Natural State of Mind: Key Methodologies, Findings, and Research Gaps in Ecopsychology

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Overview

• Highlight of benefits of nature
• Operational definitions of psychological benefits
• Operational definitions of nature
• Methodological considerations
• Opportunities
Documented Benefits of Nature Contact

Physical benefits:
• Improved immune function (Li and Kawada, 2011; Lowery et al., 2007)
• Lower blood pressure (Duncan et al., 2014; Shanahan et al., 2016)
• Reduced mortality (Coutts et al., 2010; James et al., 2016)

Psychological benefits:
• Greater happiness / well-being (Ambrey, 2016; MacKerron & Mourato, 2013)
• Improved cognitive development among children (Dadvand et al., 2015)
• Reduced stress / enhanced stress recovery (Annerstedt et al., 2013; Berto, 2014)
• Increased prosocial behavior / social connectedness (Broyles et al., 2011; de Vries et al., 2013)
Operational Definitions of Psychological Benefits

Happiness / Well-being

- Hedonic well-being
  - Self-reported positive emotions, life satisfaction
  - Absence of self-reported negative emotions or psychological distress
- Eudaimonic well-being
  - Self-reported sense of meaning, vitality, or transcendence

Cognitive Benefits

- Scores on tests of memory or attention
- Response time

Stress

- Physiological
- Self-reported stressors or severity of stress

Prosocial behavior / social connectedness

- Written responses to moral quandaries
- Self-reported feelings of social connection
- Self-reported diversity of social network
Example Study: Greenspaces and Cognitive Development in Children (Dadvand et al., 2015)

Finding:
In a sample of 7-10 year olds, those living in the greenest areas had the greatest improvements in cognitive development.

Cognitive development = scores on tests of working memory and attention

Working memory = “n”-back test
Attention = attentional network test for children
Operational Definitions of Nature Access/Exposure

Observational designs (Frumkin et al. (2017):

- Continuous
  - Satellite imagery indices
  - Distance to greenspace
- Ordinal or Categorical
  - Binary indicators
  - Categorization

Experimental designs
- Factorials, repeated measures, etc
Potential Issues with Nature Definitions

Across all fields:

• Dosage
• Inability to capture range of experiences
• Mechanism

Source: Frumkin et al. (2017)
Mechanisms for Psychological Benefits

Mechanisms seek to explain the *how*

Nature → ? → Stress Reduction
Control Conditions in Experimental Research

Control conditions are used to compare intervention

Identifying appropriate control or comparison conditions is difficult
• Simplicity vs real-life accuracy
• Only want to change one thing between control and experimental group

Potential issues with:
• Practicality
• Conceptual designs

Source: Hassan et al., 2019
Example Study: Creativity in Nature

Source: Palanica et al., 2019
Opportunities

• Understand operational definitions of psychological outcomes and nature to identify useful studies

• Seek to find the mechanism to replicate the magic ingredient

• Look for compelling uses of control and contrast conditions to be sure of the findings
Thank you