toward nature). Failure to restore from everyday demands can cause stress, mental fatigue, and, ultimately, harm people's health. Following this line of thought, we anticipated that persons who value their health would also excessively use natural environments--known to effectively promote restoration from everyday demands and renew mental resources (Hartig, 2004). In other words, we anticipated people who care for their health to particularly appreciate and use natural environments as a source of their restoration and well-being and vice versa: people who appreciate nature to be more concerned about their health as well. Subsequently, we also predicted people who care for their health to also be healthier.

In this paper, we used two new measures: one that links individual health attitudes with the likelihood of engaging in a wide variety of health-related behaviors (Byrka & Kaiser, 2011), and one that links attitude toward nature with the likelihood of engaging in a wide variety of nature-related activities and verbal statements expressing appreciation for nature (Brügger, Kaiser, & Roczen, in press).

Methods

We used survey data from German adults. The mean age of the 349 participants was 28.9; the percentage of females was 69.9%. Our sample was disproportionately younger with more females than the German population as a whole.

In our research, we used what Kaiser, Byrka, and Hartig (2010) call the Campbell paradigm. Thus, we equated health and na-

ture attitude, respectively with what a person does to retain or promote his or her health and to realize his or her appreciation for nature, respectively. Employing Rasch-type models, we corroborated 56 self-reports of behaviors from various health domains, such as sustenance, hygiene, and physical exercise, to form a transitively ordered class of activities. Likewise, 26 behavioral self-reports and 13 verbal statements expressing and realizing appreciation for nature also and again formed a transitively ordered class of activities. Hence, each attitude was measurable as a one-dimensional Rasch scale, and each was represented by a unique class of behaviors.

Results

Appreciation of nature and appreciation of health although distinct, they both were substantially correlated: $r = .40$. Obviously, a person who appreciates and seeks nature also engages in other health sustaining and promoting behaviors. Additionally, persons with a marked health attitude turned out to be

physically fitter than their counterparts at the lower end of the health attitude scale.

Conclusion

Our research speaks of the possibility to promote individual health by means of promoting people's appreciation and, thus, use of natural environments for their restoration purposes.

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