

Research Status and Gaps Related to Environment, Policy, and Physical Activity

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The Environment

Everything that comprises the context and surroundings of our everyday worlds, created by man

- Physical structures
- Social structures (policy/organizations)
- Media
- Accessibility of consumer products

GAPS in Conceptualization and Research

- Gap 1. Conceptualization of Human Beings
- Gap 2. Environment and Exposures
- Gap 3. Understanding Cues that Lead to PA
- Gap 4. Interaction of Social and Physical Environments: Programming
- Gap 5. Structuring PA through Policy and Infrastructure

Gap 1. Conceptualization of Human Beings

- Policy world thinks of people as rational, sentient, aware (individualism)
- People need to be thought of as
 - non-rational
 - lacking insight
 - wired to conserve energy (default automatic survival behaviors - eat and rest)

Why Is the Environment a Key Factor?

- People react to the environment automatically.
- Motor neurons fire BEFORE neurons that activate our consciousness
(Although we have the illusion that we consciously control our own behaviors)
- People are NOT in complete conscious control of their own behaviors

Mechanisms that Govern Automatic Behavior

- Hardwired survival strategies: conserve energy, find shortcuts, reduce work
- Forage and search for novelty, variety, knowledge, social interactions
- Mirror neurons
- Stereotype Activation, Conditioning, Priming (choices are not independent)
- Limited cognitive capacity

Walking and Talking

- Can walk and talk at same time, but walking is automatic
- Look around us, and ignore our own bodies
- Physical activity is a means, not an end.

People Also Lack Insight Into Physical Activity

- In CDC BRFSS about 50% report exercising at least 30 minutes during 5 days per week.
- NHANES study measuring MVPA using accelerometers on >6,200 showed < 5% of adults meet PA guidelines

Policy/Research Implications

- Limited value of self-report of PA
- Limited value of self-report of preferences/reasons
- Need empiric studies, observe how people respond
- Remember, people prefer sedentary behavior



Gap 2. Environment and Exposures

- The neighborhood of residence is not necessarily the neighborhood of exposure
- Daily travel determines exposures
- Need travel information to identify exposure (Can do with GPS)

