

## The impact of nature on creativity – A study among Danish creative professionals



Trine Plambech<sup>a,\*</sup>, Cecil C. Konijnendijk van den Bosch<sup>b,c</sup>

<sup>a</sup> The Alexandra Institute, Rued Langgaardsvej 7, 2300 Copenhagen S, Denmark

<sup>b</sup> University of Copenhagen Institute of Geosciences and Natural Resource Management, Rolighedsvej 23, DK-2000 Frederiksberg, Denmark

<sup>c</sup> Department of Landscape Architecture, Planning and Management, Swedish University of Agricultural Sciences, Sweden

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### ABSTRACT

This article investigates the ability of natural environments to enhance creativity. Seventeen qualitative interviews were performed with Danish creative professionals of different age, sex and profession about their creativity, their relation to nature as well as their experience of nature's ability to stimulate their creativity. Findings from this study show that nature does indeed have the capacity to enhance creativity. This study explains how nature has the ability to evoke the creative way of thinking by making us more curious, able to get new ideas as well as flexible in our way of thinking. Nature also helps us to recharge our directed-attention which is needed when analysing and further developing ideas. Nature especially plays a role in the two first phases of a creative process, the Preparation phase and the Incubation phase. Natural environments which offer the perceived sensory dimensions 'Nature', 'Space' and 'Serene' seem to be of particular importance for the creative professionals. The results suggest that it is fruitful to provide access to natural environments of different kinds in order to support creative processes.

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### Introduction

The aim of this study is to investigate the relation between natural environments and human creativity. Our society's need for creative people calls for different perspectives on how we enhance creativity. Innovative organisations need creative employees because creativity provides the raw intellectual materials – ideas, concepts, insights and discovery – that eventually become new theories, approaches, tools, products and services which underlie innovation (Vithayathawornwong et al., 2003; Baumann and Boutellier, 2009; Dul and Ceylan, 2011).

Psychology is one of the fields that describe and look into creativity. Questions like “what is creativity?”, “who is creative?” and “how can the creative person, process and work environment be understood?” have been explored and described in the literature rather comprehensively (Guilford, 1950; Oldham and Cummings, 1996; Hennessey and Amabile, 2010). An extensive amount of research within the area of human–nature interaction, especially within the field of environmental psychology explains why and how nature impacts us and may reduce human stress and relieve

burn-out symptoms (Ulrich, 1984; Kaplan, 1995; Kaplan et al., 1998; Grahn and Stigsdotter, 2010). In spite of this work, nature's ability to stimulate our creativity has only been investigated to a very limited extent within the areas of psychology and environmental psychology. To our knowledge, the attention from other fields (such as landscape architecture) for nature–creativity linkages has also been limited.

This study therefore aims to investigate the relationship between nature and creativity, as it may reveal new and important knowledge about nature's role in creative processes which may be valuable in today's and tomorrow's society.

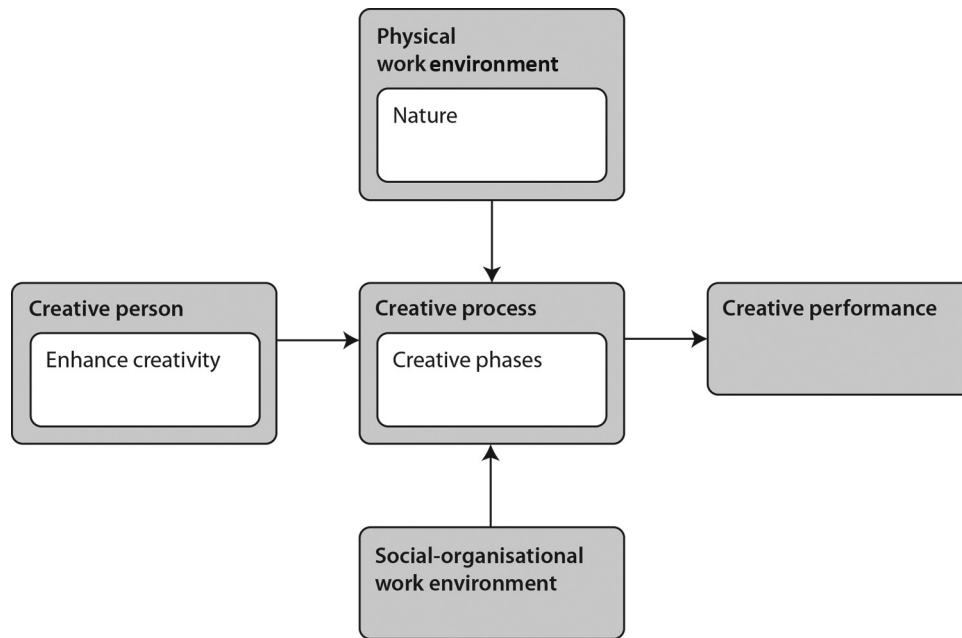
#### *The creative person, process and work environment*

Even though definitions of creativity differ, creativity is generally defined as ‘a useful novelty’ – not a novelty for its own sake, but a novelty that can be applied, and add value to products and services (Oldham and Cummings, 1996; Hennessey and Amabile, 2010).

