Class 4 - Elements I: Theory and phenomena

Agenda

- Research Question Presentations (50 minutes)

- Conceptual grounding (10 minutes)

- *Break*

- Compare-contrast presentation (Group 5-8; 35 minutes)

- Summative lecture on concepts (15 minutes)

Conceptual grounding

Two complementary organizing perspectives

- The world through a theory lens
- The world through a phenomenological lens
- The pivotal role of context

Readings for Today

Common Readings

1. Bacharach, S. B. (1989). Organizational Theories: Some Criteria for Evaluation. The Academy of Management Review, 14(4), 496-515. https://doi.org/10.2307/258555

2. Makadok, R., Burton, R., & Barney, J. (2018). A practical guide for making theory contributions in strategic management. Strategic Management Journal, 39(6), 1530-1545. https://doi.org/10.1002/smj.2789

3. Johns, G. 2006. The Essential Impact of Context on Organizational Behavior. The Academy of Management Review, 31, No. 2, 386-408.

Bacharach (1989)
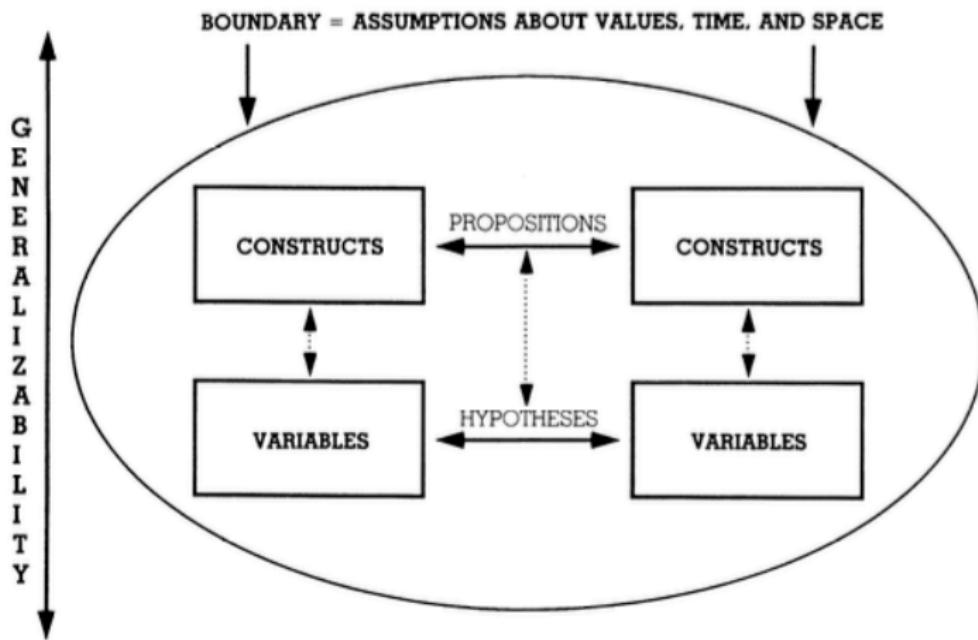
Figure 1. Components of a theory.

Bacharach (1989)

Discussion
Questions
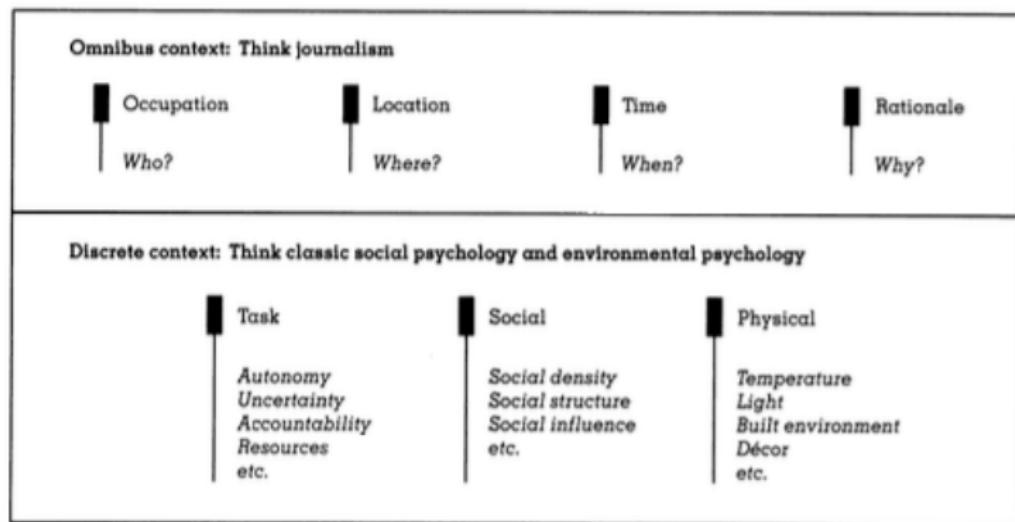
- Does this
  paper tie
  together at we
  have seen to
  date?
- What does this
  paper assume
  or downplay?

