



Environmental Green Space Drives Social Health

Dr Ross Cameron
Centre for Horticulture and Landscape
School of Biological Sciences
University of Reading

PlantforLife – HTA / EU

r.w.cameron@reading.ac.uk



How much do we rely on the natural world for our well-being?



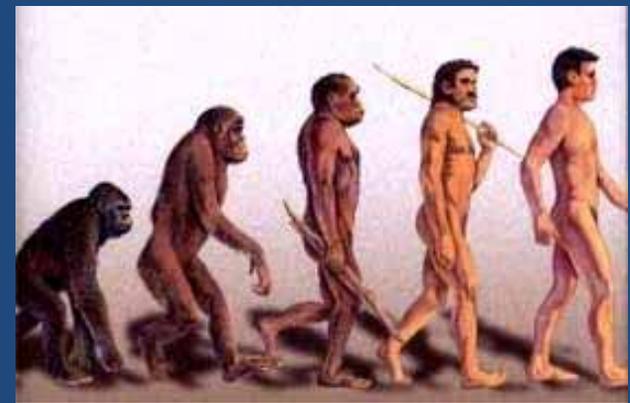
- 'Nature' is a mixed bag!
- Is there a balance to be struck?
- Have we always got our priorities right?

The Urban Context

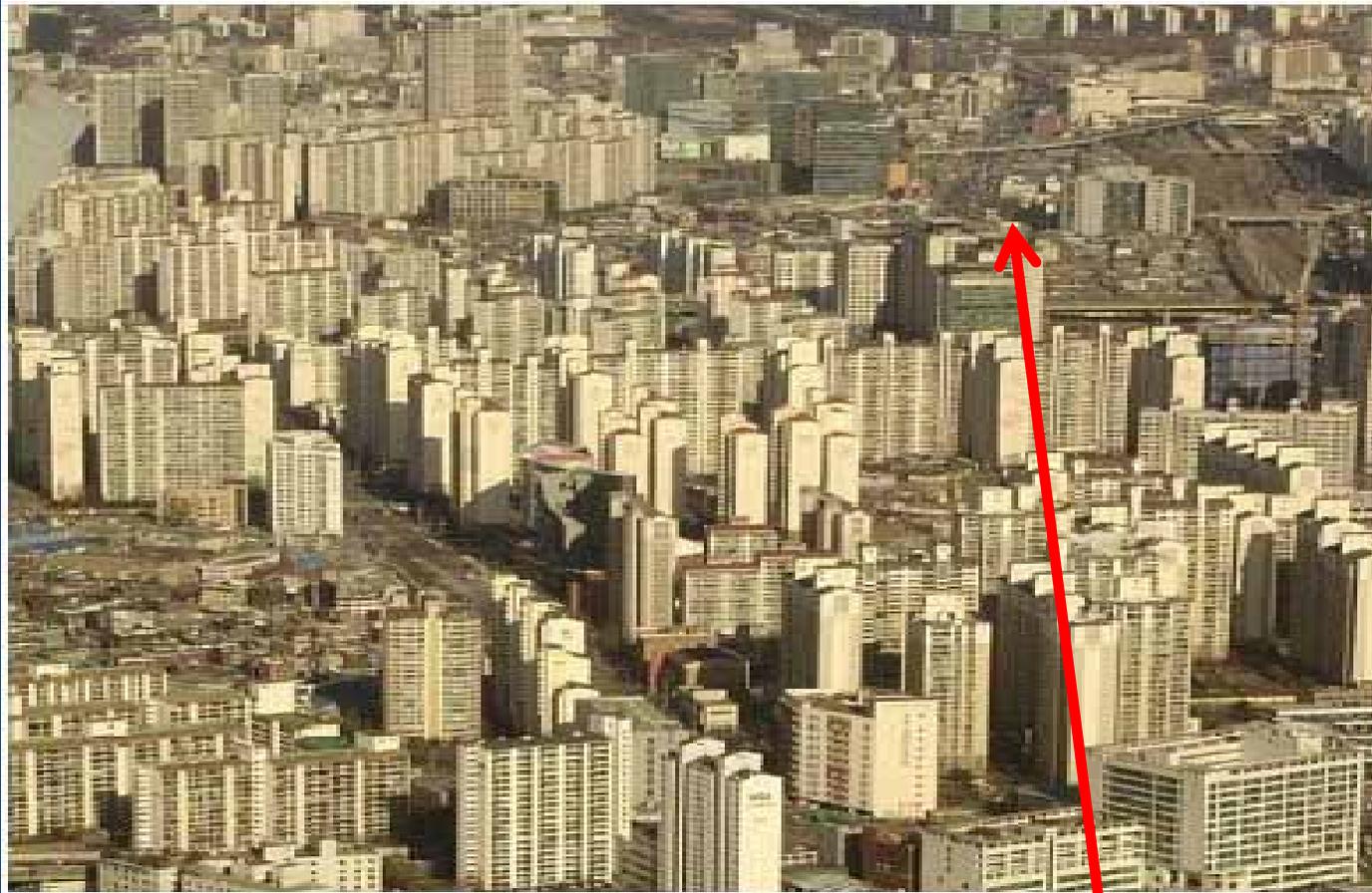


How important is 'green space' and our access to it?

- Is it a luxury – a nice 'add on' to complement the buildings?
- More fundamental – do we 'biologically-speaking' *NEED* our green spaces?
- The natural landscape shaped our evolution, but does modern urban man still have any requirement for it?



Is this a healthy environment to live in ?



Urbanisation correlates with increased risk of psychosis 72% and depression 16% (Sundquist et al., 2004)

