MIDAS

Migration, Intensification, and Diversification as Adaptive Strategies

New insights into migration, and new data needs

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The MIDAS Motivation:

Migration modeling goes back to the 19th century 'gravity model' (Ravenstein 1885)

However, these models have places as the unit of analysis, rather than people.

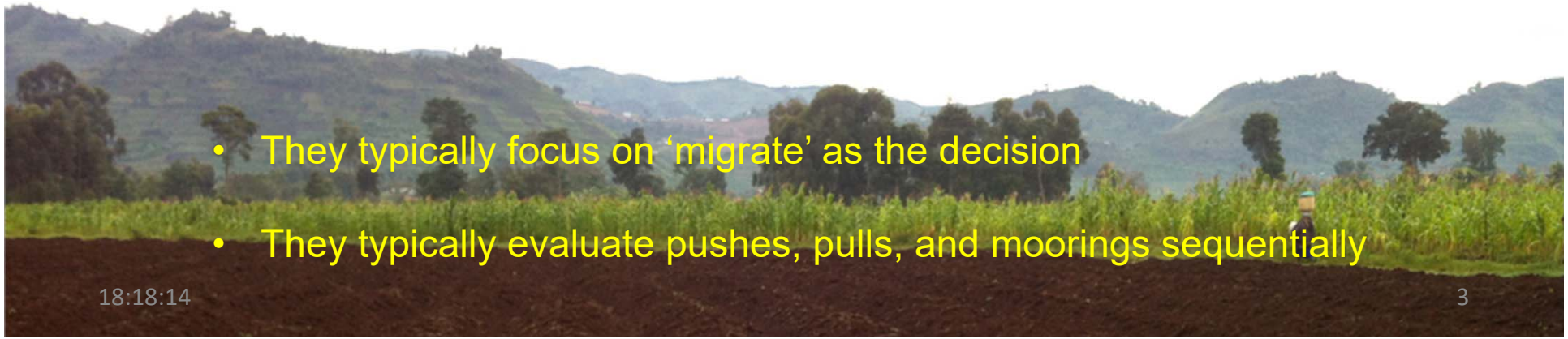
In contrast, we have decades of theory, beginning with Bogue (1969) that examine migration as an individual decision.

The MIDAS Motivation:

Progress in modeling individual/agent-based migration decisions is slow:

- Klabunde and Willikens (2016) identified 27 models
- Thober, Schwarz, and Hermans (2018) identified 15 models with environment as a driver

Things that bug me about existing models:



