

Restoration Ecology(s)
integrating human & environmental sciences

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**Social and Cultural Values
Across the Landscape Gradient**

Industrial	Central city	Suburban	Exurban/rural



Social Science Disciplines

- psychology
- social psychology
- sociology
- economics
- political science
- anthropology
- geography

Psychosocial Restoration:

why urban nature is important

PORTLAND



Portland Classical Chinese Garden

Most cherished in this mundane world
is a place without traffic;
truly in the midst of a city
there can be mountain and forest.

Wen Zhengming (1470-1559)



**Maia says:
science rocks!**

Urban Ecosystems Environmental Services

- Air pollutants reduction
- Nitrogen, phosphorus and sediment interception
- Carbon sequestration & emissions reduction
- Urban heat-island cooling
- Reduced “bad” ozone
- Stormwater runoff reduction, water quality
- Wildlife habitat

Urban Ecosystems Community Economics

- Improved consumer environments in business districts - 9-12% product spending (Wolf)
- CBD & residential market value - 1/4 mile, 17-36% (Wachter & Gillen)
- Residential real estate values - 3-7% with trees in yard
- Residential real estate values - 5-20%, proximity to natural open space (Crompton)
- Commercial property rental rates - 7% (Laverne)
- Heating and cooling costs reductions
- Less frequent pavement replacement (McPherson)

Urban Ecosystems

Human Cognition & Functioning

- Higher job satisfaction, reduced absenteeism (R. Kaplan)
- Lower crime rates in well landscaped areas (Kuo, Sullivan)
- Reduced violence and more constructive conflict resolution in domestic conflict (Kuo, Sullivan)
- Reduced ADHD symptoms (Faber Taylor, Kuo)

"Human Services"

directed attention



Urban Ecosystems Human Health & Well-Being

- Improved surgery and illness recovery (Ulrich)
- Stress reduction in urban lifestyles (Ulrich)
- Reduced driving stress response & frustration (Parsons et al.)
- Improved community walkability, lower BMI (UW Urban Eco, Naderi et al.)

"Human Services"

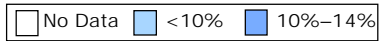
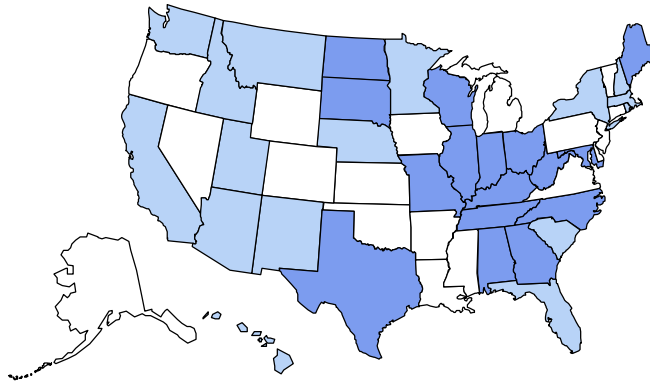
Physical Inactivity & Obesity

majority of Americans not active enough
goal-30 minutes per day of moderate activity
risk factor for chronic diseases
(heart, stroke, cancer, diabetes)
significant costs to national health services

310-580,000 deaths per year
\$100 annual billion medical costs (1995)
9.4% of all U.S. medical costs

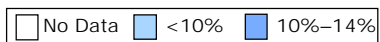
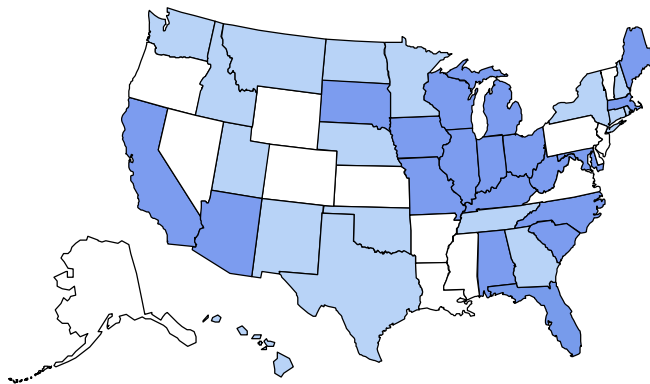
Obesity Trends* Among U.S. Adults 1987

