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Evaluation & Planning

Syntek Technologies

Applying Complexity to Make Practical Decisions About Evaluation: Part 3 of a 3 Part Series

AEA Coffee Break
May 3rd, 2018

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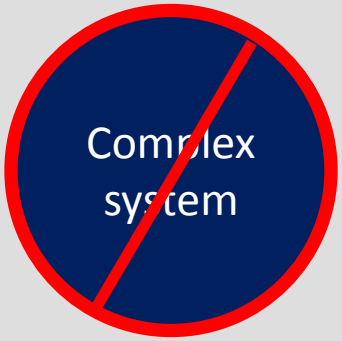
Use complexity to make actionable decisions about

- Metrics
- Methodology
- Program theory
- Data interpretation
- Interaction with stakeholders

Now	My vision of the future
RCT	RCT
Regression	Regression
Causal reasoning	Causal reasoning
	Complex behavior
Outcome harvesting	Outcome harvesting
Text content analysis	Text content analysis
Formative evaluation	Formative evaluation
Evaluability assessment	Evaluability assessment
Developmental evaluation	Developmental evaluation
And many, many others	*And many, many others*



Justice Potter Stewart on defining pornography in Jacobellis v. Ohio

"I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. **But I know it when I see it**, and the motion picture involved in this case is not that."

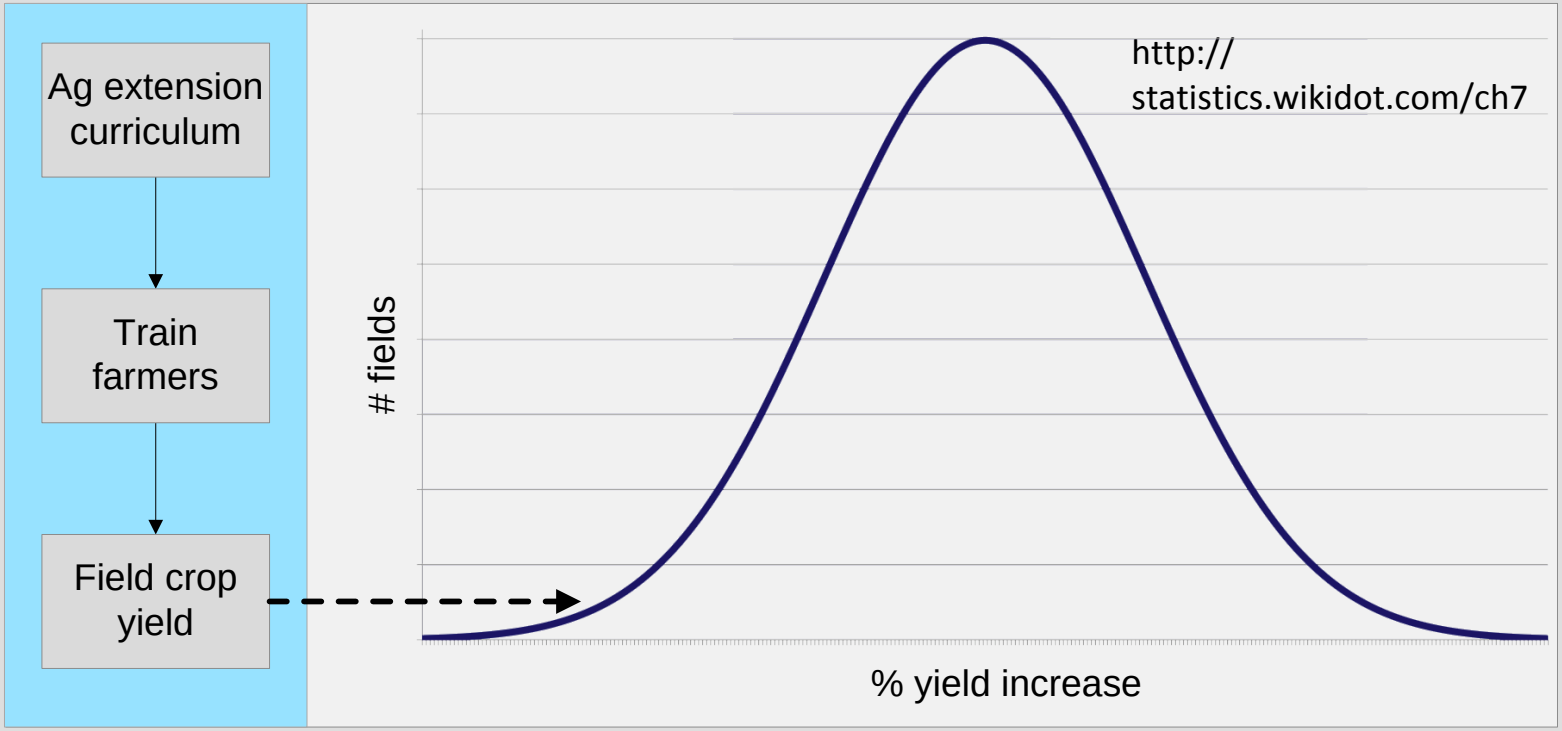
Themes in complexity science

- Predictability
- Feedback loops
- Patterns of change
- Evolutionary behavior
- Where change comes from

