

Nature Relatedness and the Happy Path to Sustainability

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Why psychology?

- ❖ Environmental sustainability
- ❖ Individual differences in nature relatedness
- ❖ Research:
 - well-being/happiness
 - sustainable behaviour
- ❖ Implications and application

Why psychology?

- ❖ Human behaviour influences the environment
- ❖ Environmental problems affect human health
- ❖ What motivates environmental behaviour

Determinants of Environmental Behaviour

- ❖ Structural factors: SES, geography, infrastructure
- ❖ Psychological factors: norms, guilt, helplessness

Raising Awareness

Information alone \neq behaviour

Do We Need Nature?

- ❖ E. O. Wilson's Biophilia Hypothesis
- ❖ Evolutionary history
- ❖ Suggestive evidence:
 - nature scenes, pets, outdoor activities,
 - gardening, zoos, office workers/plants

Do We Need Nature?

- ❖ Cognitive biophilia
(e.g., *smart as a ...*)
- ❖ Advertising, AAT, empirical evidence
- ❖ Individual differences?

Measuring Connectedness: The Nature Relatedness Scale

- ❖ Individual differences in subjective connectedness
- ❖ Cognitive, affective, physical relationship with nature

Sample Items:

My relationship to nature is an important part of who I am

I feel very connected to all living things and the earth.

Animals, birds, and plants should have fewer rights than humans (*R*)

I enjoy being outdoors, even in unpleasant weather.

I take notice of wildlife wherever I am.

Validity: Nature Related Activities

- ❖ Nature related people own pets, buy organic, volunteer, spend time outdoors
- ❖ *A better predictor of behaviour*

Nature is Good for Us

- ❖ Modern lifestyles – Is disconnection related to unhappiness?

Nature Is Good For You

- ❖ Urban centres and nature deprivation – intervention restored SE, self-efficacy, perception, aggression, empathy for nature
- ❖ Playgrounds and child development, walking to school (obesity/driving vs. opportunity to observe wildlife)
- ❖ Proximity to green space - mortality benefits, reduces ADHD symptoms

Nature Contact/Images and Health

- Physical health benefits of nature and natural images
 - hospital, prison studies, wall art, etc.
- Empirical evidence for stress reduction, relaxation, attentional restoration, physical healing (e.g., blood pressure, heart rate, cortisol)

Attention Restoration Theory - soft (effortless) vs. hard (intense, riveting) fascination

Nature Relatedness and Happiness

- ❖ Life satisfaction
- ❖ Subjective Happiness
- ❖ Positive affect
- ❖ Fascination, awe
- ❖ Negative affect
- ❖ Depression

Nature Relatedness and Well-Being

- ❖ Personal Growth
- ❖ Autonomy
- ❖ Purpose
- ❖ Vitality

A *better* predictor of happiness than environmental attitudes

A *distinct* contributor to well-being

Nature Related People are Happier

	Study 1a	Study 1b ^a
Positive affect	.29**	.33**
Negative affect	-.11	-.29**
Autonomy	.28**	.26**
Personal Growth	.29**	.29**
Purpose in Life	.19*	.23**
Environmental Mastery	.09	.28**
Self Acceptance	.18*	.30**
Positive Relations with Others	.10	.22**
Life Satisfaction	.13	.24**

* $p < .05$, ** $p < .01$

^aPartiallying out the effects of NEP, NEC, Ecology scale (actual commitment/affect).

Distinct Importance of Nature Relatedness

- ❖ Controlling for Composite of Connectedness
 - country, culture, family, music, home, friends

(Schultz's Inclusion of Nature in Self measure)

Nisbet, E. K., & Zelenski, J. M. (in press). Happiness and feeling connected: The distinct role of nature relatedness. *Environment and Behavior*.

