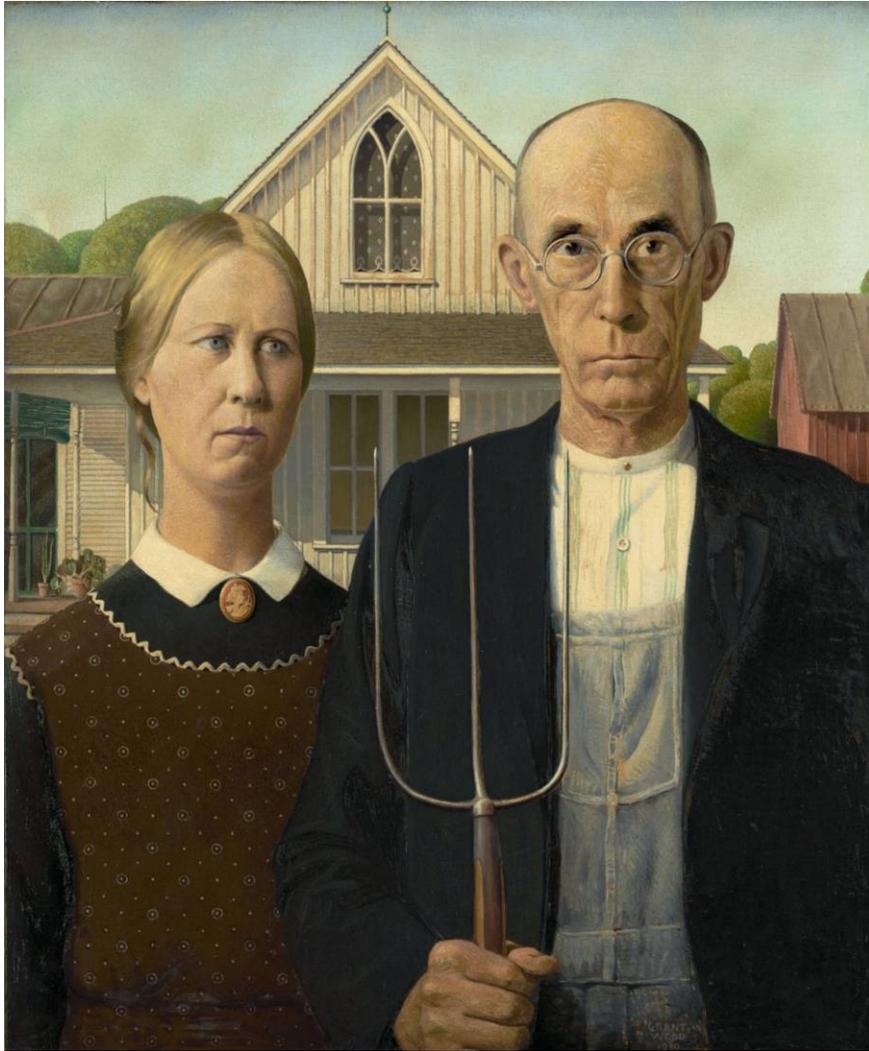


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Eastern Pennsylvania Farmers'  
Thinking about Causality (and Luck)  
... Preliminary Findings

John B. Gatewood  
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SASci / SfAA Meetings, Pittsburgh, PA ... 25 March 2015



Different kinds of farmers

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...but fundamentally similar.



# Abstract

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Eastern Pennsylvania farmers show strong similarities with respect to what factors are viewed as causing an operation to be successful. On the other hand, there are some differences in the extent to which they think they can control their farming success.

While weather is critical and regarded as uncontrollable, differences stem from farmers' abilities, or lack thereof, to cope with price fluctuations for their field crops. Much of this probably reflects inter-individual differences in what social psychologists call *locus of control*, but it also reflects prior investment and marketing decisions, such as buying expensive grain-drying equipment so they can wait for prices to improve or developing relations with direct-retail customers. Farmers also differ in the role they attribute to God and/or luck.

Based on preliminary and qualitative data, this paper reviews similarities and differences in farmers' causal thinking.

