

Note from Alan Glennon (10Jun07) – I believe these are Steve Manson's notes about the breakout group discussion.

Big questions

Areas for growth

- Social networks, different notions of space (absolute, relative, relational)
- Decision making, cognition, special focus on spatial thinking/decision making
- Measuring agent characteristics (e.g., 4D/paths, representation, rules/behavior, qualitative elements of decision making)
- Expanding our definitions of the unit of analysis (e.g., institutions, collective behavior, emergent collective, pervasive computing)

Gaps to bridge

- Time/dynamic geography
- Game development, Second Live/MMORPGs
- M2M (stats, visualization, EDA)
- Engagement with other 'agent' focused fields (DAI, physics, robotics, IBM)

As always, model intent/purpose is a key motivating question in assessing/understanding a model. This applies to agent-based models and regression and ...

Tension between agent-based model as an approach and a research topic in and of itself (e.g., land use modeling).

What makes agent-based modeling different from other methods, and to what extent can combine theory with applications?

Do we can have greater confidence in simpler models? Easier to test, easier to understand (e.g., transportation at limited spatial/temporal scales such as traffic on a single bridge or straightforward regressions between city size and patterns/characteristics).

We can learn from qualitative approaches in evaluating modeling. Use of multiple approaches to triangulate.

Tension between qualitative / relativist sense of truth is difficult or impossible to assess versus the basis of normal science in falsification.

Parsimony [MORE]

To what extent does agent-based modeling reflect a reaction to the need for detail in models (e.g., large scale urban planning models not getting to useful scales).

Key characteristics of agent-based models (which, if any, of these are key?)

- Heterogeneity
- Local interactions
- Autonomy (Goals? Direction?)
- Environment (Just other agents vs. a medium of some sort)

(even bounded rationality is not necessary). Do these characteristics suggest key areas for use?

Second order characteristics? Adaptation. Thresholds.

Should model validation focus on the key characteristics of agent-based models?

How to balance the simple and complex (vs. complicated) (e.g., fractal indices of cities or CA models of urban growth only go so far).