

PAI 705

McPeak

Lecture 2

Paradigms. The fundamental models or frames of reference we use to organize observations and reasoning (p. 32). Wait, the earth moves around the sun?  $E=mc^2$ ? Gender is a social construct? Intra-household decision making merits analysis, and households don't 'make decisions'?

Macrotheory – large aggregate explanations. Marxism, Dependency theory, macroeconomic IS-LM models. Understanding the big picture of why societies are as they are and how they interact.

Microtheory – social life at the level of individuals or smaller groups. Farmer-herder interactions in rural Mali, intrahousehold bargaining models, recruitment to Al Shabab.

Some broad overview of social science paradigms.

### Early **Positivism**.

Comte, 1798-1857; the start of Sociology.

Separation of inquiry from religion.

Postulated three stages of history.

- One, the earliest was the theological stage, where the understanding of the natural world was through religion.
- The second stage of history is metaphysical, and replacing understanding of how the world works as due to “God” with “Nature” and “Natural Laws”.
- Comte saw himself as at the start of the third phase, where the natural law phase of understanding the natural world would expand to the social world to understand the natural laws of the social world.

Positivism. Scientific truth would be positively verified by empirical observation and logical analysis of what was observed. There is a knowable objective reality. “The Truth is out there”.

**Social Darwinism.** Society evolves from more primitive stages to more sophisticated stages through a process of survival of the fittest. Social evolution as a force of progress, and competition accelerates the process. Associated with Spencer (1820-1903)

**Conflict Theory**, in particular class conflict via Marx (1818-1883). Social outcomes are a result of domination by one group and the fact of being dominated for other groups. Has been applied to class, ethnic, gender contexts.

- Feminist paradigms that view and understand society through the experience of women and explore the nature of differences and deprivations with regards to males and females.
- Critical race theory. Understanding society through exploring social identities that are associated with racial characteristics.

**Symbolic Interaction.** Simmel (1858-1918) looking at smaller groups, how individuals interact with each other. It grows out of conflict theory. Looking at the individual and the construction of the individual self as the person relates to society. Communication through language and other symbolic exchanges. How we construct an image of ourselves and the self we construct for others to see. Looking at how these constructed selves will shape future interactions.

**Ethnomethodology.** Looking at how people approach, and understand the world around them. How they react to people breaking the rules / violating the norms. Stand facing the back of the elevator. Picking up the trash on the quad. When do people clap during a speech?

**Structural Functionalism.** Viewing society as an organic whole. In doing this, we start to see the functions played by different pieces of the overall whole. What is the role of the police? What is the role of the criminals? What is the role of the victim of crime? Seek to identify the parts, and by understanding the parts reveal the whole. In a current incarnation, resilience theory.

**Postmodernism.** Questions the positivist assumption that there is an objective reality out there for us to discover through our observation, analysis, and experimentation. Observations are rooted in subjective interpretations and these interpretations are filtered through social

position. Things are probabilistically true, and have yet to be contradicted, but are not 'true'.

Elements of social theory.

**Observations** – seeing, hearing, touching, tasting, and smelling. Snow is cold.

**Fact** – a phenomena that has been observed. Snow is (or is not, or this being Syracuse in January both is and is not) on the ground right now.

**Laws** – Universal generalizations about classes of facts. Snow falls to the earth due to gravity.

Need to sift through coincidences to arrive at laws. From 1920 to 1960 the major candidate for president with the longer name won the election.

Laws are sometimes called **Principles**. Principles of Economics. The law of demand is one of the principles of microeconomic theory. These laws / principles don't explain, they summarize the way things are. We need to go to theory to explain why the law does what it does, why the principle holds. Laws are observed regularities.

**Theory**. A systematic explanation for why we are seeing the specific observations that we are seeing. Explains what we are observing by appealing to concepts.

