

Preferred citation style

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Personal biography, social networks and travel behaviour: Hypotheses and assumptions

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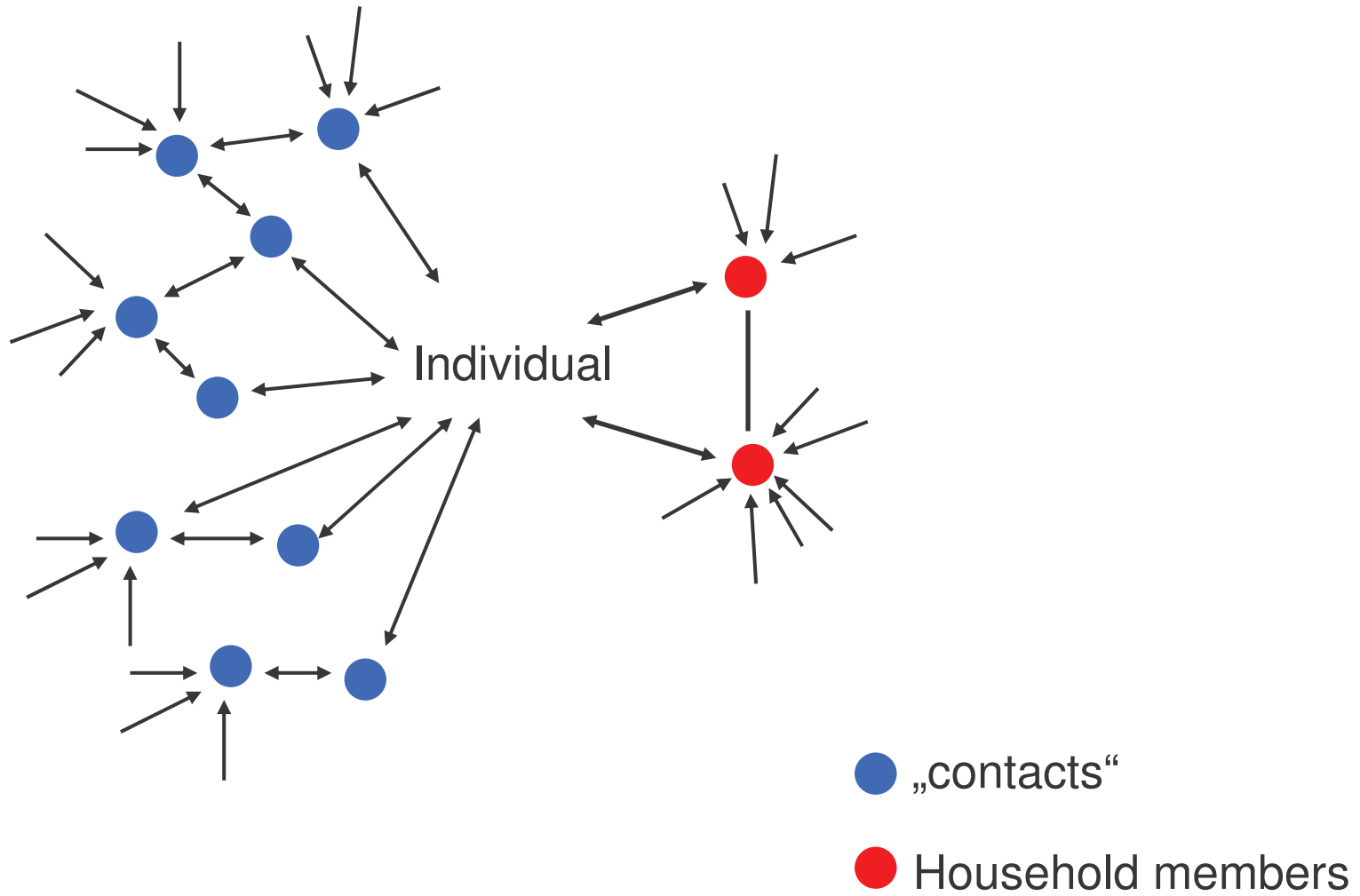
Juni 2004

 *Institut für Verkehrsplanung und Transportsysteme*
Institute for Transport Planning and Systems

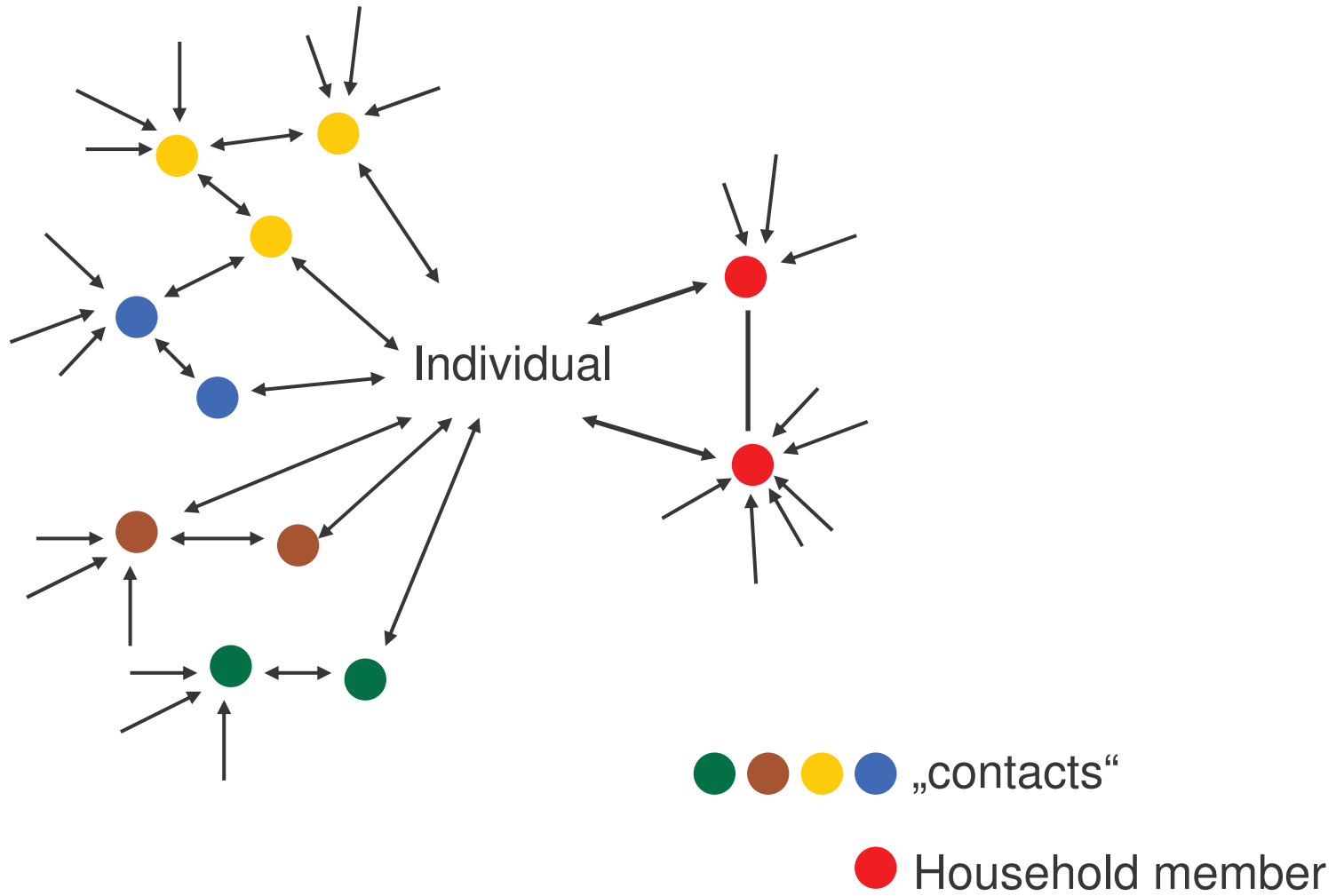
ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Position: Person as a network member



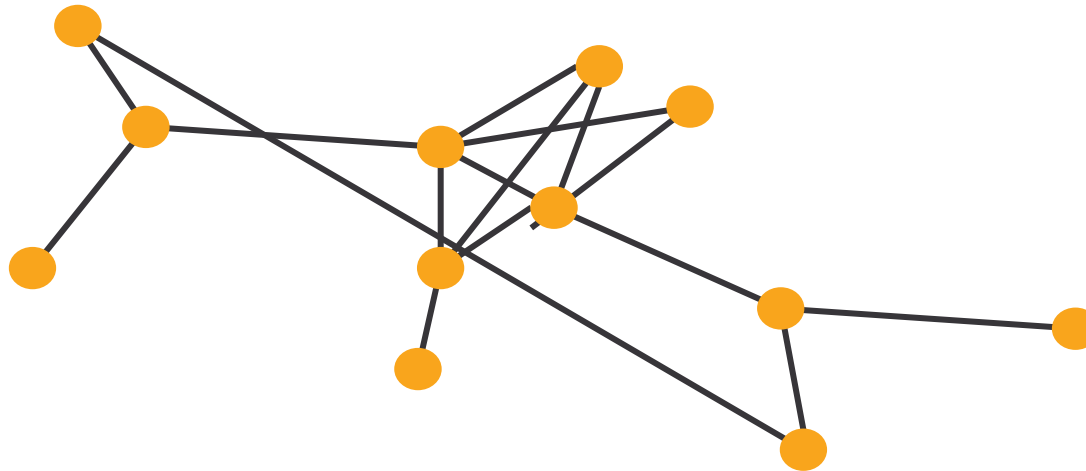
Position: Person as a member of networks



