The Impact of Urban Environments and Nature Relatedness on Directed Attention Restoration.

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Introduction

- Research has associated exposure to natural environments with improvements in cognitive performance and wellbeing for individuals (Chen et al., 2020).
- This research is driven by Attention Restoration Theory (Kaplan & Kaplan, 1989). Which posits that a restorative environment is one that possesses visual aspects that capture effortless attention allowing for the replenishment of fatigued directed attention.

As 69% of Irish people live in urban areas (CSO, 2019) It is necessary to investigate the restorative potential of urban environments.

Research to date and rationale

- Established that exposure to natural environments leads to improvements in directed attention as measured using backward digit span task (Berman et al., 2008).
- Lack of investigation into individual differences that impact restoration.
- Majority of literature proposes urban environments as contrast to natural, inhibiting investigation of the restorative value of urban spaces.

Aims and Method

- Address the gaps in literature on the influence of nature relatedness on restoration and investigate the restorative value of an urban environment.

There were 7 hypotheses, 3 main effects:

H1: There will be a difference in directed attention based on environment condition (nature or urban).

H2: There will be a difference in directed attention based on the level of nature relatedness (low or high).

H3: There will be a difference in directed attention based on time (pre and post-intervention).

There were also 4 interaction hypotheses

Quantitative 2x2 factorial mixed between-within groups quasi-experimental design.

Measures and variables

IV 1:Environment

Environment Videos

6 minute videos created in line with similar studies - (Bourrier et al, 2018)

Nature Condition (https://youtu.be/ZUAHum5d1Ns)
Urban Condition (https://youtu.be/bE1lm4tmlH8)

IV2: Nature Relatedness

Nature Relatedness Scale (NR-6)

Reliable & Valid - (Nisbet & Zelenski, 2013)

DV: Directed Attention

Backward Digit Span task

Reliable & Valid
Used in restoration research - (Stevenson et al., 2018)

Example: "I take notice of wildlife wherever I am"

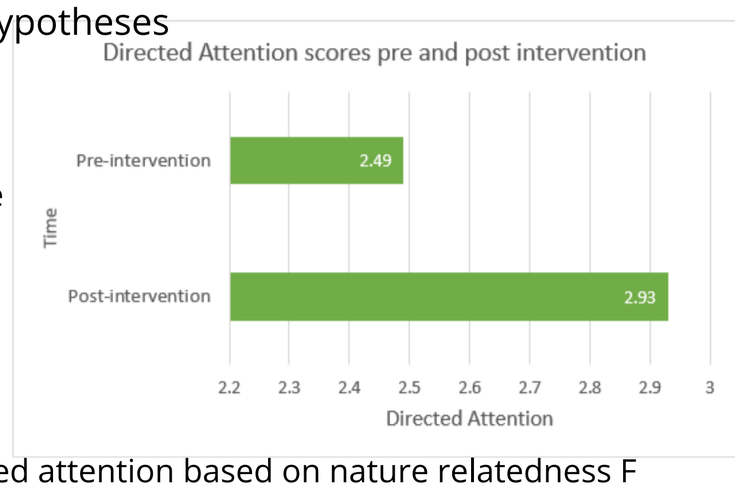
- 112 Participants in the online survey, age range 18-58, (*M*=31.04).

Environment Videos

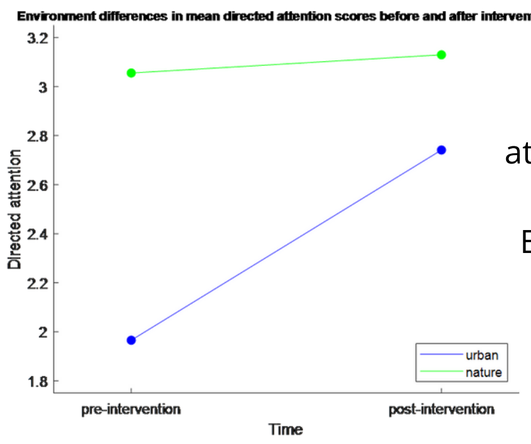
Results

A three-way mixed analysis of variance (ANOVA) was the statistical test carried out to test the hypotheses

Overall
There was a significant difference found between pre and post-intervention scores, F (1,108) =11.327, p= .001, ηp2= .095.



Nature Relatedness
no significant difference in directed attention based on nature relatedness F (1,108) = 0.303, p= .583. No significant interactions for nature relatedness were found F (1,108) = 0.674, p= .414., F (1,108) = 0.945, p= .333.



Environment
Significant difference in main effect of directed attention based on environment F (1,108) = 7.889, p= .006, ηp2= .068. the interaction between Environment (nature, urban) and time (pre, post) on directed attention was also statistically significant, F (1,108) = 7.994, p= .006, ηp2= .069.

Discussion

- Exposure to an urban environment appeared to significantly improve directed attention compared to a natural environment, suggesting that virtual exposure to an urban café is effective in temporarily restoring fatigued directed attention.
- The results suggest that the differences in directed attention before and after the intervention did not differ as a result of the level of Nature Relatedness of the participant.

Theoretical Implications
The findings challenge the understanding that natural environments have greater restorative effects than urban environments.
Perceptual experience of certain environments can benefit individuals through reducing stress and facilitating recovery from cognitive fatigue.

Practical Implications

- As the COVID-19 pandemic increases the metal burden on individuals, the results of this study provide useful evidence of the benefits of brief virtual exposure to environments in restoring fatigued directed attention.
- Virtual urban environments could be a useful tool to improve attentional focus and increase positive affect. This could be incorporated into existing employee wellbeing programmes as an intervention to provide opportunity for cognitive recovery and increase positive affect.

References

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