**Concepts** are abstract elements representing classes of phenomena within a field of study. We create these concepts. A **variable** is a special kind of concept that corresponds to a collection of attributes. A variable has different clusters of these attributes that are different across observations. "Juvenile delinquency" – operationalize juvenile, operationalize delinquency.

**Axioms / postulates** are fundamental assertions about what is true. They are the foundation of the theory. “More is better than less”. “Indifference curves do not cross”.

**Propositions.** From the axioms, we advance to making predictions about the relationship between concepts. Since more is better than less, I propose that there may be a relationship between household income and the probability a child will become a juvenile delinquent. I propose that children from poorer households are more likely to become juvenile delinquents.

Based on the propositions, we operationalize the prediction with a specific prediction about empirical reality that we can test.

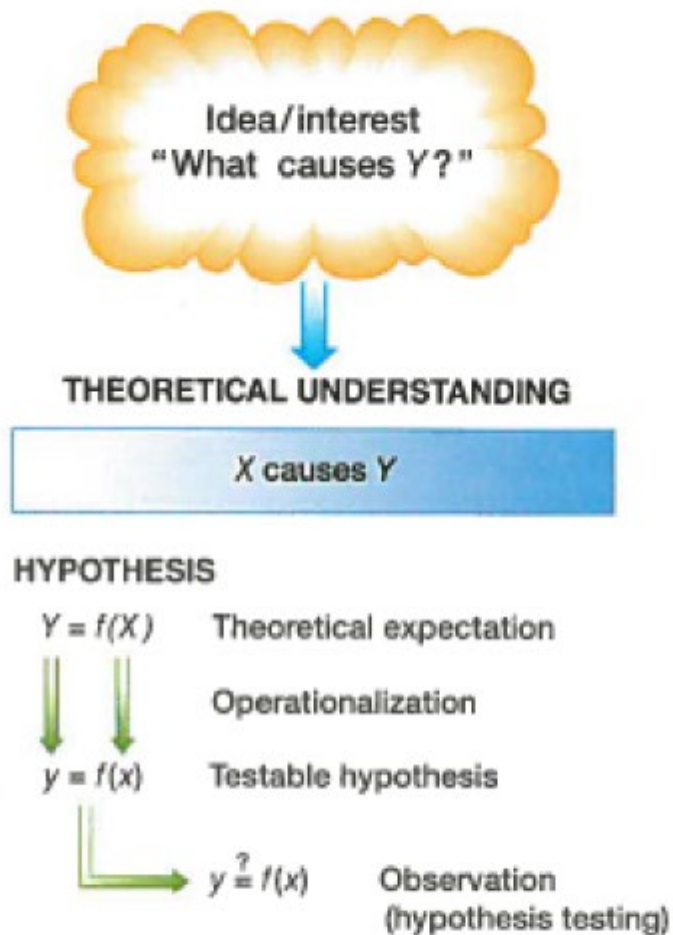
This is our **hypothesis**. I hypothesize that more than 50% of children held in NYS juvenile delinquency centers come from households with annual incomes below the median.

This is testable and potentially proven false.

Also possible: it is confirmed but the reason is not what I say it is; what if wealthy households can get better lawyers to represent their kids?

The traditional model of science.

Two Logical Systems Revisited ■ 47



**FIGURE 2-2**

**The Traditional Image of Science.** The deductive model of scientific inquiry begins with a sometimes vague or general question, which is subjected to a process of specification, resulting in hypotheses that can be tested through empirical observations.

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(Babbie, page 47)

We have a theory. Say for example I postulate that ambiguity in land rights leads to farmer herder conflict. Clarifying land use rights will reduce conflict.

Now I need to operationalize it.

What is 'conflict'?

Who is a 'herder'?