Some complex system behaviors that an evaluator can do something with

- Scaling
- Network effects
- Growth patterns
- Realistic timeframes
- Discontinuous change
- Unpredictable outcomes
- Unpredictable outcome chains
- Consequence of small changes
- Feedback loops among outcomes
- Asymmetrical distribution of benefits
- Joint optimization of uncorrelated outcomes

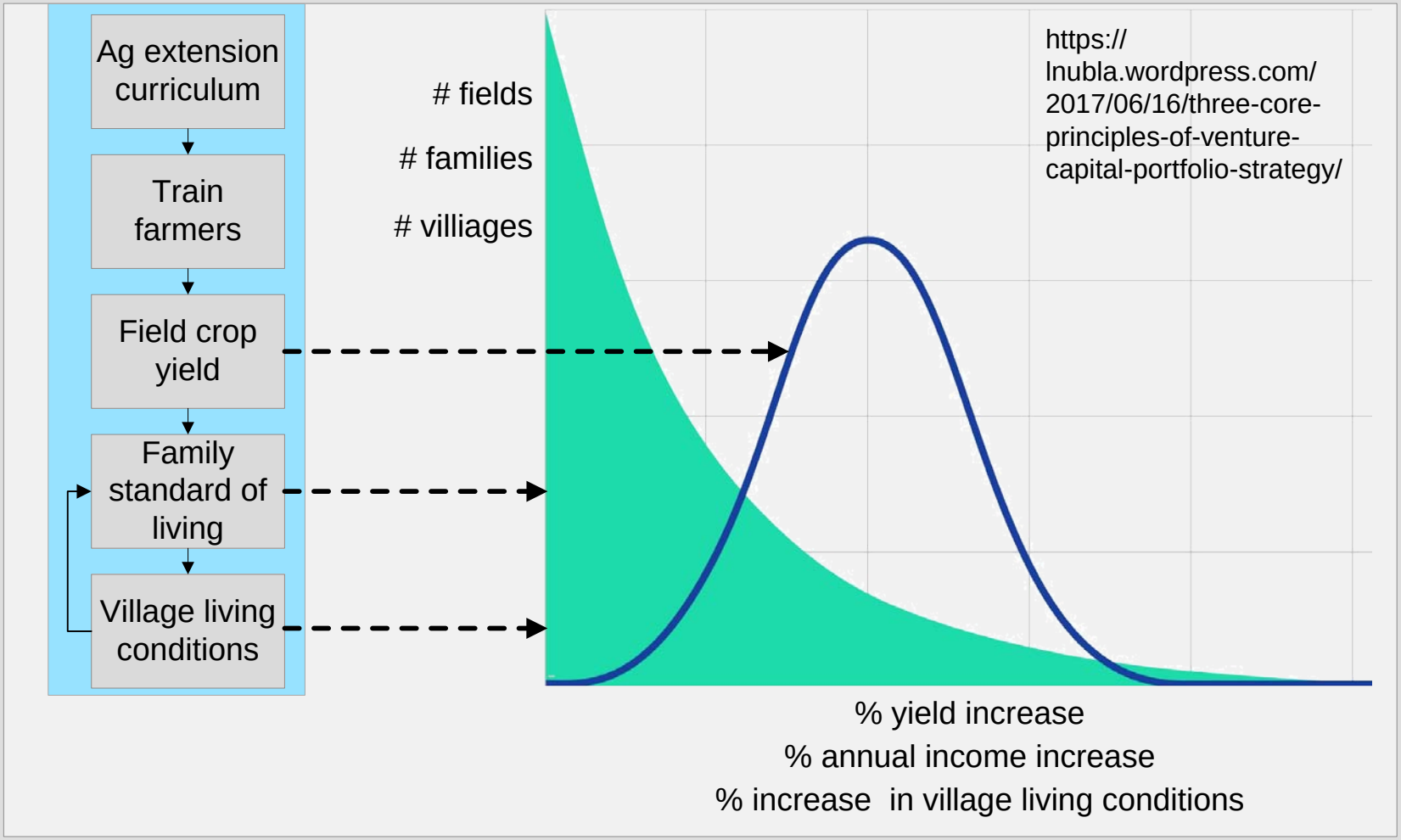
Let’s start with a nice, traditional example.



Now let’s look at complex behavior at work

- Exponential distributions , which make frequent appearances in complexity
- Multiple outcomes that are not well aligned

What would this program look like if a deliberate effort was made to *jointly optimize* all 3 outcomes?



