

Nature as a New Paradigm for Ergonomics & Well-being

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1. Introduction

Fundamentally, ergonomics is concerned with well-being. The second of the two objects of the royal charter of the Chartered Institute of Ergonomics and Human Factors (CIEHF) refers to the use of ergonomics knowledge for the promotion of well-being. This paper argues that nature provides a new paradigm for well-being. Therefore ergonomics knowledge should include both the benefits nature can bring to the workplace, and the means to enable those benefits.

2. Nature and Well-being

Currently, workplace health programmes tend to omit nature as a pathway to well-being. Similarly, key texts in ergonomics do not promote the benefits of nature for well-being and the restoration of performance. This mirrors the wider societal dissociation from nature in an age of rapid urbanisation, bringing about increases in lifestyle diseases and mental health (Maller et al., 2006). As reduced performance at work and sickness absence are related to mental health problems this should be noted by ergonomics practitioners.

Upstream nature-based solutions that bring nature into people's lives are coming to the fore to address societal challenges such as well-being (European Commission 2015). The EU research and policy agenda recognises that people need nature to be healthy and there is therefore a need for ergonomists to widen the solutions they offer, to address major challenges such as work related stress by bringing nature into the workplace. For example, research on the benefits of rest breaks for well-being and productivity can be enhanced through including restorative natural environments in break taking.

A comprehensive and diverse body of research (e.g. Maller et al., 2006) exists that demonstrates exposure to nature can: reduce hyper-tension, cardiovascular and respiratory tract illnesses; improve mood and vitality; benefit mental wellbeing in the form of issues such as anxiety; and of particular note for ergonomics, restore attention capacity and reduce mental fatigue. This research provides an evidence base for promoting nature as a new paradigm for ergonomics. It also supports the ergonomist advocating access to nature at work in order to improve health, well-being, restoration and productivity.

Although there is a lack of clear guidance, the breadth of research shows that a great deal of benefit can come from three areas. Simple exposure to nature in the form of views of green spaces, trees, gardens, green roofs and even plants in the office. Once access to nature is provided, informal measures are needed to encourage employees to spend time in nature, both during breaks and as a location for meetings. Secondly, and more specifically, the research on restoration shows that time in nature should be formalised, particularly for those jobs that involve high demands on attention.

Finally, formal nature based interventions can deliver benefits such as reductions in sick leave and burnout.

3. Nature and Ergonomics

The well-being benefits of nature are mediated by our ‘connection to nature’ which is emerging as being as important for well-being as established factors such as income and education (Capaldi et al., 2014). Therefore, as well as providing a route to workplace wellness, the concept of our shared place in nature provides a new paradigm for ergonomics informing the epistemology of the discipline and wider practice (the second object of the CHIEF royal charter) through revealing the integrative nature of human experience. Ergonomics should address global challenges where it can, and the continued loss of biodiversity and the links between the state of nature and human well-being have brought the concept of our connection with nature to the fore (DEFRA, 2011). As well as bringing nature into the workplace for human wellbeing, there is a necessity to promote the integrative perspectives of our place within nature so that benefits to both humans and the natural world can be realised in order to deliver a sustainable future.

Ergonomics is about the relationship between people and the environment, often from a positivist perspective (Dekker et al., 2013) with an ‘interface’ which suggests a boundary, the task being an external element that we encounter. This concept of humans shared place in nature relates well to integrative perspectives on ergonomics, and the difficulty in establishing where a system ends and the environment begins (Dekker et al., 2013). The concept of connection with nature where self and natural world are integrated is linked to phenomenology and concepts such as distributed and extended cognition, both discussed previously in the ergonomics literature.

Such an embeddedness within the environment provides a new paradigm for ergonomics and well-being in contrast to the ‘biomedical’ model where people are separate from the environment and deviate from ‘normal’ through events. Viewing people as embedded within the environment and having a dynamic relationship with it, changes the perspective. Echoing debate on core topics for ergonomics such as situation awareness, the concept of a shared place in nature provides a further argument for a shift in ergonomics, away from reductive positivist Cartesian viewpoints (e.g. Dekker et al., 2013) to the task being embedded – moving beyond interaction, to a holistic perspective.

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