There was a tree here, but it got chopped down in 1994

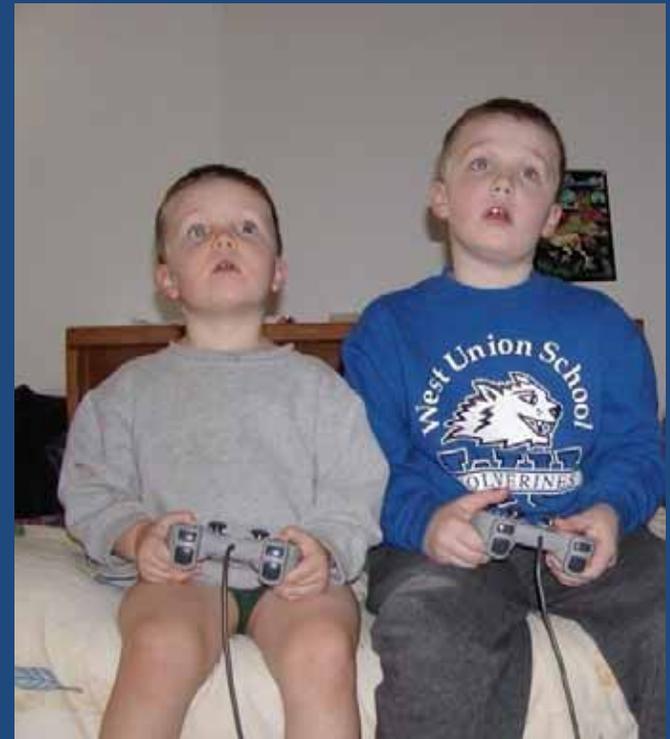
The Urban Environment



- In Europe, 10% increase in urbanisation between 2000 and 2015 (up to 80%)
- Only 60% of urban dwellers visit countryside pa (3 hr)
- 20% of children have never visited the countryside.
- Green space within European cities varies from 2 – 46%
- 45 million people living in European cities have limited access to green space (2 and 13% green space).
- Increasing pressure on Urban Green / Brown Space

Social Health Health & Well-Being Trends

- Sedentary lifestyle 23% males and 26% females = UK £10.7 bn pa
- Poor diet and limited exercise = heart disease, cancers, diabetes, stroke
- Mental health – by 2020 Depression the 2nd most common disability
- 50% of population may experience one or more episodes of mental health problems



So what's this link between nature and health!

A couple of quotes



“Yeh, well, chop down a tree and you get bad karma, man”.

