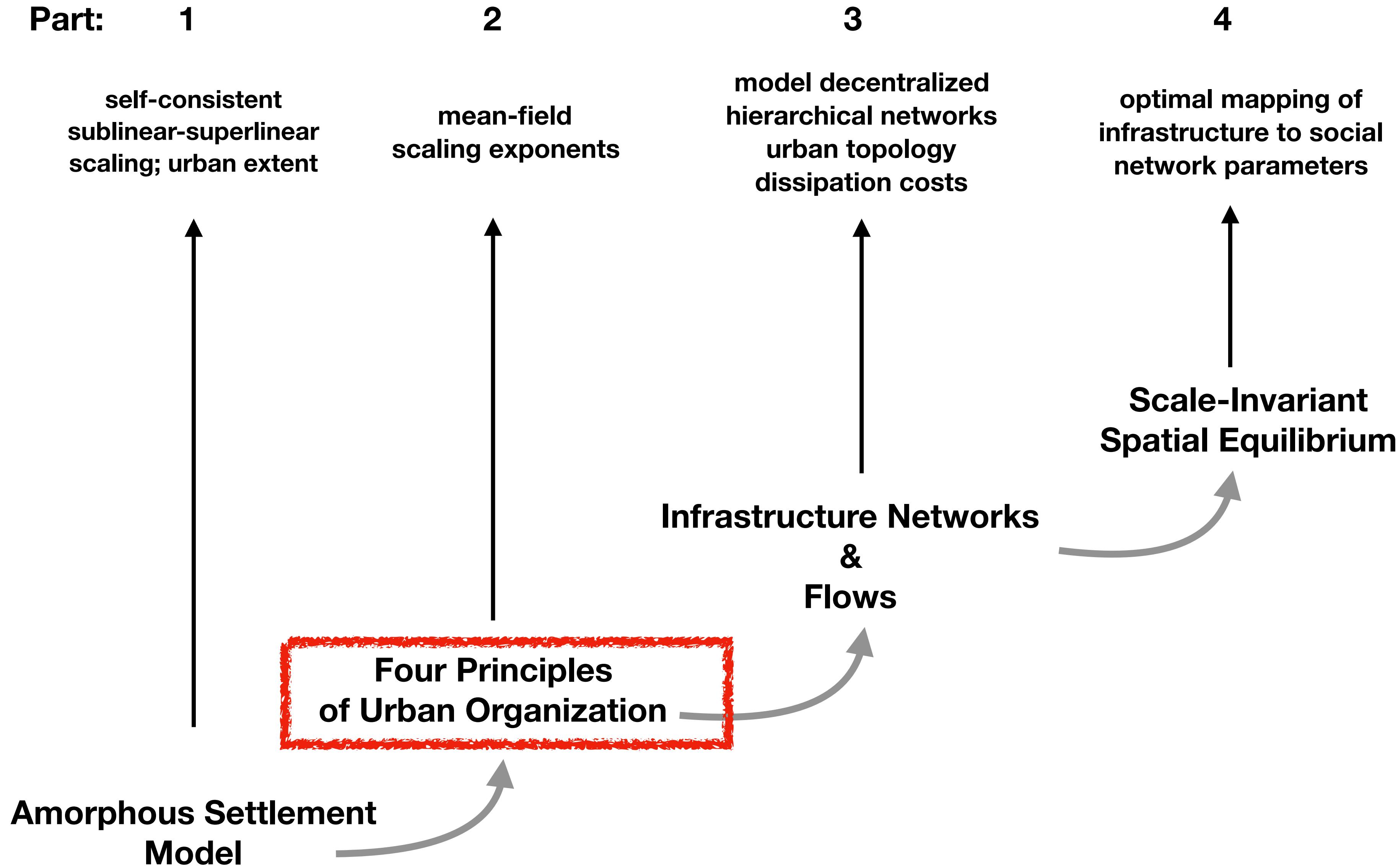


Lecture 6

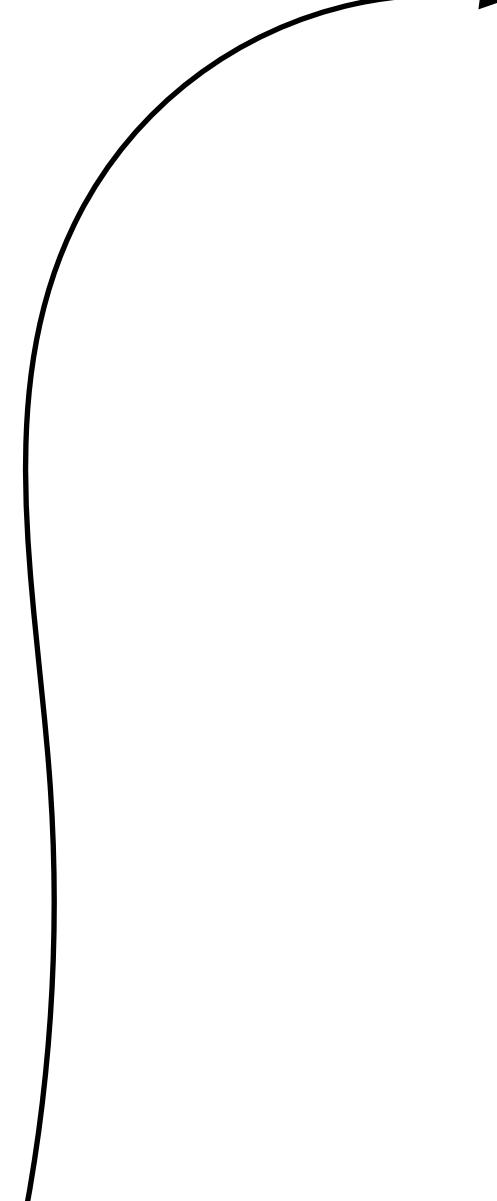
Network Models of Cities

6.3 Four Principles: Individual Cognitive and Behavioral Constraints

Urban Scaling Theory



Four Principles of Urban Organization

- 
- 1) Cities are mixing populations (networks) over built space and time Jacobs, Wirth, Burgess
 - 2) Personal effort is limited Park, Milgram, Zahavi, Simon ←
 - 3) City infrastructure as decentralized but hierarchical networks Alexander
 - 4) Socioeconomic products of cities are the result of interactions, subject to spatial costs Jacobs Alonso

already in the amorphous model, but more to come...

2) Personal effort is limited

Changes in Human Cognition and Psychology in the City

One of the greatest papers on social psychology:

That is one of the bases of its appeal and, indeed, of its functional necessity. The city provides options that no other social arrangement permits. But there is a negative side also, as we shall see.

More Choice/"Freedom "

The Experience of Living in Cities

Adaptations to urban overload create characteristic qualities of city life that can be measured.

Stanley Milgram

"When I first came to New York it seemed like a nightmare. As soon as I got off the train at Grand Central I was caught up in pushing, shoving crowds on 42nd Street. Sometimes people bumped into me without apology; what really frightened me was to see two people literally engaged in combat for possession of a cab. Why were they so rushed? Even drunks on the street were bypassed without a glance. People didn't seem to care about each other at all."

This statement represents a common reaction to a great city, but it does not tell the whole story. Obviously cities have great appeal because of their variety, eventfulness, possibility of choice, and the stimulation of an intense atmosphere that many individuals find a desirable background to their lives. Where face-to-face contacts are important, the city offers unparalleled possibilities. It has been calculated by the

Regional Plan Association (1) that in Nassau County, a suburb of New York City, an individual can meet 11,000 others within a 10-minute radius of his office by foot or car. In Newark, a moderate-sized city, he can meet more than 20,000 persons within this radius. But in midtown Manhattan he can meet fully 220,000. So there is an order-of-magnitude increment in the communication possibilities offered by a great city.

Granted that cities are indispensable in complex society, we may still ask what contribution psychology can make to understanding the experience of living in them. What theories are relevant? How can we extend our knowledge of the psychological aspects of life in cities through empirical inquiry? If empirical inquiry is possible, along what lines should it proceed? In short, where do we start in constructing urban theory and in laying out lines of research?