We Need to Go Beyond Drawing Circles to Define Exposures

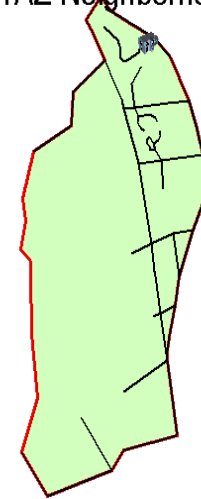
Census Tract Neighborhood



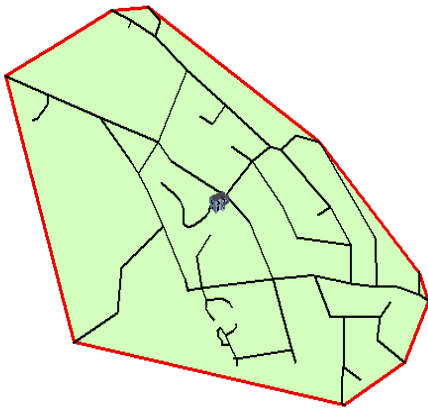
Census Blockgroup Neighborhood



TAZ Neighborhood



Street Network 1/2 -Mile Neighborhood



Circular 1/2-mile Neighborhood



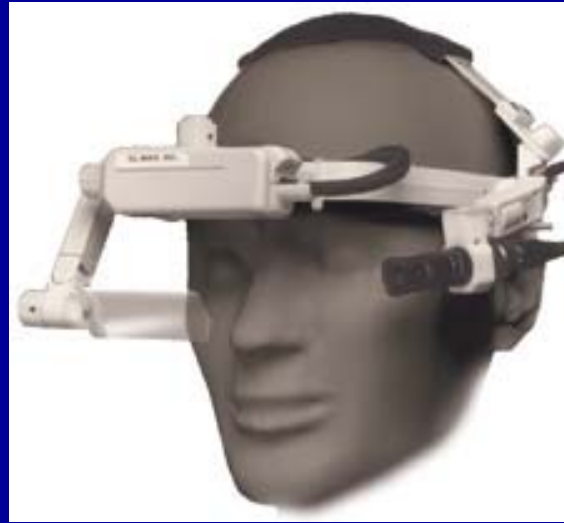
Legend

• Residence Location

— Streets

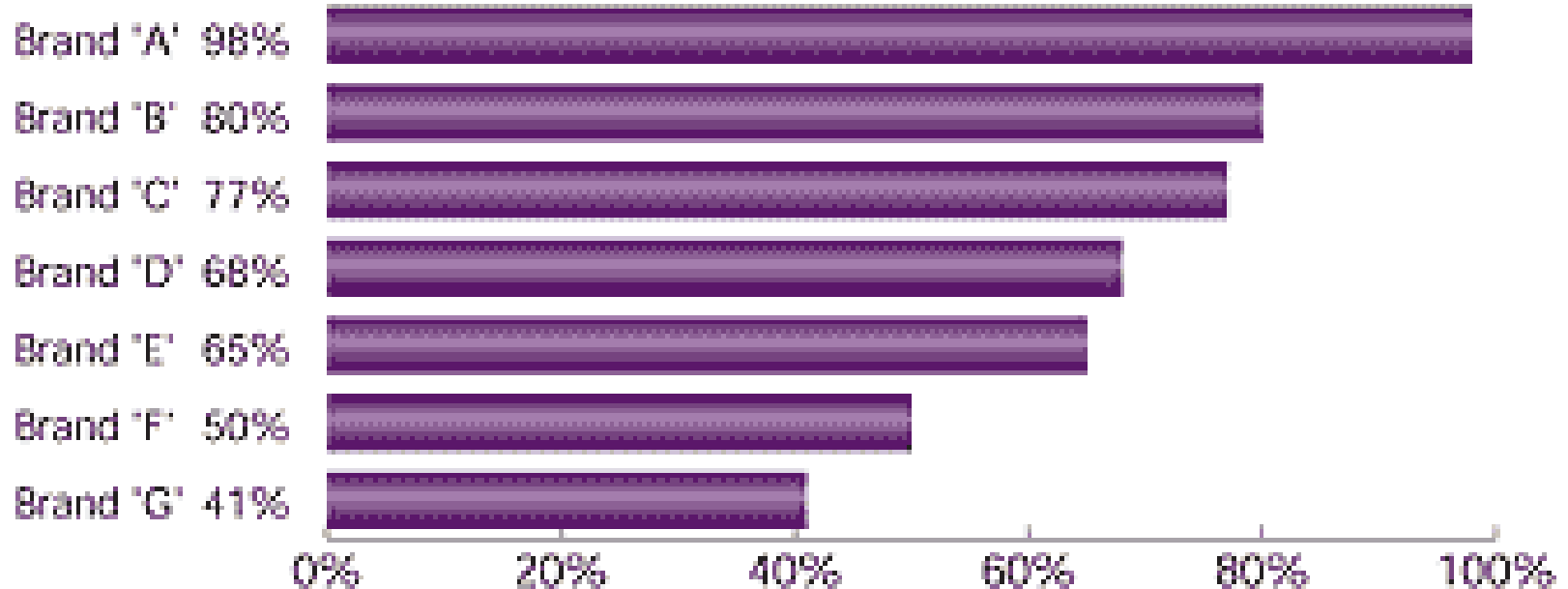
■ Neighborhood Area

Eye-Tracking Technology



- More attention given to a product, more likely to buy it
- What subjects look at, in what sequence, and for how long
- How many times eyes fixated on any given element

Percentage of Respondents Who Noticed Each Brand (Minimum Fixation Time - 0.200 seconds)



Unseen is unsold! Some brands are seen by less than 10% of respondents while nearly all respondents see other brands. We'll tell you which ones and why.

Gap 3. Understanding Cues that Lead to PA

- Physical environment may be less important than social environment, but difficult to separate
- Cues are not constant, but can vary moment to moment; micro-environments are important
- Need methods to catalog cues, sources, and relative strength

