Smart City Citizens

-Resilience of medium sized cities during global environmental change and the digital revolution
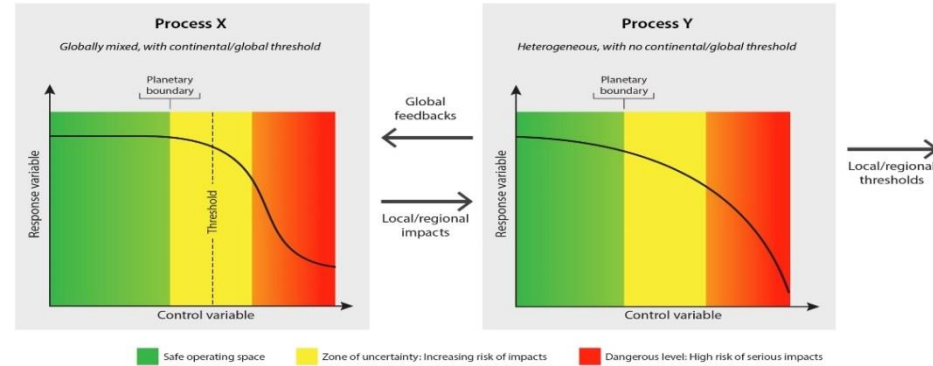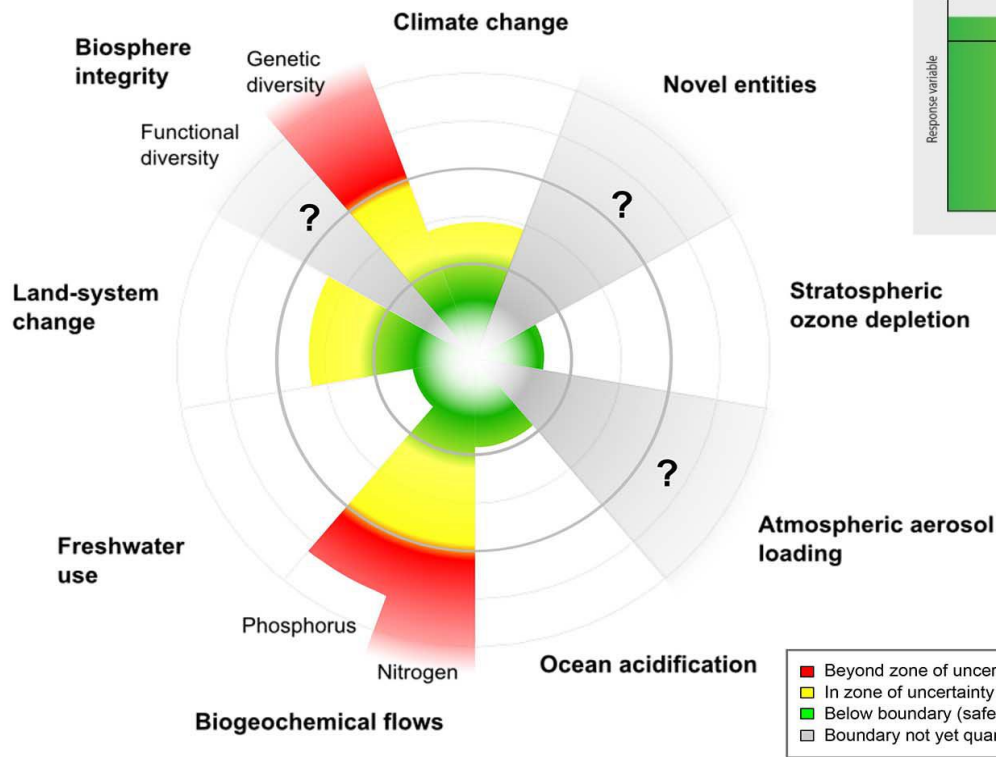

Associate Professor Stephan Barthel, University of Gävle, Sweden

(https://hig.se/urbanstudio)

