URBAN NATURE

Bringing out the best in us

William Sullivan, University of Illinois
Harney Trail, City of Omaha
THIS MORNING

Green Landscapes ➔ Attention
Paying Attention

Matters for:

- Learning
- Problem solving
- Planning & carrying out tasks
- Self monitoring & regulation
- Effective social functioning
ATTENTION FATIGUES
COSTS OF MENTAL FATIGUE
Inattentiveness
COSTS OF MENTAL FATIGUE

Irritability
COSTS OF MENTAL FATIGUE

Impulsiveness
GREEN LANDSCAPES MAY ACCELERATE RECOVERY FROM MENTAL FATIGUE
Predictions

More urban green leads to:

- Better self discipline
- Less domestic violence
- Better academic performance
- Better in high school
An interview study

- 169 care-giver & child pairs (7-12 years old)
- Recruited door-to-door by interviewers
- Administered standardized tests of self-discipline to the children
- Compared answers from people living with and without nearby nature
Why might access to green spaces impact self-discipline? Is it because they:

A. Tire children out so they get into less trouble?
B. Distract children in a natural way?
C. Reduce impulsivity and improve concentration?
D. Put that naughty part of the brain at ease?
SELF-DISCIPLINE

Concentration

Impulse inhibition

Delay of gratification
SELF-DISCIPLINE

Test scores

Concentration

Impulse inhibition

Delay of gratification

p<.01

p<.05

p<.001

Barren

Very green

Greenness of Apartment Views
SELF-DISCIPLINE

Greenness of Apartment Views

Test scores

Concentration
Impulse inhibition
Delay of gratification

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p<.01 p<.05 p<.001
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SELF-DISCIPLINE

Self-discipline increases as greenness increases

Combined test scores

Greenness of Apartment Views

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p<.0001
SELF-DISCIPLINE

Self-discipline increases as greenness increases

Greenness of Apartment Views

Combined test scores

Barren  Very green

p<.0001
DOMESTIC VIOLENCE

An interview study

- 145 residents
- Compared answers from people living with and without nearby nature
AGGRESSION AGAINST PARTNER DURING PAST YEAR

Mean Values

p < .05

Psychological Aggression  Mild Violence  Severe Violence

Aggressive & Violent Behavior

no trees  trees
AGGRESSION AGAINST PARTNER DURING PAST YEAR

Mean Values

Psychological Aggression
Mild Violence
Severe Violence

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6

p < .05

no trees
trees

Aggressive & Violent Behavior
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Psychological Aggression
Mild Violence
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Density of Trees → Mental Fatigue → Aggression & Violence

Density of Trees → Mental Fatigue

Mental Fatigue → Aggression & Violence
Density of Trees

Mental Fatigue

Aggression & Violence
Do you have to be *in* a green space for it to impact you?

A. Yes
B. Yes, but you have to spend enough time in it
C. Not really, you can benefit from a view of green space
D. No, just knowing it is there is enough
TREES & TEST SCORES
EFFECT OF WINDOW VIEW ON ATTENTION

EFFECT OF WINDOW VIEW ON ATTENTION

Digit Forward Score

After tasks

After break in room

Green View

No Window

Barren View
EFFECT OF WINDOW VIEW ON ATTENTION

Digit Backward Score

After tasks

After break in room

Green View

No Window

Barren View
EFFECT OF WINDOW VIEW ON ATTENTION

Fail Count in Color Stroop Test

<table>
<thead>
<tr>
<th>Window View</th>
<th>Errors</th>
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<tbody>
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<td>Barren</td>
<td>1.81</td>
</tr>
<tr>
<td>Green</td>
<td>0.27</td>
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At each high school
At each high school
IS CANOPY ASSOCIATED WITH PERFORMANCE?

ACT Score

Percent Canopy Cover

ACT Score
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Percent Canopy Cover

ACT Score
Green neighborhoods predict outcomes?

Distance from school

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>College Readiness</th>
<th>Freshman on Track</th>
<th>Four-Year Graduation</th>
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<tbody>
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<td>0.25-mile buffer</td>
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