Class 4 - Elements I: Theory and phenomena

Agenda

- Conceptual grounding (10 minutes)
- Core paper discussion (45 minutes)
- *Break*
- Compare-contrast presentation (Group 5-8; 40 minutes)
- Summative lecture on concepts (10 minutes)
- Key thinking tool: Nomological networks (10 minutes)

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.

A gradual shift in focus

Whereas the first three weeks entailed really broad discussions of the readings, I will start drawing out some specific items for us to talk about in the readings

This is not to suppress all of the other interesting parts of the papers; rather, it is because I will want to rely or build upon specific points in the weeks to come

Going forward, we may have one or two questions to warm up our discussion of the paper, and then we can dive into some key elements

Bacharach (1989)

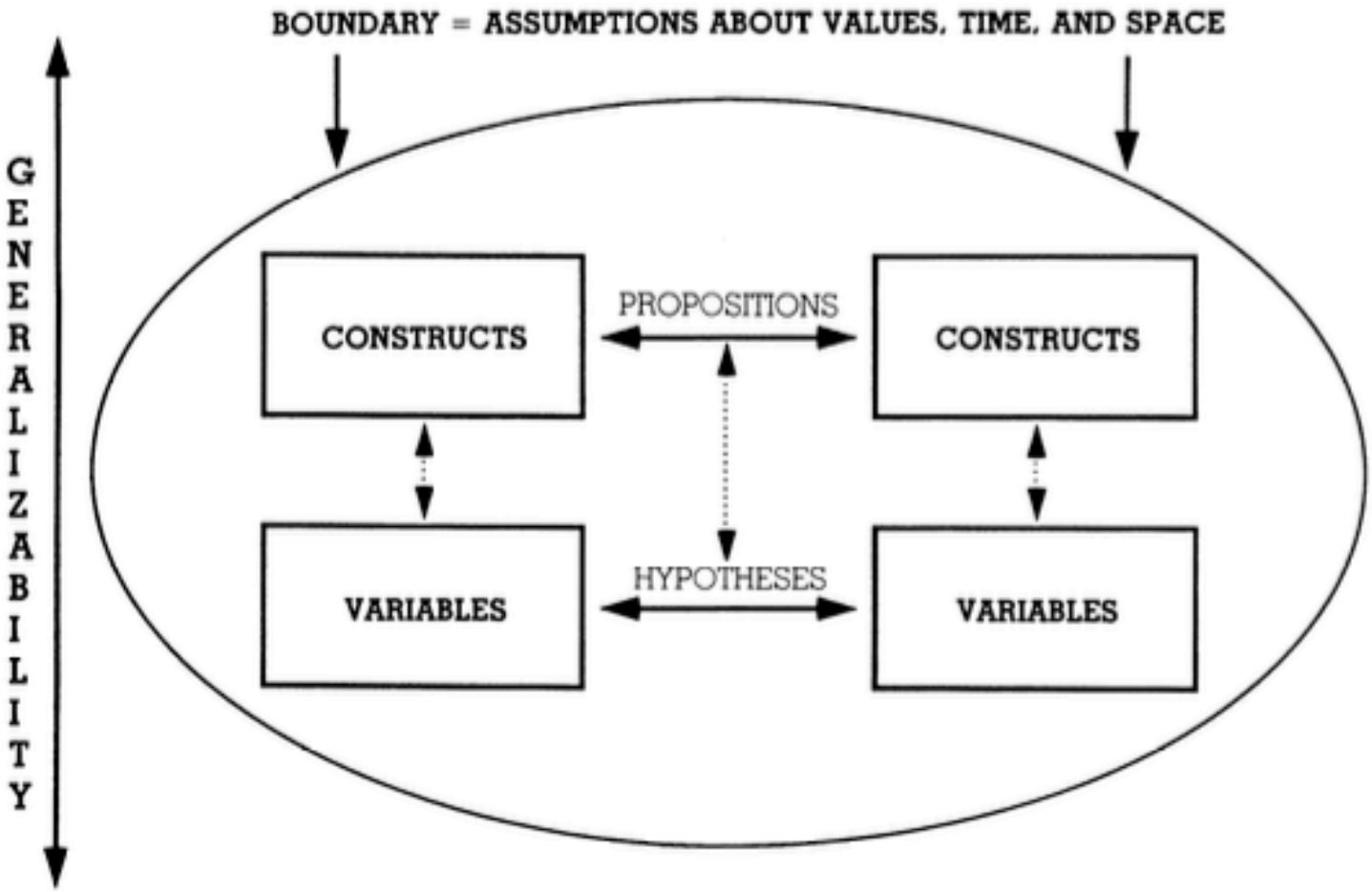


Figure 1. Components of a theory.