NR's link with happiness is independent of a generally connected personality

Happiness and Connectedness Correlations in the Community Sample (n = 415)

Scale	Connection Composite		Partial <i>r</i>		Partial <i>r</i>
	INS	INS	INS	NR	NR
Subjective Happiness	.46***	.34***	.14**	.19***	.11*
Satisfaction with Life	.44***	.34***	.15**	.16**	.07
Positive Affect	.43***	.42***	.26***	.29***	.22***
Negative Affect	-.25***	-.16***	-.05	-.07	-.02
Nature Positive Affect	.28***	.37***	.28***	.33***	.28***
Vitality	.44***	.38***	.20***	.27***	.20***
Autonomy	.25***	.27***	.17***	.25***	.19***
Personal Growth	.30***	.36***	.26***	.34***	.29***
Purpose in Life	.36***	.26***	.11*	.21***	.14**
Depression	-.29***	-.16***	-.02	-.03	.03

p* < .05, *p* < .01, ****p* < .001

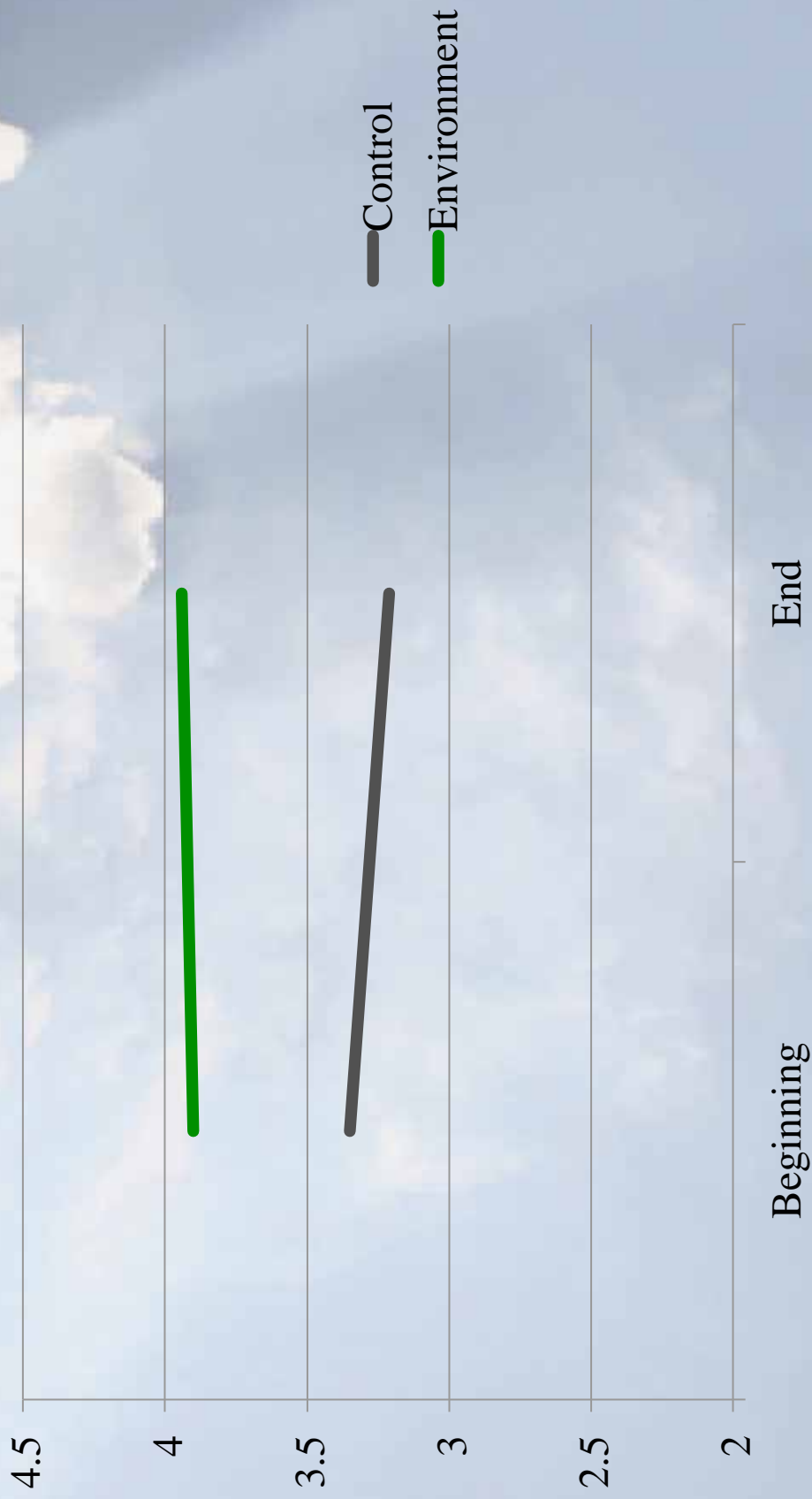
Nature Relatedness at Work (and Home)