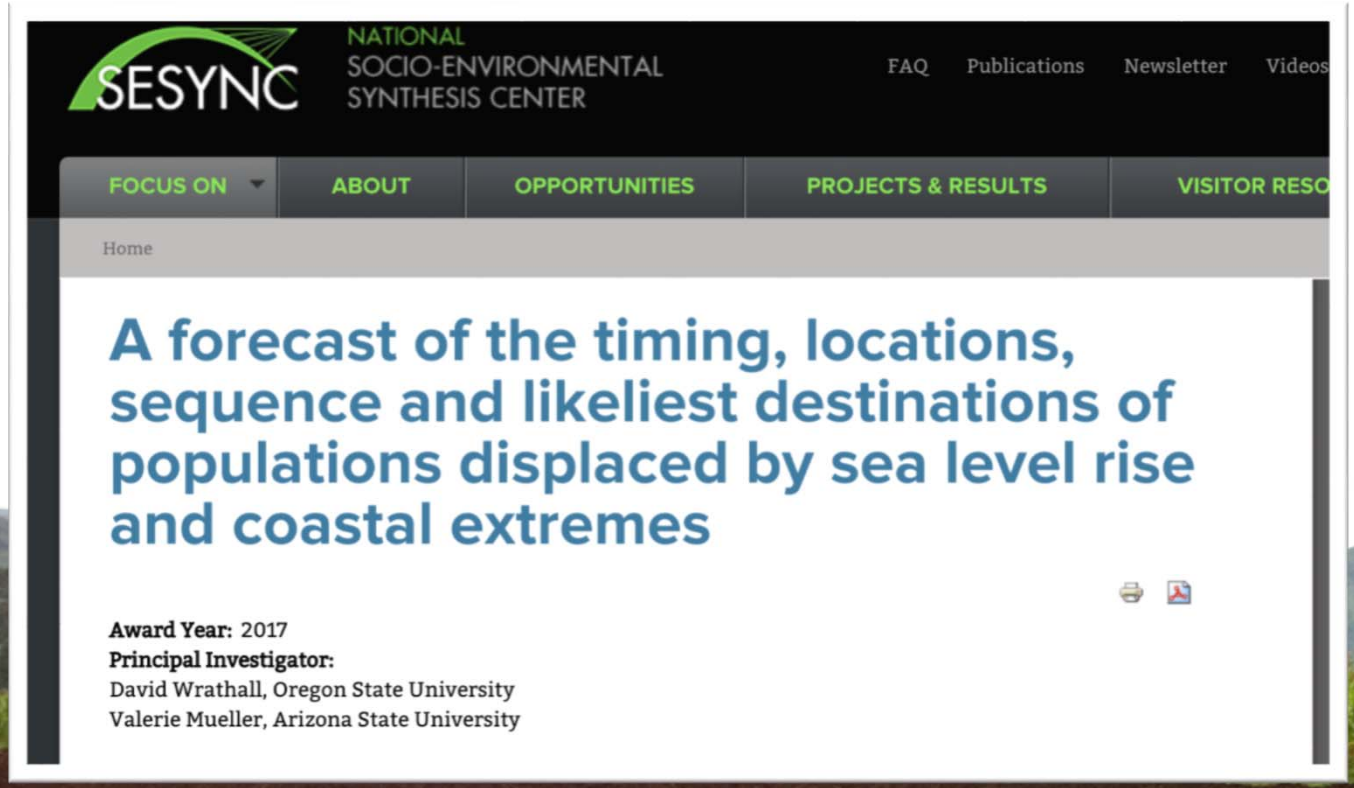
- They typically focus on ‘migrate’ as the decision
- They typically evaluate pushes, pulls, and moorings sequentially

The MIDAS Motivation:

So, I made my own model

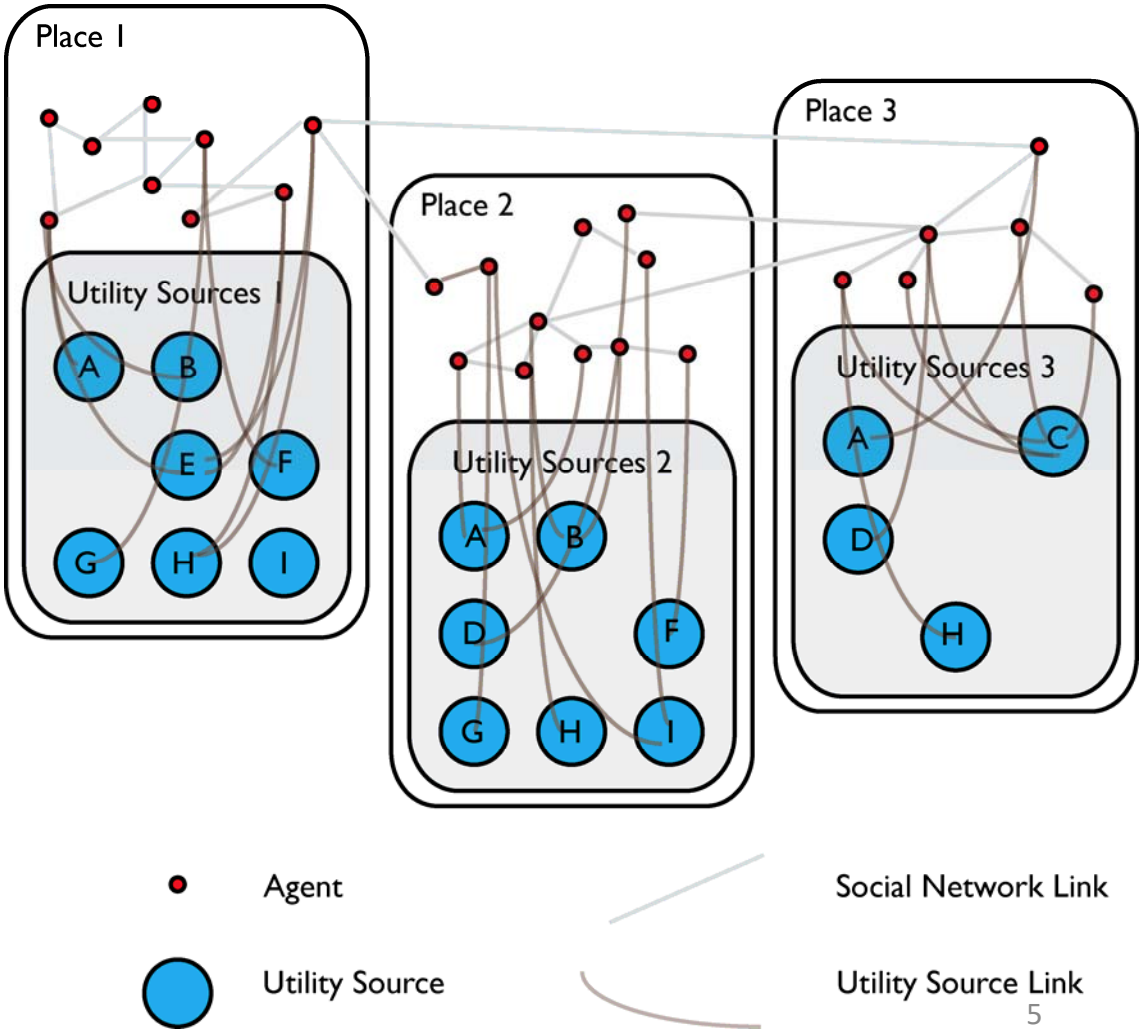
…and was very lucky to have it taken up by a big project

(this never happens)



The MIDAS Basics:

- Agents located in places, embedded in social networks, deriving utility from different layers
- Sharing resources and information across network
- Decide upon the best portfolio of utility layers
- If this portfolio is in another location, agent migrates

