

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

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“There was no possibility of taking a walk that day”

- opening to *Jane Eyre* by Charlotte Brontë

Objectives

- Brief bird's eye view of research status on environment, policy, and physical activity
- Focus on critical gaps
- Followed later by a vision of how to address these gaps

BE - Walking Associations

	Transport	Recreation
Density	+	?
Distance to destinations	-	?
Land-use mix	+	?
Street connectivity	?	?
Pedestrian infrastructure	?	+
Traffic	?	?
Personal safety	?	?
Parks/open space	?	?
Aesthetics	?	+

Gaps

- Most existing designs and resulting evidence is far from causal
- Have lost the person
- Disconnects exist
- Anticipating gaps to avoid

Cross-sectional Study Legacy

- Constructs to examine
 - Measures/instruments to use
 - May not be comprehensive in content or range
- Multi-disciplinary collaborations
- Gap identification
 - In part through examination of the valid criticisms of the field
 - Need to listen to our critics
- Overall interest and potential
 - Some consistency in findings, despite differences in methods

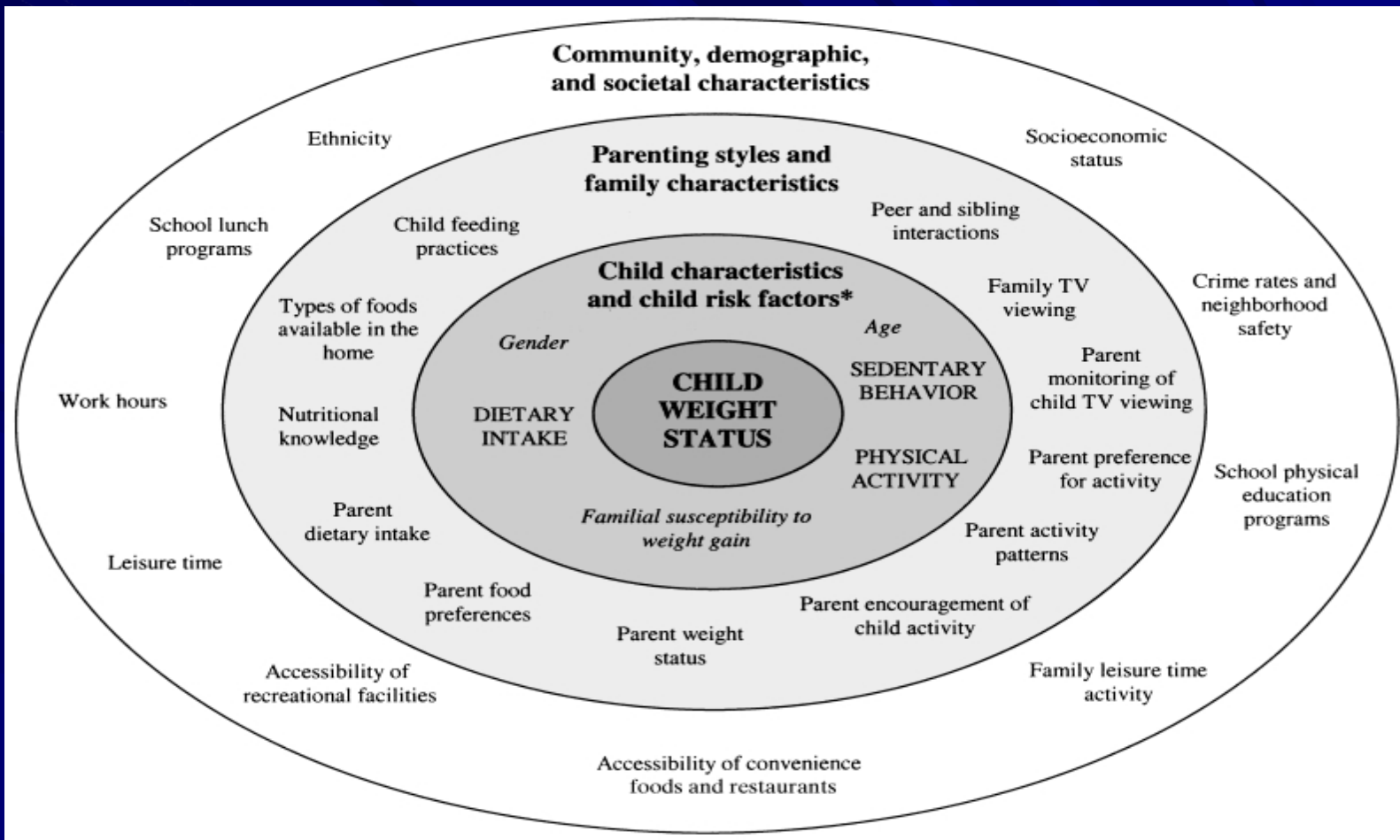
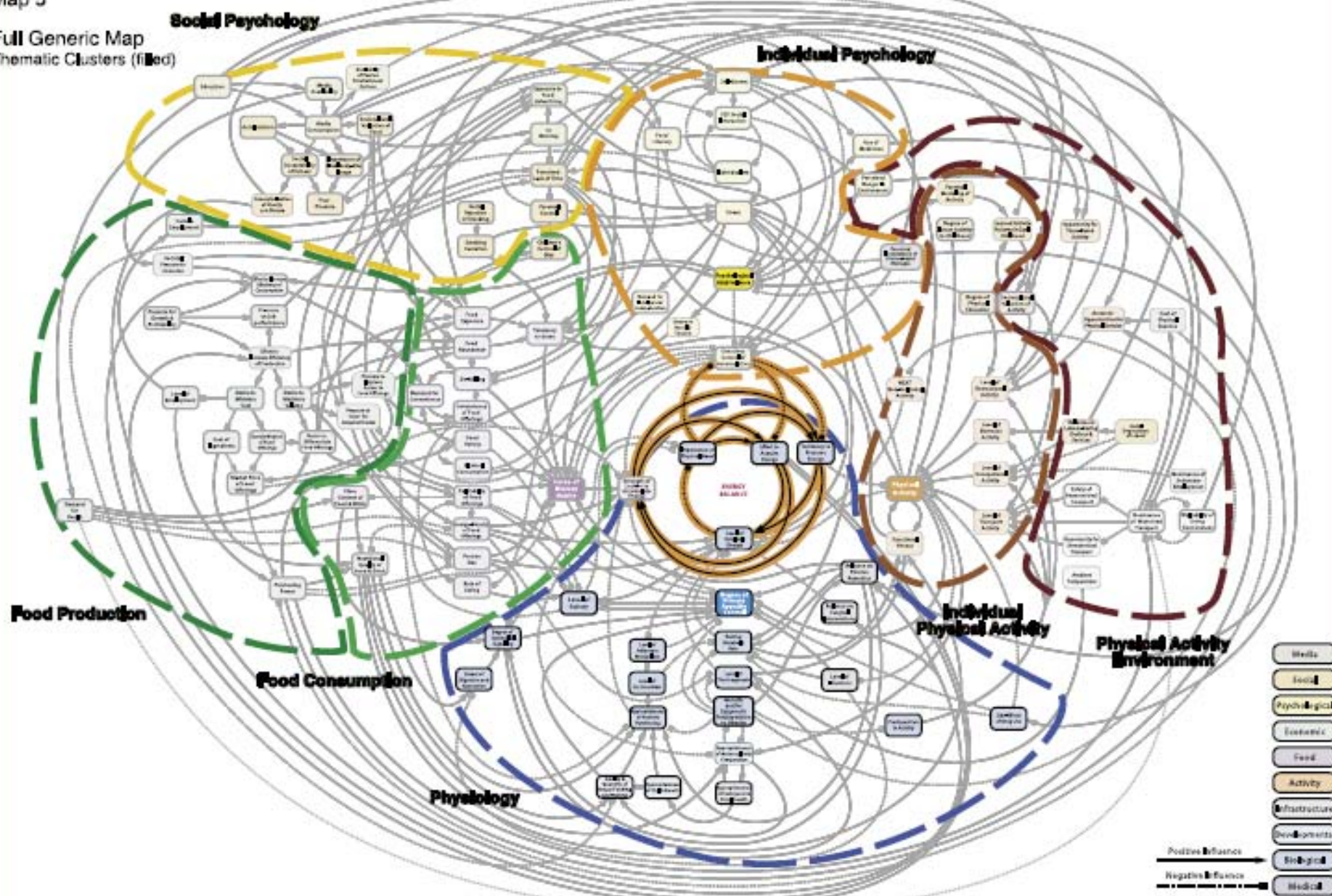