Definition of a social network

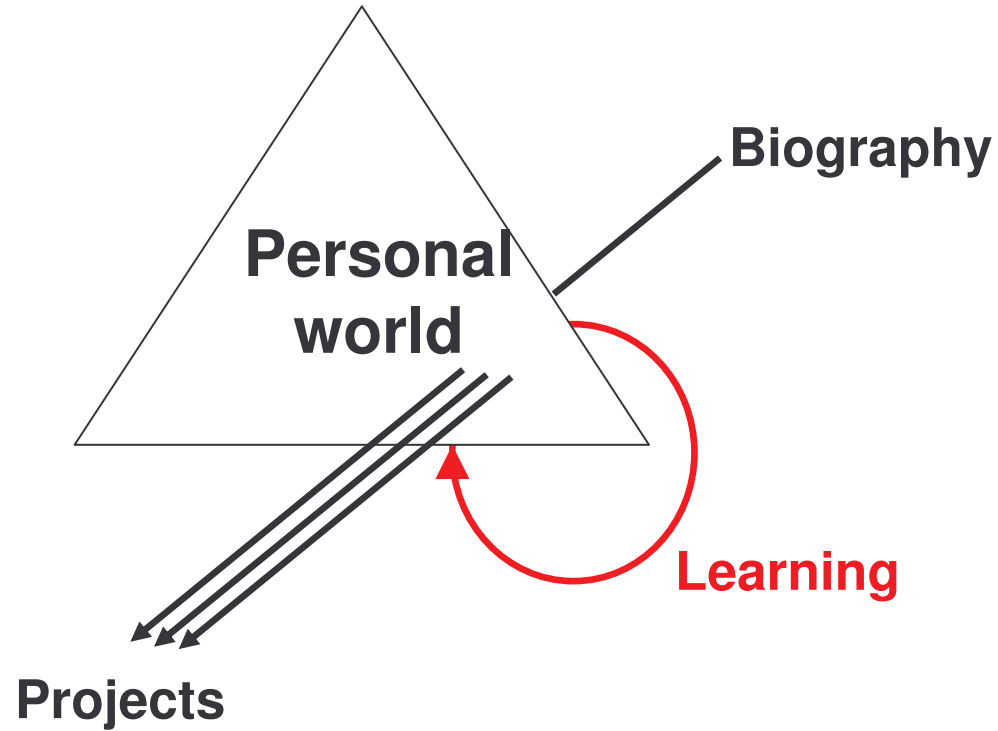
The topology of a social network describes

- Which person/firm (node) is linked to which other persons/firms
- By contacts (links) of a certain quality (impedance or cost)

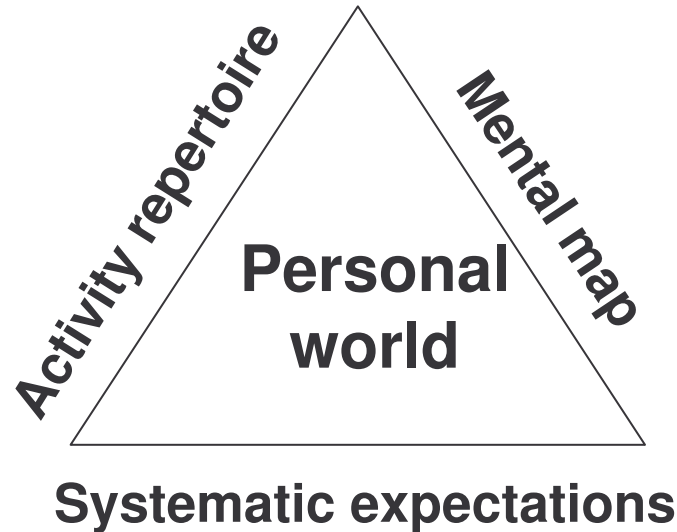


Closeness $\sim 1/\text{Impedance}$

Position: Individual in the biographical context



Position: Personal world

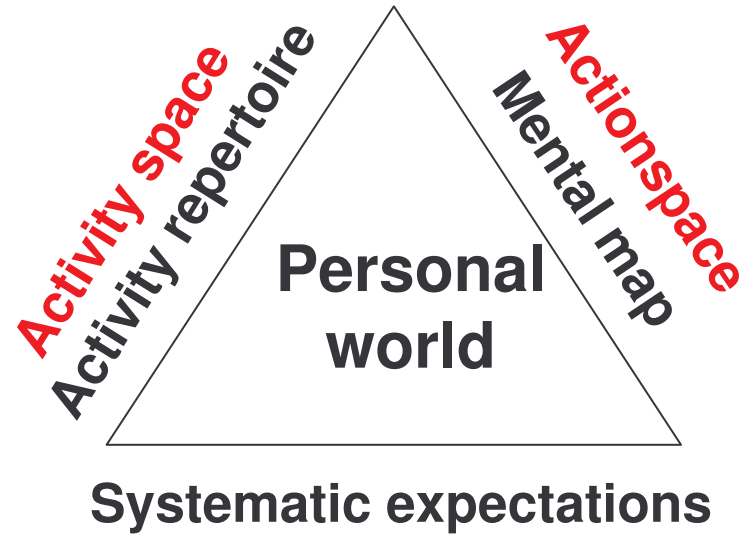


Activity repertoire: What can be done where and how

Mental map: links between locations and their generalised costs of travel

Systematic expectations about locations not yet visited

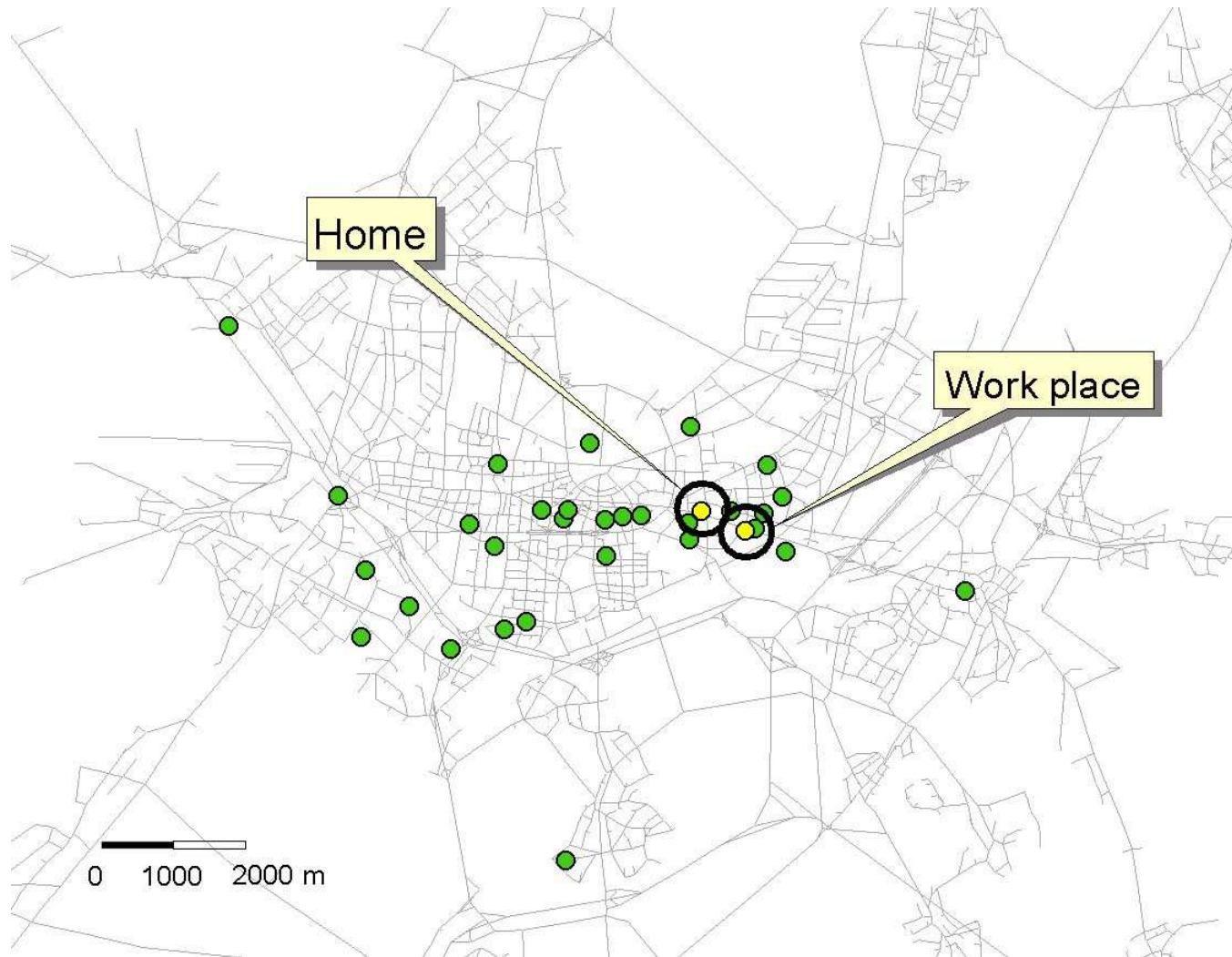
Position: Personal world



Activity space: Locations in current use

Action space: Extension of the mental map by locations known second hand via word-of-mouth or the media