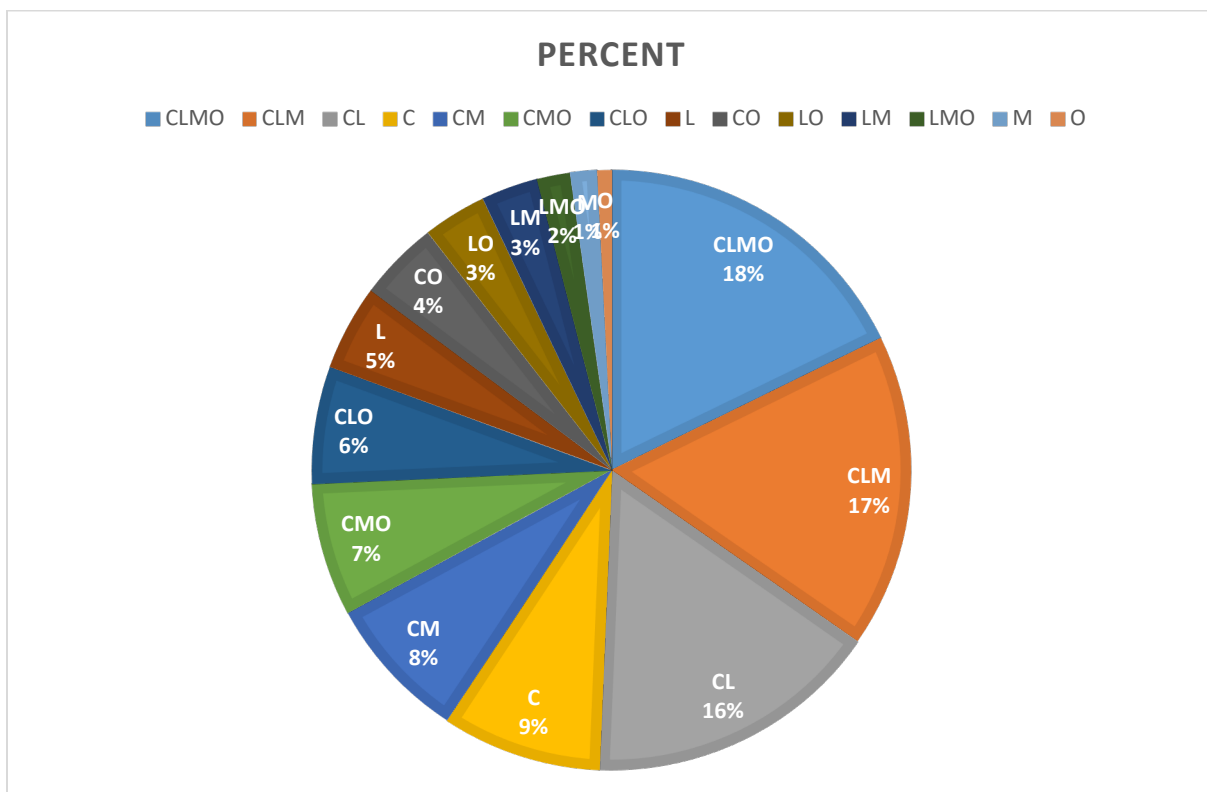
Who is a 'farmer'?

What are 'land rights'.

What do I mean there is 'ambiguity'?

