

EXPERIMENTAL RECIPES

Herbert Simon Lectures I

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TODAY

recipe/what is an experiment/why are they useful?/tools, rules,
fools/edges of validity/example



“The [economist] cannot emulate the engineer’s dry runs...He cannot set up a laboratory experiment to study the behavioural responses of representatives of each economic group to changes that would stimulate the actions of actions of other groups or changes in the common environment.”

—Jacob Marshak, On Econometric Tools, *Synthese*, 20(1), 483-88. (1969)

Recipe | 'resə,pē. *noun*, a set of instructions for preparing a particular dish, including a list of the ingredients required; figurative: something which is likely to lead to a particular outcome.

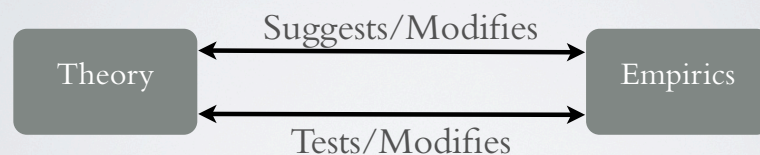
DEFINITION

An experiment is a effective procedure for the discovery of, and selection between, different possible explanations that are of equivalent or greater or lesser importance to us.

The **goal** of computable and experimental economics is an increased understanding of real world phenomena by designing effective experiments to *systematically break* model assertions.

WHY ARE EXPERIMENTS USEFUL?

Refine theories/Construct new ones/Design/redesign/wreck institutions/Test predictions



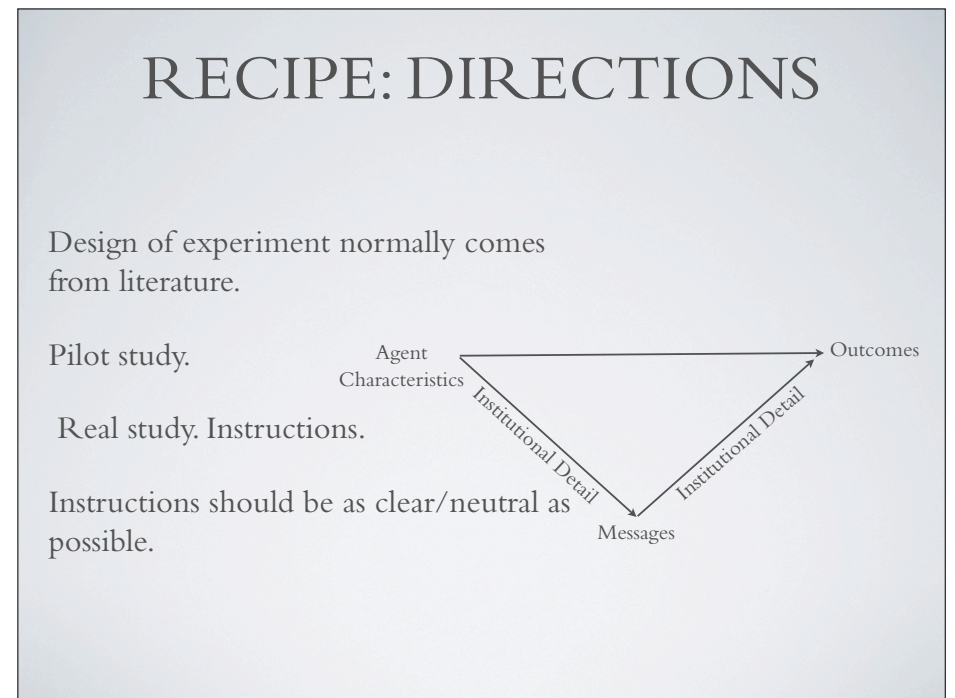
RECIPE: INGREDIENTS

Subjects.

Environment.

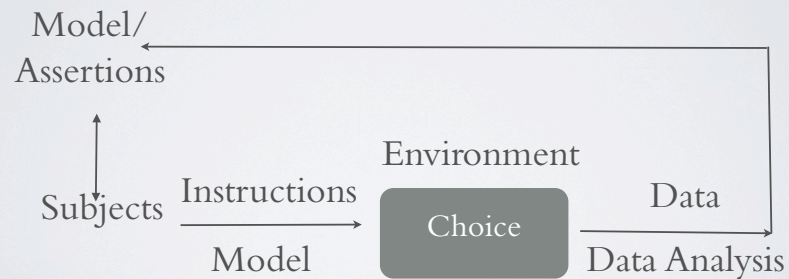
Institutions.





RECIPE: DIRECTIONS

Following simple descriptive statistics, inferential data analysis can be applied to test different hypotheses (or assertions) statistically.



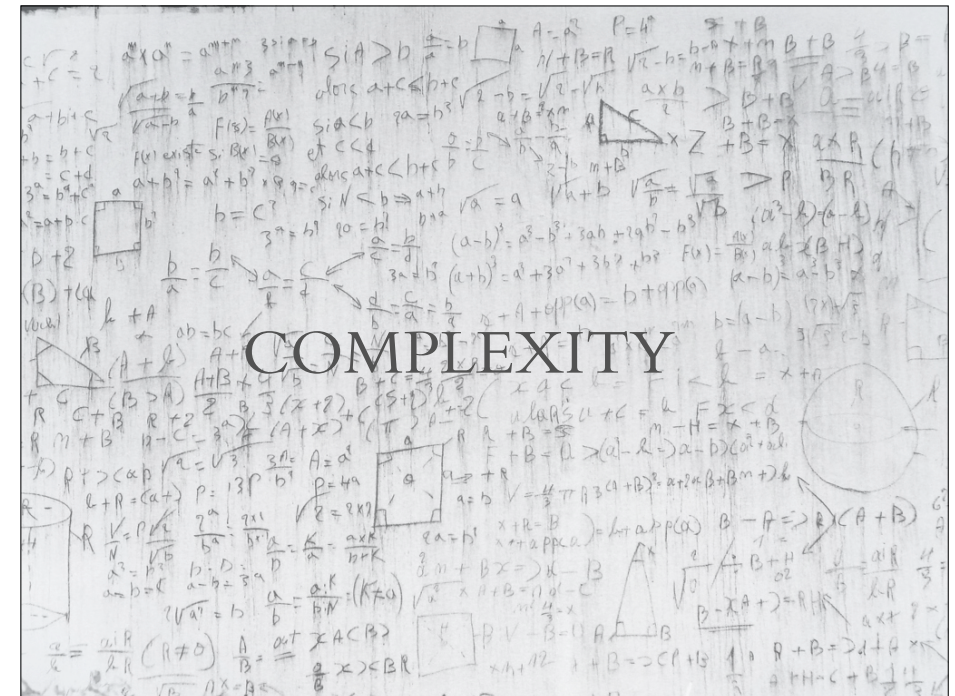
SOLUTION CONCEPTS

SOLUTION AHEAD

INCREASE SPEED

Induced Value Theory

1. Salience
2. Dominance
3. Monotonicity
4. Privacy
5. Parallelism



COMPUTING



MODEL SELECTION: NEXT TIME

- Minimum Description Length
- Computational Intelligence
- Deliberate Breaking

CAUTION



FINALLY

Markets are rule-governed institutions providing algorithms that select, process and order the exploratory messages of agents who are better informed as to their personal circumstances than that of others.

—Vernon Smith, Nobel Lecture, 2002.

NOW

- Example experiment.