( Research funded by NSF, Grant# BCS-1330936 )

# Outline

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1. Background – Fieldwork Setting
2. Variations among Grain Farmers
3. Factors Believed to Influence Farming
4. Explaining the Unexplained
5. Summary



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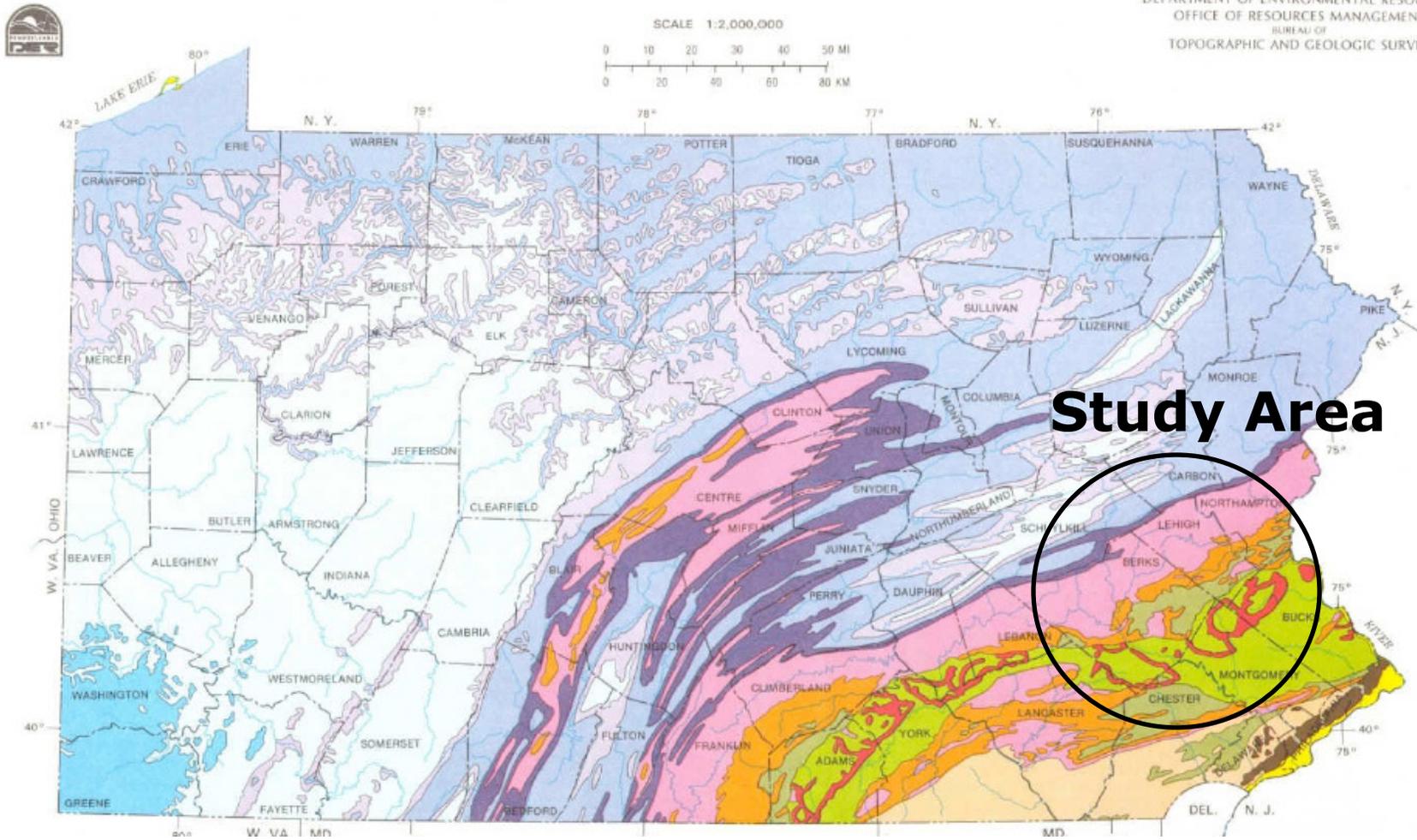
# 1. Background – Fieldwork Setting

# Pennsylvania's Geology and Soil Types are Complex

MAP 7

GEOLOGIC MAP OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
OFFICE OF RESOURCES MANAGEMENT  
BUREAU OF  
TOPOGRAPHIC AND GEOLOGIC SURVEY



# The 'Greater' Lehigh Valley

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- Location & Size:
  - 90 miles west of New York, 65 miles north of Philadelphia
  - Study area was ~50 mi. (E-W) x ~30 mi. (N-S)
- Settlement pattern:
  - 3 small cities (Allentown, Bethlehem, Easton) with many suburban tracts and smaller towns surrounding
- Population:
  - 750,000 and *growing*
- Economic base:
  - originally agricultural ...settled in the mid-1700's
  - subsequently heavy industry (Bethlehem steel, Mack trucks, manufacturing)
  - now diversified (warehouses, electronics, biotech, education, etc.)