Example of local activity space



Female, 24
Full time
Single
216 trips / 6
weeks

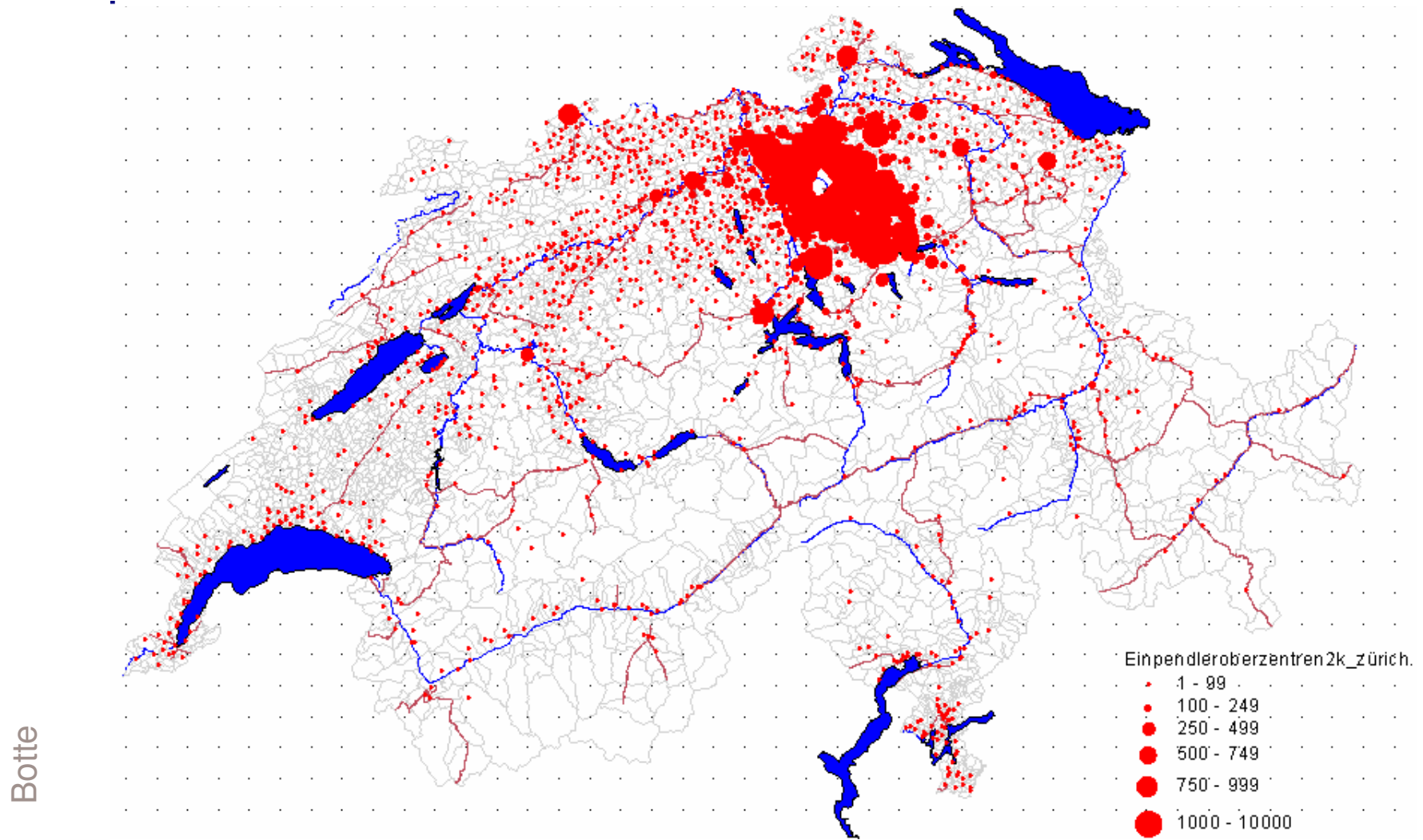
Schönfelder

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Example of a local activity space



Activity spaces: Commuters to Zürich (2000)



Position: Impacts of industrialised modernity

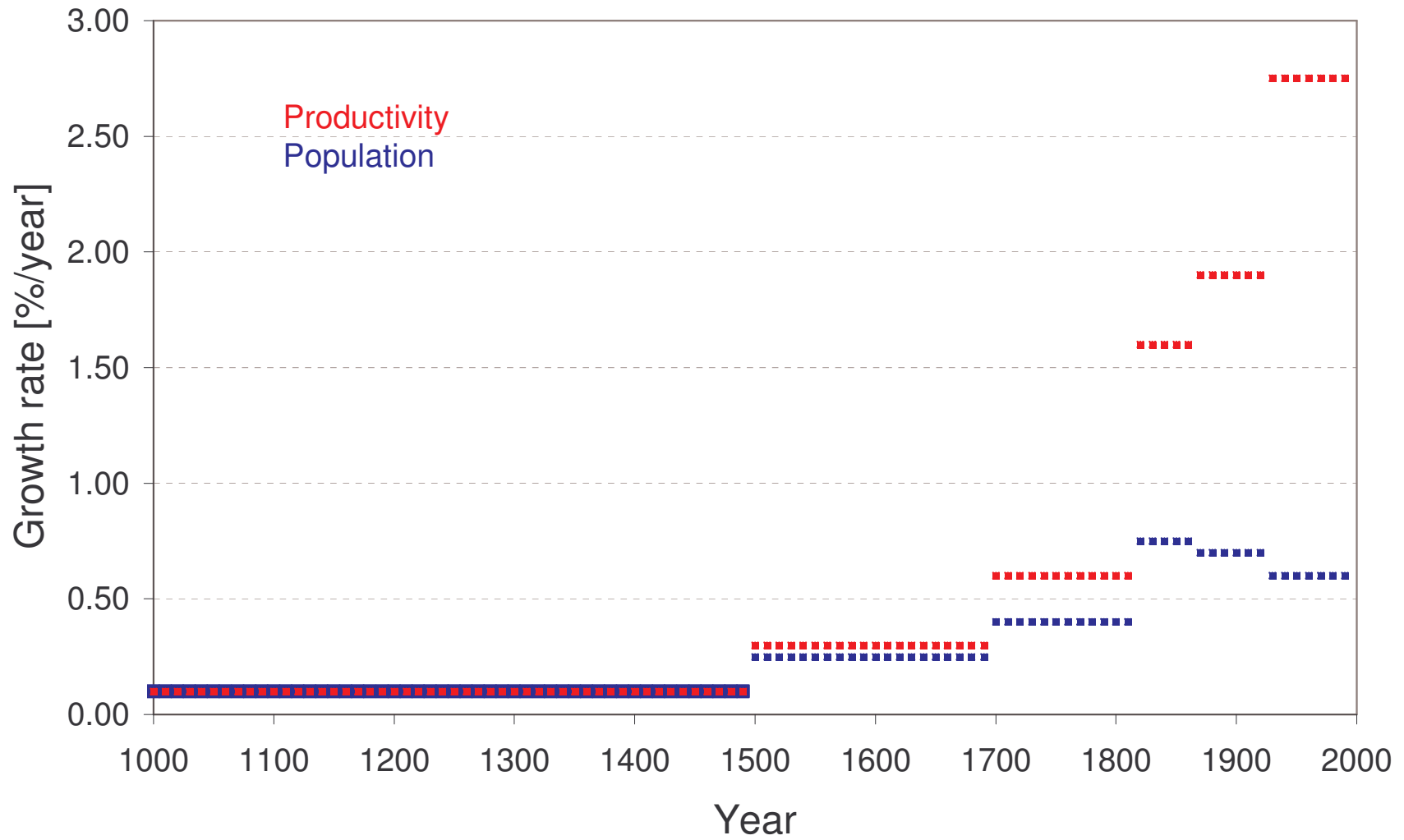
Participation of all in the productivity increases (real income growth)