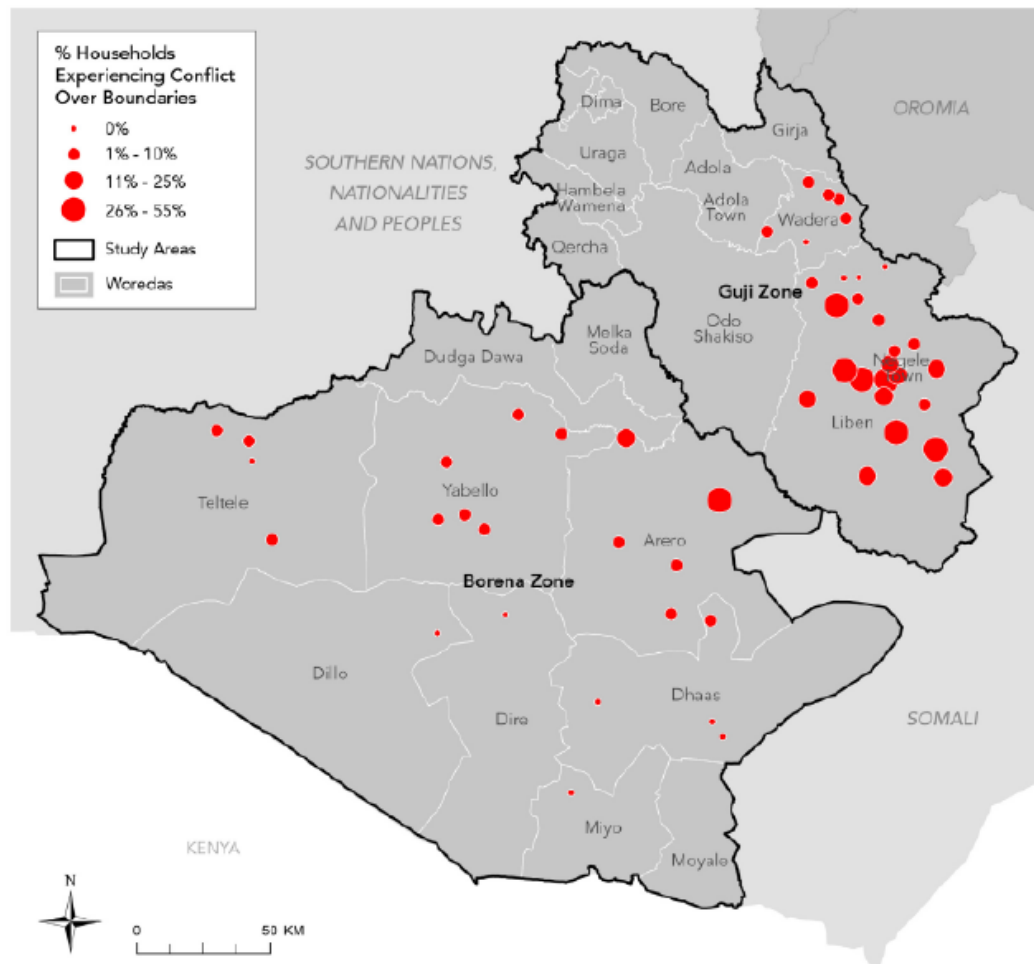
What do I mean when I say we can 'clarify' land use rights?

Complicated reality of household income diversification patterns in rural Mali. How do I sort this into herder or farmer?



C – Cultivation, L- Livestock, M – Migration, O – Other

What about conflict; what do I mean by conflict? What kind?



Map Credit: Nicole Walter

Figure 2. Boundary conflict incidence by Kebele (2014).

Boundary conflicts in southern Ethiopia. [World Development](#)

This was the baseline study. There is a clear spatial component to where these conflicts are happening. The project was designed to reduce conflicts by making collective land titling more formal. It was going to take place (treatment) in Borana zone and Guji zone was the control.

In analyzing the baseline data, we were largely following an inductive approach.



For the endline, we can test the hypothesis that the intervention had an impact.

I need to specify exactly what I am going to use as my operational definition in measuring a variable. Specifically setting out what is my system of measuring and assigning observations with different attributes for the variables.

**Observation.** I need to see some examples of cases where land use rights are clarified and evaluate the outcomes. Ideally, I want cases where the rights are clarified as well as cases where they are not clarified so I can start to assign some causal interpretation to the patterns I see in the outcome.

A **null hypothesis** is a statement that there is no relationship between the variables under consideration. We reject the null of no statistically significant relationship. In regression, the t-test / p value is testing that the coefficient is statistically different from zero. The null is that the coefficient is not different from zero. The **alternative hypothesis** is that it is different from zero.

Deductive theory construction.