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



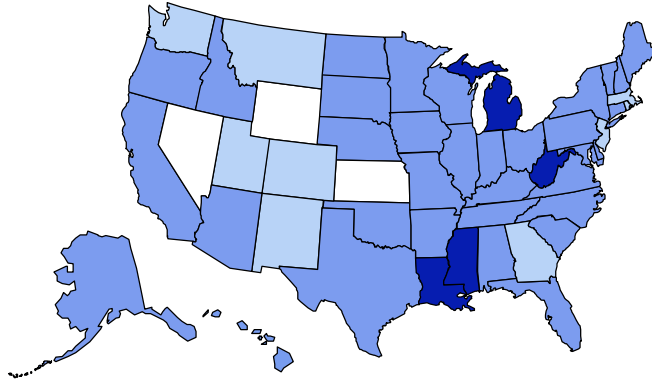
Obesity Trends* Among U.S. Adults 1988

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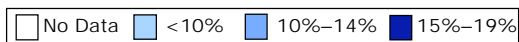
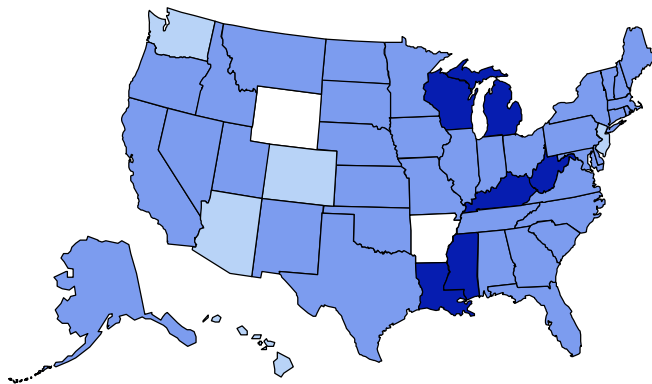
Obesity Trends* Among U.S. Adults 1991

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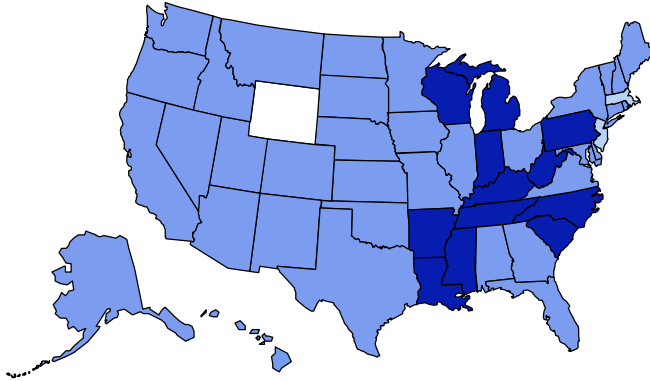
Obesity Trends* Among U.S. Adults 1992

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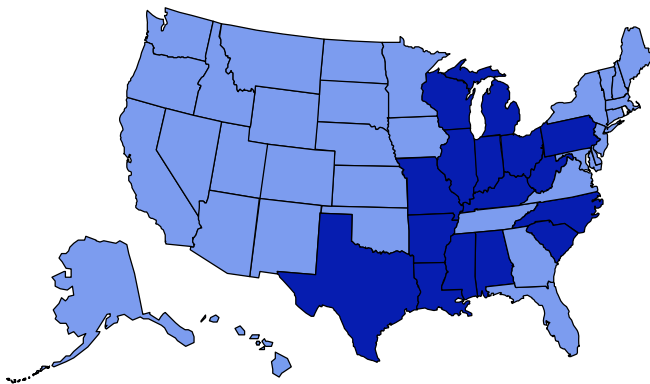
Obesity Trends* Among U.S. Adults 1993

