

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.

Diagram illustrating the relationship between constructs and variables within a boundary of assumptions about values, time, and space.

The diagram shows two columns of boxes: **CONSTRUCTS** and **VARIABLES**. Arrows indicate relationships:

- Solid double-headed arrows connect **CONSTRUCTS** and **VARIABLES** in each column.
- A solid double-headed arrow connects the two **CONSTRUCTS** boxes.
- A dashed double-headed arrow connects the two **VARIABLES** boxes.

A large oval encloses the entire structure, with arrows pointing to it from the text **BOUNDARY = ASSUMPTIONS ABOUT VALUES, TIME, AND SPACE**.

A vertical arrow on the left points upwards, labeled **GENERALIZABILITY**.

Figure 1. Components of a theory.

Bacharach (1989)

Discussion

Questions

- Does this paper tie together all 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 Empirical Adequacy more than one object or time frame	Explanatory Potential specificity of assumptions regarding objects specificity of assumptions regarding relations scope and parsimony of propositions Predictive Adequacy probabilistic versus theory-based

Figure 3. Criteria for evaluating theories.

FIGURE 1
Some Important Dimensions of Context



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)

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Break



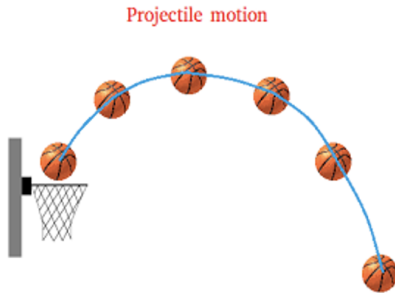
COFFEE BREAK

Summative lecture

Theory and phenomena: 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



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.

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

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

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

A red sphere and a white feather are suspended from a metal frame against a black background. The sphere is on the left and the feather is on the right. The frame is visible at the top of the image.

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Aside: Theorizing

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

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

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 phenomenon 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 existence 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 prerequisite 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

How it is “supposed to work”

- Induction: common themes across phenomena -> gives rise to theories
- Deduction: applying principles encoded as theories -> explains variation for a particular phenomenon

But when these steps are performed by different researchers who have difficulty understanding each other's processes (e.g., qualitative inductive work, quantitative deductive work), this process can short circuit

It can also short circuit if the interesting questions aren't raised to be examined inductively in the first instance

A third way: “Policy engineering” (my term)

Why not build models that synthesize theories to explain a phenomenon capitalizing on a bounded context where parameters are estimable?

- This could allow for an “engineering” orientation, where theories are rigorously applied to specific situations

Issues

- Unfortunately, nailing down parameters is (in my view, somewhat derisively) known as being “an empirical question”
- Yet without them, how can we make precise recommendations?
- My hunch: These are often unstable from context to context, putting primacy on theoretical directionality versus specific

Towards model building

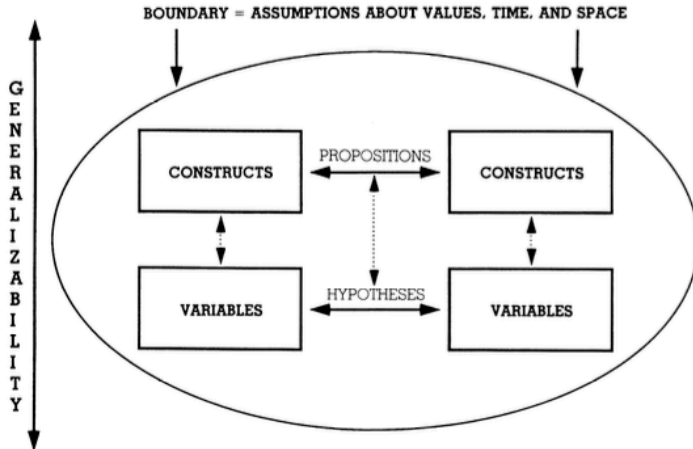


Figure 1. Components of a theory.

Towards model building

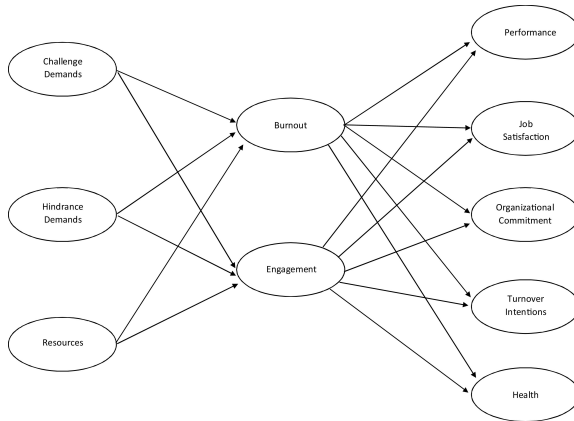
Different foci, different **nomological networks**