Neil ‘the Hippie’ – The Young Ones



“The time is right to take a closer look at the evidence relating nature to health

Why?

Because it may actually support health more effectively than specific interventions on diet, sedentary behaviour or drug misuse.”

Lawrence St Ledger, Associate Editor,
Journal - Health Promotion International

“Some of ‘exposure to nature’ approaches appear to be just as effective in achieving health gains as traditional drug-oriented treatments.”

Food for thought

- Wilderness & Urban Green Space
- Passive and Active engagement
- Access
- Scale and Quality required
- Formalised v Natural (Semi-Natural)
- In and On buildings



Attention Restoration Theory (Kaplan & Kaplan, 1989)

The natural world helps people recover from physiological stress

- Being away
 - away from the stress factor – different environment, but also imaginary
- Extent (Coherence and Scope)
 - explore in a new direction – no boundaries, does the landscape 'make sense'
- Fascination
 - passive attention - release from the normal blocking methods
- Compatibility
 - how close it is to your interests / needs

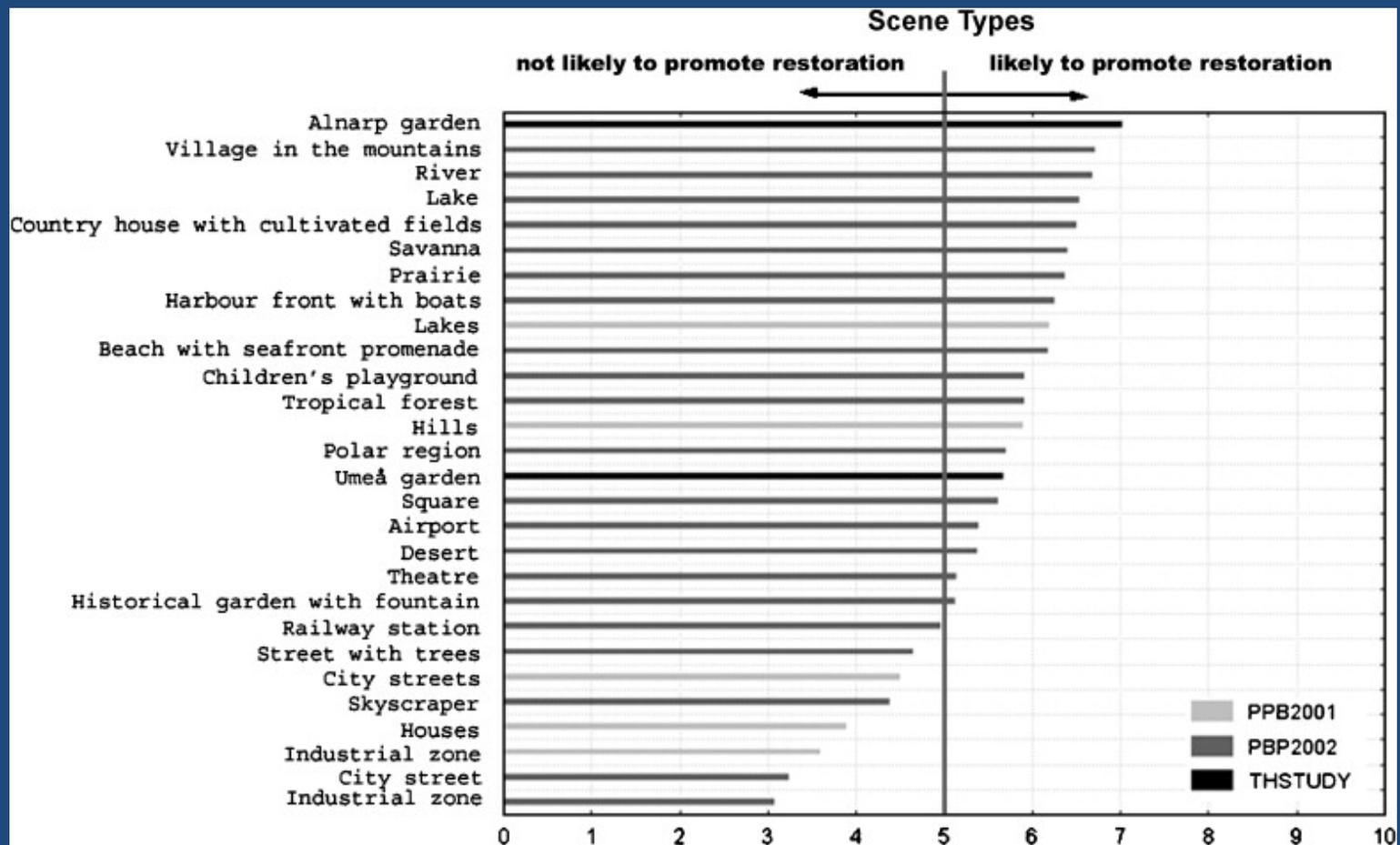




So challenges for policy makers, designers and managers on urban green infrastructure



Restorative values of different landscapes (Ivarsson and Hagerhall, 2008)



Health needs to link with other key social agendas too



Benefits are wide ranging and interactive



Psychological

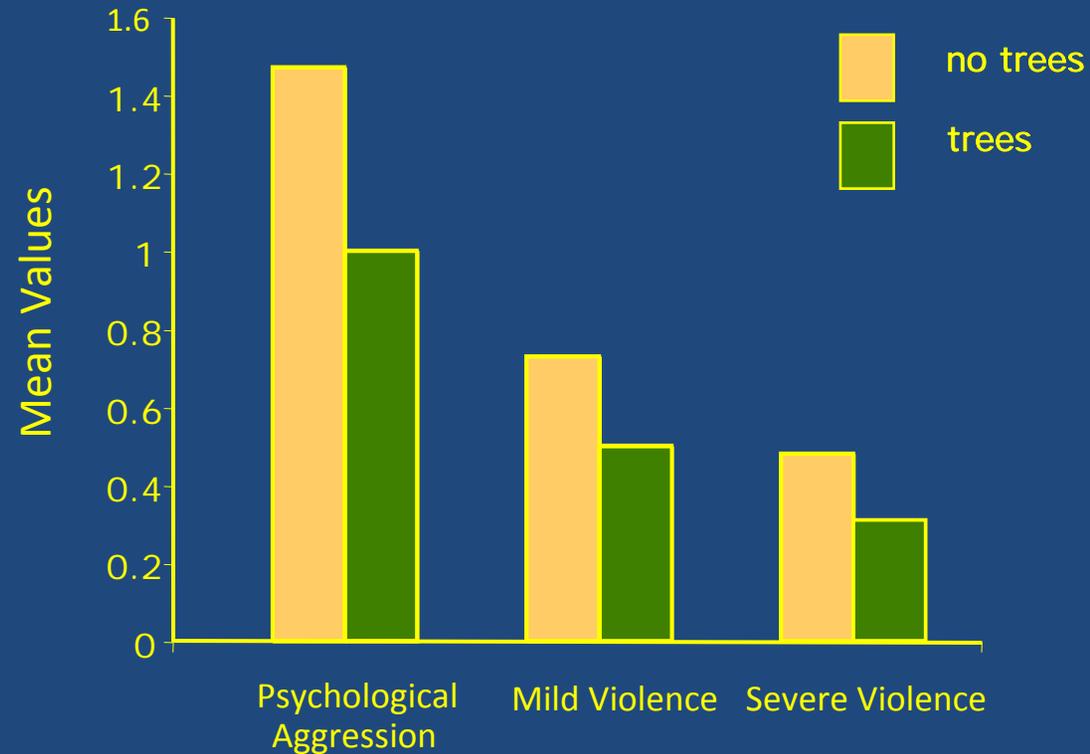
(Jo Barton and William Bird)

- Stress Release
 - (Kaplan & Kaplan, 1989)
- Depression
- Communication / Self-esteem
- Pain reduction
- Eco-therapy for mental health



Aggressive Behaviour Against Partner

Linked to increased mental fatigue in non-green living spaces



Kuo and Sullivan (2001)

Physical Health

(Jo Barton and William Bird)

- Physical fitness
 - Gardening 272 cal hr⁻¹ (Badminton 470 cal hr⁻¹)
 - Green Gyms higher retention rate than conventional gym
- Reduced blood pressure
- Gardening - delays dementia
- Pain relief and post-surgery recovery rates (Ulrich, 1984)
- School gardening helps children adopt the 5-a-day fruit and veg scheme.