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



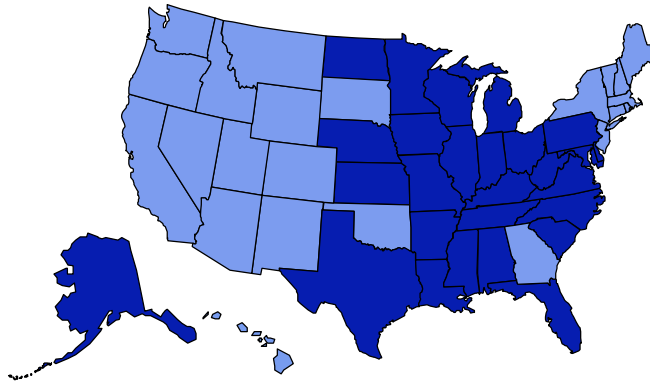
Obesity Trends* Among U.S. Adults 1994

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults 1995

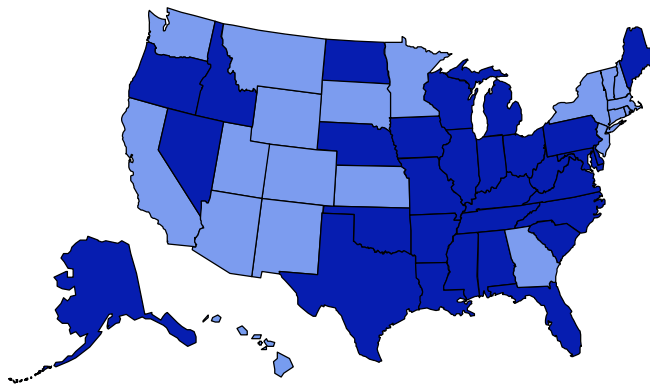
(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



□ No Data □ <10% □ 10%–14% □ 15%–19%

Obesity Trends* Among U.S. Adults 1996

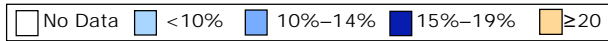
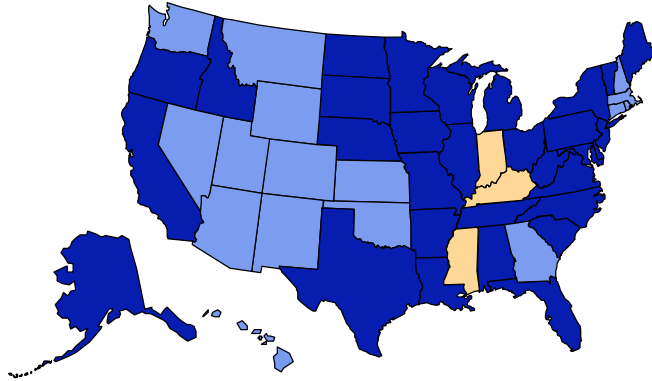
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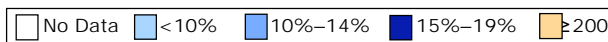
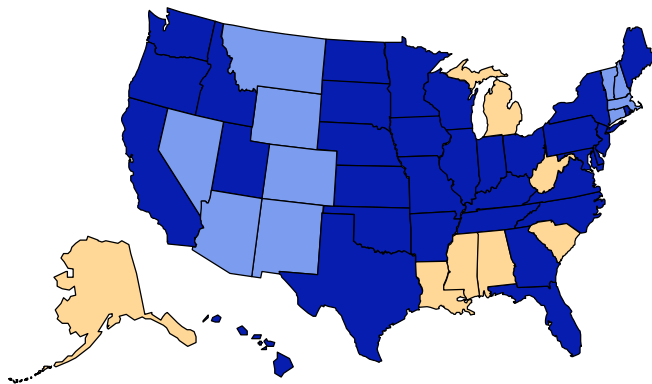
Obesity Trends* Among U.S. Adults 1997

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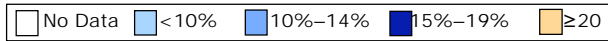
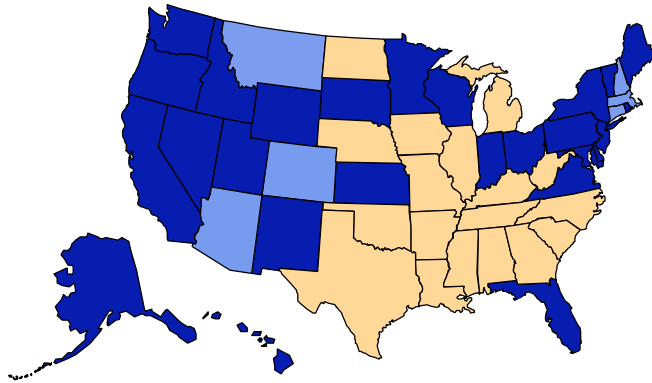
Obesity Trends* Among U.S. Adults 1998