Drastic reductions of the generalised costs of travel and telecommunication

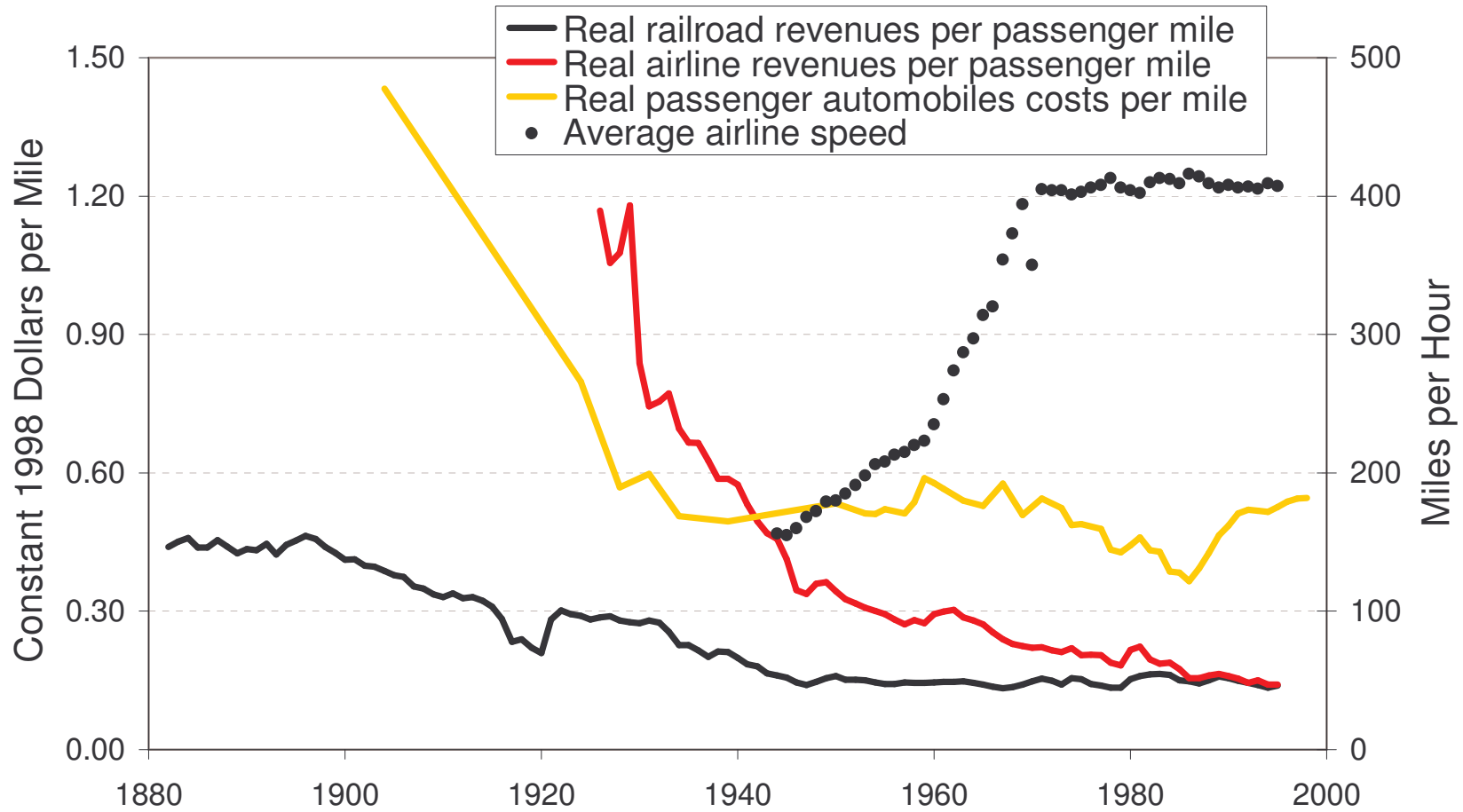
(Substantial) replacement of local personalised links by anonymous instruments of social integration

Modernity: Productivity growth in Western Europe

Adapted from Galor and Weil (2000)

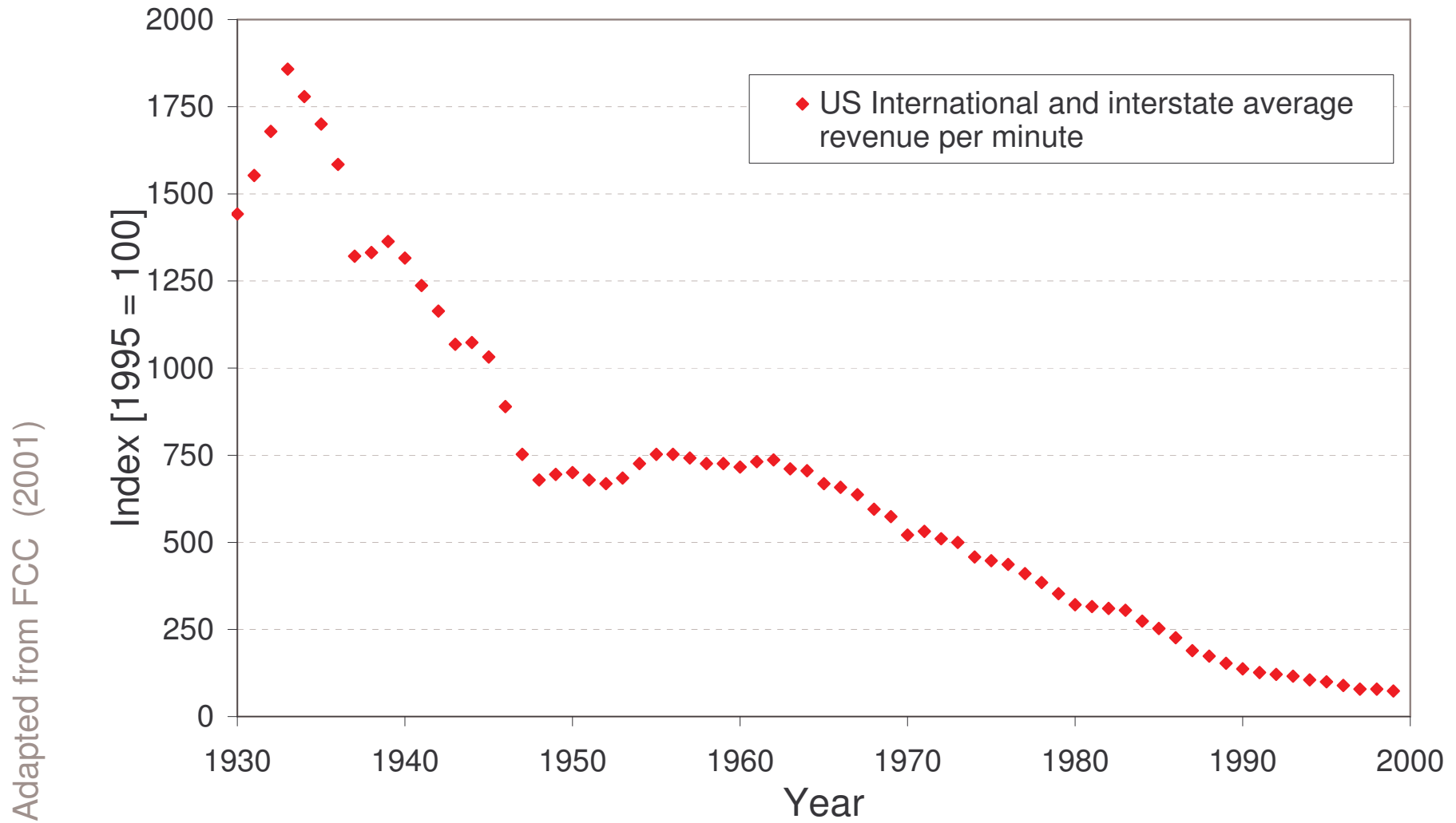


Modernity: Reduction of transport costs (USA)



Adapted from Rhode and Strumpf (2003)

Modernity: Cost reduction in telecommunication (USA)