	Falsifiability	Utility
Variables	Operationally Defined? Measurement Issues face & content validity noncontinuousness reliability	Variable Scope
Constructs	Clarity & Parsimony Construct Validity convergent discriminant	Construct Scope
Relationships	Logical Adequacy nontautological specified nature of relationship	Explanatory Potential specificity of assumptions regarding objects specificity of assumptions regarding relations scope and parsimony of propositions
	Empirical Adequacy more than one object or time frame	Predictive Adequacy probabilistic versus theory-based

Figure 3. Criteria for evaluating theories.

Johns (2006)

FIGURE 1
Some Important Dimensions of Context

Omnibus context: Think journalism

Occupation	Location	Time	Rationale
Who?	Where?	When?	Why?

Discrete context: Think classic social psychology and environmental psychology

Task	Social	Physical
Autonomy	Social density	Temperature
Uncertainty	Social structure	Light
Accountability	Social influence	Built environment
Resources	etc.	Décor
etc.		etc.

Johns (2006)

Discussion Questions

- Let's talk through the "faces of context" and be sure we know what they mean.
- How might context affect "hard science" systems, like physics?
- Did this paper resonate after what we have seen so far? Why?

The Many Faces of Context:

- Salience of situational features
- Situational strength
- Cross-level effects
- Bundle of stimuli
- Discrete events
- Shaper of meaning

Makadok Burton and Barney (2018)
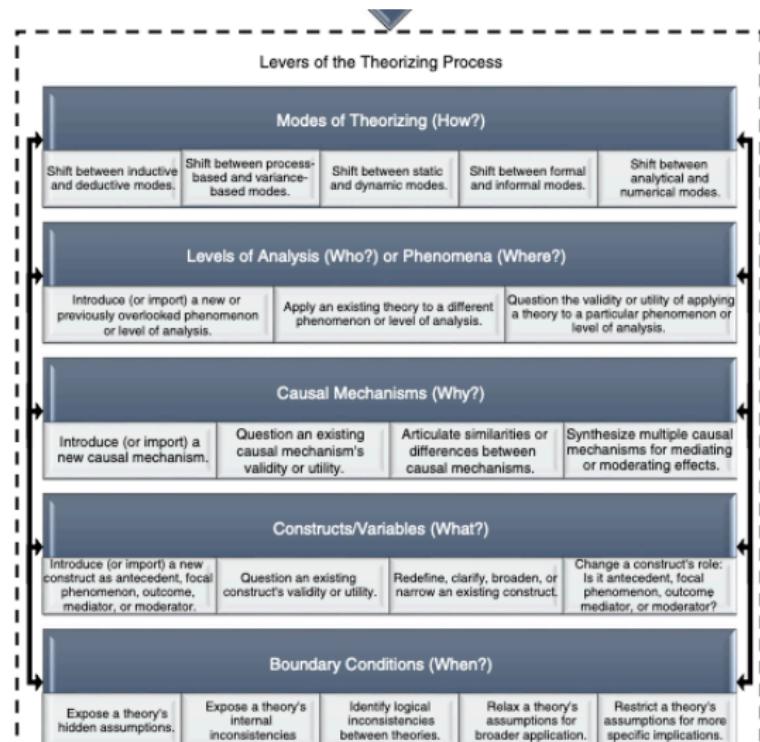
Rather than introducing radical new "grand theory" paradigms, most theory contributions in strategic management extend, clarify, or apply received theories in new and interesting ways. Here we offer a guide on how to make these kinds of contributions to theory. Theory usually begins with a research question, which can come from the phenomenon of interest, variations/limitations of existing theory, or intellectual creativity. Along with the question, there are a number of more craftsmanship-level aspects of a theory where contributions can be made […] (Abstract)

Makadok Burton and Barney (2018)

Discussion
Questions

- Did you find
  this useful?
- Might this
  framework
  allow for an
  integration of
  theory and
  phenomena?

