# Misbehavioral Urban Economics

#### Marcus Berliant

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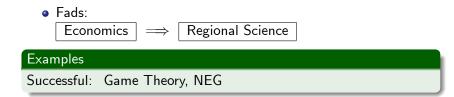
April 23, 2009

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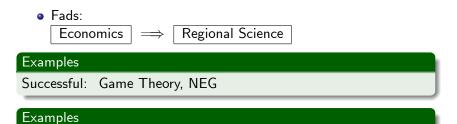
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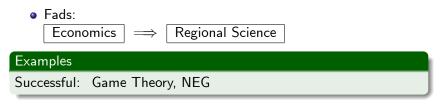




Unsuccessful: fractals, computation, chaos, catastrophe

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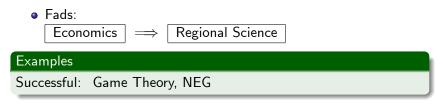




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- Why have some fads met with success in regional science, and why have some failed?
- To address this question before getting into the meat, namely the potential impact of the behavioral economics fad on regional science, it is of utmost importance next to compare and contrast the methodology used in economics and regional science.



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- At a superficial level, economists require that models of markets be consistent with the use of prices (wages and rents) and with the optimizing behavior of agents.
- Regional scientists seem oblivious to this, often using models implying that people (including themselves) don't care about the price of a house when they buy it, or models where non-zero price elasticities would falsify their theory.

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- In fact, this topic is usually the subject of the first lecture in core Ph.D. micro courses.

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- This is, no doubt, a direct result of the 2008 Nobel prize in economics.
- The stark difference here is in the use of scientific method, and the stage at which mathematics is brought into the research process.

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- This is how and why fads in regional science bite the dust.
- I call this "Regional Art," and I see a great deal of it in my editorial work. Very creative.



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- I am hoping, but not optimistic, that the application of behavioral ideas to regional science will take a similar *scientific* rather than *artistic* tack.
- Realistically, I expect that the ideas will be brought in wholesale from economics and shoved into regional science (e.g. NEG) models, whether the assumptions and motivating questions (if any) make sense in this new context or not.



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- Although it is interesting to speculate about whether it is just a fad or something more substantial, in technical terms whether or not it will "nuke the fridge," I'm going to leave that to you.
- But first: What is behavioral economics?

• "Behavioral economics may be defined as the research programme striving to give a psychologically realistic basis to the theory of economic behavior." Rustichini (2008)

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- Most incorporated into general equilibrium theory (the classical market setting) 30-35 years ago.<sup>2</sup> What is needed is irreflexivity (no bundle is strictly preferred to itself) and a bit of continuity.
- For the questions, ideas and examples we shall consider, we will need to consider one specific variety of behavioral economics.

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- In technical terms, these ideas are called "unexpected utility theory."

#### Decisions, Decisions

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- The small decisions made by individuals can add up (across agents) to something much bigger. They might be the underpinnings of important phenomena, such as agglomeration economies.

#### More Decisions

• However, the consistency of these small decisions with particular theories might be difficult to tease out in individual data, as agents might be satisficing. The choice might not matter much to any one of them. Thus, we focus on the big decisions.

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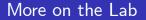
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• For big decisions, satisficing is unlikely to be prevalent because a mistake could cost an agent big time. So **behavioral behavior** should be visible if it is present.

#### The Role of the Lab



• Due to the presence of many other factors (noise) that can cause apparently anomalous behavior, to isolate the choice problem from these other factors, testing has been moved from the classical laboratory of the real world to the experimental lab.



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It is often context that is important in behavioral theories.

# Throwing the Baby Out with the Bath Water



• If there is something to behavioral economics, we should consider revising our theories, of course.

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# Throwing the Baby Out with the Bath Water



- If there is something to behavioral economics, we should consider revising our theories, of course.
- But this does not mean throwing the baby out with the bath water.

• It does not necessarily imply, for example, that we should not be using supply and demand (*correctly*) in a classical competitive market.

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- It does not necessarily imply, for example, that we should not be using supply and demand (*correctly*) in a classical competitive market.
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- It is possible that these are at the fringes of applications of the theory, or are small enough in magnitude for large markets that the classical theory works well enough, perhaps due to aggregation across agents.<sup>3</sup>

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- It is possible that these are at the fringes of applications of the theory, or are small enough in magnitude for large markets that the classical theory works well enough, perhaps due to aggregation across agents.<sup>3</sup>
- Careful and *scientific* reading of the evidence does not imply that: the whole theory should be scrapped and replaced with something else, preferably not involving economists at all. Regional artists seem to rejoice at the latter prospect, since it means they don't have to learn basic economics. But in my opinion, you've got to know something to criticize it.

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- When people consider moving or actually move to a new city, there generally remains much uncertainty about their new circumstances, for example their commute, their neighborhood and their schools.
- Although much information can be gleaned from the internet and from current residents, the residual uncertainty can be substantial.

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• What are its implications for the way we look at cities?

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 Or do loss aversion and endowment effects cause stickiness in the migration decisions of households?

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- In other words, it is hard to isolate the effects of interest from noise.
- So the experiment that would follow naturally, not context free, is to compare in the lab decisions of consumers without the endowment of a house and location (but just a budget, like a new migrant to a country), and consumers who are identical but endowed with a house in a community.

## Isolating Misbehavior II

 One could also look at real world data, for example comparing locations chosen by new immigrants to a country with locations chosen by people already resident in a country, though the controls would have to be extensive. In other words, are location decisions sticky, and if so, why?

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- If they are sticky, there might be a role for government to improve *ex post* welfare by subsidizing moves through the tax system.



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- Consider first a standard equilibrium model of cities. Suppose for simplicity of exposition that all people are identical. The standard model has no uncertainty or moving costs.
- Then people will move to the city where they are happiest. Only those cities that offer the highest level of happiness will have positive population. Those cities that offer a lower level of happiness will be empty. (The resulting equilibrium allocation might not be first best due to externalities.)

# Analysis Under Uncertainty

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- This process will continue until only the cities at the top of the distribution are left, and all consumers know that. Thus, under the assumptions of the standard model, and using expected utility theory, only the top cities survive.

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- Cities with relatively unhappy residents do not empty. Such agents are fearful of moving because they believe that the city they move to could be worse than their current city of residence.
- There are applications of this idea to the welfare economics of systems of cities and to explaining the size distribution of cities as well as to the interpretation of quality of life indices.

# Conclusions



• Are the location decisions of firms and consumers sticky, and if so, why?

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