Feedbacks between the systems

Transport system

Suppliers

Customers

Lower (gen.)
user costs

Larger
markets

Better
selections

More travel
Higher load factors

Specialisation
Higher wages

Better quality

Productivity growth
Bigger units of
production

Lower prices

More funds for
Investment/maintenance

Longer distances

Longer distances

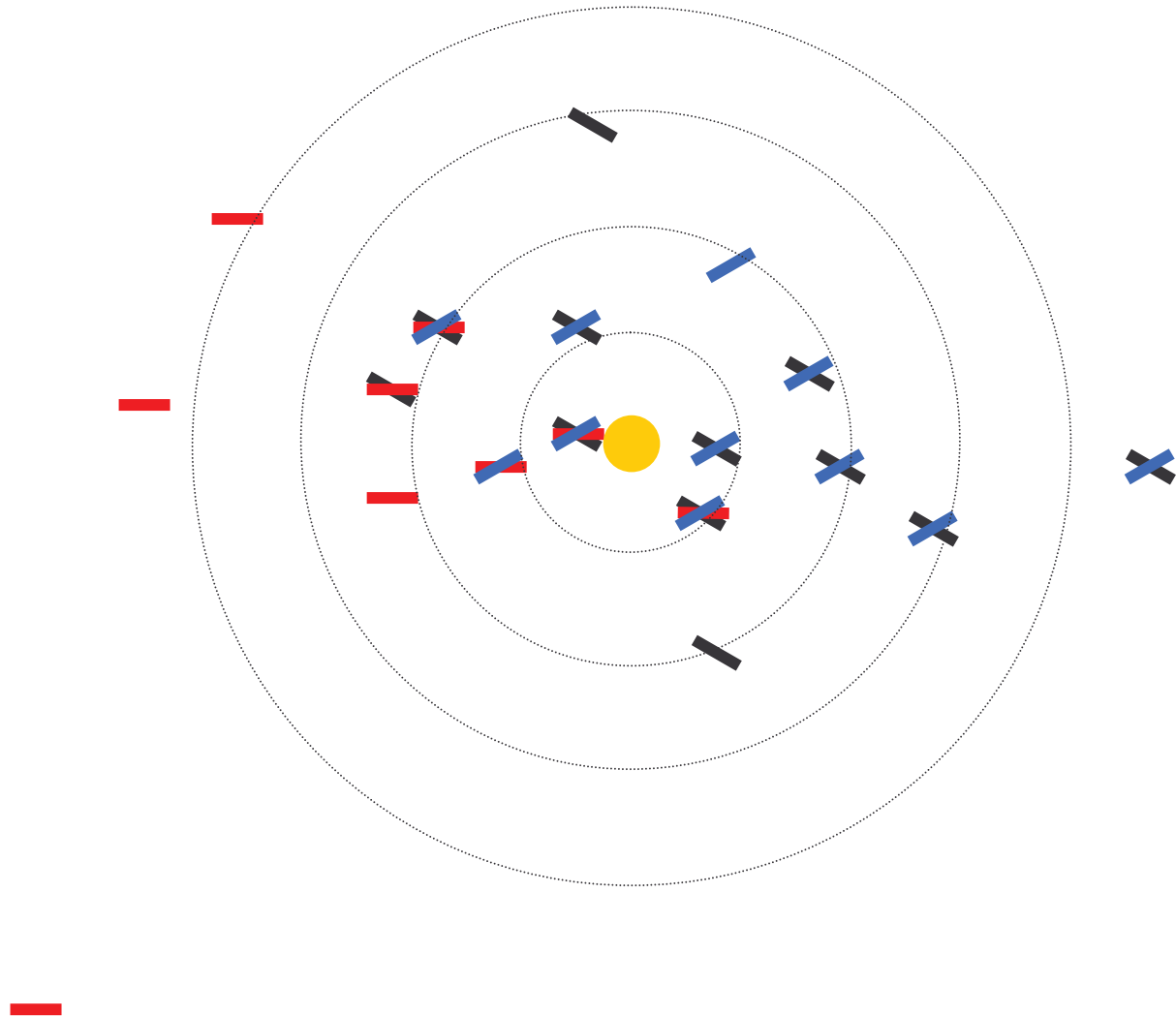
Social networks: Hypothesis 1

The size of spread (geography) of the social networks is inversely proportional to the generalised costs of communication (travel and telecommunication)

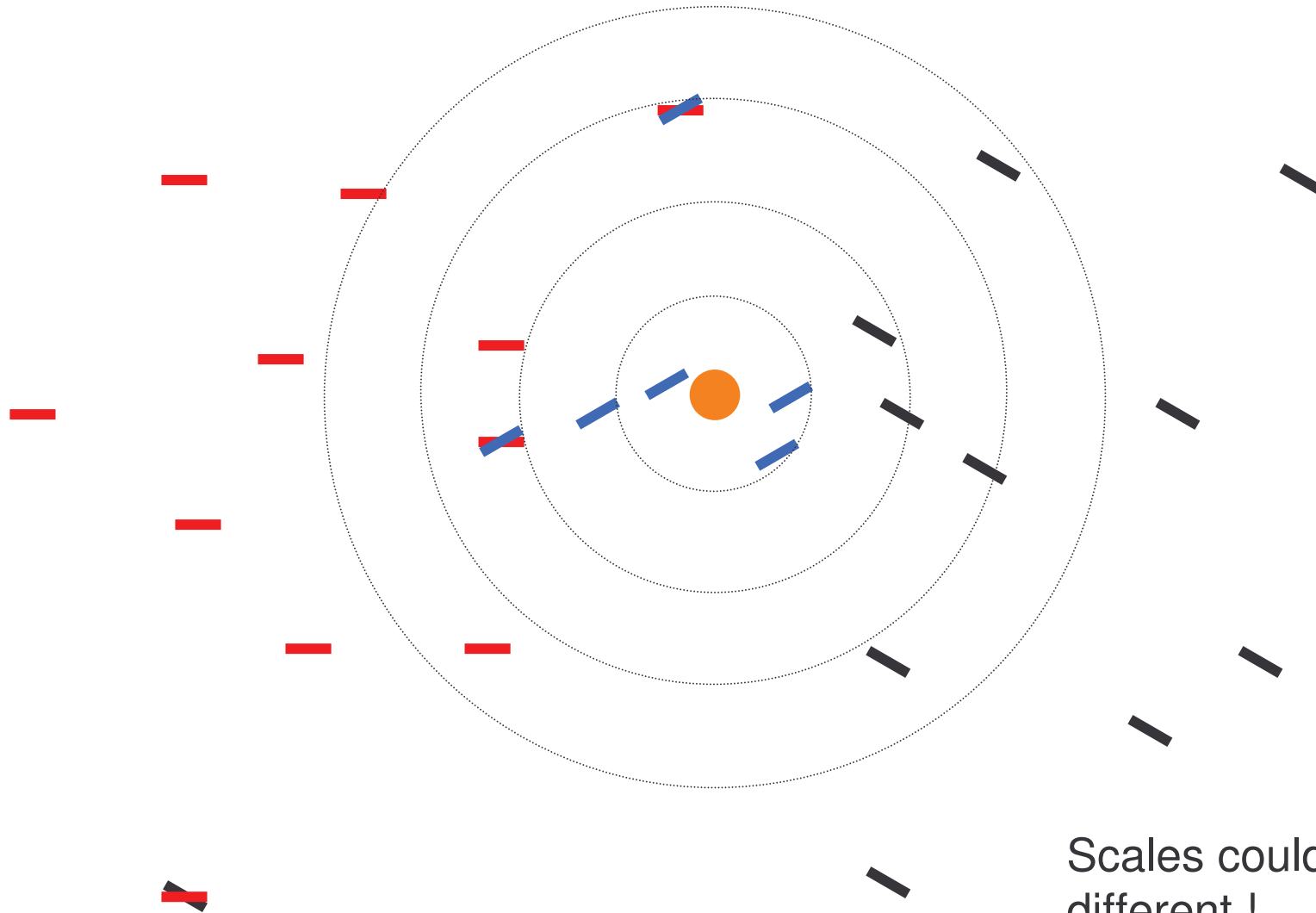
Additional result: Small geographies make it more likely that any two persons are linked through multiple networks

Corollary: The feeling of personal safety (“eyes on the street”) is proportional to the density of local links

Locally coherent networks (of the past ?)



Spatially non-coherent networks (today ?)



Scales could be different !

Social networks: Hypotheses 2a and b

Persons belong to more networks today

Persons keep more contacts alive than earlier

- More leisure time over the life cycle
- Drastically reduced costs of communication
- Copying of messages has become nearly free