Break

COFFEE BREAK

Compare / Contrast Presentations

- Sutton, R. I., & Staw, B. M. (1995). What Theory is Not.
  Administrative Science Quarterly, 40(3), 371.
  https://doi.org/10.2307/2393788

- Hambrick, D. C. 2007. The field of management's devotion to
  theory: Too much of a good thing? Academy of Management
  Journal, 50, 1346-1352.
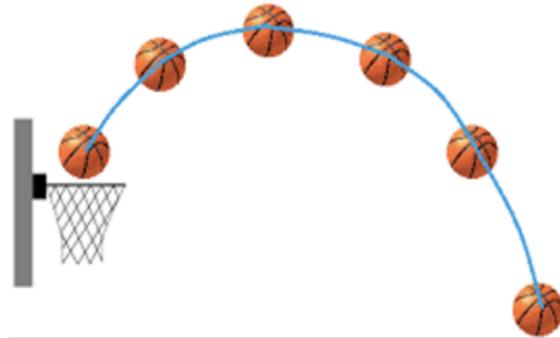
Summative lecture

Theory and phenemena: Two sides to a coin

- Theory: foregrounding the parts and **asking why**

- Phenomena: foregrounding the whole and **taking action**

Motivating example from high school physics

Projectile motion

Phenomenon - Making a free throw

Let's say we know exactly how much force we need to get the ball to travel from the free throw line to the hoop horizontally and our aim is dead straight.

But we don't know how much we need to loft the ball to make it in the basket.

How do we solve for the height of the ball at any given time?

Goal: We want to successfully take an action - making a free throw

Theory - Newton's second law

Newton says: The ball is being acted upon by the force of gravity,
which imparts an acceleration.

$$a = g = -9.8 m/s^2$$

$$h(t) = h_0 + v_0 t + (-9.8/2)t^2$$

Will we get the answer right??

**Goal: We want to understand - why does the ball move the
way it does?**

Aside - Turtles all the way down

Note this law is a mathematical expression between two quantities:
the height of the ball and time. It doesn't say where the expression
is coming from or what is causing it.

We can say it is due to gravity since this relationship holds for any
object on Earth, and thus a common gravitational field for the
Earth is consistent with this explanation. Further, celestial bodies
operate with similar mechanics.

But where does gravity come from?
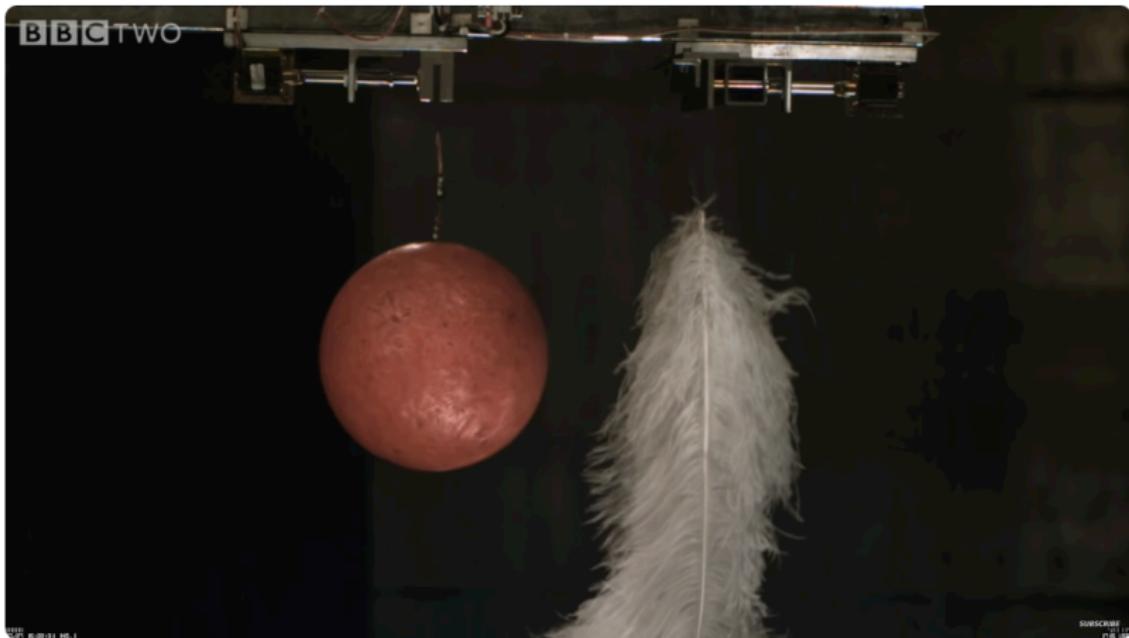
Aside - Turtles all the way down