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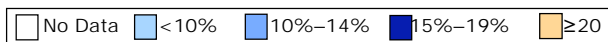
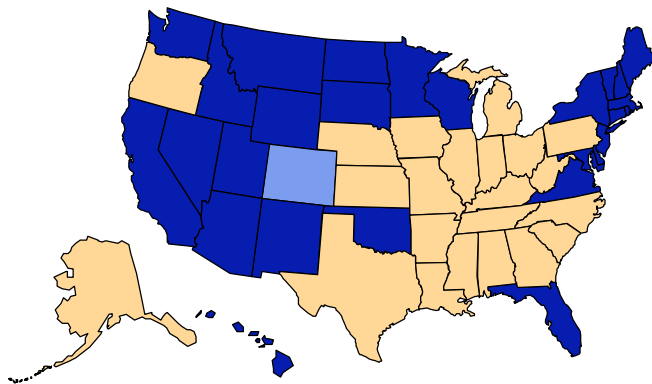
Obesity Trends* Among U.S. Adults 1999

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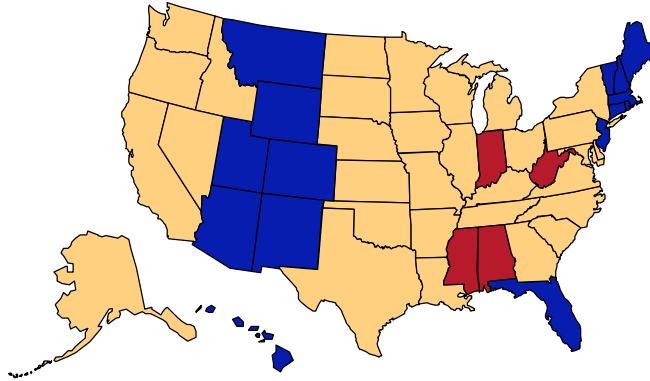
Obesity Trends* Among U.S. Adults 2000

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



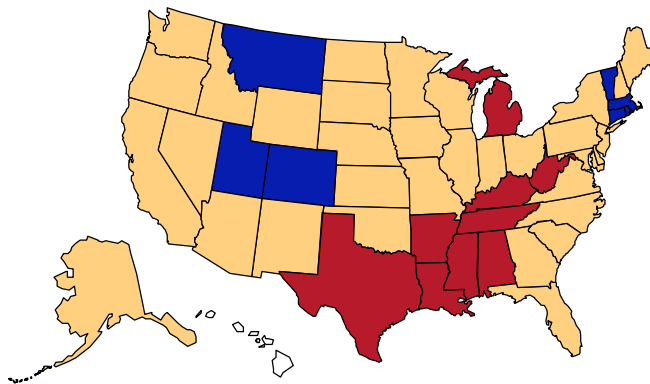
Obesity Trends* Among U.S. Adults 2003

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)

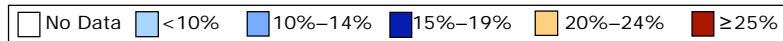


Obesity Trends* Among U.S. Adults 2004

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



**Doubling of
adult obesity
rate since 1980.**



Source: Behavioral Risk Factor Surveillance System, CDC.

CANINE CONSTITUTIONAL



A brisk walk in the park keeps Marcy B in shape between dog shows. His owner, Columbus resident Cathy Sandoz, got up early to give her 5-year-old Doberman his regular workout. They typically log 10 miles in Barlowe Park.





Durham, NC




parks, open spaces & trails



Restoration Ecology(s):