Figure 5.2: The full obesity system map with thematic clusters (see main text 5.1.2 for discussion)^{17,18} Variables are represented by boxes, positive causal relationships are represented by solid arrows and negative relationships by dotted lines. The central engine is highlighted in orange at the centre of the map.

Map 5

Full Generic Map
Thematic Clusters (filled)

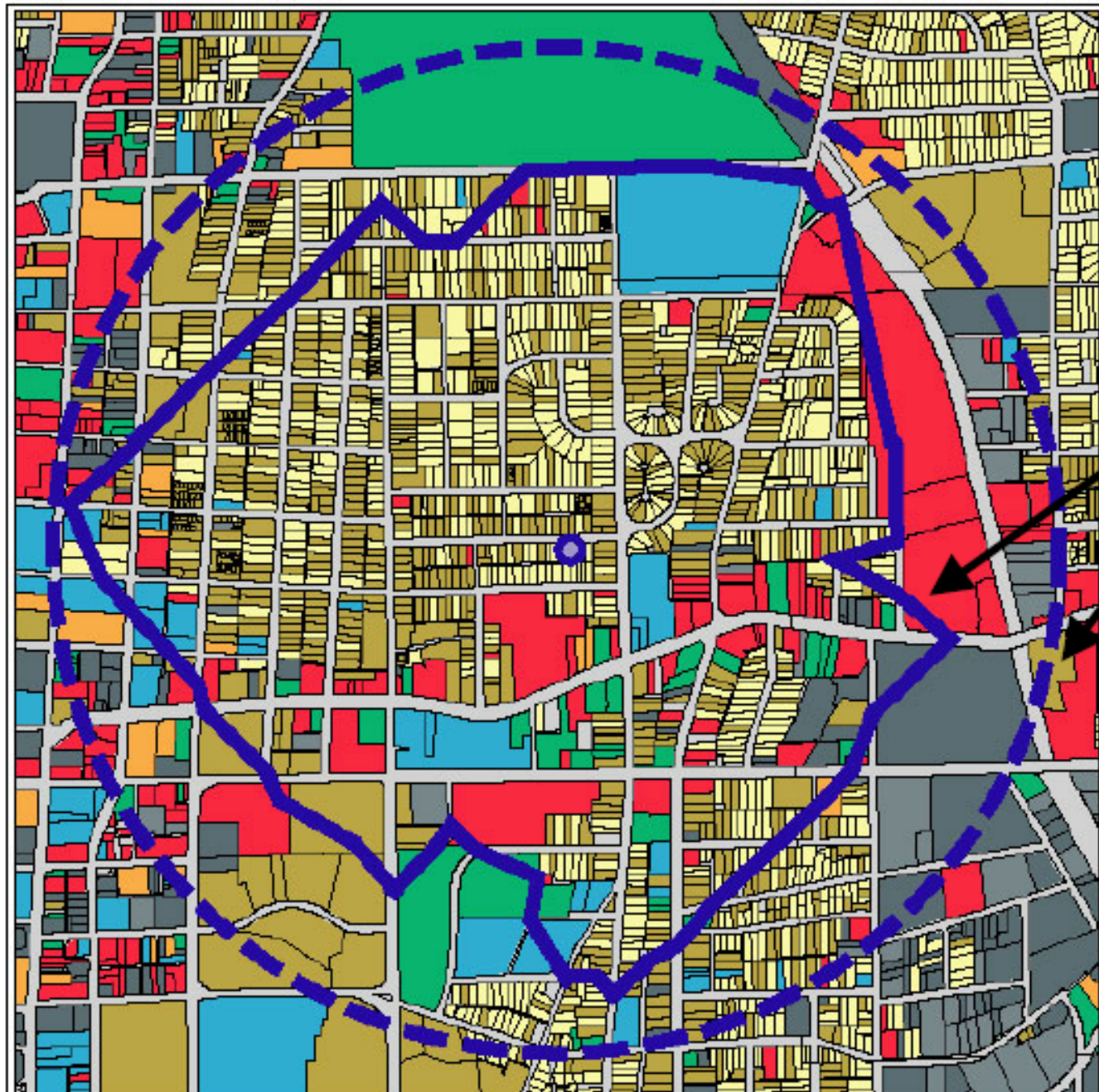


Where Is The Person?

- Not fully testing the ecological model
 - We are skipping across, not cutting through, all the levels
 - Not considering that individuals cross environments throughout any given day, week, or other time period
 - Not looking at the more proximal levels
 - Not examining the ways that individuals affect their environments (reciprocal determinism)

Really, Where is The Person?

- Lack of more sophisticated definitions for physical activity environment
 - Consider strategies other than radial buffers
 - Lack precision about activity locations
 - Need to match specific locations with specific physical activity
 - Factors that impact the environments established/selected
 - Reaching back to the individual and examining social and cultural environment (e.g., the Friday night place to go)
 - Including the “rejections” (activity places not selected)
- Need a next step from descriptive qualitative work on PA environments



1km Network
Buffer

-Straight Line
Buffer

- Commercial
- Office
- Institutional
- Single-Family Residential
- Multi-Family Residential
- Park/Recreational
- Industrial
- Vacant/Unknown

There Are Some People...

- Need to explore individual by environment interactions
 - Focus now on differences in PA across different environments
 - Why do individuals in the same environment differ in PA levels?
 - Analogous to interventions that work better and worse for certain individuals
 - Within households, within schools, within worksites