What is a question of interest?

What has been done on researching answers to this question already?  
Literature review, snowball sample method to get a sense of who has done what already. Reading bibliographies to follow up on links.  
Looking at authors other works once you establish who has done what.

What specifically is my topic and what do I have that is new and not been done already?

What is the range of the phenomena I am trying to explain with my research? To whom does it apply, over what time period, in what domains of their social life?

What are my major concepts and variables? How am I going to measure them and use the variables to answer my question of interest?

What are known propositions about the relationships between the concepts and variables I am working with?

Through logical reasoning, advance from these propositions to draw conclusions about your specific topic.

Inductive Theory Construction.

Observing, then trying to discover patterns that lead to universal principles.

Start with data rather than theory.

Glazer and Strauss (1967) describe inductive “Grounded theory”. Grounded theory starts with data and through review and refinement sorts through the data to develop categories and concepts. It leads to new theories that are generated from the empirical patterns in the data that are revealed through analysis.

You do not review the literature in advance, with the idea that the existing findings will lead you to see patterns that conform to existing understandings rather than being guided by what your data is telling you.

Here, we use the field research to collect direct observations.

We develop theories through observation and analysis.

Observe behavior and try to identify patterns.

Develop larger theory by reference to what can explain the patterns of behavior you see.

Categorize, refine, recategorize, to put structure on your analysis.

From the book, deductive compared to inductive in a series of graphs:

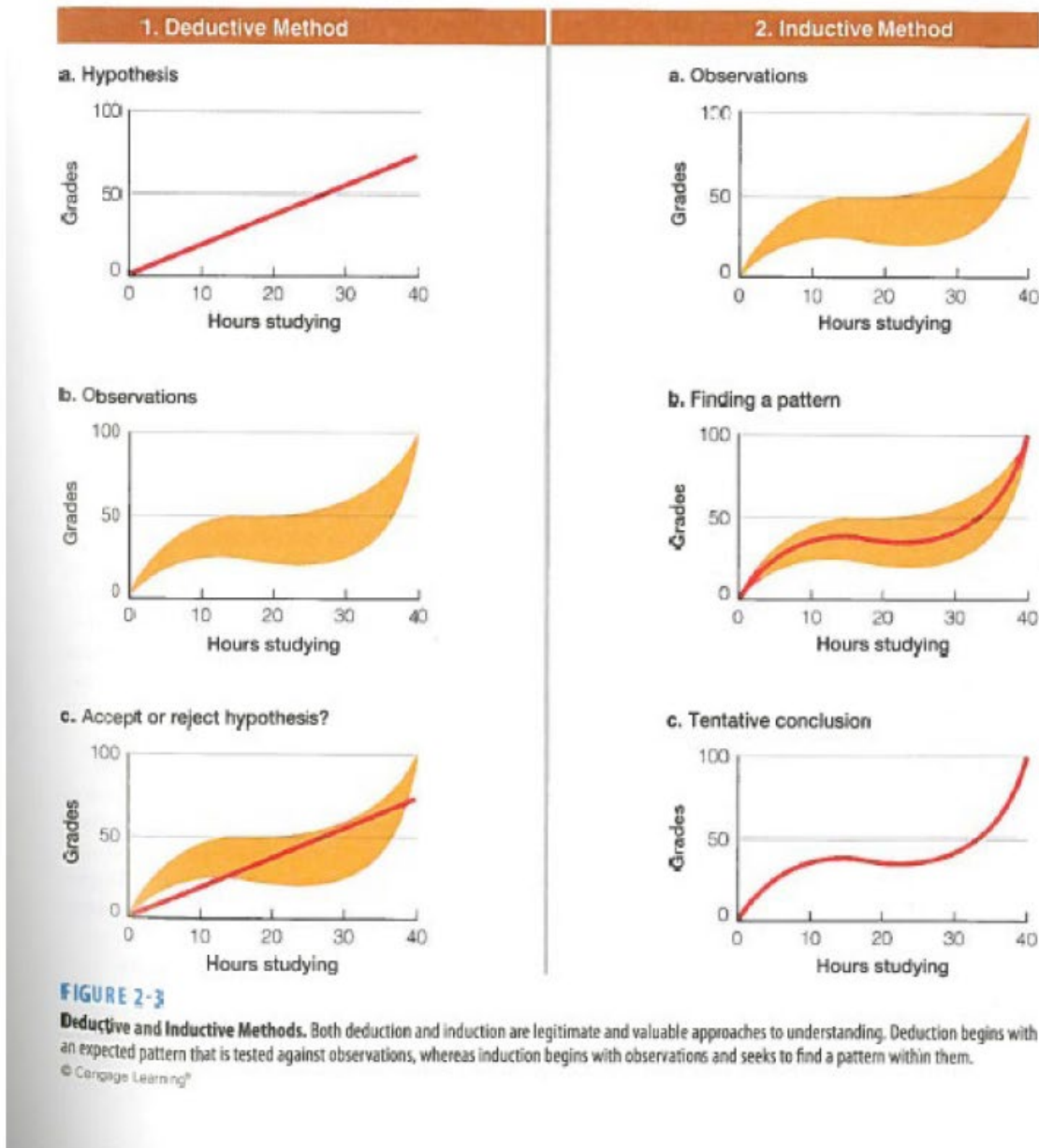


Figure 2-3. Babbie, page 51.

## The Role of Theory in Social Science.

[Krugman's article.](#)

The case presented is 'high development theory'. This is how Krugman describes the theory of which Hirschman was part in the 1940s and 1950s. The core idea we are particularly interested in is captured in this passage:

*"As I will argue, the crisis of high development theory in the late 1950s was neither empirical nor ideological: it was methodological. High development theorists were having a hard time expressing their ideas in the kind of tightly specified models that were increasingly becoming the unique language of discourse of economic analysis. They were faced with the choice of either adopting that increasingly dominant intellectual style, or finding themselves pushed into the intellectual periphery. They didn't make the transition, and as a result high development theory was largely purged from economics, even development economics."*

The case he is making is that the insights of Hirschman and other scholars of early development theory were not fully realized because they were not presented in the formal modelling and mathematical representation of social science theory that was central to economics at that time.

Further, partially that was because the theory was not ready for the expression of these ideas.

What does he mean by "high development theory"?

Hirschman had a focus on forward and backward linkages, and the high development theory that Krugman is summarizing is characterized by an idea of virtuous cycles.

It is a view of how things will occur in development economics that relies on feedback cycles and multiple parts of the economy expanding.

This view of the world implies that a process of development needs coordination and involvement of government to make sure different parts of the economy move forward.

There is an idea that if coordination and sequencing are not present, a country can be trapped in a lack of development and stagnate.

A key point is that 'high development theory' has as a key assumption the role of increasing returns to scale.

Note at this point in economics, the key models in use revolve around perfectly competitive markets and constant returns to scale.

For example, Solow and classic production functions of the Cobb Douglas type.

But rather than engage this directly, the high development theorists remained vague and their ideas were not to flourish until much later when new models and theories had become established.

Krugman compares the evolution of knowledge / ignorance by the example of maps of Africa.

The idea is that the map of Africa in some way is characterized as an evolution of ignorance rather than a linear process of better and better maps.

The first maps were not great, but contained features of the interior that were mostly accurate based on reports of what was in there. They got the Niger River, they were more or less right about where Tombouctou was.

As more exploration of the coast was completed, the coastal map got better but the map of the interior lost detail.

The standard of evidence got more stringent and that which we had heard about in the interior disappeared as we could not precisely locate it and defend the placement.

What happened to high development theory is described as following a similar process. The core models we taught you in 723 start with perfect competition, and then we take you to monopoly. Those ends of the spectrum have been pretty well explored and were pretty firmly in place at the time of Hirschman's writing.