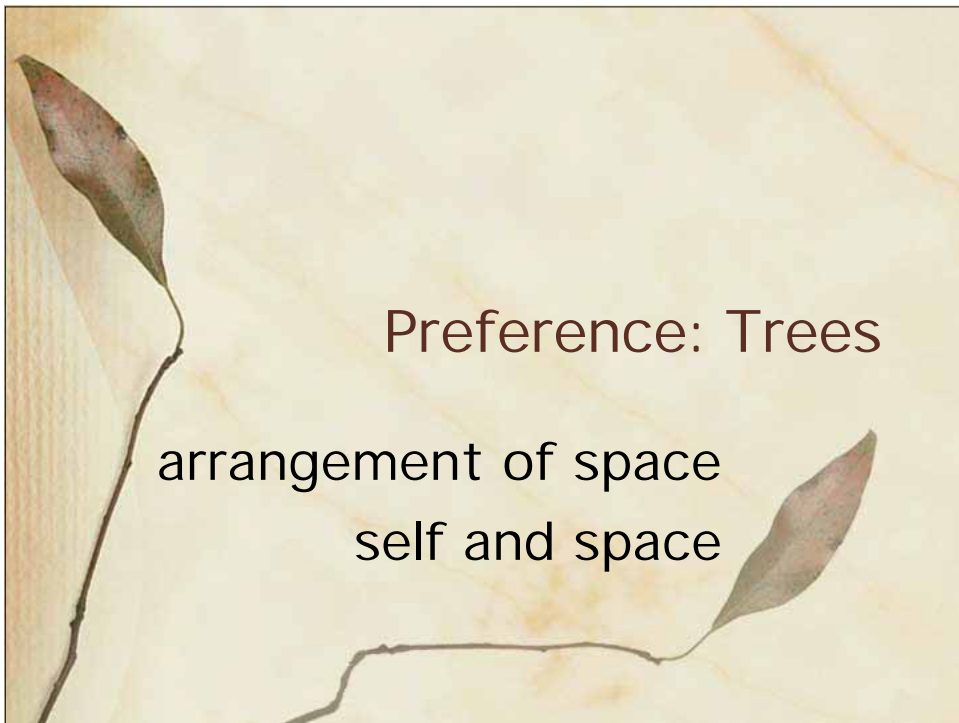
*how to integrate social &
environmental sciences*



Preference: landscape elements

big trees!