Social networks: Hypotheses 3

Contacts have become more selective

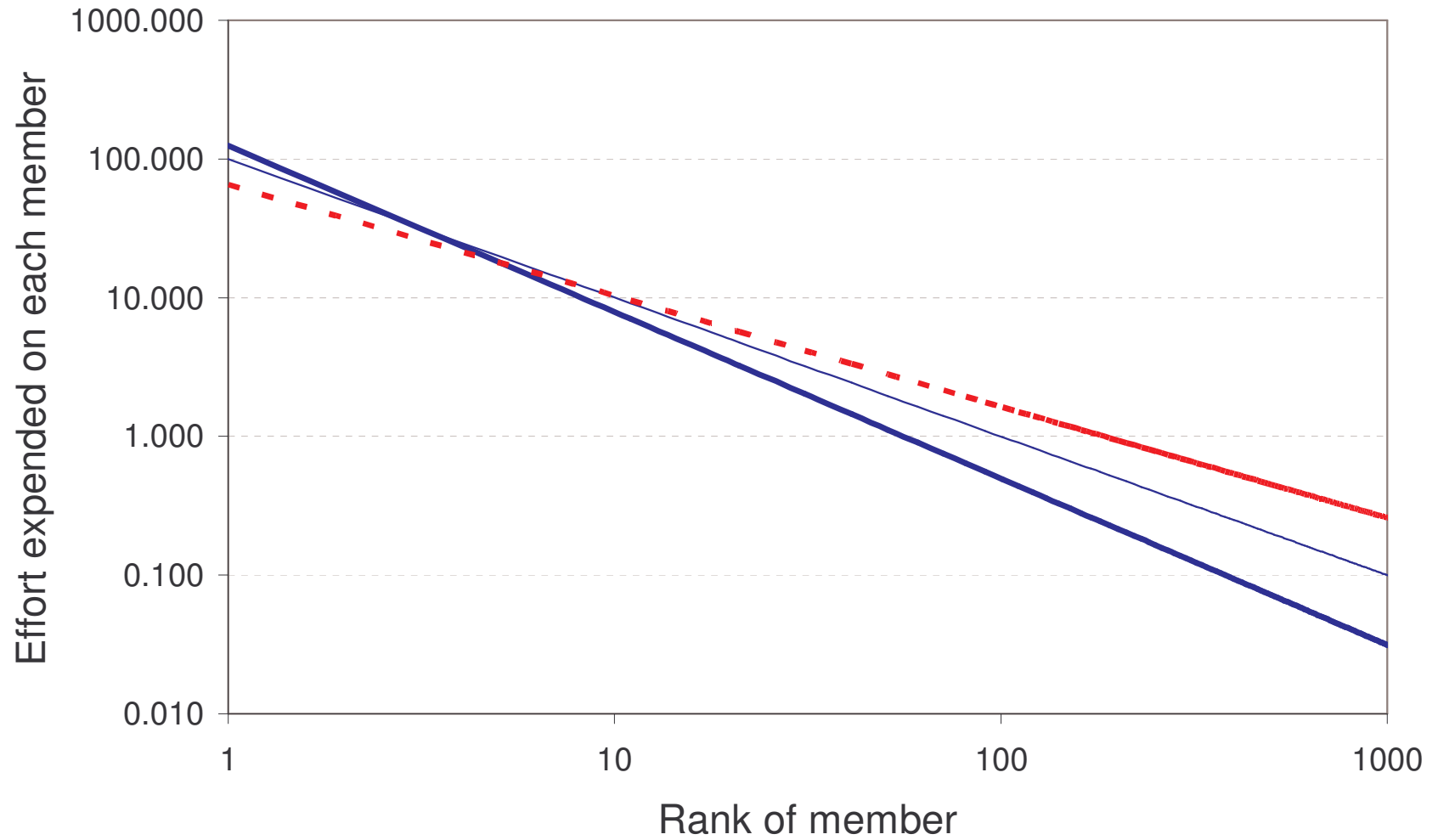
- No need to make do with the „neighbours“

Social networks: Hypothesis 4

The distribution of contacts intensity has become more left skewed

- Selectivity of contacts
- Time requirements for acquiring the background knowledge about the references of the other persons
- Less gossip
- Fewer random meetings

Shift in contact intensity



Detour: The question of “milieu”

How do milieux constitute themselves ? (socially effective, stable “crowds” without strong links)

- Definition of style
- Transmission of fashion
- Membership rules

How do they work in a society without a clear apex ?

How do they spread ?

What role do commercial providers of milieux play ?

What power do they have ?

Social networks: Hypothesis 5

The average knowledge about the contacts of own contacts is reduced by the increasing skew of the contact intensity:

- Less knowledge about everyday life and contact
- Lower visibility of many technologically enabled contacts

Corollary 1: The impact of gossip/news can be less well predicted

Corollary 2: The distance decay of “network supervision” should be less steep than in the past; the friends of one's friends are likely to be present in the same milieu independent of location.

Social networks: Assumption

The selectivity is being increased by the general availability of mobile phones:

- More spontaneous patterns of time use
- Fewer predictable availabilities at certain (time-space) locations

Biographies: Hypothesis 1

The style of travelling during childhood and adolescence, i.e. of the parents, forms the style of the next generation

- The emotional response to (types of) locations is transferred
- The desire for variety seeking is transferred
- The attitude to travelling is transferred

Biographies: Hypothesis 2

Action spaces grow over the duration of the life course

Assumption: They grow exponentially with the number of main locations (work places; home locations) via involvement with third parties