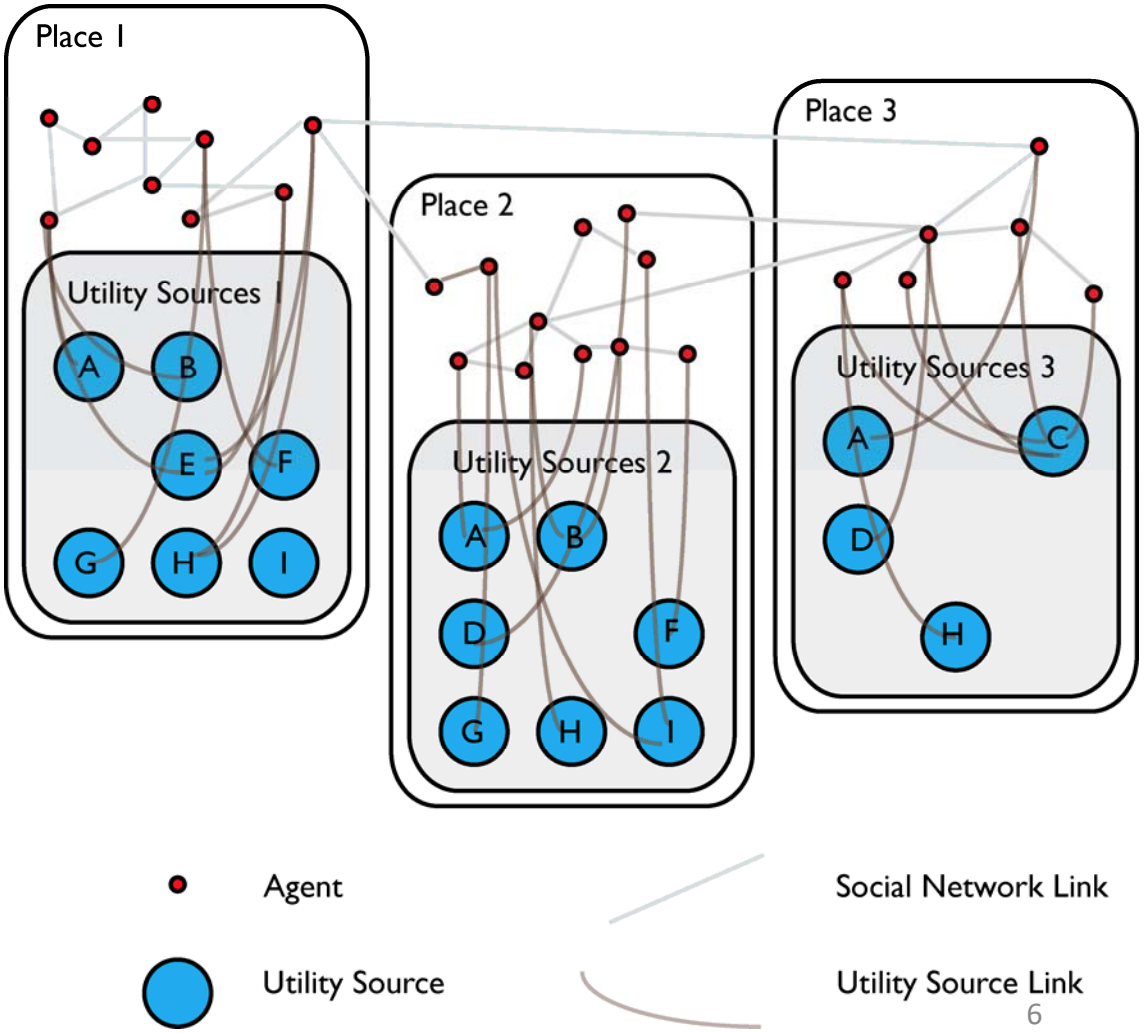


The MIDAS Basics:

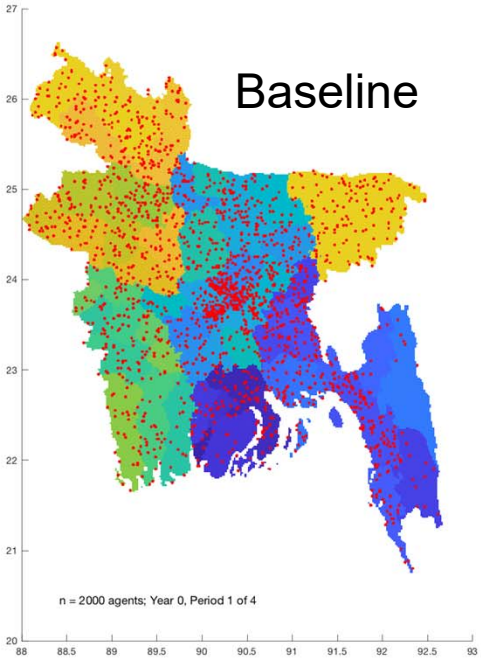
Key MIDAS features:

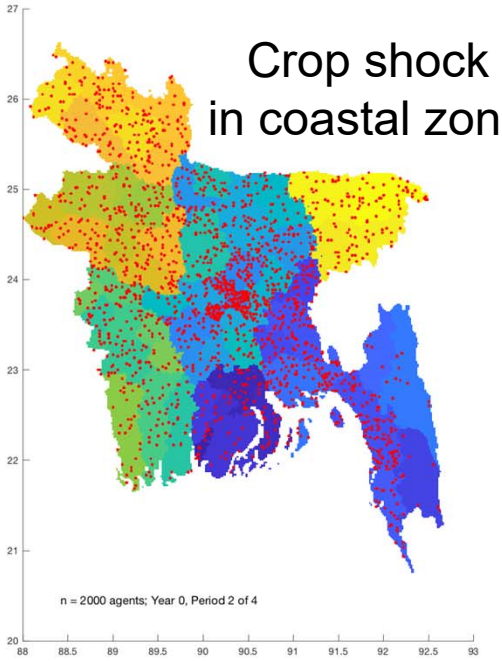
1. Simultaneous consideration of pushes, pulls, and moorings