- ❖ Personal growth, agreeableness, openness
- ❖ Greater quality and frequency of outdoor/nature time
- ❖ Nature/outdoor time related to: positive emotions (home AND work), productivity (work and personal goals), job and life satisfaction
- ❖ Spillover of nature benefits from leisure to work

Can We Change Nature Relatedness?

- ❖ Ecological knowledge/literacy
- ❖ Longitudinal study of environmental education students, compared to controls
- ❖ Changes in nature relatedness, environmental attitudes, well-being, over 3 months

Nature Relatedness Over Time



Change in Vitality & Sustainable Attitudes



(The Nature Related Path to Happiness) (Nisbet et al., 2009, 2011)

But clearly more work to be done on ‘interventions’

Nature Contact and Happiness

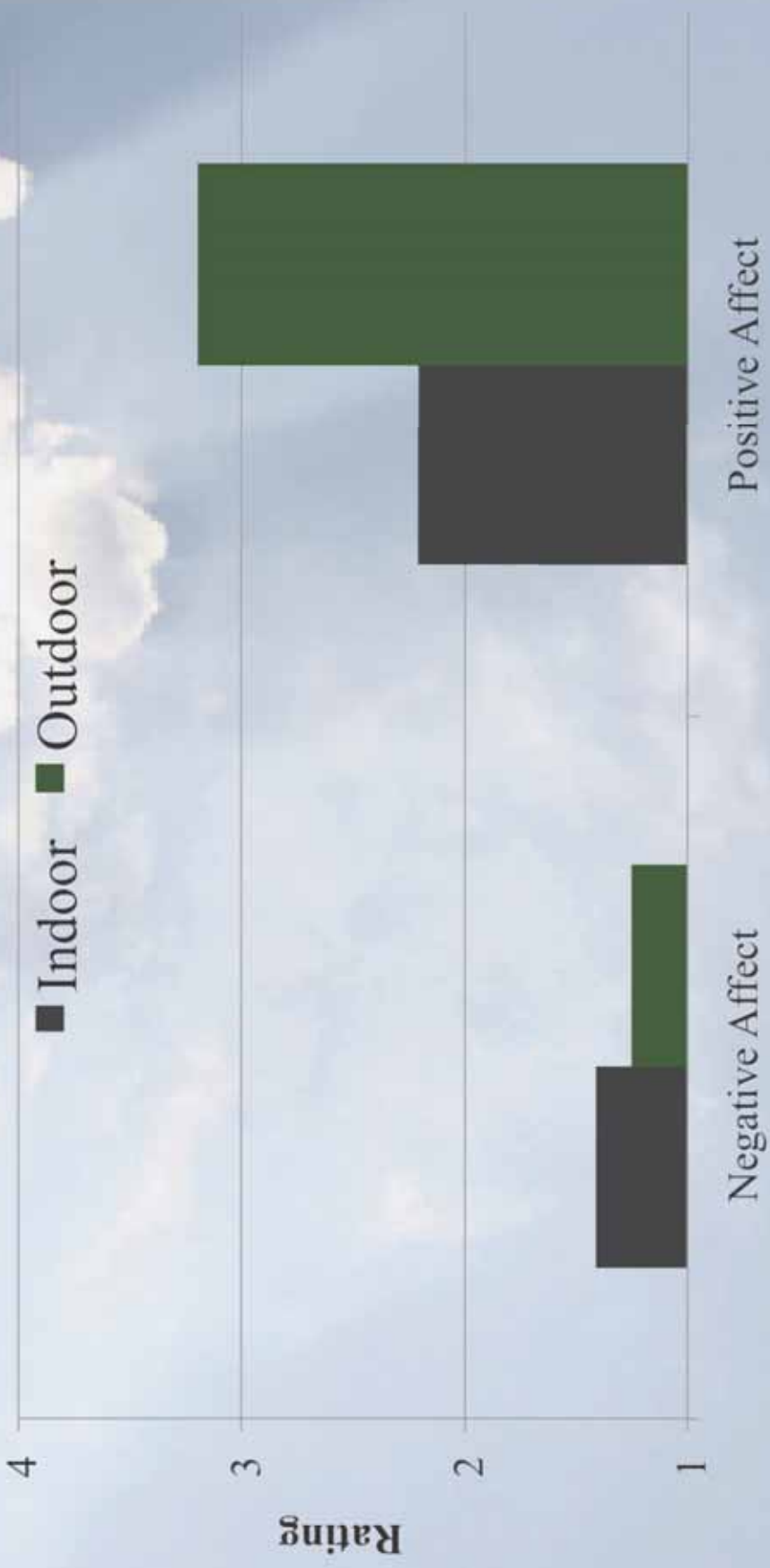
- ❖ Trait level connection is associated with more nature contact and (some types) well-being
- ❖ Nature experiences linked with well-being
- ❖ Potential benefits of “state” relatedness?
- ❖ What about nearby nature, differences in built and natural environments?