- Our interventions will have to be personalized to an extent, so let's start examining personal by environment

Disconnects

- Community involvement and relationships
 - Policy and environmental changes are being made without evaluation taking place
 - Lack of recognition of potential PA impact?
 - Lack of resources?
 - Lack of empirical/evaluation culture?
 - Environmental factors selected to examine may not be of interest to the community
 - Natural experiments and policy evaluation (which are not inherently driven by investigators) are more practice-oriented

Another Disconnect

- Resources to conduct quasi-experimental research
 - Most funding cycles not responsive quickly enough to natural experiments
 - Length of funding not responsive to the need for more long-term evaluation
 - Consider peak/valley type funding over longer periods of time
 - Timing of funding may need to be flexible
 - Policies and environmental changes often are delayed
 - Evaluation funding set into environmental/policy changes

Let's Not Make the Same Mistakes

- Treatment and prevention literature rife with examples of not measuring (assuming) the independent variable or change therein
 - E.g., in natural experiments, need to measure environments well before and after, as well as behavior (and make behavior specific too!)
 - Unexpected consequences
 - Policy examples
- Lack of surveillance
 - Need to establish more complete baselines
 - Allow for better and more complete sense of change
 - Look at a broader range of policies
 - E.g., some that don't seem to be physical activity policies, but may be inadvertently promoting sedentary behavior

Summary

- Need more innovative research designs
- Person back into the ecological model
- Close disconnects
- Avoid prior gaps in related areas

Conclusions

- Off to a good start, but can see the writing on the wall if we don't move forward
- View gaps as opportunities
- Just one investigator's perspective, but the glasses are half full