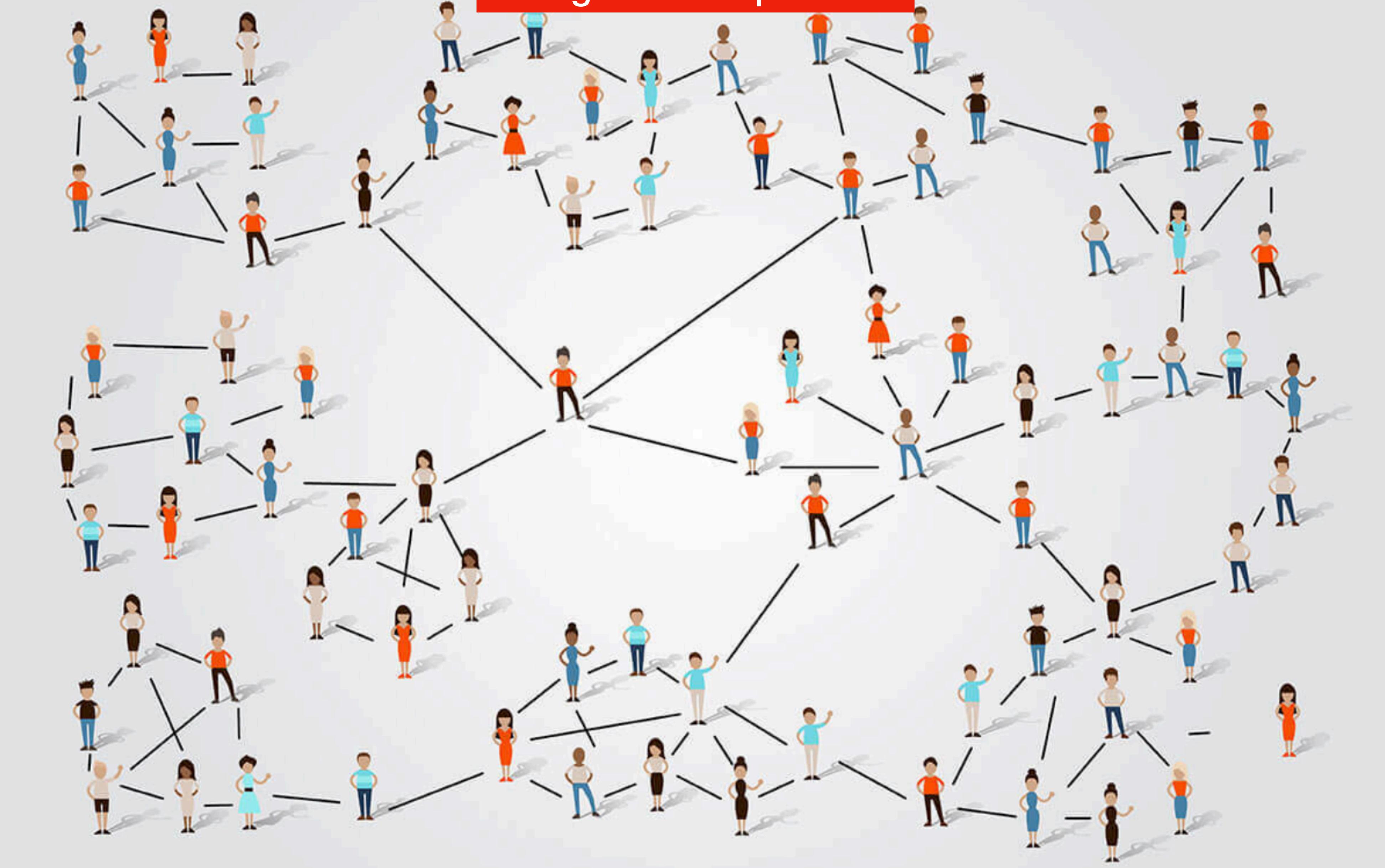
Observation is the indispensable starting point. Any observer in the streets of midtown Manhattan will see (i) large numbers of people, (ii) a high population density, and (iii) heterogeneity of population. These three factors need to be at the root of any sociopsychological theory of city life, for they condition all aspects of our experience in the metropolis. Louis Wirth (2), if not the first to point to these factors, is nonetheless the sociologist who relied most heavily on them in his analysis of the city. Yet, for a psychologist, there

where did you see this?

