A dynamic understanding of travel demand: a sketch

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Aim

Highlighting three areas:

- Social networks and travel
- Activity space impacts
- Day-to-day activity generation

assuming a dynamic micro-simulation of activity participation as the framework
A look back: Productivity growth since 1000 (W Europe)

Galor and Weil (2000)
Summary for the look back

Extraordinary income streams have been created and are consumed (in part) as

- Travel (Speed)
- More (and dispersed) housing
- Long-distance communication
- Longer lives with less work
- Independence/Isolation
- Relative more spending on travel and communication
Long term commitments: Social network structure past?
Long term commitments: Social networks today?
Changes in social network structures

- Spatial distribution of the home locations of the members of the networks will be wider than in the past
- The networks will have less overlap in membership
- The activity spaces of the members will overlap less
- The set of contacts will be bigger than in the past
- The contacts will be spread among more networks
- The maintenance of each contact requires more effort for a given level of quality
Long term commitments

- Work/school location
- Housing location/style of neighbourhood
- Mobility tool ownership
  - car, motor cycle
  - bicycle
  - public transport season ticket
Activity space (Mobidrive 6 week diary, Karlsruhe)
Long term commitments: Activity space effects

Area of the 95% confidence ellipse [km²]

- □ - Not a main user of a car without season ticket
- ■ - Not a main user of a car with season ticket
- ◊ - Main user of a car without season ticket
- ● - Main user of a car with season ticket

Residential location:
- CBD
- Core
- Urban fringe
Long term commitments: Summary

Daily life is constraint and enabled by the long term commitments:

- Work
- Housing
- Mobility tools
- Social networks

Models of daily life should properly account for these commitments through:

- Modelling self-selection
- Inclusion of appropriate variables
Long term commitments: Research questions

- Mobility biographies
- Biographies of social network involvement
- Spatial patterns of social life
Day-to-day dynamics: Personal world

Concepts used:

- *Mental map* - Focus on networks and generalised costs of travel

- *Knowledge space* - Focus on spatial distribution of opportunities and their generalised costs

- *Activity repertoire* - Focus on specific activities and activity ideas, experiences, locations and generalised costs of participation
Day-to-day dynamics: Activity calendar

Filled from activity repertoire and external ideas, but structured through:

- Physiological requirements (sleep, personal care, eating)
- Commitments (work, school, family and household, civic)
- Projects

and

- Reserve times for the unforeseen
Day-to-day dynamics: (Daily) activity programme

Constructed from the elements of the activity calendar given

- Scripts, building blocks, routines
- Urgency/desire (time since last performance)
- Replacability
Day-to-day-dynamics: Research questions

- Functioning of the activity calendar
- Updating of the personal world
- Project formulation, selection and implementation


Appendix
A look back: Travel between Zürich and New York

Index [1990 = 100]

Year


- Flights/week
- Flying time
- Lowest list price
A look back: Expenditure shares in Switzerland

Widmer (2001)
Long term commitments and mode choice

![Graph showing public transport trips/week vs. trips with motorized vehicles/week. The graph includes data from the German Panel, Mikrozensus Schweiz, and UK National Travel Survey. The legend indicates different modes of transport and their combinations with season tickets.](graph.png)
Long term commitments: Activity space (Borlänge)

Locations visited during a 3 month period by one car