UNIVERSITY OF GÄVLE

Shifting Planetary Boundaries
– Time ripe for adaptation

Källa: Steffen et al. (2015). Planetary boundaries – Guiding human development on a changing planet
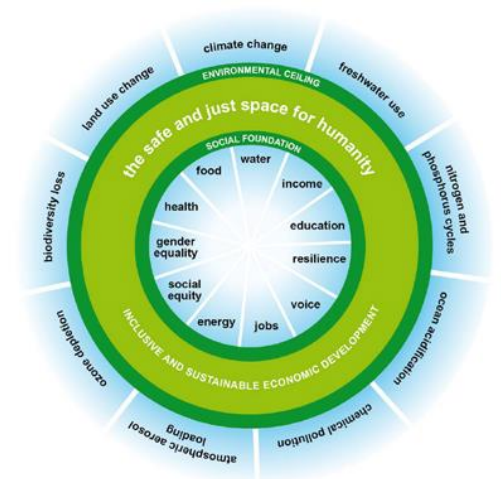
Urban Resilience

-The buffer capacity to absorb disturbance and continue develop
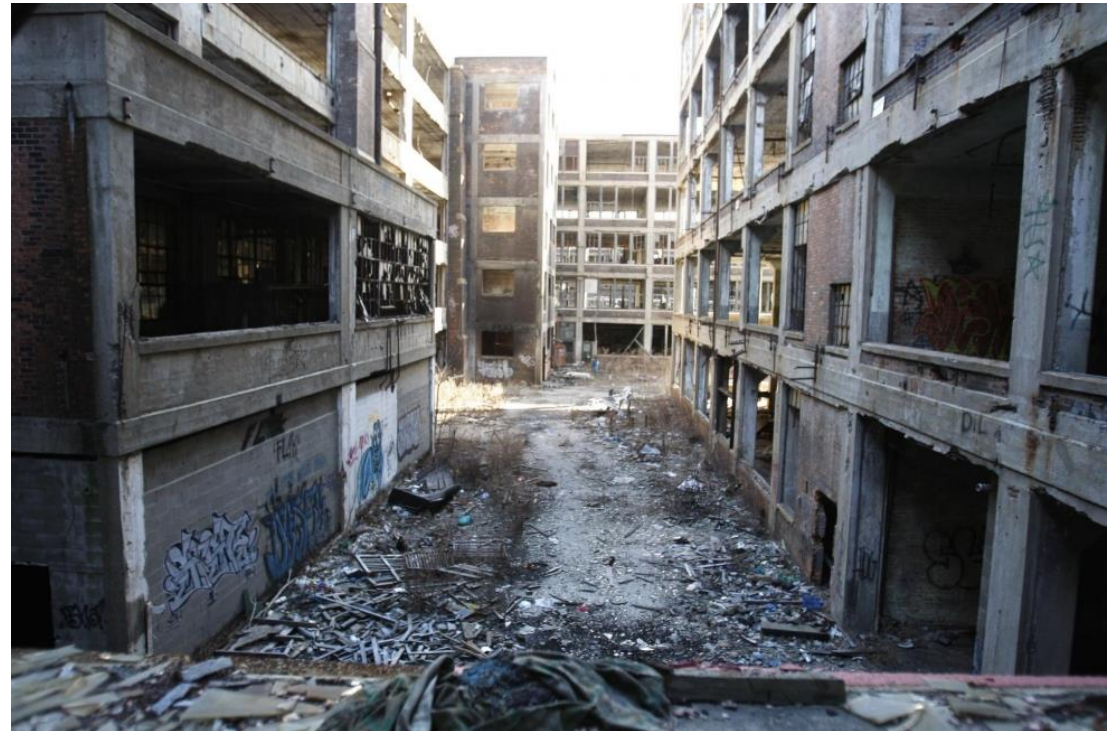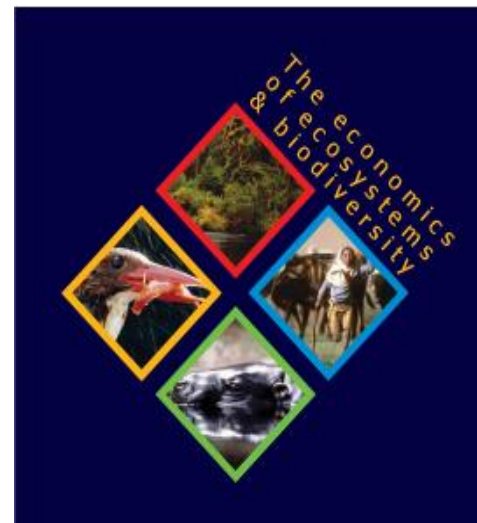
Urban Nature and Climate Resilience