Walking Study 1

- ❖ University students – “*impressions of campus*”
- ❖ Random assignment to indoor or outdoor walk
- ❖ Autumn, all non-rainy days
- ❖ Post-walk well-being: “How do you feel right now?”



People prefer the outdoor walk

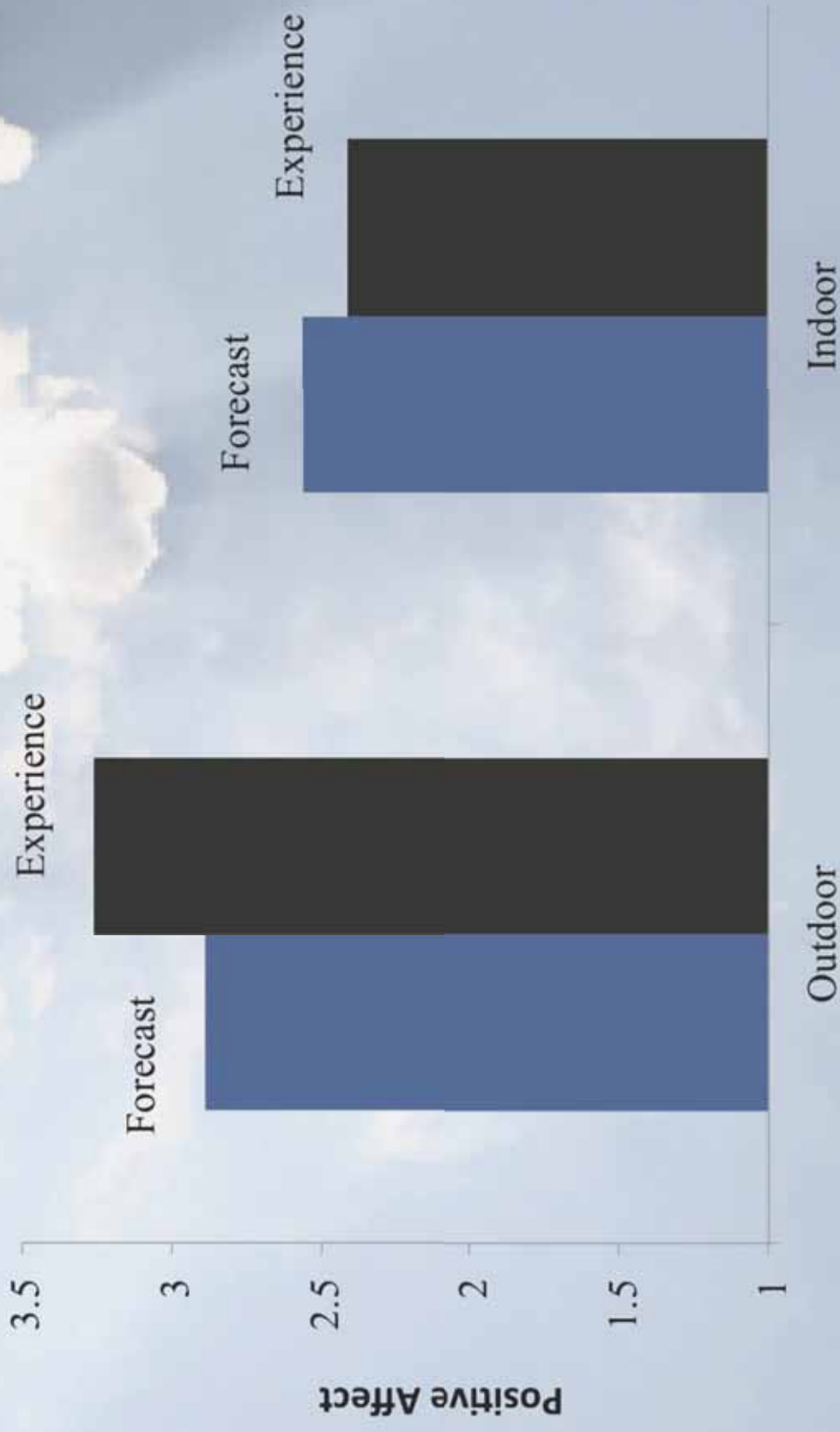


(Also vitality, fascination)

Walking Study 2

- ❖ Similar methodology as study 1, but added...
- ❖ Pre-walk affective forecasting - **predictions** of happiness (positive/negative affect)
- ❖ **State** happiness measured after walk

People under-predict the benefits of outdoor walks



Walking Study 3

- ❖ Replicated results from studies 1 and 2 with different design
- ❖ Random assignment to walk location
- ❖ Random assignment to *either* predict *or* experience
- ❖ Mood benefits of nearby nature are underestimated; Forecasting errors occur both between and within person