The author is professor of psychology at the Graduate Center of The City University of New York, New York 10036. This article is based on an address given on 2 September 1969 at the 77th annual meeting of the American Psychological Association, in Washington, D.C.

credit: HackerEarth.com

“6 degrees of separation”

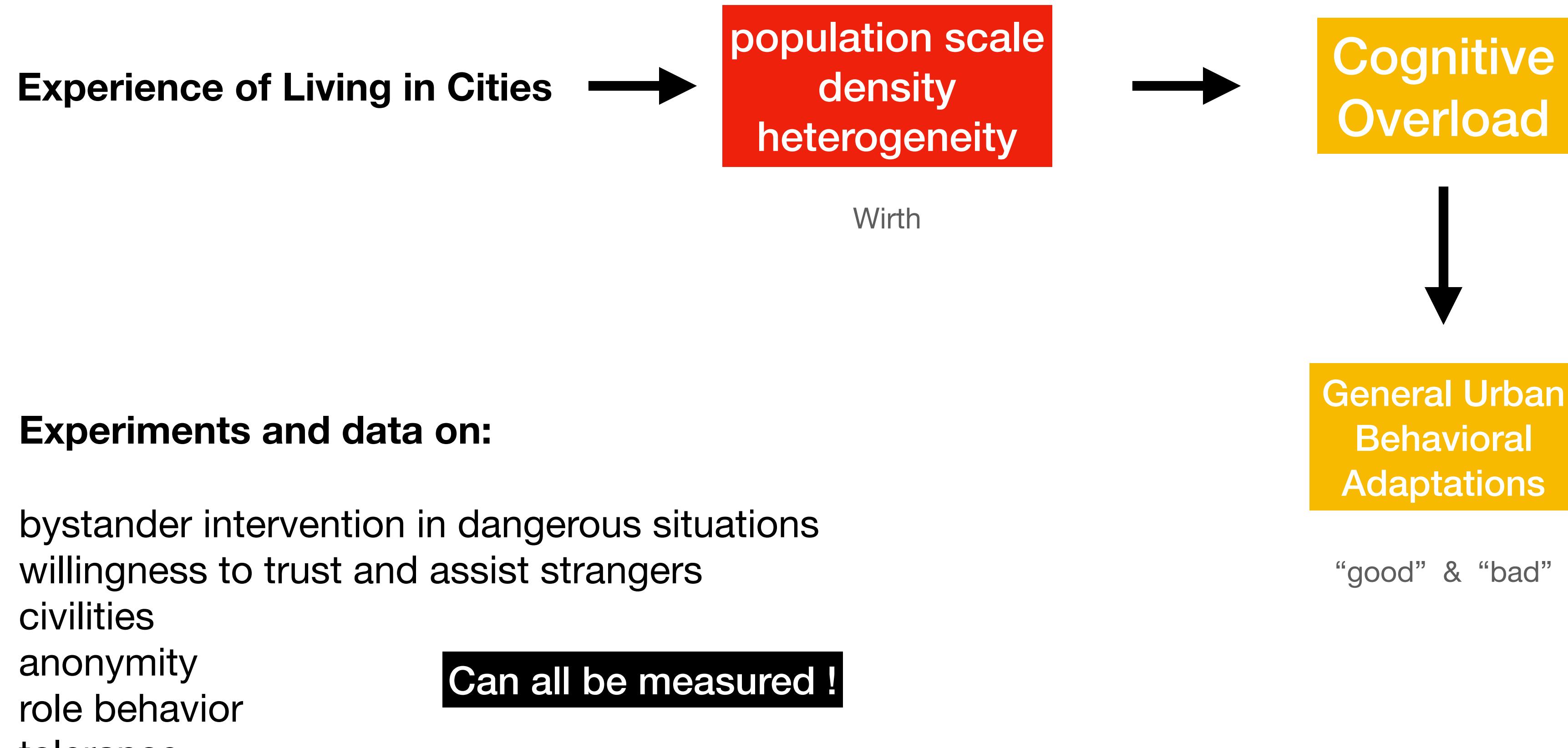


Social Networks are Small Worlds link distance between people is $\sim \ln N$

Adaptive behavioral in cities responses to cognitive “overload” (Milgram)