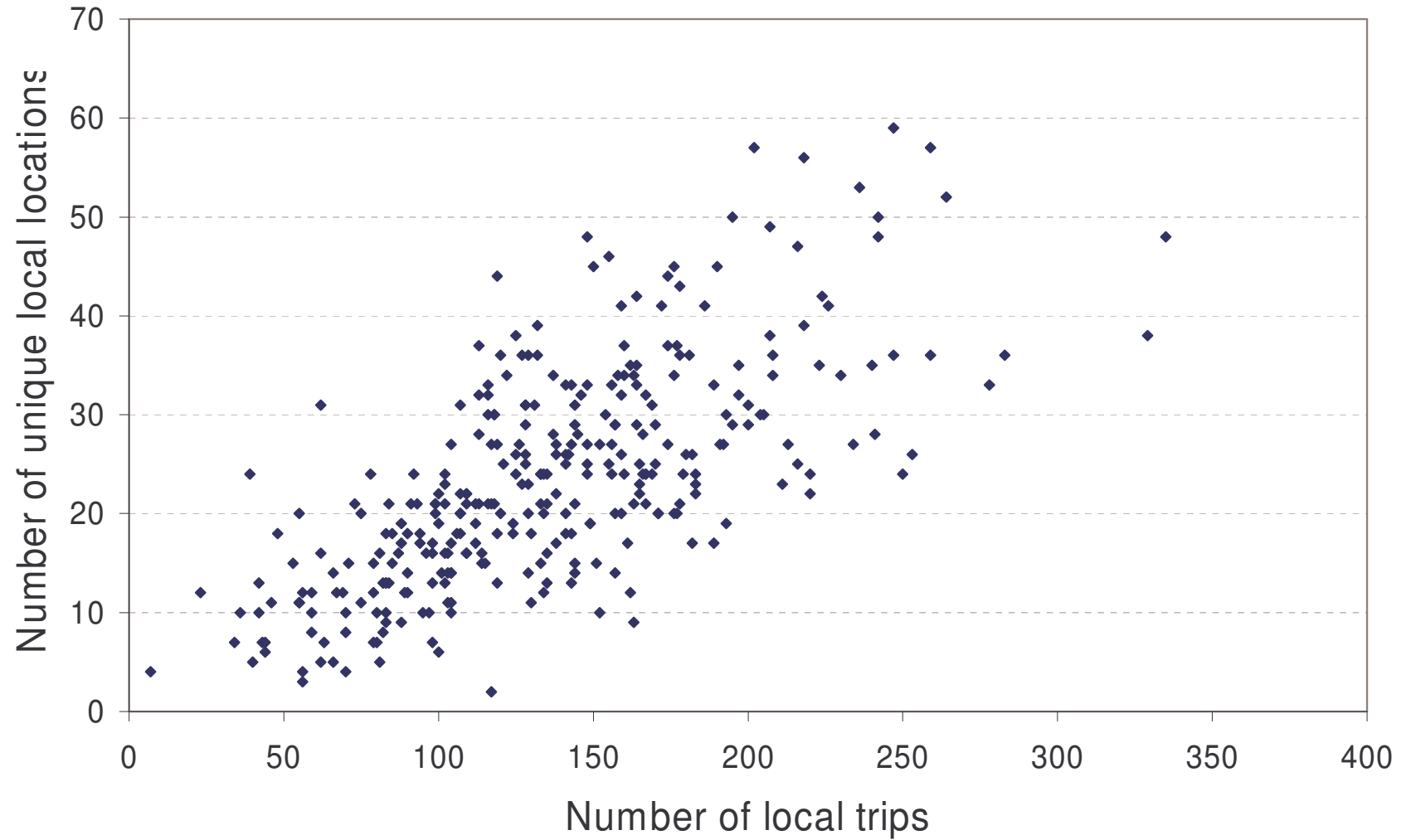
Biographies: Hypotheses 3a and b

The elements of the activity repertoire age

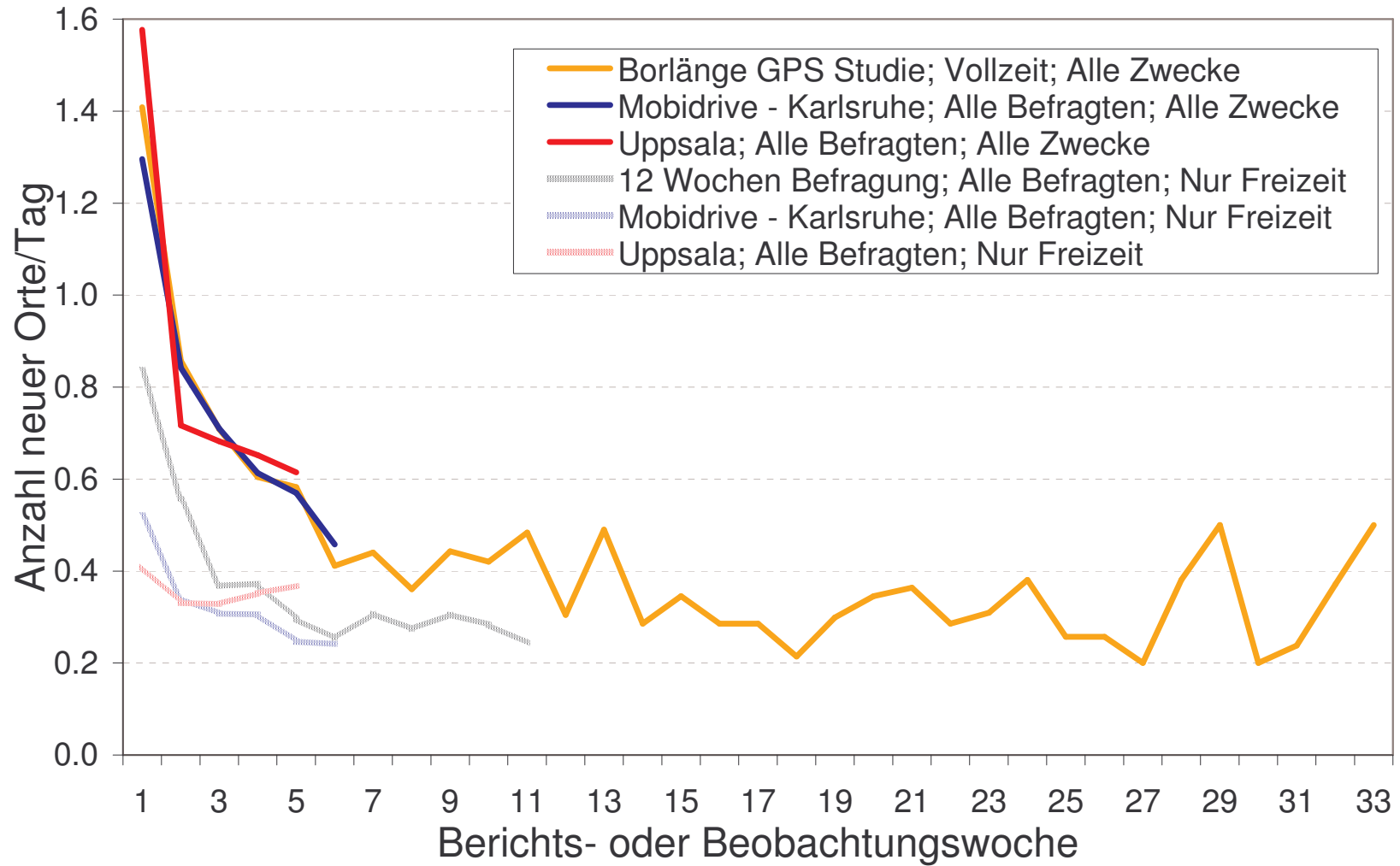
The current size of the activity space remains constant through continuous innovations

- Locations and activity supply change over time
- Idealisation of locations/activities through memory processes and generalisation

Mobidrive: Number of unique locations and trips

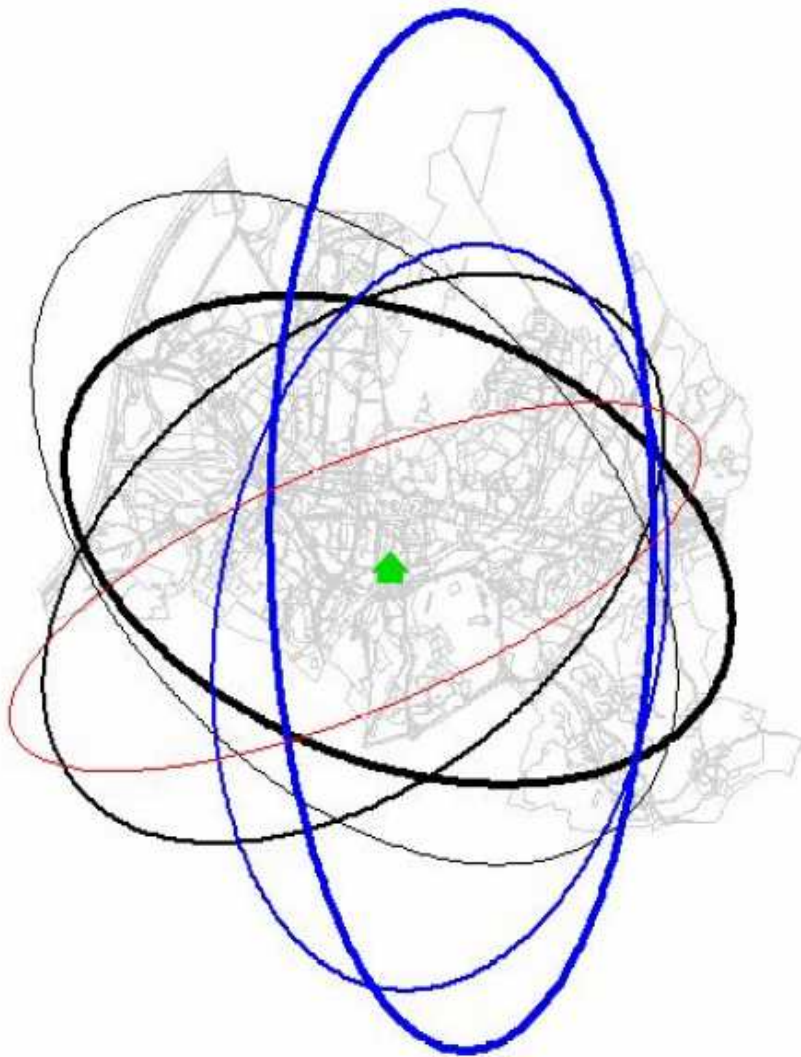


Innovation in destination choice



Variance of activity spaces: A Mobidrive example

Srivastava und Schönfelder, 2003



Male, Full time

Black: Working days

Blue: Weekend

Line width:

Weeks 1+2; 3+4 and 5+6

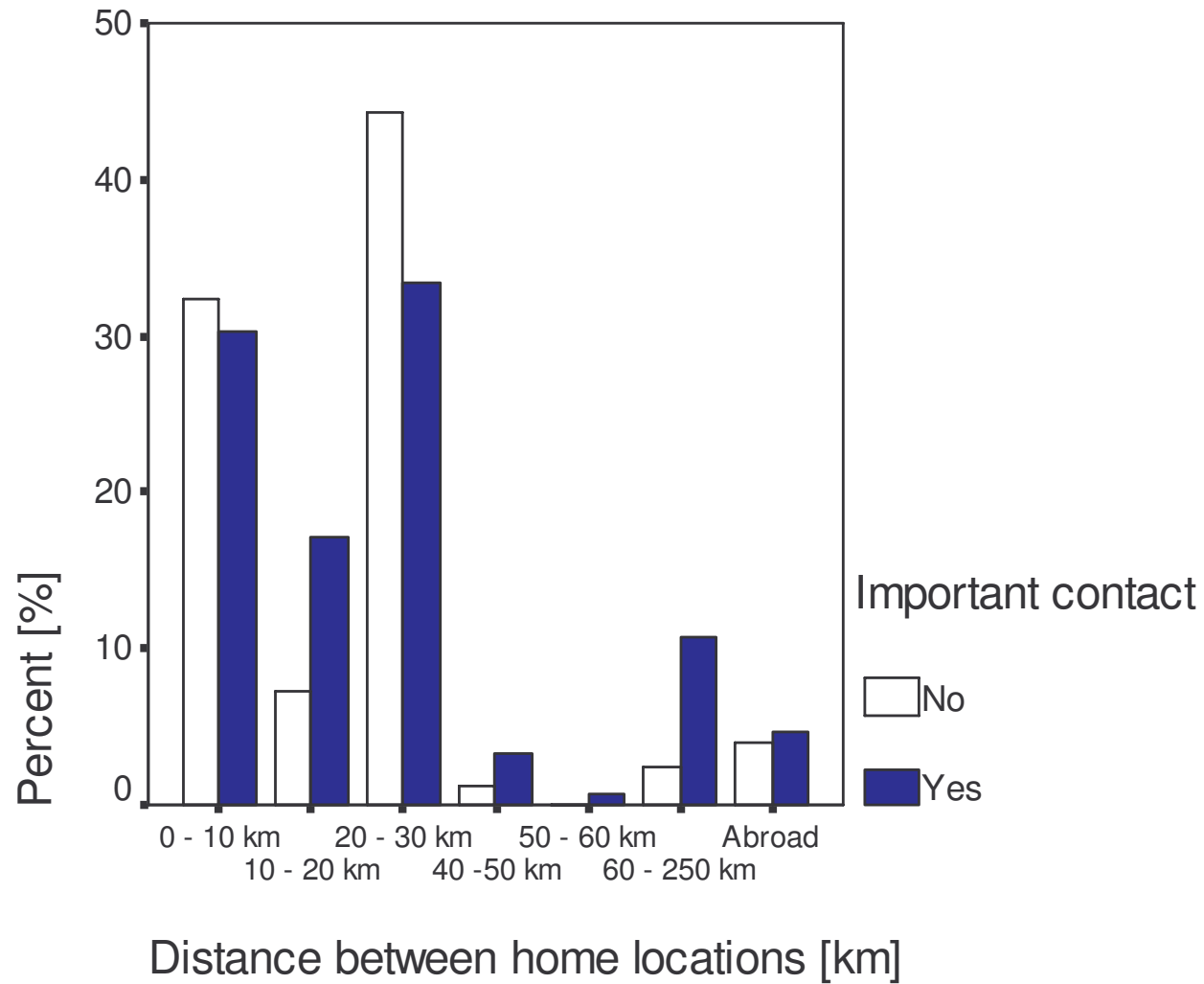
Expected impacts: Travel behaviour

Activity spaces should be larger than earlier

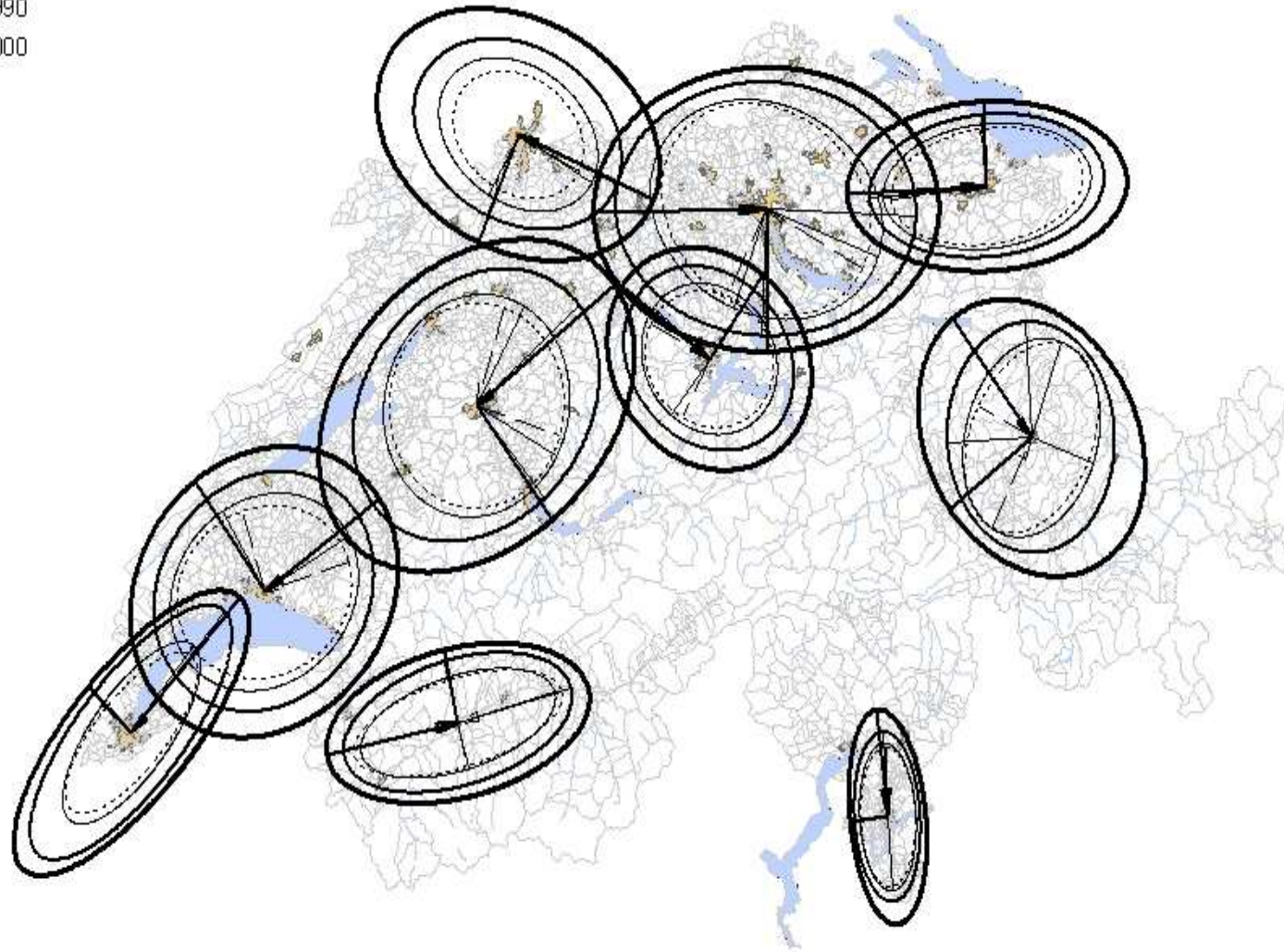
Regular long distance travel is required

Fast modes will remain popular

Mean distances between home locations of contacts



Activity spaces: commuter sheds since 1970



Nach Botte, 2003

Expected impacts: localised anomie

Reduced number and intensity of local contacts should reduce the local level of trust:

- Growing investment into safeguarding the person and the home
- Reduced exposure to risk during travel, i.e. less travel by public transport, cycling and walking

Expected impacts: Improved welfare

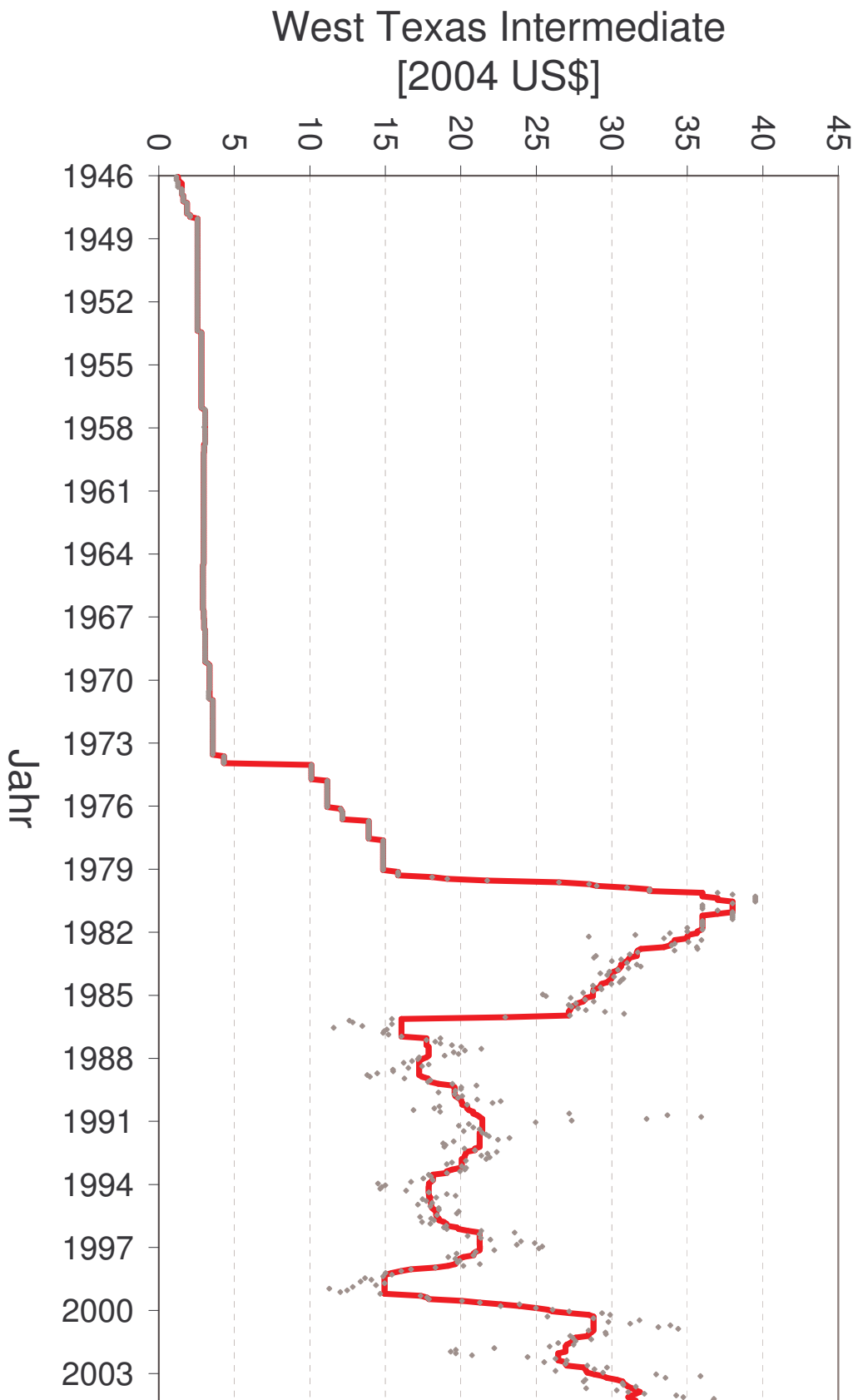
The social networks should be more homogeneous and therefore more productive for their members

But, the selectivity excludes the „less attractive“ persons who are disadvantaged through a reduced ability to travel or a reduced ability to participate in activities

When will the marginal benefits become zero ?

- the localised anomie stresses the other mechanism of social inclusion too strongly
- the costs of private protection become too high
- the environmental impacts become too threatening
- the trend in the costs of travel changes

Quelle: Dow-Jones Inc.



Petrol prices

Back to the future ?



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