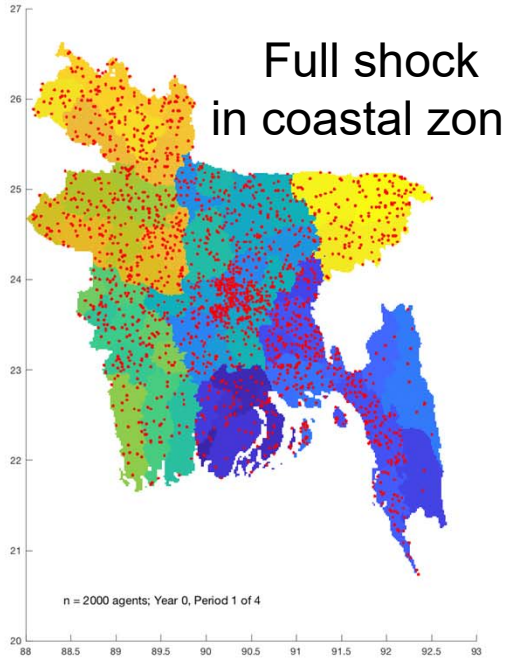
2. Migration as an emergent strategy among others



MIDAS in action







It takes a lot of data to get MIDAS running.

One of my hopes today is to talk about how to better link/collect data and big models

On Data

Many people migrate, BUT most people DON'T migrate

Random sampling is impractically expensive for a migration study

Large integrated household surveys and censuses DO often ask about migration

(bless them)

But can't focus on decisions or the other behavioral factors we know can matter

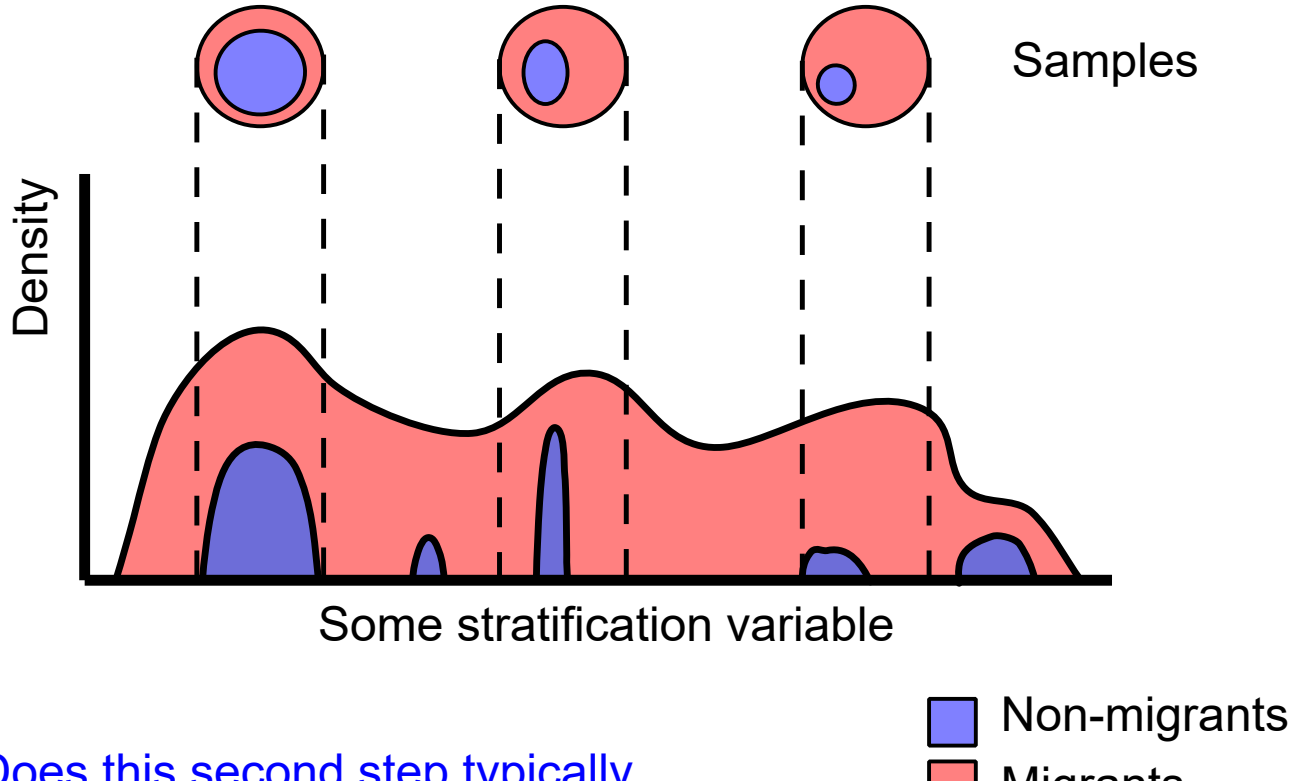
Instead, typically have migrant-focused sampling (quota, snowball, etc.)