-Ecosystem services
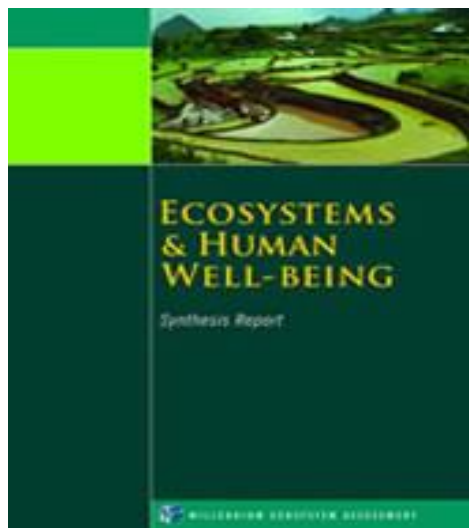
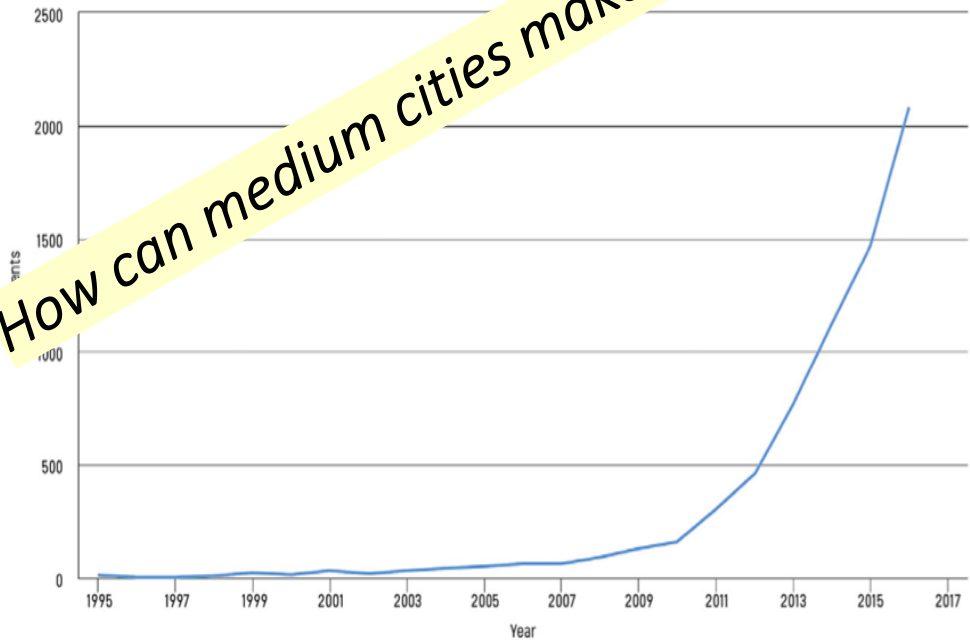Grönområden bidrar till att rena luft och sänka temperaturen i staden.

The Smart (digital) City Model
- c. 8000 scientific publications by 2018

How can medium cities make sense of it?