Creativity, or creative performance, can be described in many ways. According to Dul and Ceylan (2011), creative performance depends on the person, the process, the social-organisational work environment as well as the physical work environment (as visualised in Fig. 1). The focus of this study has been on natural

\* Corresponding author. Tel.: +45 30236622.

E-mail addresses: [trine@plambech.com](mailto:trine@plambech.com) (T. Plambech), [cck@life.ku.dk](mailto:cck@life.ku.dk) (C.C. Konijnendijk van den Bosch).



**Fig. 1.** A modified version of the conceptual model of the relationships between creative person, creative work environment and creative performance (adapted from original figure in Dul and Ceylan, 2011) showing the focus of this study in the white boxes.

environments as part of the Physical work environment and as impacting the Creative person and the process.

On a psychological level there is no distinction between the creativity that is used by artists, and the creativity we all use when we try to create something new within our field (Mikkelsen, 2009).

It was J.P. Guilford, test and intelligence researcher, who for the first time defined what characterises the thoughts involved in a creative process:

1. Being sensitive towards problems (we are aware of things that do not work or fit together and it makes us curious to find out why).
2. We get lots of ideas, and our ideas are new and not just replications of old ideas.
3. We are flexible and able to shift between different perspectives. We can view a problem from different angles and branch out into new channels of thought.
4. We think in a synthesising way – organising ideas into larger, more inclusive patterns and as part of it analyse to see the relevant and interesting aspects (Guilford, 1950).

The creative process consists of a number of phases (Wallas, 1926):

- *Preparation*: when the person directs his attention to a particular topic, and starts to gather information and look into issues that are interesting and arouse curiosity.
- *Incubation*: conscious work stops, and attention is directed to other things, while unconsciously the creative process continues. The unconscious scanning is based upon personal, visual and sensory qualities (Ehrenzweig, 1968).
- *Idea*: the moment when new ideas suddenly come to mind, and the work done during the preparation phase turns into concrete and conscious ideas.
- *Evaluation*: when logical and rational thought returns to decide, whether the insight is valuable and worth pursuing.

The output of the creative process is a creative performance.

Many creative thinkers have recognised the potential role of the environment in influencing creativity (Amabile et al., 1996; McCoy and Evans, 2002).

#### *Theories of human–nature interactions*

Nature, in the broadest sense, is equivalent to the natural, physical, or material world or universe (Wikipedia, 2014). The natural environment encompasses all living and non-living things occurring naturally on Earth or some region thereof. It is an environment that encompasses the interaction of all living species (Johnson et al., 1997). Humans have a major impact on nature and natural environments, especially in urbanised countries (Hauxner, 2011).

Highly relevant research has been carried out within the field of environmental psychology. Below, three theoretical perspectives are introduced that are considered of high relevance to the focus of this article.

The Attention Restoration Theory (ART) by Steven Kaplan (1995) identified two types of attention. One refers to the direct attention system, which is used in unnatural environments, like urban environments, office work or when driving a car. In these situations our brains are ‘hit’ by 11 million bits of information per second, which demand our attention, while only 15–20 bits of information are cognitively adapted. The rest we have to sort out, and this demands energy, which will become mentally tiring (Kaplan, 1995). The other concerns spontaneous attention, or soft fascination, which is the ability to experience things unnoticed, thus stimulating the brain without being mentally tiring. In nature, this type of attention is used and stimulated (Kaplan et al., 1998). As illustrated in Table 1, there are four factors, in particular, that are important for a restorative feeling and they can all be found in nature (Kaplan et al., 1998).

The Affective Aesthetic Theory (AAT) differs from ART by having its focus on psychological and affective reactions, rather than cognitive ones (Ulrich, 1983).

Evolutionary forces have shaped human beings, and natural environments have been of crucial importance for survival during most of human evolutionary history. To be able to survive, it was important to be able to trust our affects. Affections are bodily

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