A well-known scientist (some say it was Bertrand Russell) once gave a public lecture on astronomy. He described how the earth orbits around the sun and how the sun, in turn, orbits around the centre of a vast collection of stars called our galaxy. At the end of the lecture, a little old lady at the back of the room got up and said: "What you have told us is rubbish. The world is really a flat plate supported on the back of a giant tortoise." The scientist gave a superior smile before replying, "What is the tortoise standing on?" "You're very clever, young man, very clever," said the old lady. "But it's turtles all the way down!" - Steven Hawking, A Brief History of Time

Context - Earth

- Why is $g = -9.8m/s^2$?

- What about air resistance?

- In both cases, the boundaries of the specific context are often captured by **parameters**

Context matters!

Brian Cox visits the world's biggest vacuum | Human Universe - BBC

Aside: Theorizing

How would we arrive independently at the conclusion about the force of gravity?

$$a = g = -9.8 m/s^2$$

What observations would we need to make?

What data would we collect?

What would need to be true about the data generating process to get a solid answer?

Let's generalize the example

- The phenemonon is a problem we want to solve or something "real" we want to understand (score points)

- We use theories to abstract away complexities and focus on core principles, which are often unobservable (the existance of gravity, and its effect)

- But we need to be mindful of the context in which those theories are applied to pin down the values of relevant parameters (air resistance, gravitational force)

Example phenomena of interest

- Acquisition premiums paid

- Likelihood of achieving an IPO

- Probability of bank failure

- Level of CEO overconfidence

Explaining phenomena: The tricky bits

- What theories are applicable? (There are many that could be)

- What might they omit and how do you deal with that? (What must be controlled for?)

- If you learn something in a particular context, how can you generalize?

- If theoretical contributions are a prerequsite to publish, how do you make one?

Example theories of interest

- Social network theory
- Transactions costs economics
- Theory of planned behavior
- Theory of constraints

Extending theory: The tricky bits

- Where can you find situations where the theory cannot be straightforwardly applied? (Potential limits?)

- Why are these situations worthy of study? (Importance of the findings?)

- How can you map the particulars of a theory into a specific context?

Back to our logical modes

- Induction: common themes across phenomena -> gives rise to theories

- Deduction: applying principles encoded as theories -> explains variation for a particular phenemonon

A third way: "Policy engineering" (my term)

- Nailing down parameters is (in my view, somewhat derisively) known as being "an empirical question"

- But without them, how can we make precise recommendations for practice?

- My hunch: These are often unstable from context to context, putting primacy on theoretical directionality versus specific values

Towards model building
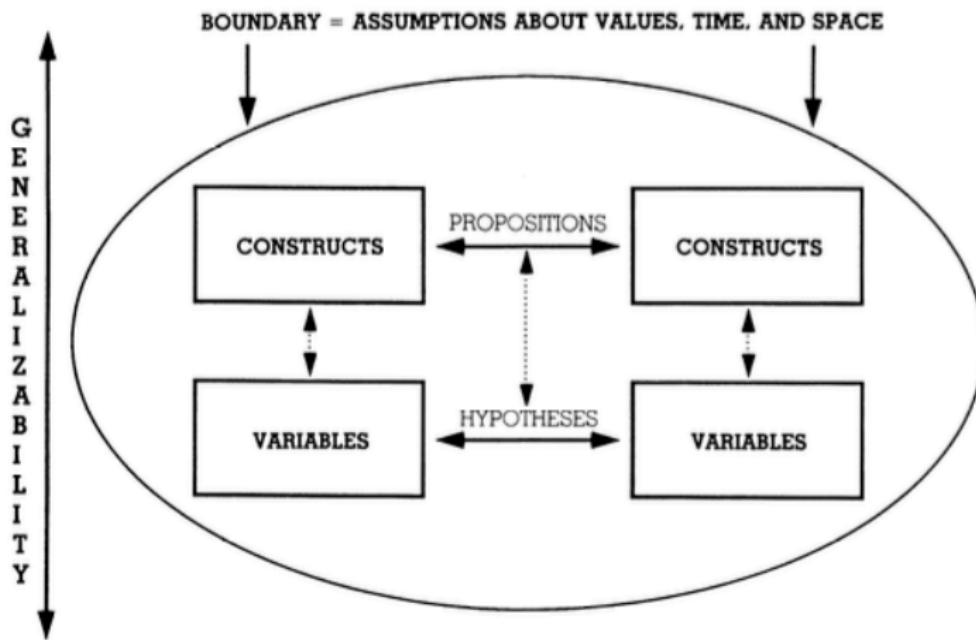
Figure 1. Components of a theory.