Bacharach (1989)

Discussion Questions

- Does this paper tie together at we have seen to date?
- What does this paper assume / take for granted?

Bacharach (1989)

	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.**

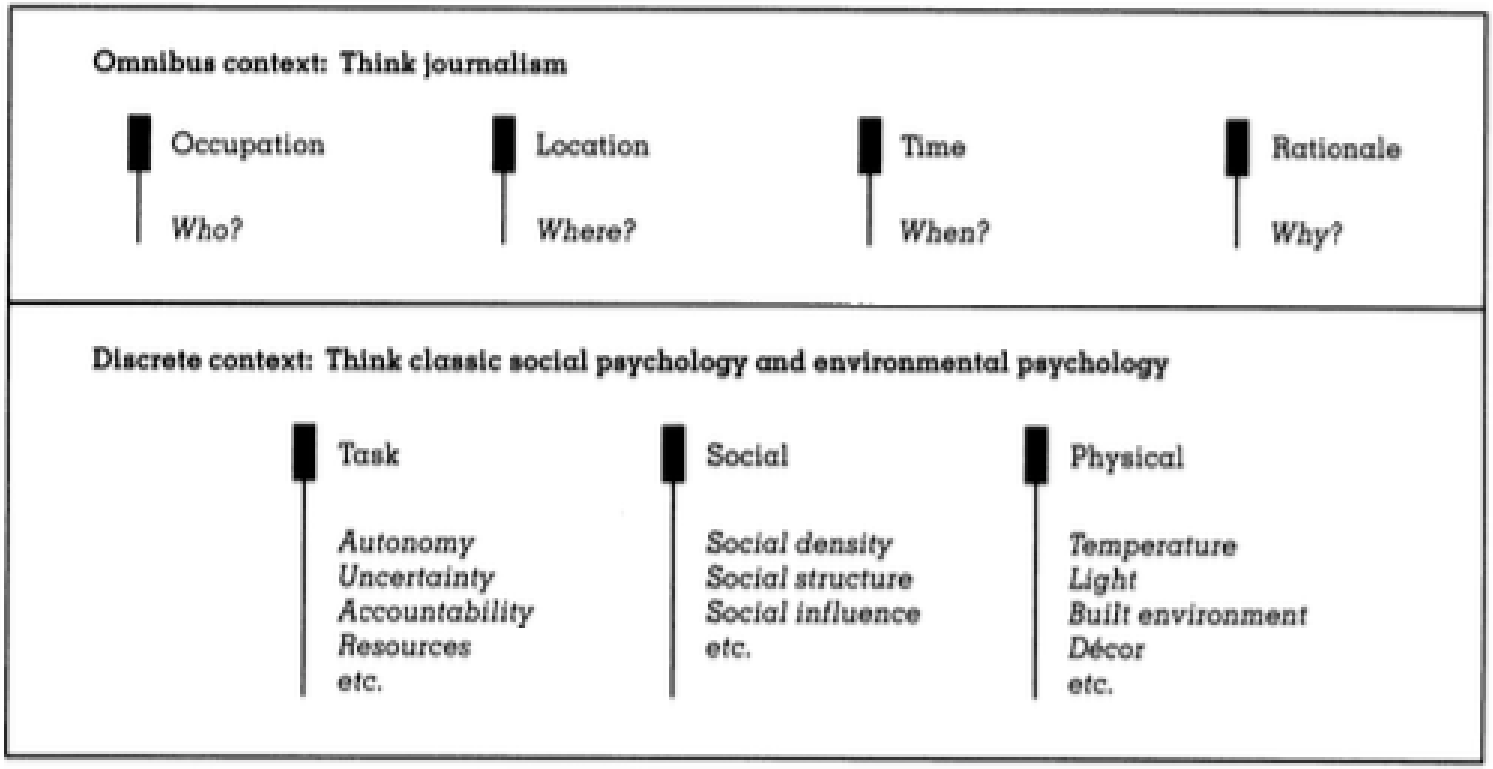
Bacharach (1989)

Key Points

- Falsifiability, modes of inference (logical adequacy), explanatory potential - it's all here!
- Brings to the foreground the idea of a **set of relationships between ideas**
- Emphasis placed on generalizability across contexts and explanatory potential

Johns (2006)

FIGURE 1
Some Important Dimensions of Context



Johns (2006)

Discussion Questions

- Did this paper resonate after what we have seen so far? Why?
- How might 'discrete' context affect "hard science" systems, like physics?