Cue: Attraction to Novelty

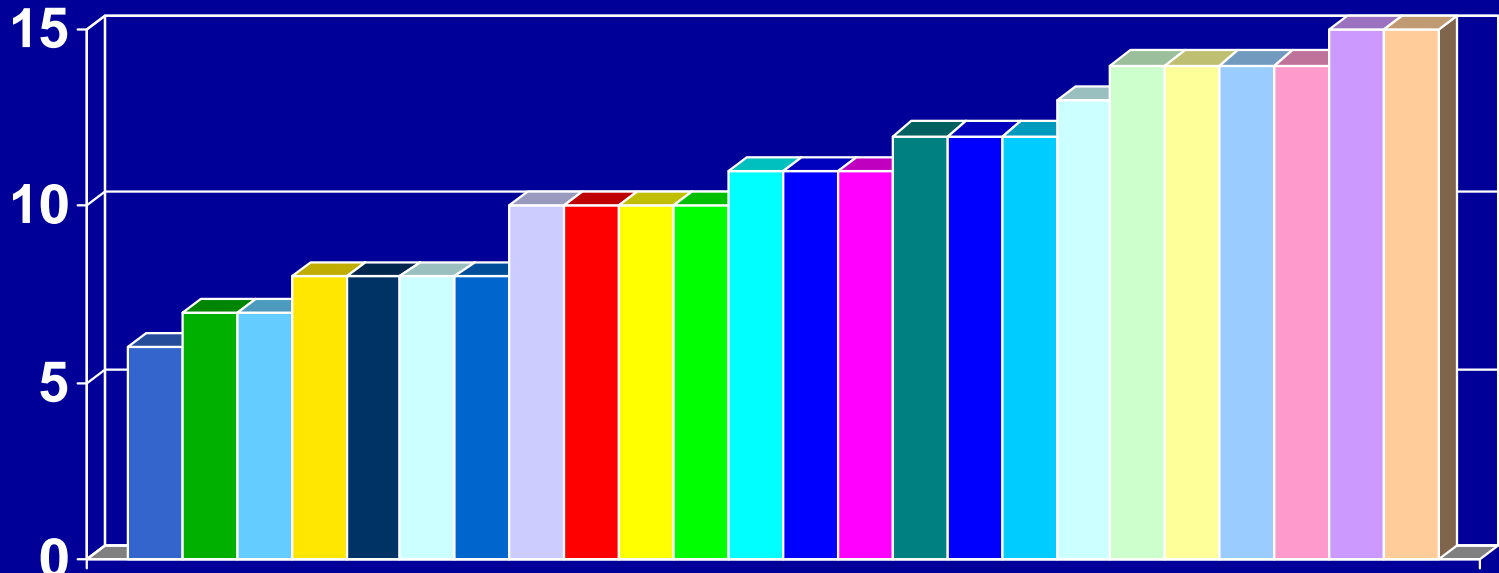
- The GATES by Christo Brought 4 Million People to Central Park During a 16-Day Period
- Represented a 400% Increase in the Number of Visitors Compared to Average February



Gap 4. Interaction of Social and Physical Environments

- As work becomes increasingly sedentary, leisure time is more important for PA.
- Structured, organized activities are successful in increasing PA
- Why is there so much variation in these, even among communities with similar resources, populations, and physical features?

