Proving Cause-and-Effect for Decisions

Dr. John Hoven <jhoven@gmail.com>

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Dr. John Hoven
www.linkedin.com/in/johnhoven

Dr. Hoven spent several decades investigating business mergers for the Antitrust Division of the Justice Department – everything from chicken farms to jet fighter radar. Investigators have three weeks to go from clueless to deciding whether to recommend a full-blown investigation.
Fast-Feedback Decisionmaking

Problem-solving in

• *particular local contexts*

through

• *fast-feedback collection-and-analysis of data*, and

• *proving cause-and-effect in a sample size of one*, for prediction, monitoring, and assessment
Everyday problems in the real world are not random draws from a validated model. They are unique, ill-defined messes that reflect the astonishing nuances in ordinary human behavior. For these one-of-a-kind situations, evidence-based decisionmaking requires proof of cause-and-effect in a sample size of one. That is not as hard as it sounds. It’s like planning a party.
Proving cause-and-effect in one-of-a-kind situations

- Articulate a chain of cause(s) and effect(s).
- Search at critical links for confirming and disconfirming evidence.
- Revise or replace the hypothesis.
- Keep doing that, again and again.

\[ A \text{ does } X \quad \text{or} \quad B \text{ does } Y \]

Evidence FOR

Contributing Cause Z

Evidence AGAINST

AND / OR

AND / OR

Effect
1. You are agent A. Describe an uncertain decision you are considering ("A does X"). Also describe the uncertain outcome.

2. Describe one immediate, direct effect that may result from your decision.

What could happen? (uncertain outcome)
What's important?

#1. Articulate a possible chain of cause-and-effect. Distinguish between causal factors that are necessary ("AND") or sufficient ("OR").
What evidence would help you judge whether an Effect is likely, unlikely, or somewhere in between?

**What’s important?**

#2. Search for evidence FOR or AGAINST each cause-and-effect link in the chain. As you learn, revise or replace them.
What's important?

#3. Focus on the cause-and-effect links that are most important and least well understood.

Good advice, but why is it important?

Your search for evidence constantly brings up causes and effects that you hadn't expected. There is no time to investigate and understand them – unless you stop investigating something else. Focus.
What's important?

#1. Articulate a chain of cause-and-effect. Distinguish between causal factors that are necessary ("AND") or sufficient ("OR").

#2. Search for evidence FOR or AGAINST each cause-and-effect link in the chain. As you learn, revise or replace them.

#3. Focus on the cause-and-effect links that are most important and least well understood.
What is a way to try this out in your

• research

• coursework

• everyday decisionmaking
Fast-Feedback Operations for Ill-Defined Problems: Basic Framework

1a. Fast feedback
- Conversational interviewing
- Simple, fast experiments

Design → Act → Test → Train
Do these concurrently, not sequentially

1b. Fast focus
Then go deep, and expand out

2. Build trusted relationships
- Shared interests
- Shared personal interests and values

First partner

3. Proving cause-and-effect in one-of-a-kind situations

Solution
A Theory of Change

Build credibility

"What could be done?"
Discover a destination.

What is a first step?"

Find local "bright spots"

Recruit local change agents

AND

Build the concept

Collect "bright spots" – successful efforts worth emulating – together with detailed descriptions of the context, problem, and solution.

Copy "bright spots" from similar contexts

Design a program

Try out one very small piece of a solution. The goal is simply to learn.

Lean Startup

Evidence FOR

Evidence AGAINST

Iterate rapidly. Pivot sharply as needed to explore more promising opportunities.

AND

OR

AND
ActorA and ActorB may be individuals or groups. Each one gives something and gets something.

**Analyzing Relationships**

The Figure serves as a checklist for these key questions:

- **What** does each entity get out of it?
- **Why** do they care? (wants)
- **How** do they do it? (key capabilities)
- **Who else** could supply? (e.g., ActorA2 for GoodA)
- **What else** is a good substitute? (e.g., "GoodX from ActorX" for GoodA)
To learn more

• Blomberg (2012) "The Lean Startup Approach–and its applicability outside Silicon Valley"
  http://studenttheses.cbs.dk/xmlui/bitstream/handle/10417/3434/aleksander_blomberg.pdf?sequence=1

• Collier (2011) “Understanding Process Tracing”

• Davis (2011) "Primer for Building Factor Trees to Represent Social-Science Knowledge”

• Hoven & Lawton (2015) "Locally Nuanced Actionable Intelligence” https://app.box.com/s/sl6a56fsgr3ywhvzkopt

• Lean Startup website http://theleanstartup.com/


• Rubin & Rubin (2011) Qualitative interviewing
