

# Pracademics and the Problem of Induction

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# The Problem of Induction

**“...no matter how many instances of white swans we may have observed, this does not justify the conclusion that all swans are white....[M]any people believe that the truth of...universal statements is '*known by experience*'; yet it is clear that an account of experience—of an observation or the result of an experiment—can in the first place be only a singular statement and not a universal one.”**

Sir Karl Popper

*The Logic of Scientific Discovery*

1958 (English); 1934 (German)



# Popper's Logic of Scientific Discovery

- Theory → Singular Statements → Test
- Positive outcome → Corroborates Theory
- Negative outcome → Falsifies Theory
  
- Science =  
deduction/statement derivation +  
experimentation/statement corroboration or  
falsification
  
- Not science = theory imagination and other  
necessary things



# Implications of “Logic”

- **Universal explanation is the goal of science**
- **Social science needs ‘law like structures’ in order to proceed** (Thomas Merton)
- **Social science has elevated empirically-grounded theory testing as its highest calling**
- **Quality of testing is assessed based on *internal and external threats to validity* of causal assertions**



# Threats to Validity

(Campbell and Stanley)

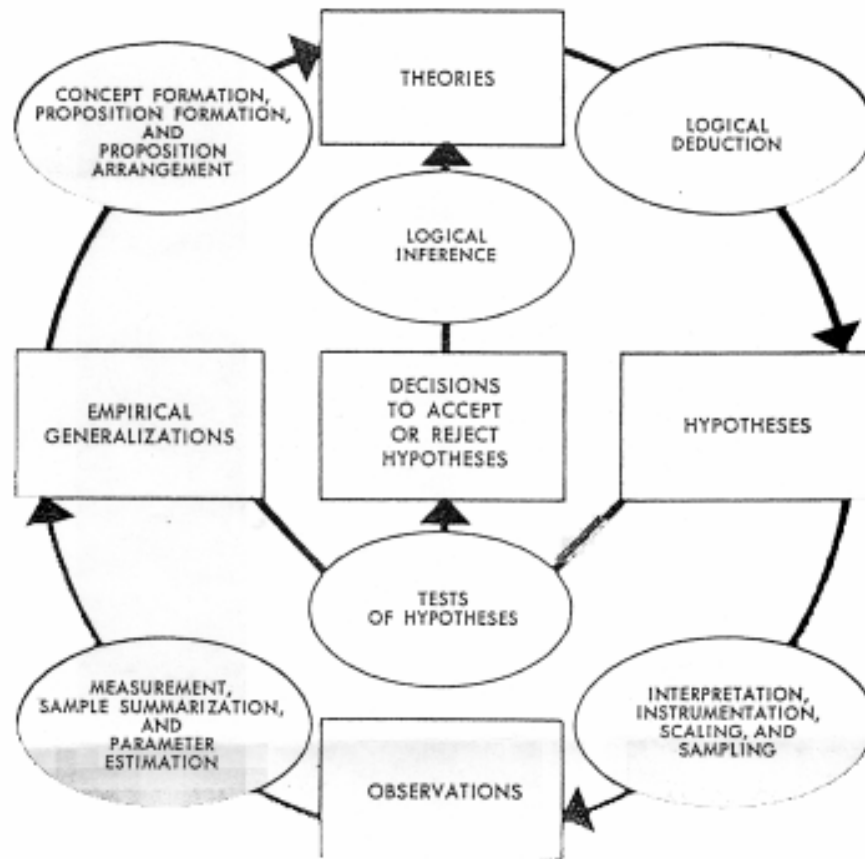
- **Internal Validity**

- History
- Maturation
- Testing
- Instrumentation
- Regression
- Selection
- Experimental Mortality

- **External Validity**

- Reactive Effect of Testing
- Interaction of Selection and Experimental Variable
- Reactive Effect of Experimental Var
- Multiple Treatments
- Sample Representativeness to Population





Note: Informational components are shown in rectangles; methodological controls are shown in ovals; information transformations are shown by arrows.

Figure 1. The Principal Informational Components, Methodological Controls, and Information Transformations of the Scientific Process.



# Where is evaluation research?

Evaluation research is seen as useful to  
progress of scientific knowledge

**ONLY IF *it tests causal hypotheses***

**Or IF *it leads to new hypotheses for later testing***



# Where are case studies?

Case studies are seen as useful to  
scientific progress

**ONLY IF** they test causal hypotheses  
or **IF** they lead to creation of new  
hypotheses to be tested.



How does the record of Collaboration research fit the expectations of social science?

**“...it is apparent that the enthusiasm and inventiveness of mediators has thus far outdistanced the ability of researchers to comprehend the mediation process and accurately assess its value.”**

Kressel and Pruitt

*Mediation Research*

1985



# How does the record of Collaboration research fit the expectations of social science?

- **Lauria and Wagner (2006) meta-analysis of 114 case studies of communicative planning theory**



# How does the record of Collaboration research fit the expectations of social science?

- **Lauria and Wagner (2006) meta-analysis of 114 case studies of communicative planning theory**
  - Growing numbers of empirical studies of communicative planning
  - Case studies represent 77 of the most recent studies



**Table 7.**  
**Communicative planning theory cases categorized**  
**by outcome (dependent variable).**

	<i>Cases</i>	<i>Unminimized Configurations</i>
$Y = 0$	28	23
$Y = 1$	32	25
$Y = 0$ and 1 (contradictory cases)	18	6
<b>Total</b>	<b>78 cases</b>	



# How does the record of Collaboration research fit the expectations of social science?

- Of 32 studies supporting communicative planning theory...
  - 28 (88%) began from a communicative planning theory framework
- Of 28 studies not supporting communicative planning theory...
  - None began from a communicative planning theory framework
- Only 4 studies (5%) led to findings that contradicted the theoretical beginnings of the study.