On Sampling

Best case – we stratify along some key variable and sample strata

Samples can link back to population via stratification dataset (probably a large household survey)

BUT Does this second step typically happen?



What groups of people are missing?

Often, many different groups whose choices and adaptations lead to ‘stay’

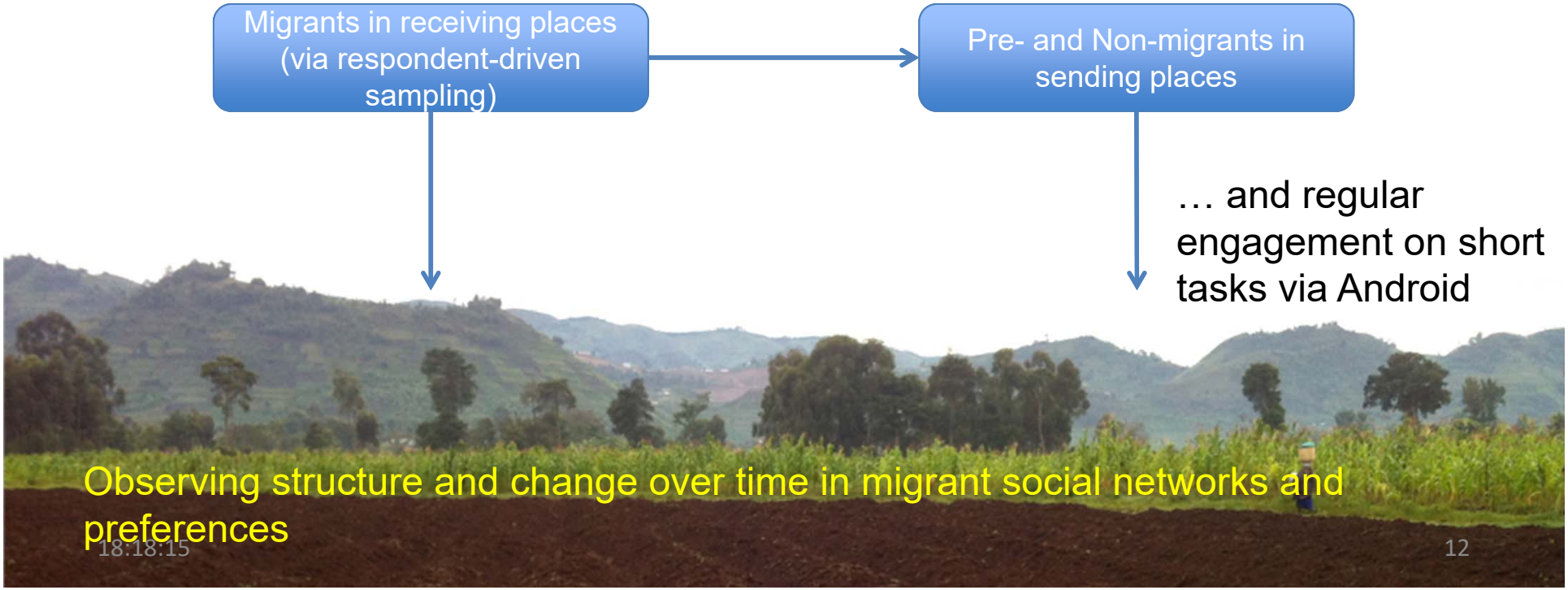
Better unpacking these groups can help us to identify who might move next

