

## Seeing, thinking, feeling : exploring free associations with (non)restorative pictures

**Citation for published version (APA):**

van der Ha, B., Kort, de, Y. A. W., & Beute, F. (2011). *Seeing, thinking, feeling : exploring free associations with (non)restorative pictures*. Abstract from 9th Biennial Conference on Environmental Psychology, Eindhoven, Netherlands.

**Document status and date:**

Published: 01/01/2011

**Document Version:**

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

**Please check the document version of this publication:**

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

**General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.tue.nl/taverne](http://www.tue.nl/taverne)

**Take down policy**

If you believe that this document breaches copyright please contact us at:

[openaccess@tue.nl](mailto:openaccess@tue.nl)

providing details and we will investigate your claim.

# Seeing, thinking, feeling: Exploring free associations with (non)restorative pictures

B. van der Ha, Y.A.W. de Kort, & F. Beute

*Human Technology Interaction, University of Technology, Eindhoven, the Netherlands*

## Introduction

Research has demonstrated that nature has a restorative effect on human beings. Viewing nature can increase mood, cognitive performance, and directed attention, while reducing stress levels and negative affect (e.g., Hartig, et al., 1991; Berman & Jonides, 2008). Yet both current theories explaining these effects (Ulrich et al., 1991; Kaplan, 1995) still leave quite a few questions on the underlying mechanisms unanswered.

Efforts to investigate these mechanisms included methodologies such as continuous psychophysiological recordings (Hartig, et al., 1991), affective priming (Korpela, et al., 2002), or eye-tracking (Parsons & Olson, 1998). In the current study we investigated the free associations of viewers of natural vs. urban pictures as a first step on an avenue towards more insight in the restorative effects of nature. Very little research focused on the role of associations, yet learned positive associations with nature have been suggested in relation to restoration (Ulrich et al., 1991). Also, ART's components *fascination* and *being away* (Kaplan, 1995) both suggest the mind is drawn away from current worries or tasks – but where to? Our study aimed to answer this question.

## Method

The study, following a within groups design (nature vs. urban vs. control) consisted of four stages. Forty participants first reported their mood, state self-control and need for restoration. Then they produced minimally five free associations with each of twelve pictures (four natural, four urban, four fillers). After this, they evaluated all of their associations on 5-point scales ranging from 'very negative' to 'very positive'. In the fourth phase, participants viewed all pictures again, rating perceived restorativeness and

their preference. A closing questionnaire probed connectedness to nature and demographic variables.

## Analyses and Expectations

Data collection is currently in progress. On the free associations we will perform a two-stage content analysis: first categorizing the associations into activities, emotions, or objects; then qualifying activities as socially, physically, and/or mentally demanding, and emotions according to the circumplex model.

Qualitative and quantitative analyses will explore the differences between associations to natural vs. urban stimuli, and the relations between associations and the restorativeness of and attitude towards these stimuli. We hypothesize that nature is associated with more positive emotions and activities that are less mentally demanding. These relationships may depend on connectedness to nature and need for restoration.

## References

- Berman, M. G., & Jonides, J. K. (2008). The cognitive benefits of interacting with nature. *Psychological Science, 19*, 1207 - 1212.
- Hartig, T., Mang, M., & Evans, G. W. (1991). Restorative effects of natural environment experiences. *Environment and Behavior, 23*, 3-26.
- Kaplan, S. (1995). The Restorative Benefits of Nature: Toward an Integrative Framework. *Journal of Environmental Psychology, 15*, 169 - 182.
- Korpela, K., Klemetillä, T. & Hietanen, J. (2002). Evidence for rapid affective evaluation of environmental scenes. *Environment & Behavior, 34*, 634-650.
- Parsons, R., Olson, M., 1998. Eye movements and landscape aesthetics: evidence for differential scanning as a function of aesthetic preferences. *Psychophysiology 35* (Suppl. 1), S63.
- Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Michael, Z. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*, pp. 201 – 230