

Population Health, Place, and Space: Geographic Concepts

Jonathan D. Mayer, PhD

Professor, Geography

Adjunct Professor, Medicine(Infectious Diseases),
Health Services, Family Medicine, Epidemiology(?)

Recent Recognition of Medical Geography in Health Sciences

- Largely due to:
 - Methodological innovations and origins of Geographical Information Systems;
 - Spatial modeling of disease
 - Spatial statistics
- Less well known are conceptual understandings
- My own work is in ecology of infectious disease, spatial aspects of health service provision

Traditions of Geographic Thought

- Human-Environment
- Locational
- Regional
- Physical
- Social Theoretic
- Sense of Place

Human-Environment

- How do humans and physical environment interact?
- Mid to late 20th century hesitancy due to environmental determinism
- Manifestations in medical geography
 - Disease ecology
 - Climate change and effects on health
 - Modeling environment-health interactions

Locational

- Geography as “applied geometry”
- Spatial patterning and processes that generate them, e.g.:
 - Population patterns and density
 - Urban patterns
 - Migration patterns
- Modeling, describing disease spread of “diffusion”

Regional

- Traditional approach
 - What makes a region unique?
 - “Idiographic approach?”
 - Regional studies
 - Includes regional medical geographic studies
- “New” regional geography
 - How do processes that are general get played out in specific regions?
 - Migration, class, gender, etc.
 - Includes health inequalities, disease transmission, etc.

Physical

- Geomorphology
- Hydrology
- Climatology
- Etc.
- Implications for health—in disease ecology
 - Habitats for vectors
 - Physical characteristics of environments suitable for spp of waterborne bacteria, viruses, etc.

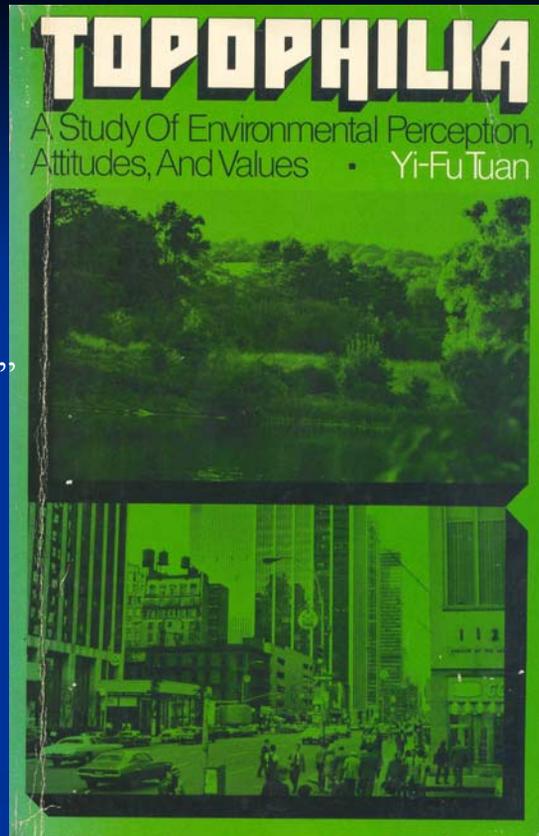
Social Theoretic

- How do general theories of how societies function get played out in space?
 - Class conflict
 - Land use
 - Segregation
 - Migration
 - Regional health inequalities
 - Market theories—supply and demand

Sense of place

- Subjective feelings toward place
- Has intuitive appeal
- Difficulties in operationalizing
- Has had only application in medical geography
 - View through hospital window and recovery from surgery—Roger Ulrich

“Topophilia is the affective bond between people and place or setting. Diffuse as concept, vivid and concrete as personal experience, topophilia is the recurrent theme of this book”
--Tuan, 1974



Location vs. Place

- Location as set of (x,y) coordinates or as vector (direction and distance from an origin)
 - Point with a set of properties
 - Works nicely as input into a model or GIS
 - Adequate for input into a disease diffusion (spread) model
 - Probably not the best way to understand how people perceive and react to the social environment

Location vs. Place (cont)

- Place
 - Imbued with affective meaning
 - Personal history (negative or positive affect)
 - “this is where I grew up”
 - “this is where I was abused”
 - “this is where I can’t escape”
 - Social histories
 - Institutional histories
- ***Locations and places are very different***

Location and Place in Health Research

- Social epidemiology has dealt exclusively with location
 - It is more objective
 - Fits into scientific paradigm
 - Data are more easily gathered
- Medical geography—has dealt with both
 - Medical geography vs. health geography

What About Neighborhoods?

- Krieger's "web of causation" and Susser's "Chinese boxes"
- Intuitive appeal of importance of neighborhoods
- Elastic definitions of neighborhoods
- Inadequacy of census definitions
- That's what we're left to deal with
- Maybe we should start with neighborhood and work downwards to individual risk factors

Hierarchy of Regions

- Smallest areas embedded within larger areas embedded within still larger areas (Kawachi and Bergman acknowledge medical geography in recent book on neighborhoods)
- All embedded within large regions and globe
- Global processes affect even smallest region
- Political ecology

Does Sense of Place Have Relevance to Social Epidemiology?

- I suspect that it does;
- Current research will not measure it;
- Will probably require qualitative research
- It certainly does in health outcomes research
 - Referral patterns
 - Health outcomes

Some Concluding Thoughts

- Disciplinary boundaries have dissolved in health inequalities research;
- Spatial methods are being used increasingly;
- Beware: These methods are more than just learning a software package
- Place is intuitively important, but
- We are not addressing place, we are addressing location
- Why do we ignore intuition?