over the development of publications on "smart city"/"smart cities" as provided from the Scopus database. Source: modified from Scop
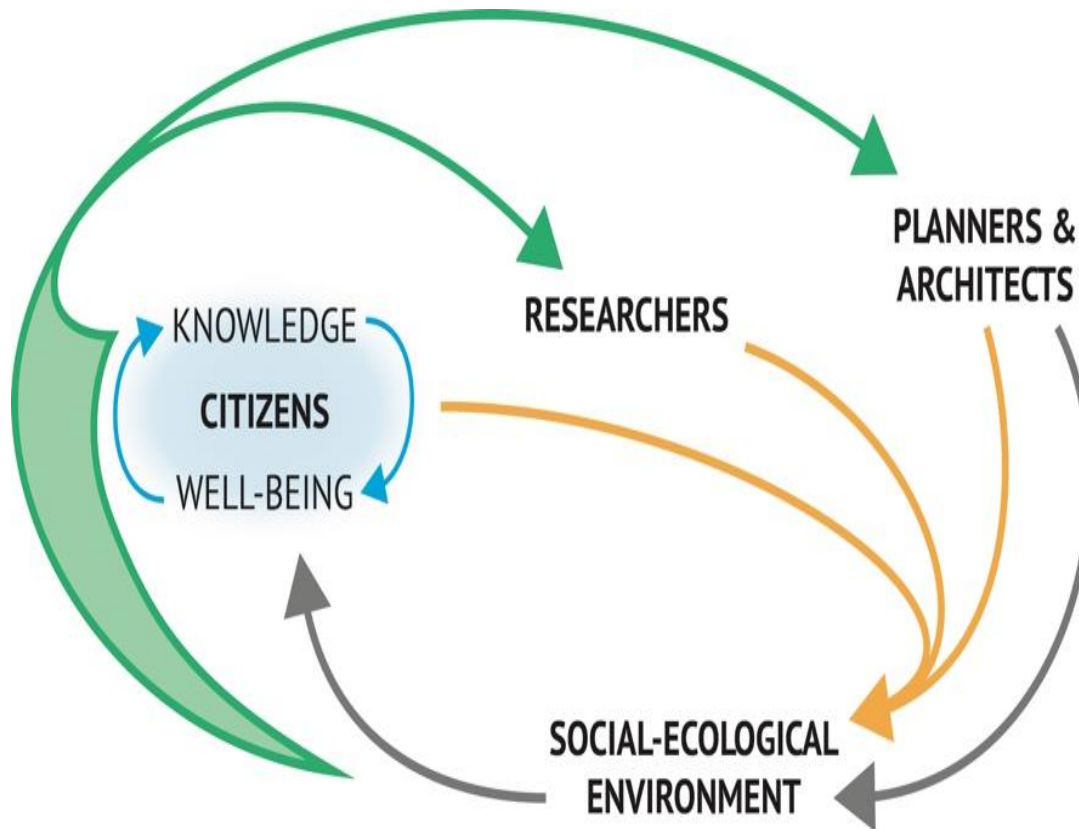
Civic participation in design
-Can digital tools be used to foster urban resilience?

