Metaphors, Metonymy and Alternative Narratives of the Transport System

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BACKGROUND: STEP-CHANGE PROJECT

“Aims to inform a 'step-change' in attitudes to urban transport by revolutionising the planning of towns and cities.”

Funded by EPSRC, 2011-2015
Strand 1: Cohort Study

Strand 2: Historical information on step changes

Strand 3: Integrating diverse knowledge sources

Strand 4: Planning for urban resilience in 2050

Strand 5: New Modelling Paradigms

Academic and non-academic collaboration
Accounts and models of the transport system

- Empirical, practical and predictive activities in transport research generally make a variety of explicit and implicit assumptions about:
  - the mobility of people and goods
  - the means provided for such mobility and
  - how transport policy is made.

- These assumptions, when bundled together in a specific study, can be understood as forming an account of the transport system.

- A model can be understood as a device for constructing such an account.
**KEY INSIGHT**

- A key insight of the presentation is that all such accounts (and hence models) are underpinned by narratives as to how the transport system evolves.

- To understand more about models it is useful to identify the different types of narrative underpinning them.

- Presentation focuses upon narratives of the future
  - Since (arguably) main use of models is ‘future-oriented’ (in transport planning)
  - However, general points also apply to narratives of the past.
CLASSIFICATION OF NARRATIVE TYPES

- Four narrative types are identifiable in existing transport research based upon two sets of criteria:
  - (assumptions of) contingency versus determinism;
  - and actor-based versus (external) scenario-based narratives

- where an actor can be interpreted as any decision-making entity, such as individual trip-maker, individual policy-maker, local authority etc)
Determinism Contingency

Actor focussed

Contingency → Determinism

(External)
scenario focussed
CONTINGENCY

- Although some narratives can be purely deterministic, no (meaningful) narrative will be purely contingent.

- Even if a narrative is classed as contingent, it must necessarily include deterministic elements.
Determinist Scenario-Based Narratives

- These narratives underpin most ‘traditional’ transport modelling.

- Arguably, the most traditional such model, with roots going back to the 19th Century, is the gravity model (which is based upon an analogy with the law of gravity in physics).
DETERMINIST ACTOR-BASED NARRATIVES

- Such narratives emphasise individual choices.
- However, they assume that, at an aggregate level, such choices are predictable
  - i.e. over the group of individuals being considered, the aggregate impact of individual choices is non-contingent
- Increasing usage in transport modelling since the 1970s
- Examples of models using such narratives are:
  - (short-term) discrete choice models
  - systems dynamics LUTI models
  - agent-based models
CONTINGENT SCENARIO-BASED NARRATIVES

- Such narratives typically exist within ‘scenario sets’ describing highly different alternative futures, in which the roles of actors (in creating these scenarios) are generally downplayed or ignored.

- An important use of such narratives is in Foresight planning.

- Two example sets focusing upon transport are:
  - Megacities on the Move
    http://www.forumforthefuture.org/project/megacities-move/overview
  - OST Foresight scenarios
CONTINGENT ACTOR-BASED NARRATIVES

Such narratives emphasise the key role of specific individuals and/or groups in changing the transport system
- with the implication that, if these individuals/groups had not existed, change would not occur
- or at least would follow a very different path.

Various such narratives can be found in transport studies concerning the past (e.g. Khayesi, 2007) but very few concerning the future:
- one exception being workshop-constructed visions, e.g. those developed as part of the VISIONS 2030 project.
STEP CHANGE

- If (ontologically) the future is seen as contingent, the use of determinist narratives has the effect of forcing a view of determinism upon our understanding of the world which is ‘false’

- If the world is to be (step) changed through the agency of people/organizations/social-groups etc, such efforts will be
  - facilitated by narratives in which such actors are endowed with change-making powers and
  - undermined by narratives which ignore such powers.
How do we move ahead with these ideas for modelling?

- If the world is contingent, there is a need to construct (new) contingent narratives for the future of transport.

- To help construct narratives (in general), it is useful to identify the ‘figures of speech’ (tropes) used within narratives:
  - such tropes underpin the representations found in transport models.

- New transport models will follow from new tropes (and hence new narratives).
Metaphors, Metonyms and Idealisations

Many tropes could be considered for helping to construct new narratives/models
  - Wikipedia lists more than 100 types of trope

Those considered here are:
  - Metaphors
  - Metonyms
  - Idealisations
A *metaphor* can be understood as:
- a *description of something inside the transport system by something outside it*

**Examples**
- *gravity model*: the description of trip distribution by the analogy with the physical law of gravity
- a *market*, matching transport demand with supply.

Most modelling approaches rely upon *key metaphors*.
Metonyms

- A metonym can understood as the *representation of something*
  - (i) by *a particular aspect of it* (a process of reduction), or
  - (ii) as a *cause/effect of it*.

- For example, the representation of a human being as a *time-saver*

- Metonyms interact with each other (though cause-effect relationships) in *metonymical systems*
An idealisation can be understood as a *perfection* of something that can only be observed in a non-perfect state

For example:
- a perfectly-informed traveller
- a system at *equilibrium*
- a *time-minimiser* (as opposed to a time-saver)

An idealisation is frequently ideologically loaded
- for example, the idea of a *perfect market* (at *equilibrium*) suggests the success of a certain type of political system
WAYS FORWARD

- Narratives underlying models are based upon metonymical systems
  - involving key metaphors, idealisations and metonyms

- Where might contingencies enter such systems?
Metaphors can be
- closed (e.g. newtonian physics) or
- open (e.g. from literature or art)

A contingent narrative/model is likely to be made up of open metaphors

The modeller has complete freedom to choose metaphors
- “Let a hundred flowers bloom”!
METONYMS

- Non-deterministic cause/effect pairs can be emphasised

- Role of probability is interesting
  - what is the relationship between contingency and probability?
  - approaches to probability:
    - ‘objective’
    - ‘subjective’
    - ‘intersubjective’
**Idealisations**

- Idealisations are inevitable
  - and often provide a ‘way in’ to (contingent) political issues in narratives

- However, they should be used with ‘self-awareness’
  - i.e. it should not be forgotten that they are idealisations
  - ideology is a problem when it is hidden

- Thinking about idealisations leads to formal philosophical approaches to model-building
  - e.g. *speculative realism* (which has a particular interest in contingency)
SUMMARY AND CONCLUSIONS

- To construct new models, it is useful to think about the narratives that might underpin such models.

- Narrative construction is helped by considering the tropes used by narratives (metaphors, metonyms and idealisations).

- If the world is thought to be contingent, there is a need to construct (new) contingent narratives for the future of transport:
  - using tropes that are ‘contingency-friendly’