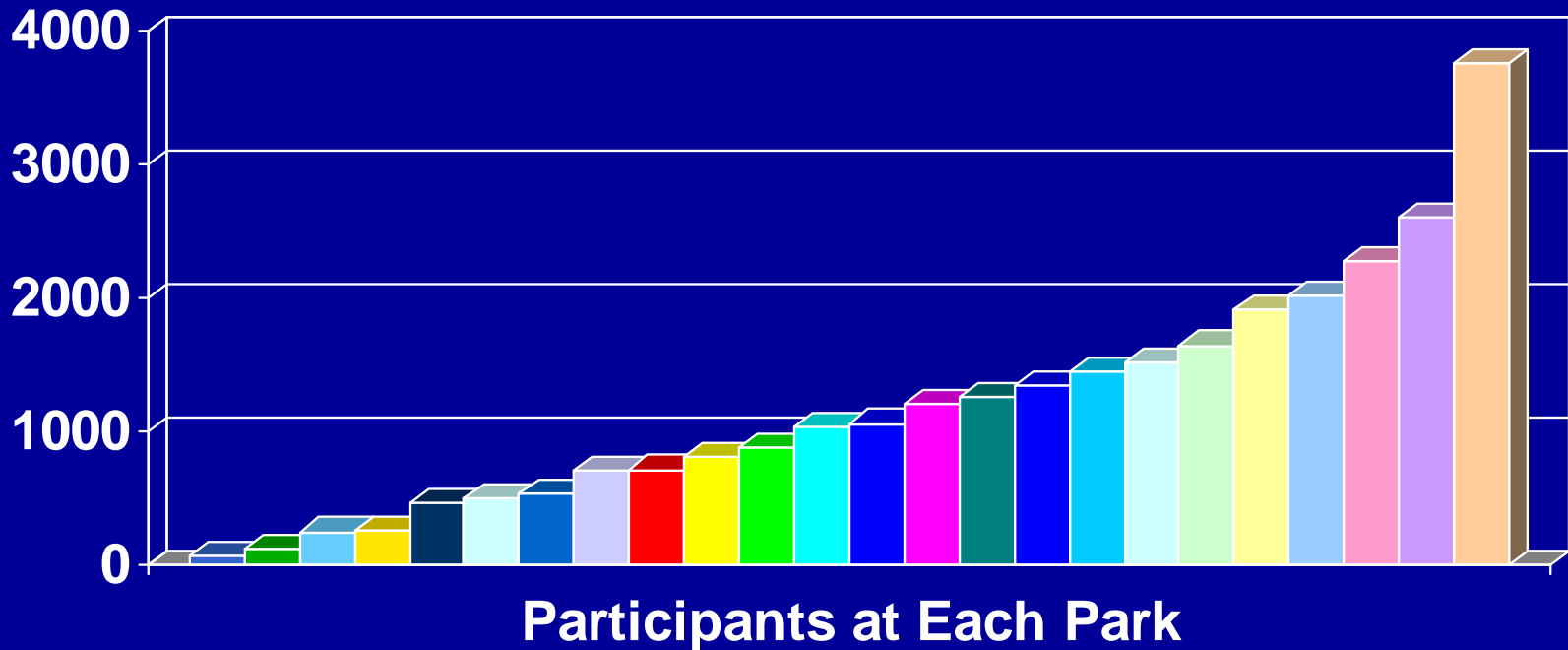
Variation in Number of Park Programs



Number of Programs at Each Park

- | | | | |
|-----------------------|----------------------------------|----------------------------------|----------------------|
| □ Hollenbeck Rec Ctr | □ Martin J. Bogdanovich Rec Cntr | □ Denker Rec Cntr | □ Roscrans Rec Cntr |
| □ Tarzana Rec Cntr | □ Barrington Rec Cntr | □ Toberman Rec Cntr | □ Yosemite Rec Cntr |
| □ Poinsettia Rec Cntr | □ Lincoln Heights Rec Cntr | □ 109th Street Rec Cntr | □ Palisades Rec Cntr |
| □ Panorama Rec Cntr | □ Vineyard Rec Cntr | □ North Hollywood Rec Cntr | □ Encino Comm Ctr |
| □ Queen Anne Rec Cntr | □ David M. Gonzales Rec Center | □ Glassell Park Rec Cntr | □ Palms Rec Cntr |
| □ Alpine Rec Cntr | □ Shatto Rec Cntr | □ Valley Plaza Recreation Center | □ Silverlake Rec Ctr |

Variation in Programs and Participation Not Explained by Park Size, Resources, Population Density or other Population Characteristics



- | | | | |
|--------------------------------|--------------------------|------------------------------|--------------------------------|
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Benchmarks and Standards

- How much participation can a park generate?
 - Parks are underutilized– how do we get them to maximum capacity?
 - What is maximum capacity?
- Can parks be the center of their communities?

Marketing Parks

- Minimal efforts in the past
- Good reason to believe this could be successful
- Post cues, signs, reminders in the community
- Increase outreach
- Systematic research needed



Gap 5. Structuring PA through Policy

Because people are wired to conserve energy, need policies that structure more PA routinely, especially if “bouts” of PA preferred.

- Daily School PE in schools
- Daily Workplace PA
 - e.g. Instead of mandatory “rest” breaks for sedentary workers, encourage “activity” breaks.
- Neighborhood exhibits, shows, entertainment, routines, that require physical activity to appreciate
 - e.g. promenades, contests, regular events
- Incentives for organizations to include PA in meetings

Summary

- Need to consider limitations of humans to accurately perceive themselves and their interactions with the environment
- Increase focus on social factors and micro-environments
- Need to spend more effort on programming and structuring PA

Focus on Interventions

If you want to truly understand something,
try to change it

-- Kurt Lewin