Towards model building
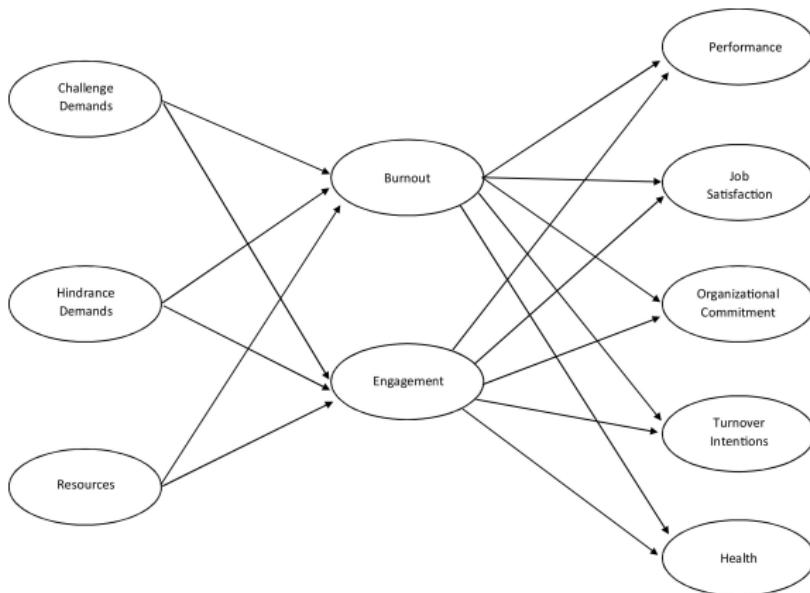
Different foci, different **nomological networks**

- Theory-focused: Construct / relationship / proposition centric

- Phenomenon-focused: Variable / prediction / hypothesis centric
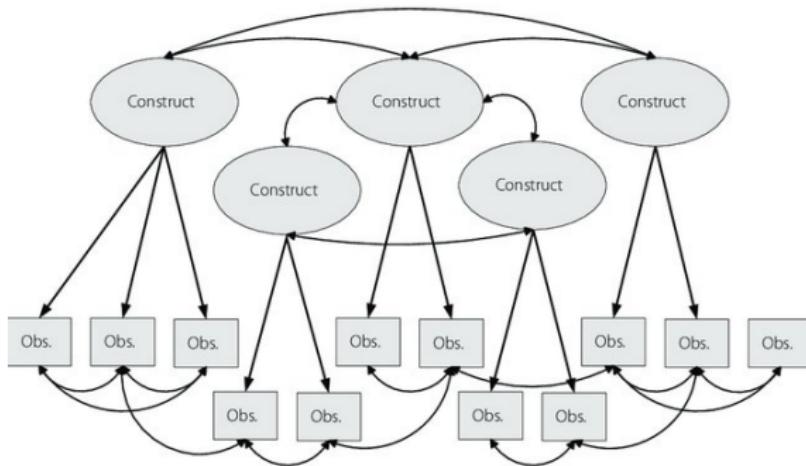
Key Thinking Tool: Nomological networks

Scientifically speaking, to "make clear what something is" means to set forth the laws in which it occurs. We shall refer to the interlocking system of laws which constitute a theory as a nomological network. - (Cronbach and Meehl (1955), p. 290)

Key Thinking Tool: Nomological networks

Key Thinking Tool: Nomological networks

Theory-focused models

Objective: Make correct predictions across as many cases as possible (assuming other details rendered negligible)

How: Build out the nomological network of the theory

- Connecting more and more variables and hypotheses **across phenomena** to a core set of constructs, relationships, propositions

- Expanding upon the common core of constructs (who/what)

- Determining the mechanisms of actions and underlying causes (how, why)

- Identifying and pushing on the boundaries of applicability (where, when)