- 1) allocation of less time per input busyness
- 2) disregard for low priority inputs callousness
- 3) boundaries are redrawn so as to distribute overload somebody else's problem
- 4) reception is blocked off indifference
- 5) intensity of inputs diminished by filtering devices “headphones on bus”
- 6) specialized institutions arise to deal with inputs institutionalized social services

There's a science to all this



Psychology needs an idea that links the individual's experience to the demographic circumstances of urban life.

Milgram: When Overload is present Adaptations Occur.

Not quiet all about “overload”:

Other Aspects of the Urban Experience:

The Atmosphere of Great Cities

Experimental Comparisons in Behavior

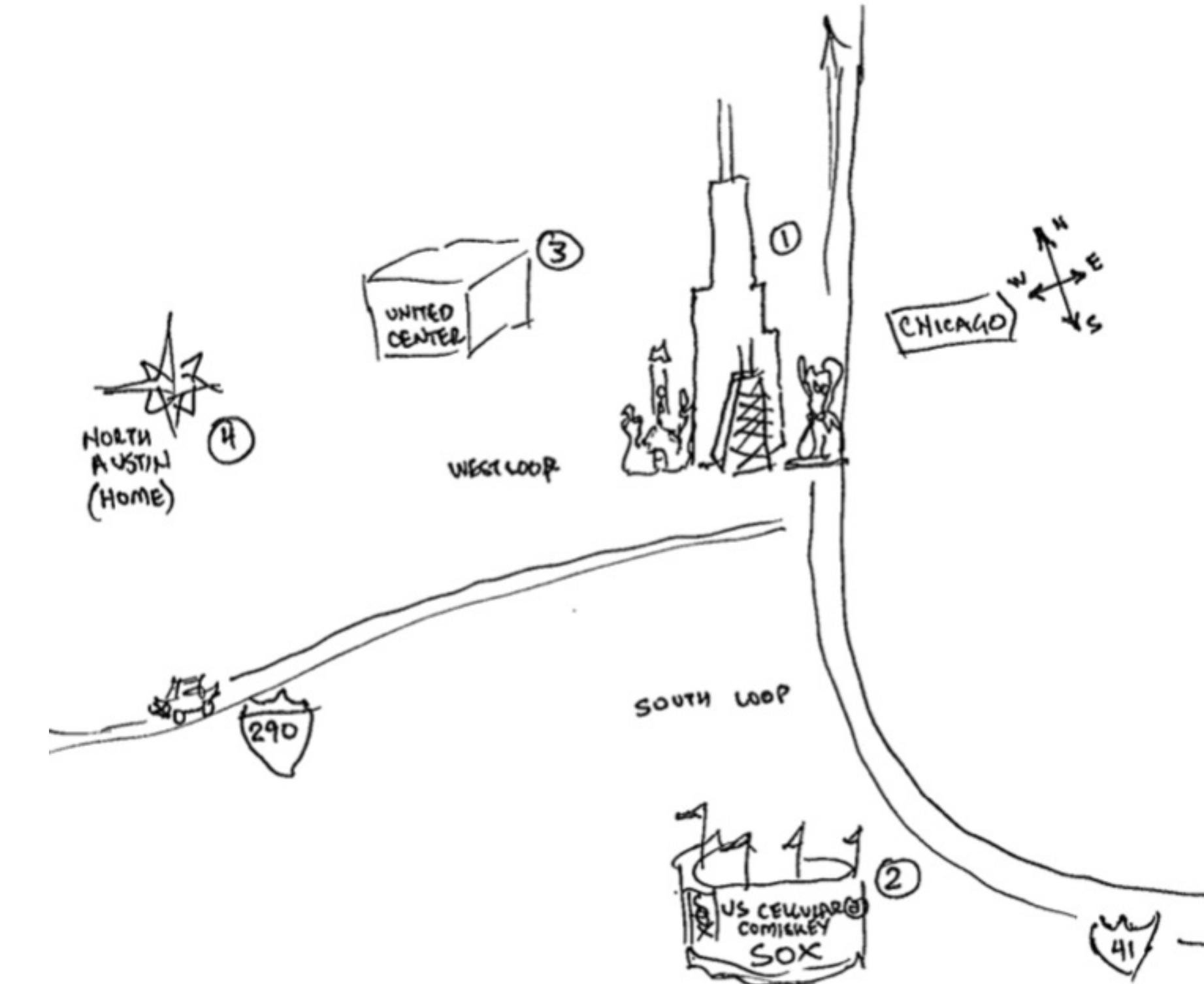
Tempo and Pace

Visual Components

Ambiance

Cognitive Maps of Cities (legibility)

the city becomes “symbolic”



Kevin Lynch: Image of the City

In Manhattan an individual can meet 220,000 others in a 10 minute radius of their office

The City Provides Options that no Other Social Arrangement Permits



The effects of low socioeconomic status on decision-making processes

Jennifer Sheehy-Skeffington

shift away from lack of “rationality”
and “cognitive biases”

Low income groups are often criticised for making decisions that harm their long-term life outcomes. This article reviews research that attempts to understand these decision-making patterns as a product of adaptive responses to the situation of low socioeconomic status. It proposes that low income contexts present socioecological cues concerning resource scarcity, environmental instability, and low subjective social status, which trigger a regulatory shift towards the present and the tuning of cognitive skills and focus to address immediate needs. These shifts in psychological processes lead to decisions that are rational in the proximal context of socioeconomic threat, but may hinder the achievement of more distal goals.

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Psychological shifts in response to socioecological cues

Attempts to answer this question have moved from assuming that decision-making patterns of low socioeconomic groups reflect a set of deficient psychological traits, to investigating them as the product of the experience of low SES itself (see, e.g. [2,8,9**]). While appealing at the policy level, this shift in orientation will only succeed as a scientific endeavour if it can document how the workings of specific psychological mechanisms are shaped by specific components of the experience of low SES, and why.