Navigating the Smart City Tsunami
-Innovation in digital methods for improving health
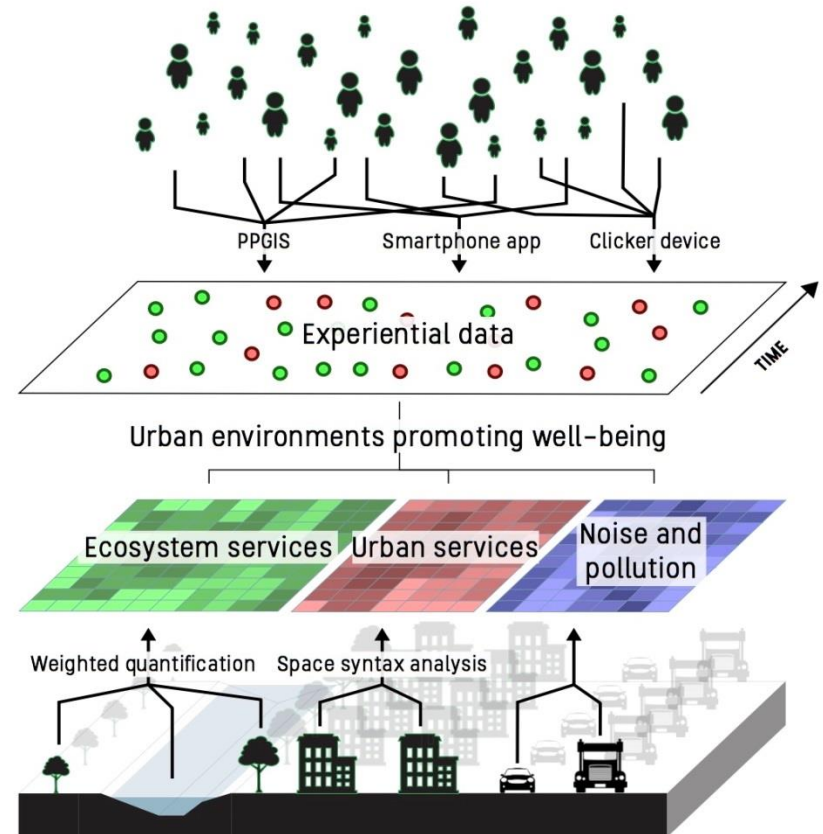
Conflicting Spatial Paradigm
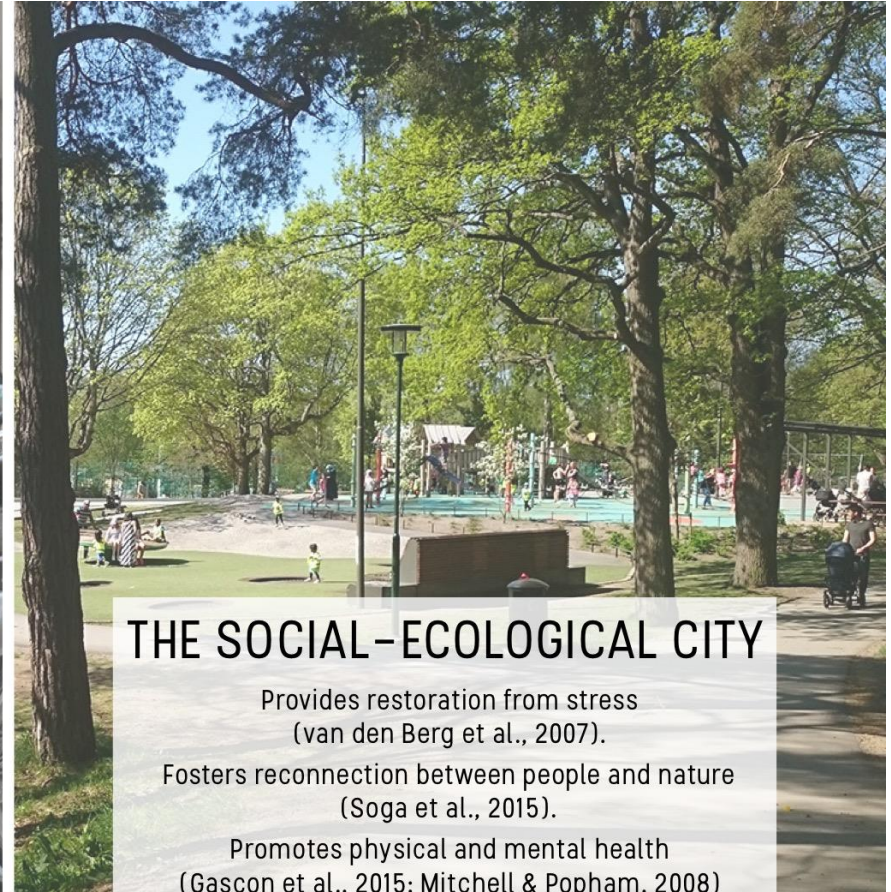## -experiential knowledge may bridge the divide
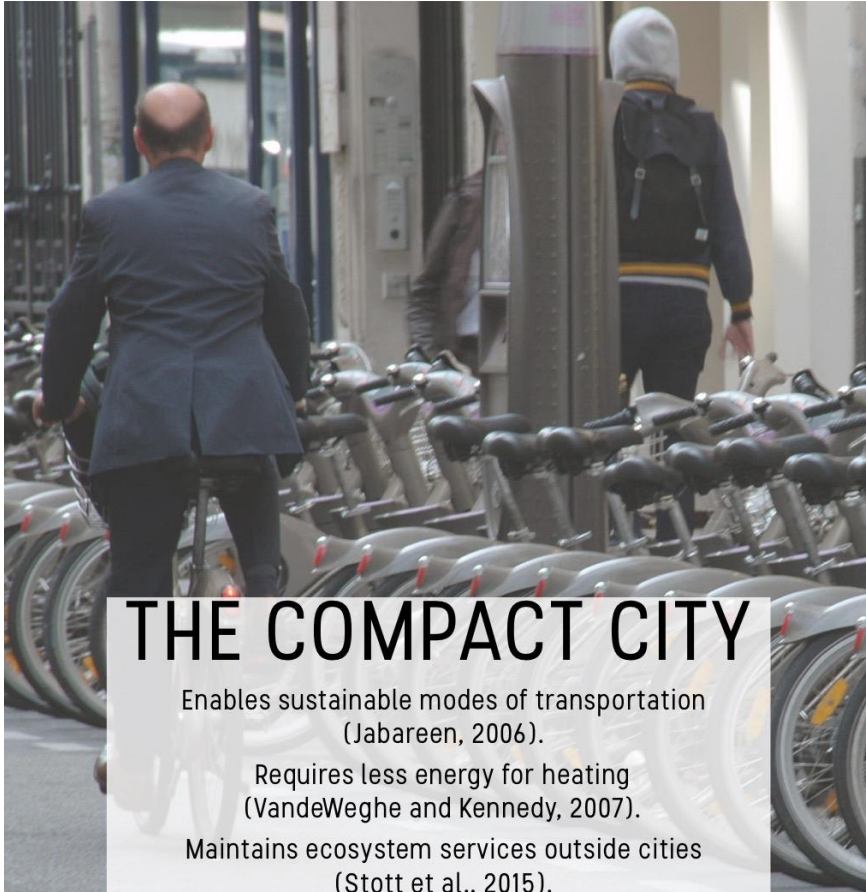
THE COMPACT CITY