What kinds of data are missing?

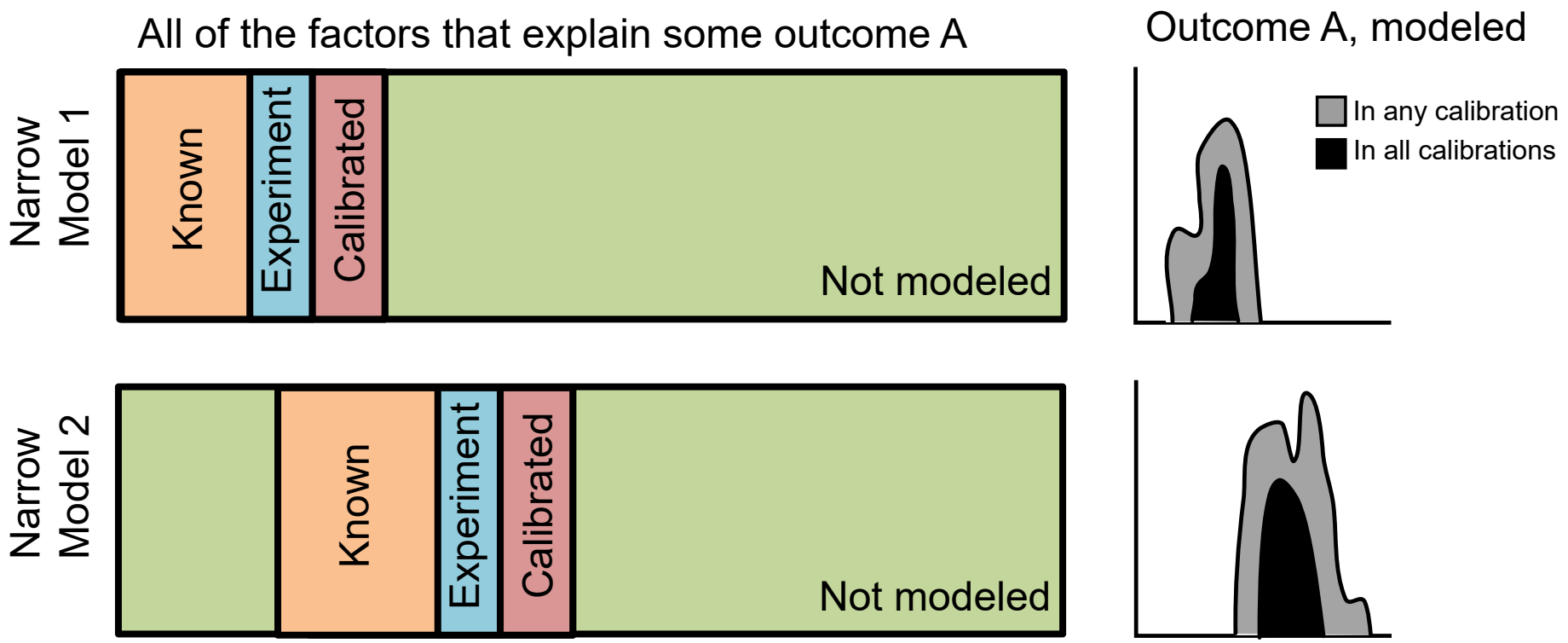
- Unobserved preferences
- Trade-offs individuals face choosing across income, access to family, access to place, etc.
- Value placed on different things