Why does it matter?

Equity	▪ If equal benefit distribution matters, do a different program, or the same program differently
Data analysis	▪ Statistical methods
Program theory	▪ Distribution patterns reflect causal dynamics
Definition of success	▪ A hugely successful program can have minimal impact on most recipients

- No value judgement
- Focusing on crop yield may be the right thing to do.
- Accepting asymmetric benefit distribution may be the right thing to do.
- Applying logic of complex adaptive behavior provides insight about
  - Program theory
  - Methodology
  - Metrics

Questions? Comments? More information?

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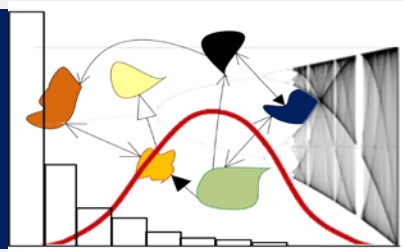


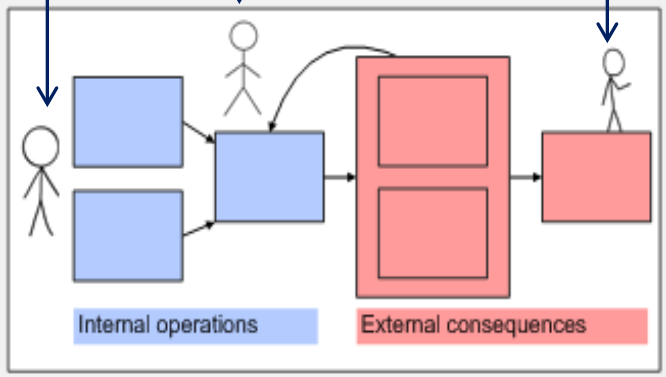
Not for this presentation, but keep in mind that planners have good reasons for ignoring complexity.

Our job is to engage in constructive dialogue.

Program designers and evaluators pretend the world is like this:

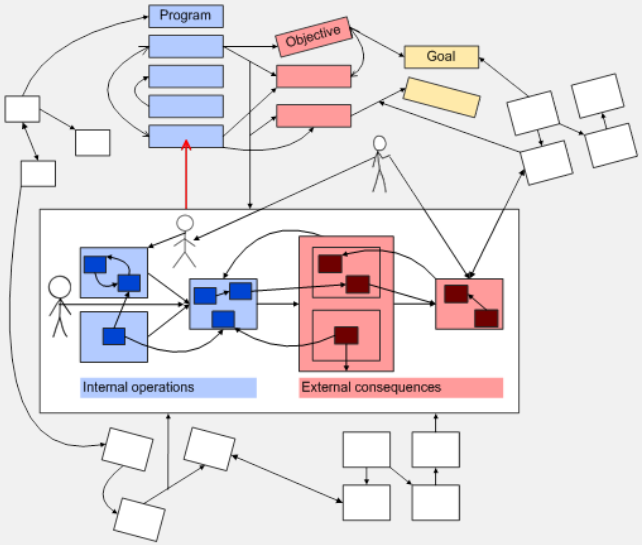
- Efficient
- Can be effective
- Can be implemented, given
  - Money
  - Politics
  - Organizational structures
  - Organizational processes

Can these people coordinate across boundaries?



When it is really like this:

- Different stakeholders
- Stovepipes are efficient
- Multiple priorities in each part
- Different organizational cultures
- Few personal working relationships
- Unknown, unknowable interactions
- Cost of coordination people, $, time
- Different schedules for decision making



Further Reading

Blog Surprises in Programs and their Evaluations http://evaluationuncertainty.com/

Videos https://www.youtube.com/channel/UCqRIJjhqmy3ngSB1AF9ZKLg

Books and Articles

Morell, J. A., Hilscher, R., Magura, S., & Ford, J. (2010). *Integrating Evaluation and Agent-Based Modeling: Rationale and an Example for Adopting Evidence-Based Practices*. Journal of Multidisciplinary Evaluation, 6(14), 35 -- 37.

Morell, J. A. (2010). *Evaluation in the Face of Uncertainty: Anticipating Surprise and Responding to the Inevitable*. New York: Guilford.

Parunak, H. V. D., & Morell, J. A. (2014). *Emergent Consequences: Unexpected Behaviors in a Simple Model to Support Innovation Adoption, Planning, and Evaluation*. Paper presented at the Social Computing, Behavioral-Cultural Modeling, and Prediction 7th International Conference, SBP 2014 , April 1-4, 2014, Washington, DC, USA.

Morell, J.A. (2017) *From Firefighting to Systematic Action: Toward A Research Agenda for Better Evaluation of Unintended Consequences* Paper presented at Unintended Effects of International Cooperation: An Academic & Policy Cross-over Conference, January 16th and 17th 2017 The Hague, The Netherlands