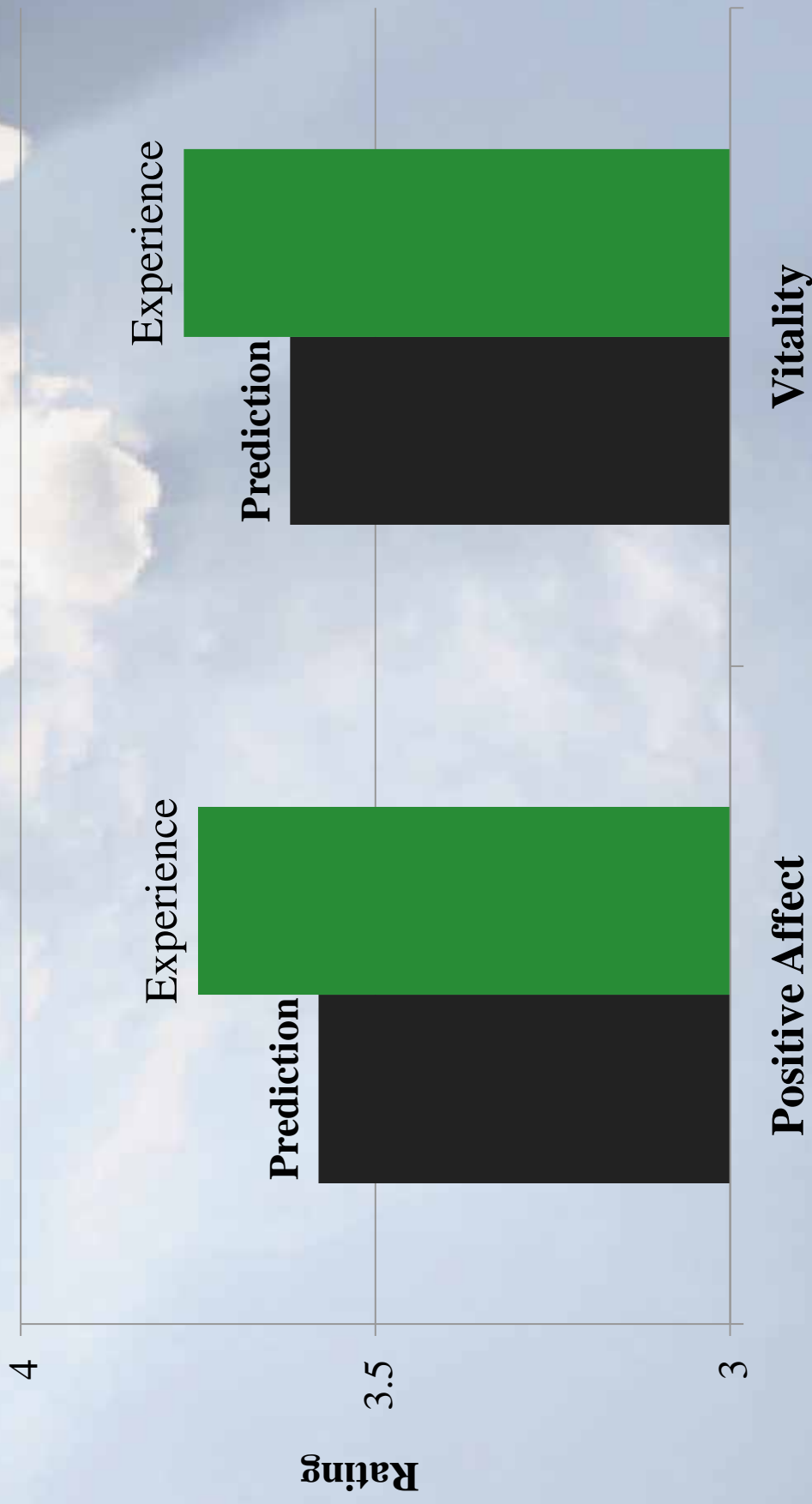
Forest ecology walk

- a look at forest ecology
patterns and processes

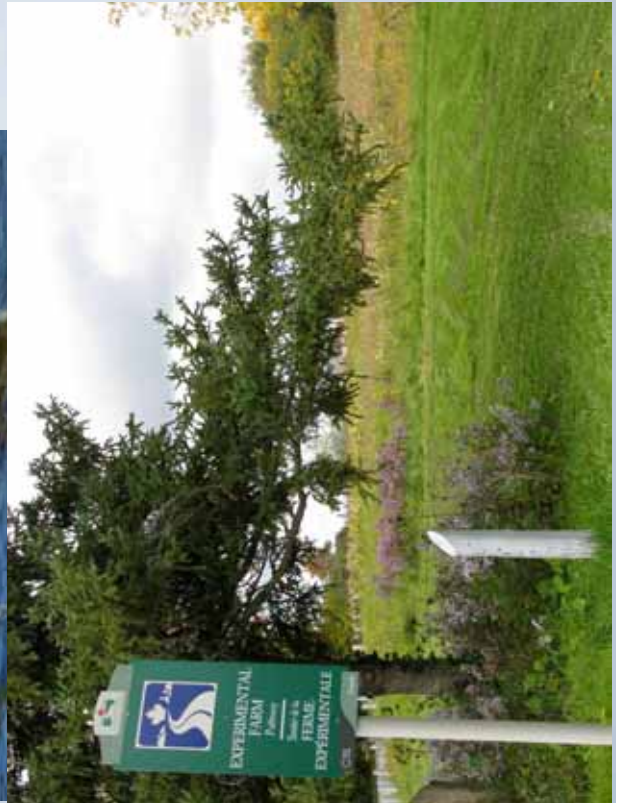
Mock canoe trip

- paddle and portage through a 5 day canoe trip in 2 hours, activities

Even outdoor educators err in affective forecasting