**NET EFFECT:** open spaces are being "developed" at a rapid pace, leaving smaller plots of *non-contiguous* farmlands

# Diverse Kinds of Farms

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- Commercial grain farms
- Beef farms [small-scale]
- Dairy farms [small-scale]
- Poultry farms ... turkey, chicken
- Exotic animal farms ... llama, alpaca, buffalo
- Orchards ... apples, pears, berries
- Organic vegetable farms
- “Educulture” farms

# A Pilot Study

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This research is part of a multi-PI, collaborative project on primary food producers' conceptions of nature and causality (Giovanni Bennardo, shepherd of the flock)

- Specific Goal of My Pilot Study:
  - Interview a small number of farmers about what factors, both human and non-human, affect the success of their operation
  
- The Farmers:
  - Purposive Sampling ... interested in 'range of variation' (assisted by Penn State Agricultural Extension Agent)
  - 14 interviews with people involved in four of the eight kinds of farming
  - Done at farmer's home, sometimes with spouse participating, and lasted from 2 – 3½ hours
  - Almost 500 single-spaced pages of transcripts



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## 2. Variations among Grain Farmers

# Grain Farm in Berks County, PA

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# Commercial Grain Farms

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- All farms in this category grow “*field crops*”
  - corn and soybeans (most common)
  - wheat and hay (usually less important)
- Some also have a few dairy or beef cows
- A few also grow Christmas trees
  
- NOTE: PA farms are **small** compared to those in Midwest
  - 200 – 4,000 acres\* being worked (81–1,619 hectares)
  - AND, farmers lease most of the land they work from multiple owners
    - total acreage is scattered in small plots over several miles

\* 1 acre = .4047 hectare

# A Few Statistics ...

Farmer	Number workers	Acres worked	Acres owned	Products	Soil quality	Yearly profits
Peter	8	4,000	2	"Custom" hay & field crops	Variable	\$100k
Dan	6	3,000	550	Field crops	Mostly good	\$150k
John	17	3,000	1,000	Field crops, Xmas trees, & trucking	Poor	\$100k
Don	3½	2,800	200	Field crops	Good	\$100k
Kyle	5	1,775	280	Field crops	Good	\$100k
Hank	2½	1,015	215	Field crops & 20+ beef cows	Variable	\$20k
Bill	4	650	250	Field crops & 47 dairy cows	Good	\$70k (?)
Keith	3	325	13	Field crops & 40 dairy cows	Poor	\$9k
Arnold	3	200	150	Field crops, trees, & 13 beef cows	Variable	\$10k



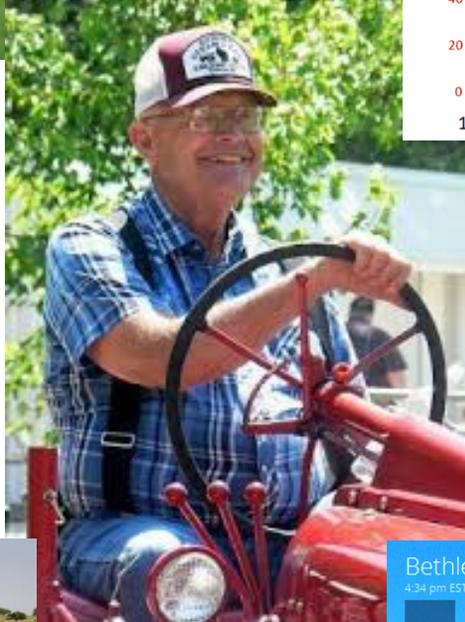
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### 3. Factors Believed to Influence Farming