water



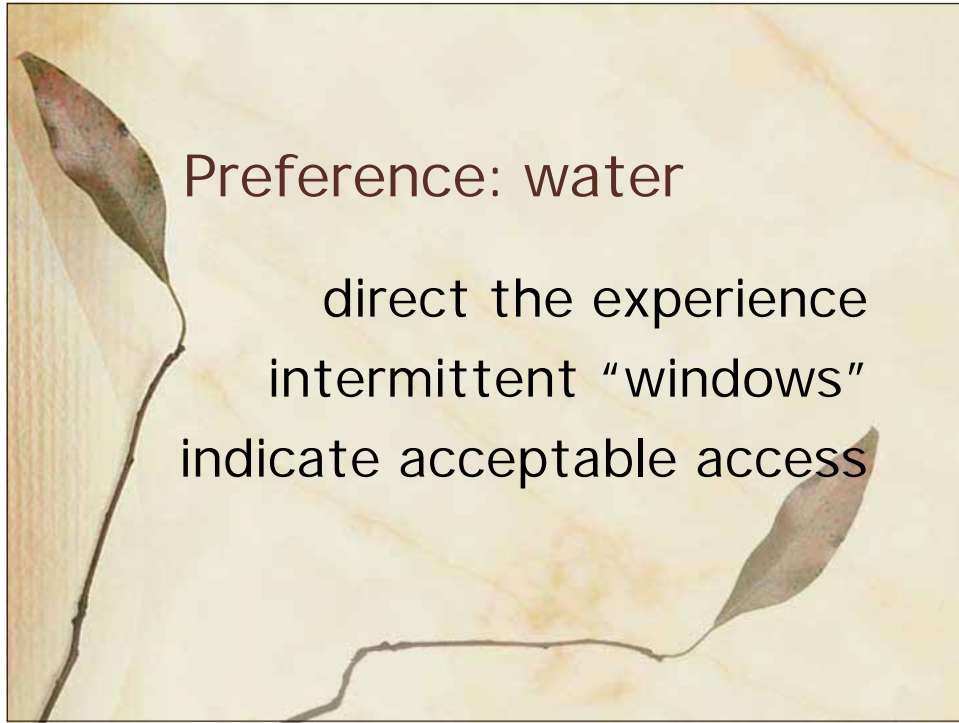




pleasure & guidance



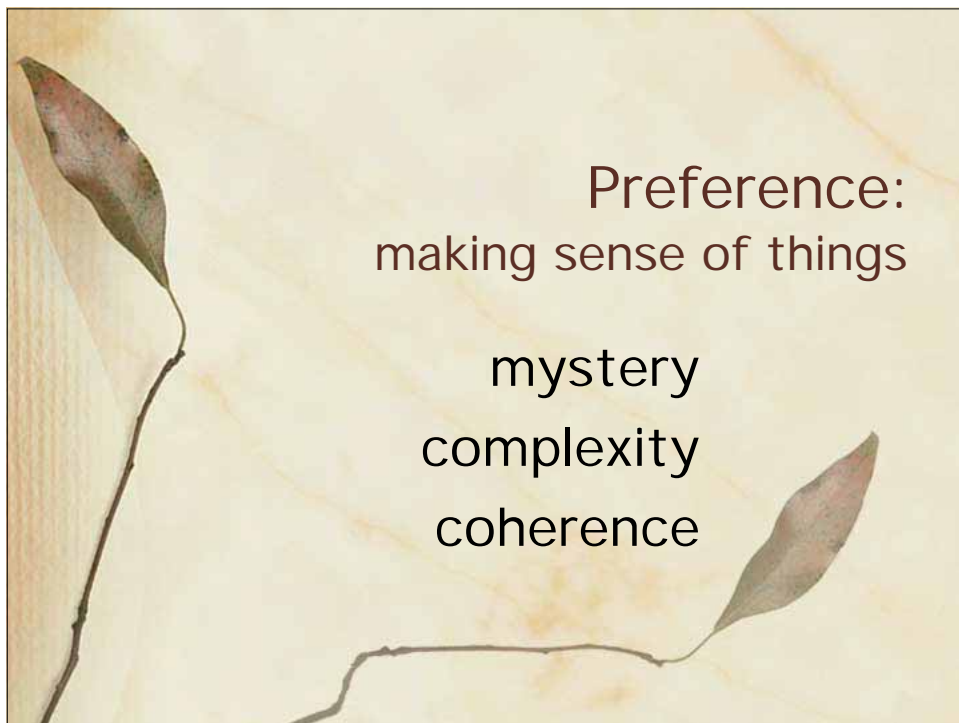
sequence of views & experience





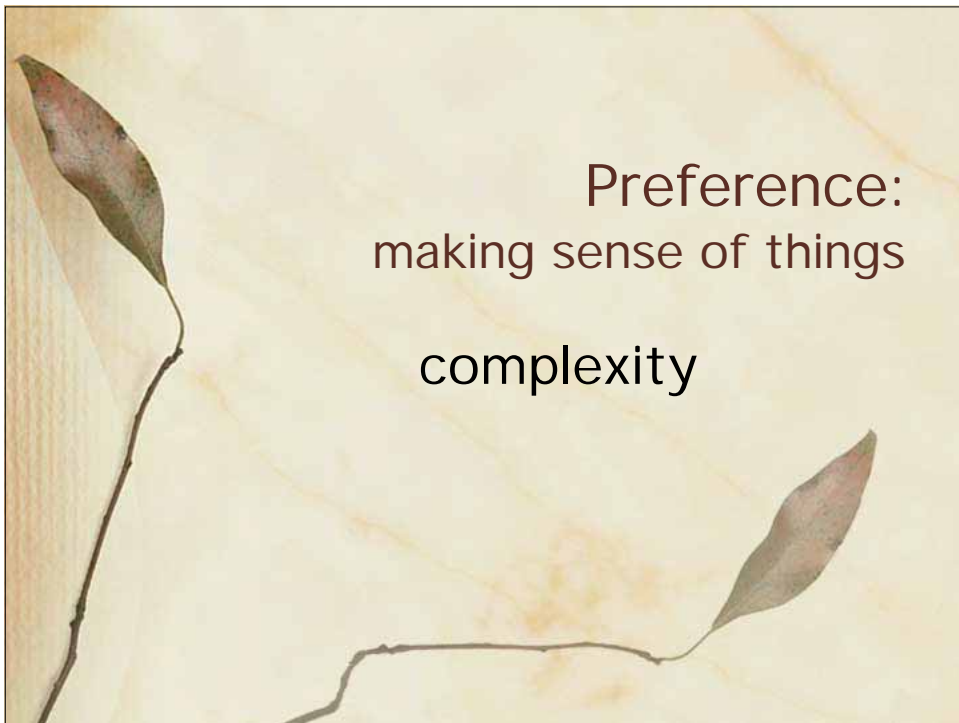


trail - sequence of experiences



Preference:
making sense of things

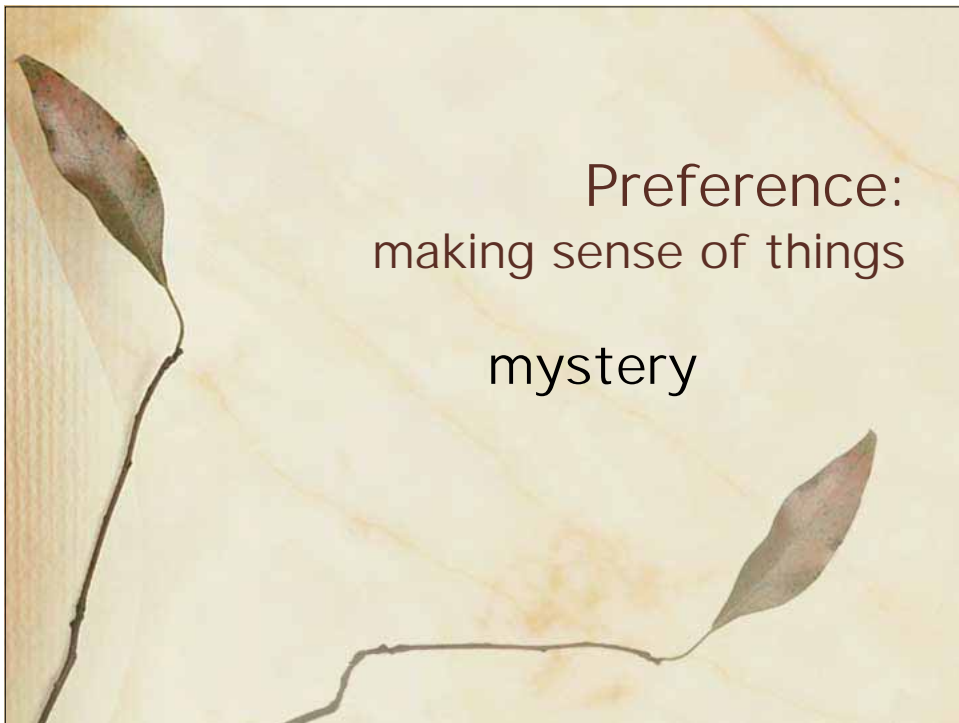
mystery
complexity
coherence







future complexity & density



Preference:
making sense of things

mystery



unknown,
but not unpredictable







plant & landscape “layers”



English landscape garden style



**transitions to
subspaces**



**transitions
dimension**



**focused
attention**



sets of 3, 5, 7





signals of intention



movement, guidance, intention



Halloween Candy Bag:
some additional thoughts



shek-kei: borrowed scenery





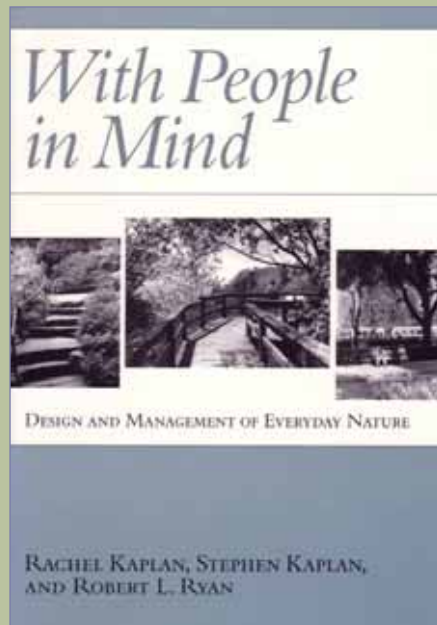
**edge & enclosure
confined sight lines**



edge gradient

Summary:

*big trees & water preferred
mere aesthetics? or
making sense & exploration
complexity, mystery, coherence
today's plantings - future experiences*



*With People
in Mind*

*R. Kaplan
S. Kaplan
R. Ryan*

1998

www.cfr.washington.edu/research.envmind

Center for Urban Horticulture, College of Forest Resources, University of Washington

Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples' perceptions and behaviors regarding nature in cities

Nature and Consumer Environments
Research about how the urban forest influences business district visitors.

Trees and Transportation
Studies on the value of having quality landscapes in urban roadides.

Civic Ecology
Studies of human behaviors and benefits when people are active in the environment.

International Urban Greening
Scientific explorations of people and urban nature in other nations.

Urban Forestry and Human Benefits
More resources, studies and links...

Research Director
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questions & comments?