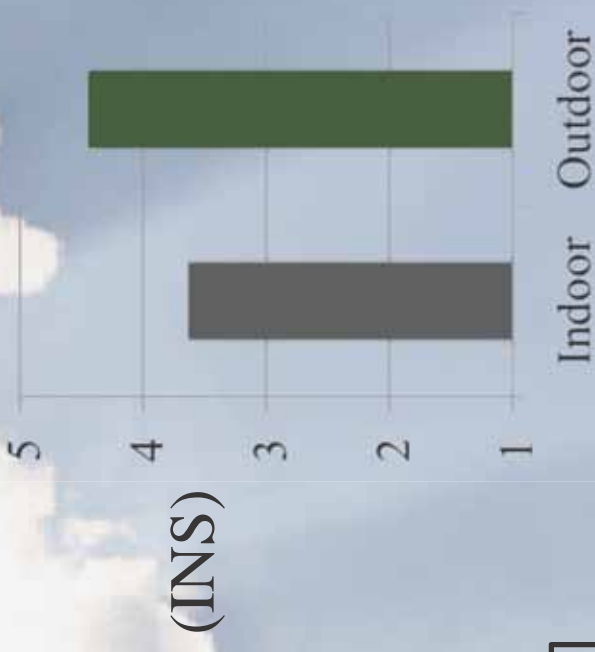


Happiness of nature images also underestimated



Changing Nature Relatedness (in the short term)

- ❖ Campus walk studies

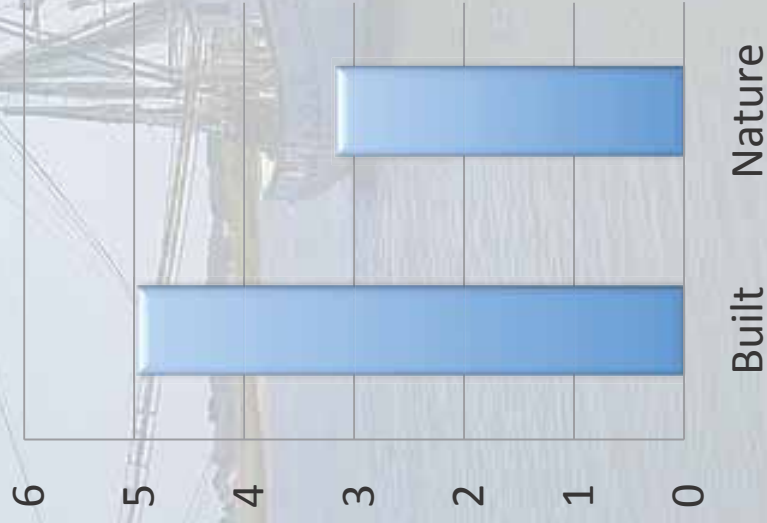


(The happy path to sustainability)

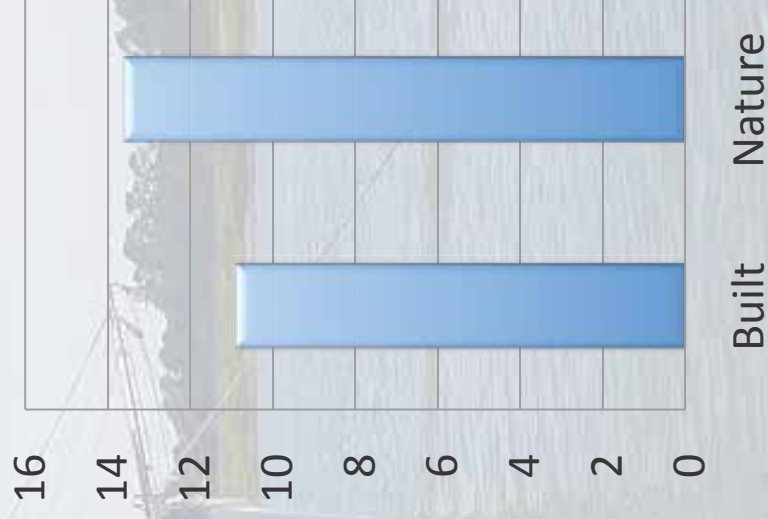


Fishing Behaviour

Fish/Season



Seasons



Future Directions and Applications

- ❖ Interventions (minimum dose, lasting effects)
- ❖ Experimental Methods (elements/mechanisms, antecedants)
- ❖ Urban Design (active commuting, health promotion and policy, interdisciplinary collaboration)
- ❖ Messaging (framing, health)