Two broad sets of decision-making mechanisms that have been the focus of research on the psychology of poverty are self-regulation and cognitive functioning. Observations of unhealthy eating, unwise spending, and poor academic performance among low income groups have been explained, in part, in terms of the disruption of key regulatory and cognitive processes by the mental pressures of poverty, as documented through present-based behaviour and poor performance on executive functioning tasks among those for whom resource scarcity is made salient [10–12] (though see Ref. [13]). Yet the experience of low SES involves more than resource scarcity, and its impact is not merely disruptive. Two other psychologi-

Levels of Construal, Psychological Distance and Cities:

Psychologists talk in terms of 4 dimensions of Psychological Distance:

- 1) Spatial : Near vs Far
- 2) Temporal : Now vs Later
- 3) Social: Familiar vs Stranger
- 4) Hypothetical: Certain vs Unlikely

They are all connected

living in (larger) cities forces us to traverse larger psychological distances

Collective and personal human development
are **associated with traversing increasingly greater distances**:

Human history is associated with expanding horizons: traversing greater spatial distances (e.g., discovering new continents, space travel), forming larger social groups (families vs. cities vs. states vs. global institutions), planning and investing in the more distant future, and reaching farther back into the past. Human development in the first years of life involves acquiring the ability to plan for the more distant future, consider possibilities that are nonpresent, relate to and take the perspective of more distant people (from self-centeredness to acknowledging others, from immediate social environment to larger social groups)

There are always limits to (cognitive) human effort for individuals

How is a life with open-ended creativity, novelty and more information possible?

Cities expose the limits of human cognition by creating psychological **overload**

but they also need to create **opportunities and barriers**, along with **shortcuts in psychological distance**,
by concentrating diversity

Urban environments create, at once



stark limits in every day life

no contradiction, just a matter of time scale

new pathways for development over longer times

There is a “connectivity budget “ that needs to be well allocated : **G is conserved across city size**