- Theory-focused: Construct / relationship / proposition centric
- Phenomenon-focused: Variable / prediction / hypothesis centric

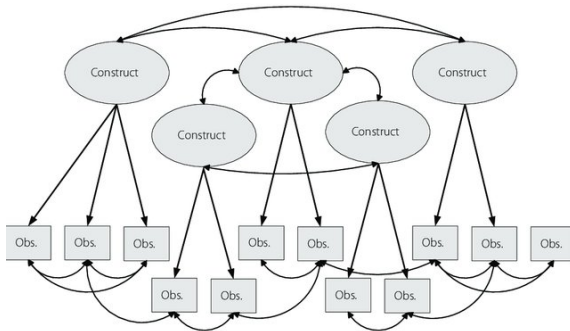
Key Thinking Tool: Nomological networks

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 phenomenon
(this is not how it is thought of in the literature)

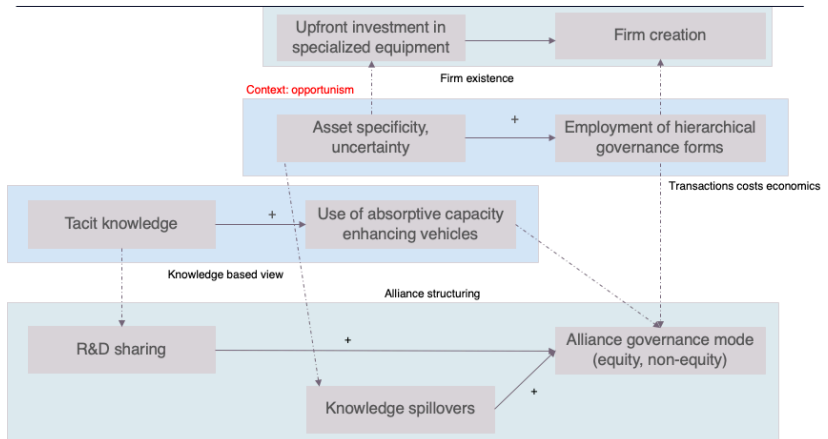
- Connecting more and more constructs and relationships **across theories** to explain a core set of variables
- Identifying the key variables at play and the context/parameters that matter (who/what)
- Determining how theories comport and conflict in the specific situation (how, why)
- Taking advantage 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 phenomenon “focuses” attention across theories to specific variables of interest

Comparing theoretical and phenomenological 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:

<http://briancfox.com/vfront/>

Summary

Historically (in management) there was pressures for papers to “do it all” - advance and test a theory (Aguinis and Vandenberg 2014)

- As our readings indicate, this thinking slowly evolving towards a more nuanced view of contribution (Makadok, Burton, and Barney 2018)
- And Hambrick (2007) noted, other fields have already found a more moderate stance
- But many outlets still require a theoretical contribution in their editorial statements
- This requirement for a theoretical contribution is institutional, rather than intrinsic

Finding the balance

There is nothing as practical as a good theory - Lewin (1943), as cited in McCain (2015)

- Theory provides a means to generalize our observations (Bacharach 1989)
- But we need a place to make those observations in the first place (Hambrick 2007)
- And we need to think about how our study can affect understanding of an important phenomenon (Tushman and O'Reilly 2007)

Finding the balance

This balance can be struck within or across papers

- Within a paper: targeting a narrow question that takes seriously the phenomenon and focuses on
- Across papers: some papers can focus on developing theory, others can build our understanding of the phenomenon
- The rub: outlets vary in their receptivity to these different foci
- There is hope: publishing in more receptive disciplines, Academy of Management Discoveries, cross-over journals
- And you may be in a better position than most: Must you publish in top academic journals in Management?

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

- Aguinis, Herman, and Robert J. Vandenberg. 2014. "An Ounce of Prevention Is Worth a Pound of Cure: Improving Research Quality Before Data Collection." *Annual Review of Organizational Psychology and Organizational Behavior* 1 (1): 569–95.
- Bacharach, Samuel B. 1989. "Organizational Theories: Some Criteria for Evaluation." *The Academy of Management Review* 14 (4): 496–515.
- Cronbach, Lee J., and Paul E. Meehl. 1955. "Construct Validity in Psychological Tests." *Psychological Bulletin* 52 (4): 281–302.
- Hambrick, Donald C. 2007. "The Field of Management's Devotion to Theory: Too Much of a Good Thing." *The Academy of Management Journal* 50, No. 6: 1346–52.
- Makadok, Richard, Richard Burton, and Jay Barney. 2018. "A Practical Guide for Making Theory Contributions in Strategic