Nature Relatedness Research

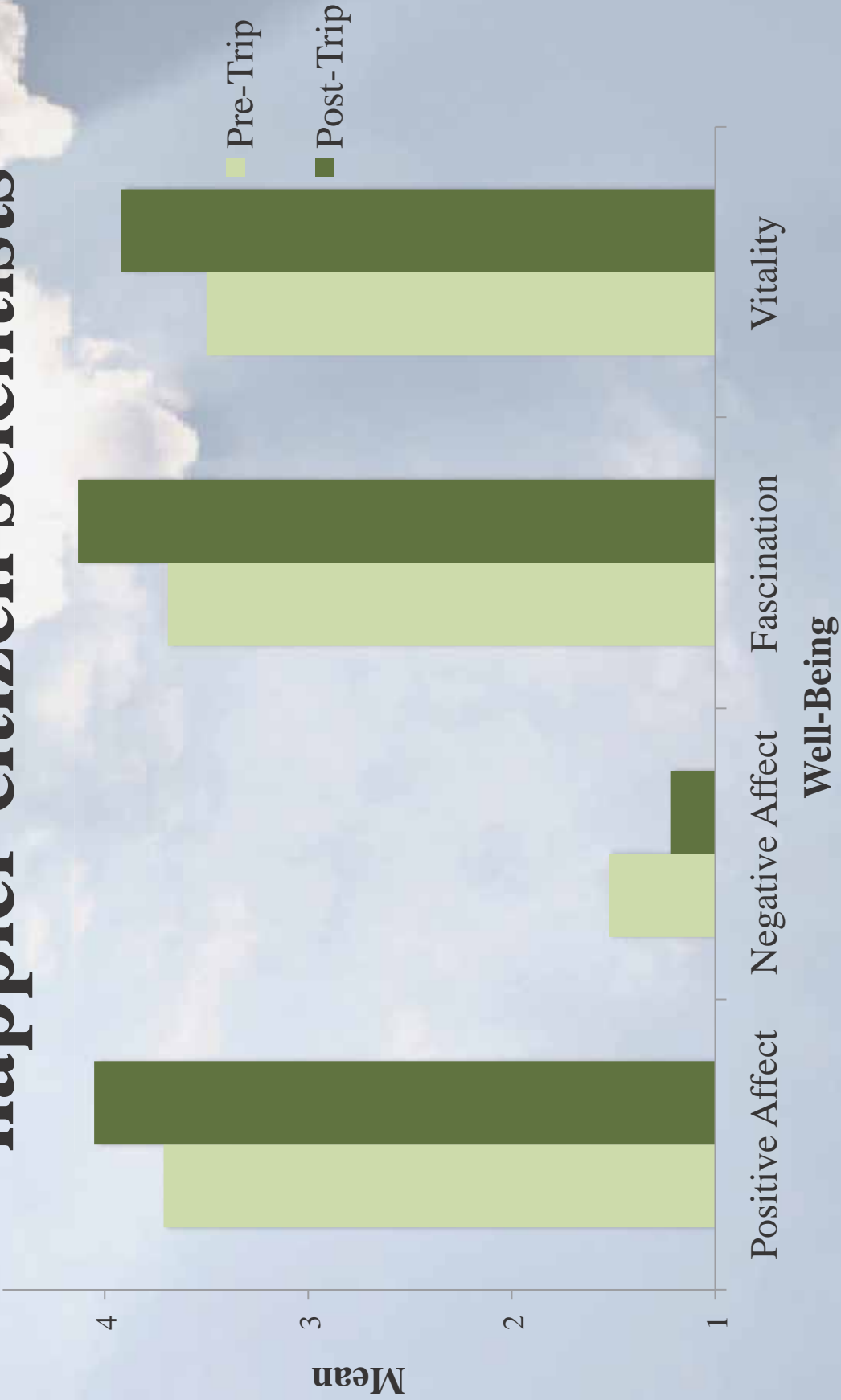
**Does being a ‘citizen scientist’ affect mood
and connectedness with nature?**

Nature Relatedness Research

NON-INVASIVE GRIZZLY BEAR TRACKING STUDY



More nature related, and happier citizen scientists



Nature Relatedness Research

**Ecology + Psychology = WILDLIFE DETECTIVES
CSI STUDY**

Benefits of Connectedness

- ❖ Complementary, not competing goals
- ❖ Health of people and the planet are interconnected (e.g., active commuting)
- ❖ Solutions need interdisciplinary collaboration

Happy People, Happy Planet



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Thank You!

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