We then move on to imperfect competition, and draw on strategic actions and complementarities. This draws on concepts such as game theory that more fully developed and flourished after the 'high development theory' era.

As the ideas of circularity and self – reinforcing cycles key to high development theory were not possible to express in the context of the models of the time, it fell from the discourse. Krugman writes:

*Economic theory is essentially a collection of models. Broad insights that are not expressed in model form may temporarily attract attention and even win converts, but they do not endure unless codified in a reproducible -- and teachable -- form. You may not like this tendency; certainly economists tend to be too quick to dismiss what has not been formalized (although I believe that the focus on models is basically right). Like it or not, however, the influence of ideas that have not been embalmed in models soon decays. And this was the fate of high development theory.*

He again takes us to the larger discussion of the role of models in social science.

First, he notes any model is a falsification. It is not the full system, it is a representation of the full system.

The example of the dish pan model of the climate in the pre-computer era of modelling. Water, heat on the outside, spinning, and flakes. You get jet streams, you get fluctuating patterns....Many essential elements are revealed.

He states about modeling:

*You make a set of clearly untrue simplifications to get the system down to something you can handle; those simplifications are dictated partly by guesses about what is important, partly by the modeling techniques available. And the end result, if the model is a good one, is an improved insight into why the vastly more complex real system behaves the way it does.*

He sets out the big push model for the closing part of the paper.

The inner workings of this model are not key to what we are trying to get from this essay, but to give you the core insights, we have the following.

In essence, the modern sector has increasing returns to scale, the traditional sector has constant returns to scale.

For investing in the technology of the modern production technology to replace the traditional production technology you need a market to absorb your increased production.

If you invest in the modern technology, you can pay workers higher wages than they get in the traditional sector and they will come work for you.

Workers with higher wages can buy more stuff from you and other producers.



If only one sector of the economy brings in the modern technology, there is no market for the increased production since wages did not go up in other sectors.

Modernization can happen if coordination happens to bring modern technology in to many sectors at once.

A role for coordination and for government to take the role on resolving this potential trap that each firm acting in their own self-interest will not make an investment that is in their collective self-interest.

This kind of insight, that we are dealing with a world of potentially Pareto sub-optimal outcomes by playing best response and arriving at a Nash Equilibrium, was a methodological innovation in social science that was not there in time to support 'high development theory' at the time it first appeared.

It was only once the tools had developed that the core concepts could re-enter the world of models and development theory.

This gets us back to the ideas we started this section with. What we think we know is nested in paradigms of knowledge.

Paradigms change and evolve.

Research and understanding don't just allow us to advance by having more data points to fill in our understanding.

The research process also progresses by giving us whole new ways of modeling and understanding how things are related.

Inductive and deductive can interact. This is a paper I was part of writing, where the process of thinking it through was largely inductive at the start. People described different ways the decision making might be happening, we used that to develop a theory and then returned in a deductive way to compare the theories to the evidence.

<http://ajae.oxfordjournals.org/content/88/3/525>

This model is possible because of the increased prominence given to game theory in microeconomic training.

There was also a growing interest in the literature to look at decision-making within a household by using game theory concepts. In the 1980s there was a major innovation in our theory of the consumer and household decision making.

I read those as a graduate student in the 90s and used them to help understand what I saw in my field work in the late 90s.

I first wrote this up as an idea in 1998.

I was stuck and brought up the idea with Cheryl Doss, and together we turned it into an article in 2002.

We had it ready to submit by 2003. It got rejected at Journal of Political Economy (they even sent the check back!).

We submitted to American Journal of Agricultural Economics. Three reviewers and two rounds of reviews and comments from the journal's editor.

**Received:**01 February 2004; **Accepted:** 01 October 2005; **Published:**01 August 2006

New theories will lead to new ways of thinking about things will lead to new insights that leads to new theories.