The data mode I propose

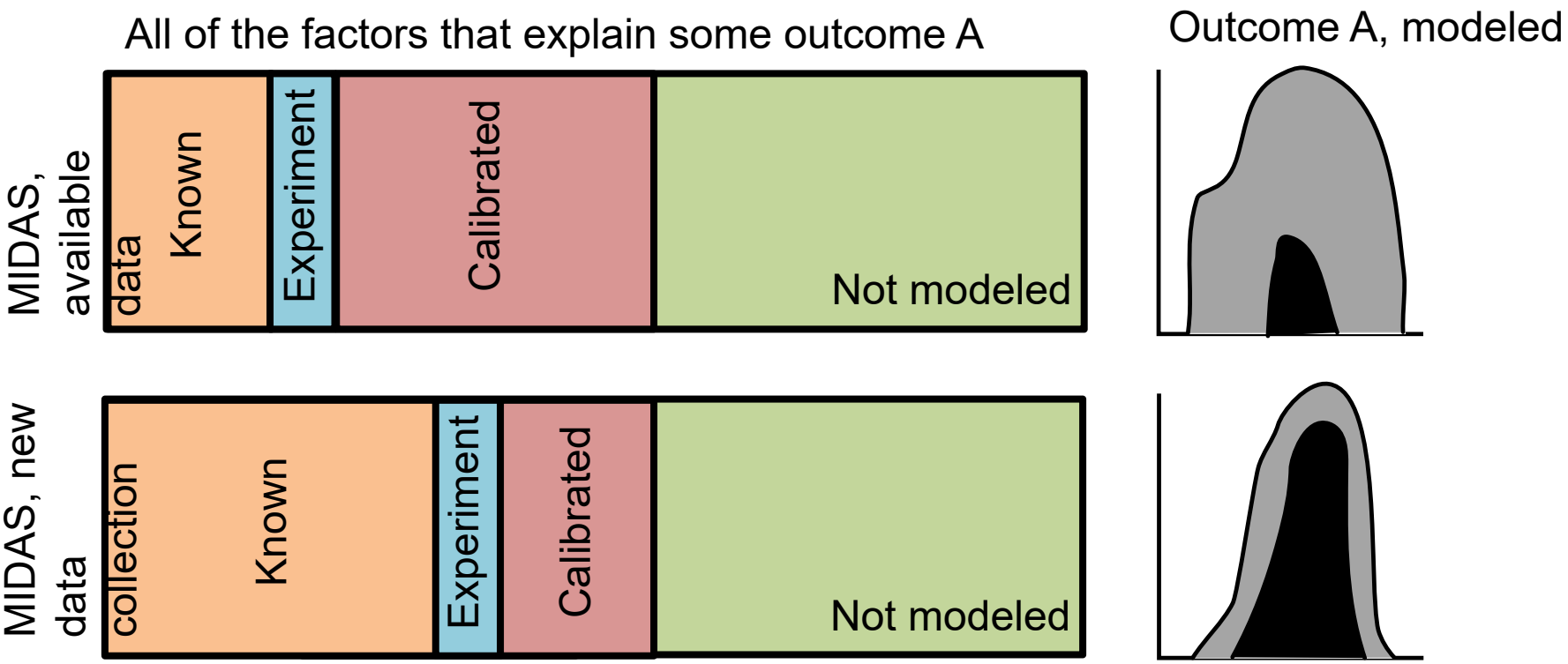
In most of my current proposals, I ask for funds for the following design:



Why so much data?



Bigger models for complex decisions



Last slide – what am I saying?

Data demands for modeling often exceed those for hypothesis testing

There are approaches to i) see where you get with existing data, and ii) collect new data with modeling in mind

They all start with talking to modelers