Phenomenon-focused models

Objective: Make the best prediction for a specific case

How: Build out the nomological network of the phenemonenon
(this is not how it is thought of in the literature)
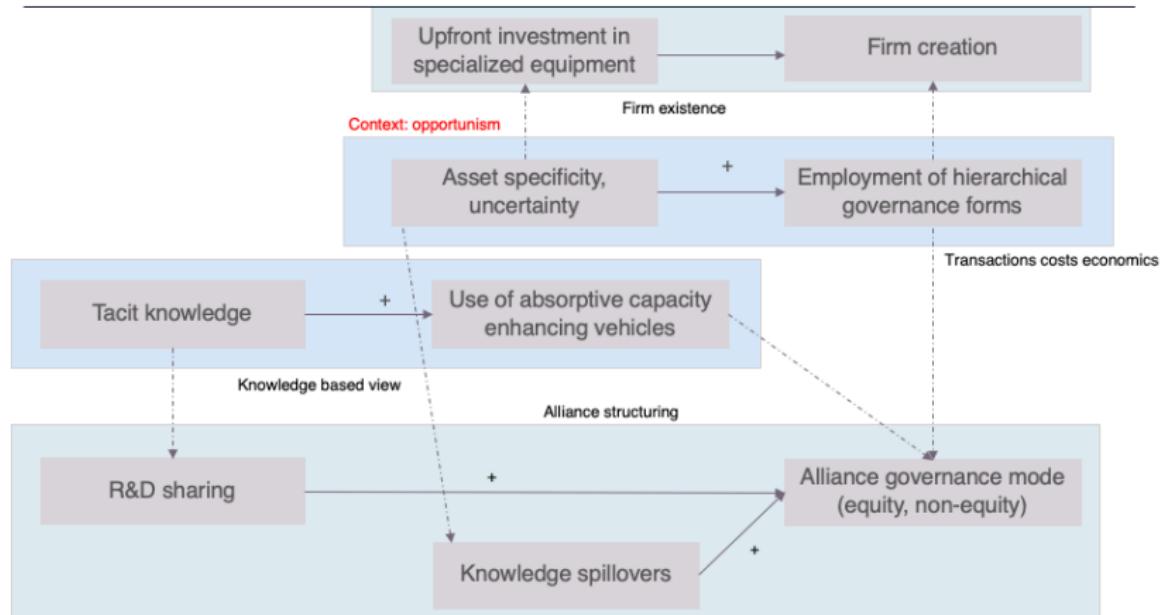
- Connecting more and more constructs and relationships
  across theories to explain a core set of variables

- Identifying the key variables at play and the
  context/parameters that matter (who/what)

- Determining how theories comport and conflict in the specific
  situation (how, why)

- Taking advantage of a specific bounds of a context to pin
  down predictions with precision (where, when)

What takes primacy?

Bacharach (1989) places primacy on generalizability - since theory "abstracts" away from variables to constructs to predict across more situations it is given a lofty status

But we could just as easily place primacy on explanatory power - here a phenemenon "focuses" attention across theories to specific variables of interest

Comparing theoretical and phenomological nomological networks

Summary

To oversimplify a lot, here is my mental model:

- **Phenomena** specify a universe of dependent variables and independent variables

- **Theories** provide the "rules" for how these IVs and DVs interrelate

- But we also need **parameters** to capture contextual differences

Here is one way I try to keep both in mind as I read papers

Next class

Your concept checks are due before we start next class.

It is super simple, about 10 questions based on our discussions so far.

You will have one hour to complete the assessment once started (plenty of time)!

Next class

Elements II: Models and hypotheses

1. Harris, J. D., Johnson, S. G., & Souder, D. 2013.
   Model-Theoretic Knowledge Accumulation: The Case of
   Agency Theory and Incentive Alignment. Academy of
   Management Review, 38(3), 442-454.

2. Chamberlin, T. C. (1965). The Method of Multiple Working
   Hypotheses. Science, 148(3671), 754-759.
   https://doi.org/10.1126/science.148.3671.754

3. Pearl, J. 2010. 3. The Foundations of Causal Inference.
   Sociological Methodology, 40(1), 75-149.

Next class

Elements II: Models and hypotheses

4. Compare / Contrast

- Adner, R., Pólos, L., Ryall, M., & Sorenson, O. 2009. The Case for Formal Theory. Academy of Management Review, 34(2), 201-208.

- Miller, K. D. & Tsang, E. W. K. 2011. Testing management theories: Critical realist philosophy and research methods. Strategic Management Journal, 32(2): 139-158.

References

Cronbach, Lee J., and Paul E. Meehl. 1955. "Construct Validity in
Psychological Tests." *Psychological Bulletin* 52 (4): 281–302.