Social, Educational & Cultural

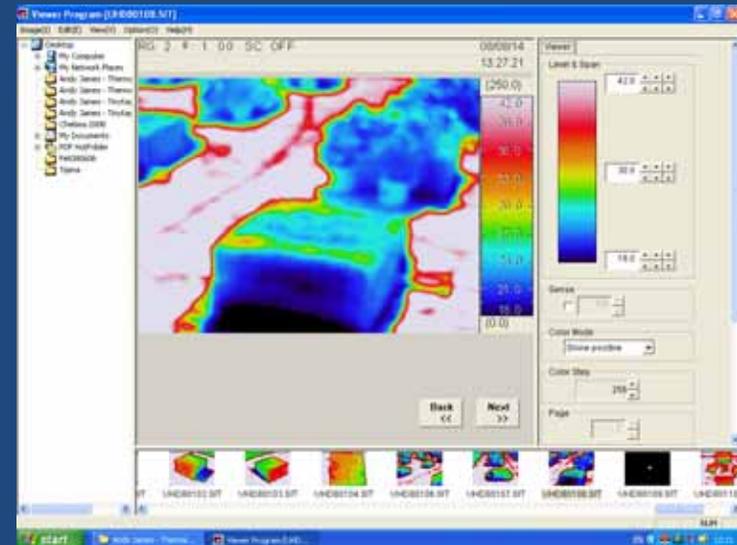
(Ruth Taylor, Tony Kendle, James Hitchmough)

- Community involvement and engagement
- Social cohesion
- Personal and social communication skills
- Assert control and direct one's own well-being (Morris, 2003)
- Educational aspiration and performance
- Forest Schools (attention)



Environmental (Mark Johnston, Mark Long, Ross Cameron)

- Thermal comfort – Insulation & city cooling
- Reduced run-off & Flood avoidance
- Air pollution (asthma and other respiratory disease)
- ‘Sick building’ syndrome



Business & Financial (Jonathan Read)



- Increased productivity
- Reduced sickness from work (Bergs, 2002)
- House / Property Value
- Corporate image



Biodiversity (James Hitchmough)

- Resource / sanctuary for native wildlife
- Fascination & education
- Access – e.g. Inner-city children
- Can aid the therapeutic process – hort, eco & pet therapy



Does 21st Century Man still have a special (evolutionary) relationship with the biological world?

Biophilia and Biophobia



Bio Philia
Best illustrated by
Bio - Phobia

Warning

Some may find these images
DISTURBING!





Annual Death Rates

Snake-bite = 50,000



Road traffic = 1,095,000



After those shocking images –
One to cheer you up !



Biophilia

- Love of life requirement for it!
- Appreciation for landscape - relates to our evolution on the African Savanna
- Most secure when we have a vantage point and our backs protected

African Kopje or the patio overlooking the lawn!



Biophilia – Emotional responses to flowers and evolutionary behaviour

- Haviland-Jones et al. (2005)

- Cultivated flowers > 5000 yrs, but no known 'reward' for this 'costly' behaviour
- Compared flowers to other presents
- With flowers, women, always elicited the Duchenne (true) smile & reported more positive moods 3 days later
- More positive social behaviour than other stimuli



Emotional responses to flowers and evolutionary behaviour - Haviland-Jones et al. (2005)

Authors concluded:

- Flowers have immediate and long-term effects on emotional reactions, mood, social behaviours and even memory
- Some flowers have 'evolved' to induce positive emotion in humans, just as others have evolved to attract insects or birds



Conclusions

Man is part of the natural world!

For health (and various other important reasons) quality, accessible green space is critical.

Some definition on details still required (type, quality, social interaction etc.).

Policy makers & planners need to engage with the principle now.

Thank-you!