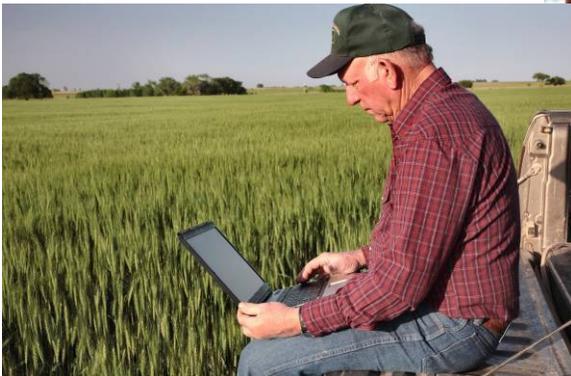
# Soil type / quality



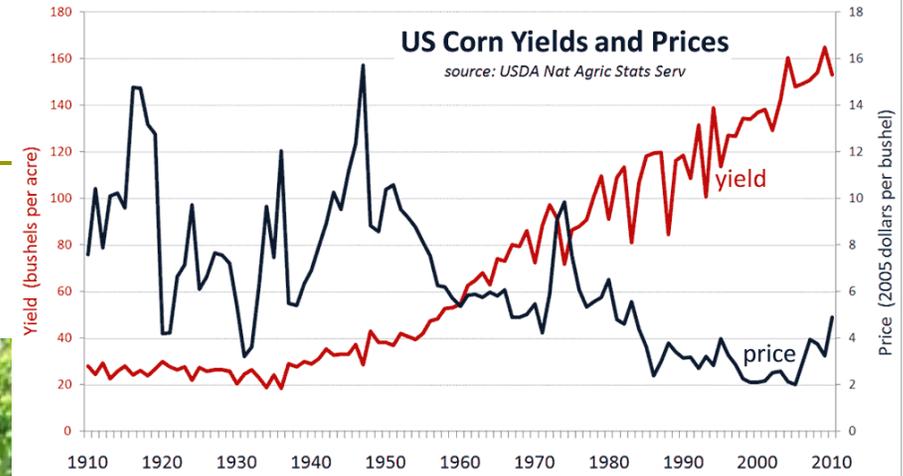
# Farmer's efforts and abilities



# Technologies



# Market prices



# Weather



# Five Main Categories of Causal Factors

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1. **Soil type**  
variable soil quality even within short distances in Eastern PA
2. **Farmer's work-ethic, knowledge, and skills**  
especially business/managerial skills and long-term planning  
(investment decisions)
3. **Modern technology**  
soil science, genetics, farm equipment, computers, GPS
4. **Marketing**  
marketing-decisions (when to sell products) &  
marketing-arrangements (where to sell products)...  
commodity markets OR direct-retail
5. **Weather**  
BOTH local/regional weather & national weather conditions

NOTE: All of these are viewed as mundane, secular factors

# Explaining Differential Success among Farms

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General agreement about the factors most responsible:

1. Soil type / nature of the land itself
  2. Farmer's willingness to work hard, knowledge, managerial skills, and long-term business planning
  3. Wise use of technologies, such as soil scientists, plant geneticists, no till planters, computerized and very detailed record-keeping, etc.
  4. Well-informed marketing-decisions (when to sell) and how products are sold (to whom)
- But, since these four factors are more or less constant for an experienced farmer, they cannot explain year-to-year fluctuations *for a given farm*

# Explaining Year-to-year Fluctuations for One's Own Farm

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General agreement about the factors most responsible:

1. Market price volatility
  2. Weather conditions, both locally and nationally
- Market prices ... mostly uncontrollable, slightly predictable
    - Commodity market prices ... Chicago Board of Trade prices are beyond a farmer's control; seen as a quasi-random variable
      - Farmers can only decide WHEN to sell
      - Farmers who have invested in "grain-drying" equipment can delay selling for quite some time, waiting for prices improve
    - Direct-retail prices ... farmers who have developed direct-retail customers have much more control over the prices for their products
  - Weather ... uncontrollable, only slightly predictable
    - seen as quasi-random variable over short term, but random variable over longer time periods

# Factors about which Farmers Differ

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Despite the areas of general agreement just noted, there are some differences among farmers' understandings...

- A few farmers think the mundane, secular factors mentioned so far explain virtually ALL the important variations in farming ... both long-term differences among farms and year-to-year fluctuations for any given farm
- Most farmers, however, think the secular factors do NOT account for quite everything ... they believe there are additional, 'cosmological' factors involved



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## 4. Explaining the Unexplained



Luck



God's Will



# Different Views of Luck

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## A range of opinion...

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- Those who simply don't believe in luck at all
    - Secularist version: "One makes one's own luck."
    - Religious version: "There is no such thing as luck – everything that happens is God's will."
  - Those who believe in luck, but think it plays a relatively small role
    - "Luck accounts for maybe 10%-30% of year-to-year variation, but just in those situations where individuals have no control and timing is critical, such as rains at the right time and right amount or commodity prices going up or down at the right time."
  - Those who think luck plays a very large role in farming success
    - "Luck accounts for as much as 80% of farming success. You try hard to do the right things, but how much money you make depends mostly on things you can't control."

# Different Views of God's Role

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## Another range of opinion...

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- Non-believers don't think gods cause anything
  - Believers who think God, as Creator, is the ultimate cause of everything (including natural laws and processes), but not so much an active agent in the day-to-day workings of his creation
    - tend to agree with the adage: "God helps those who help themselves."
  - Believers who think EVERYTHING that happens is a direct manifestation of God's Will and his active intervention
    - a few pray for God to intervene and assist with their day-to-day farming concerns
    - but, most think it is simply inappropriate to ask for God's assistance in crass business affairs



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# Summary

# The Main Points ...

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- Farmers pretty much agree about the main things affecting their livelihood. And, for the most part, their understandings are multi-causal involving mundane, secular-materialist factors.
- Farmers differ from one another, however, in the degree to which they recognize other, more abstract causal factors.
  - most invoke notions of Luck and/or God's Will to make sense of what they regard as (otherwise) unexplained variations
- Luck is a very slippery concept ...  
In farming, luck comes up in situations where farmers must take actions vis-à-vis fluctuating circumstances over which they have little or no control ... and this boils down to the hard-to-predict but important fluctuations in  
**Market Prices & Weather**  
that some believe God controls.

*Thank you*