## Lauria and Wagner Results:

- **“Researchers empirically interrogating communicative planning theory overwhelmingly tended to construct...evidence that supported their theoretical predispositions.” (p. 376)**



# How close do we come to meeting the challenges of Popper's Problem of Induction?

- **Internal Validity**

- History
- Maturation
- Testing
- Instrumentation
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- Selection
- Experimental Mortality

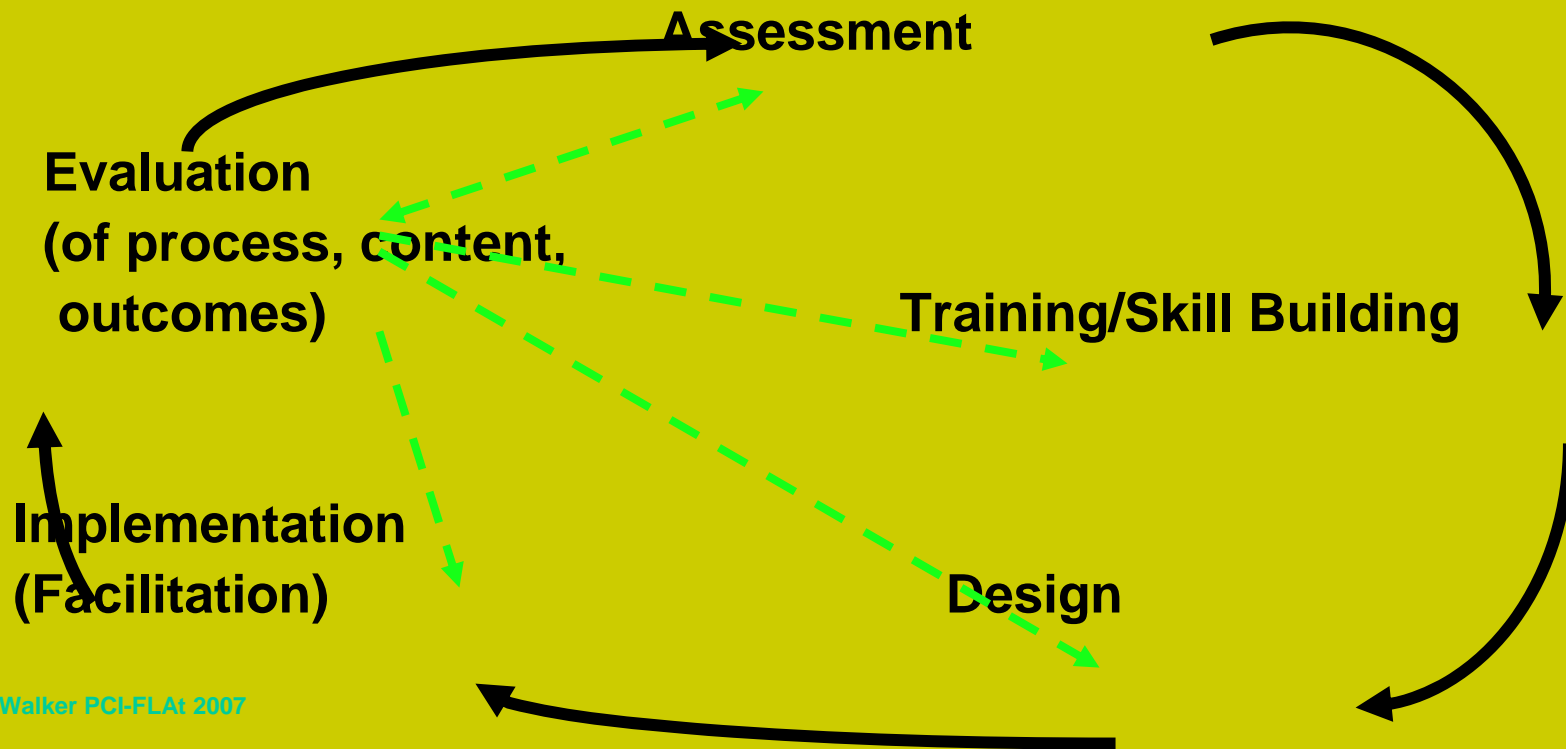
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## Multi-Stakeholder Collaboration: Five Phases as Research Points



# Pracademics and the Problem of Induction

- Neither traditional researchers nor pracademics have given us the high quality of research we need to advance the practice of collaboration
- We need rigorous research designs that will fare well in comparisons against Threats to Validity.
- Embedded researchers balancing practice objectives and lacking distance are unlikely to solve this problem.