Enables sustainable modes of transportation
(Jabareen, 2006).

Requires less energy for heating
(VandeWeghe and Kennedy, 2007).

Maintains ecosystem services outside cities
(Stott et al., 2015).

THE SOCIAL–ECOLOGICAL CITY

Provides restoration from stress
(van den Berg et al., 2007).

Fosters reconnection between people and nature
(Soga et al., 2015).

Promotes physical and mental health
(Gascon et al., 2015; Mitchell & Popham, 2008)

Research Paper

Impact of environment on people's everyday experiences in Stockholm

Karl Samuelsson[a,*], Matteo Giusti[b], Garry D. Peterson[b], Ann Legeby[c], S. Anders Brandt[a],
Stephan Barthel[a,b]

a) Residential population
b) Working population
c) Distance to major road
d) Distance to nature
e) Distance to water
f) Temperature regulation

Probability of positive experience
0 - 0.15
0.15 - 0.30
0.30 - 0.40
0.40 - 0.50
0.50 - 0.60
0.60 - 0.70
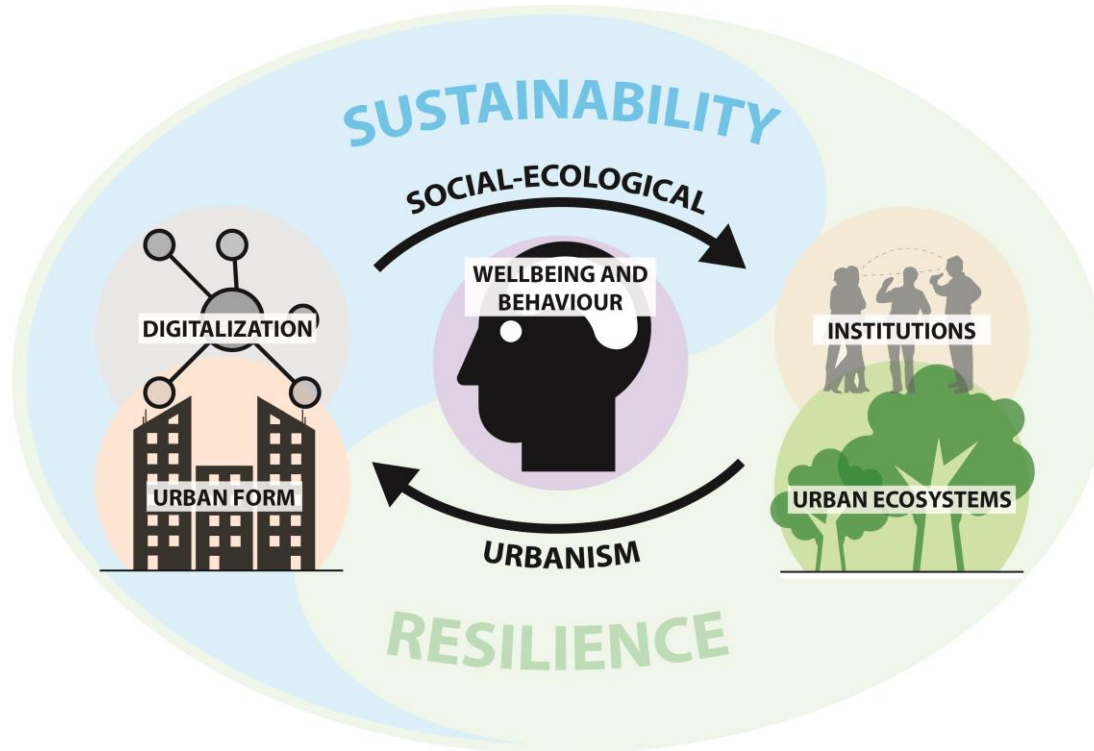0.70 - 0.80
0.80 - 0.90
0.90 - 1
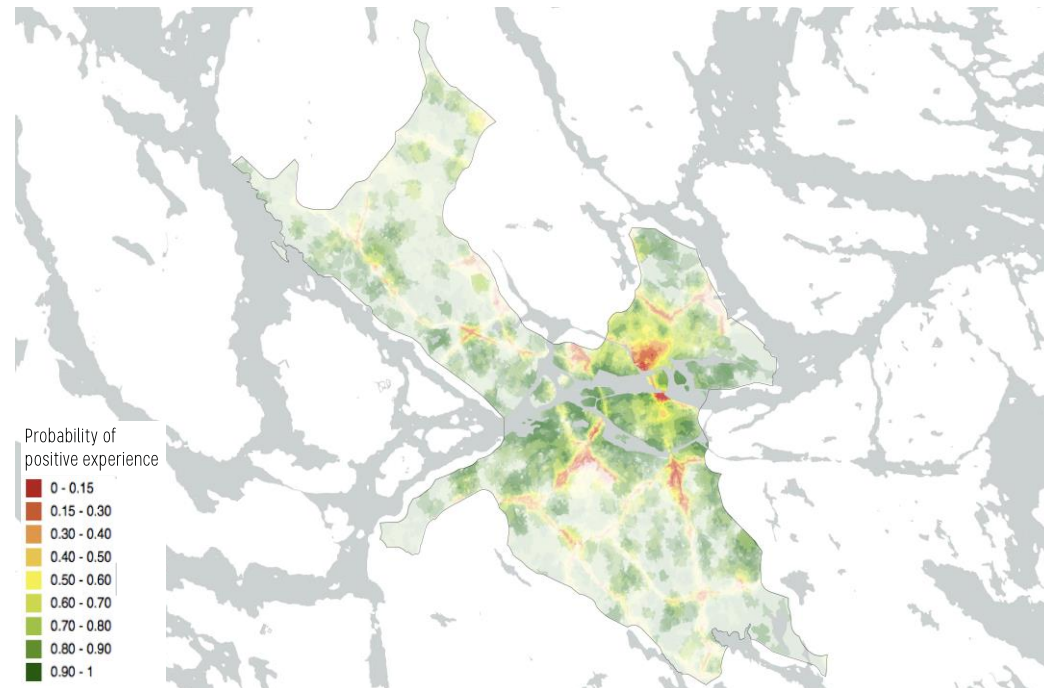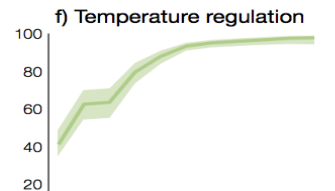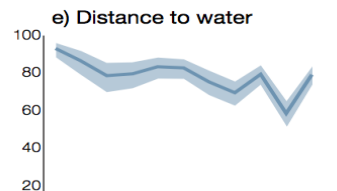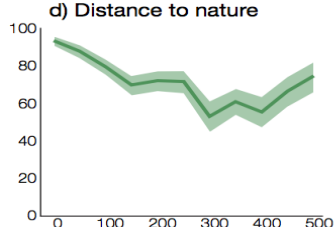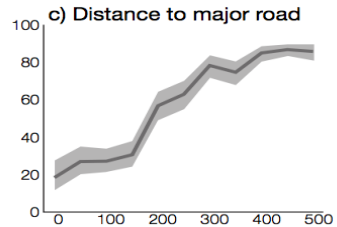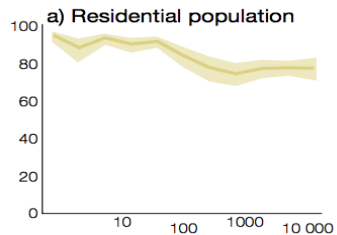
Resilient City-Scapes centered on Human Wellbeing
-Advantage of medium sized cities

- Healthcare costs are spiralling upwards
  - 95% of healthcare costs are in treating disease
  - Only 5% are in preventative healthcare!
  - Can we design for long term positive impact of social-ecological landscape on wellbeing?

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Thanks!