Johns (2006)

The Many Faces of Context:

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

Johns (2006)

Key Points

- Context (where / when) can shape the relative importance of a theory compared to other effects
- It can serve as a **boundary of applicability** or can **condition theoretical effects**

Makadok Burton and Barney (2018)

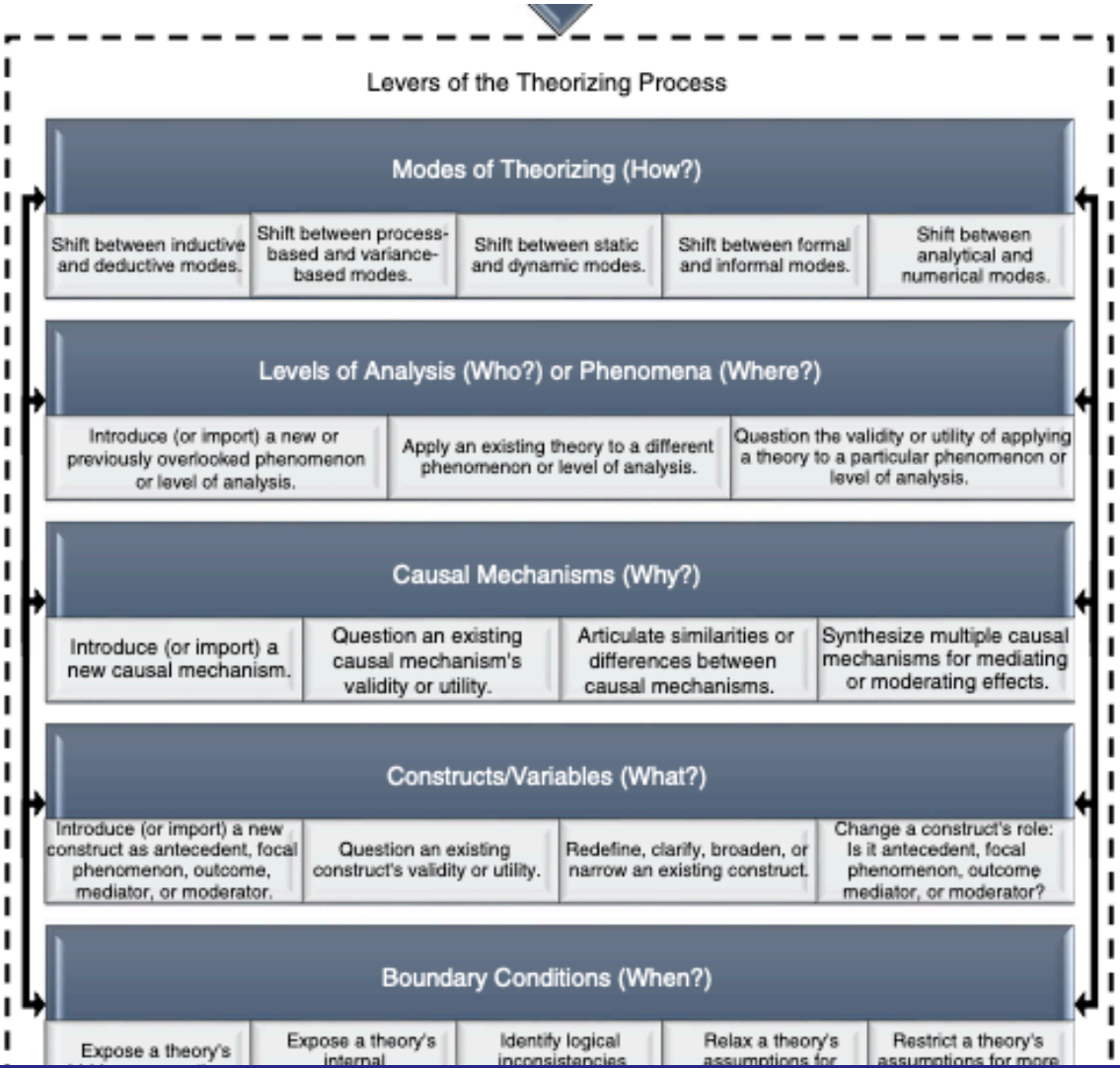
Rather than introducing radical new "grand theory" paradigms, most theory contributions in strategic management extend, clarify, or apply received theories in new and interesting ways. Here we offer a guide on how to make these kinds of contributions to theory. Theory usually begins with a research question, 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?

Makadok Burton and Barney (2018)



Makadok Burton and Barney (2018)

Key Points

- There are many means by which theoretical contributions can be made
- Contributing to theory means **adding to our web of knowledge**, you don't need to spin the whole thing yourself
- Phenomena can provide new lenses to see how a theory operates and old theories can be useful in explaining new phenomena

Break

COFFEE BREAK

Compare / Contrast Presentations

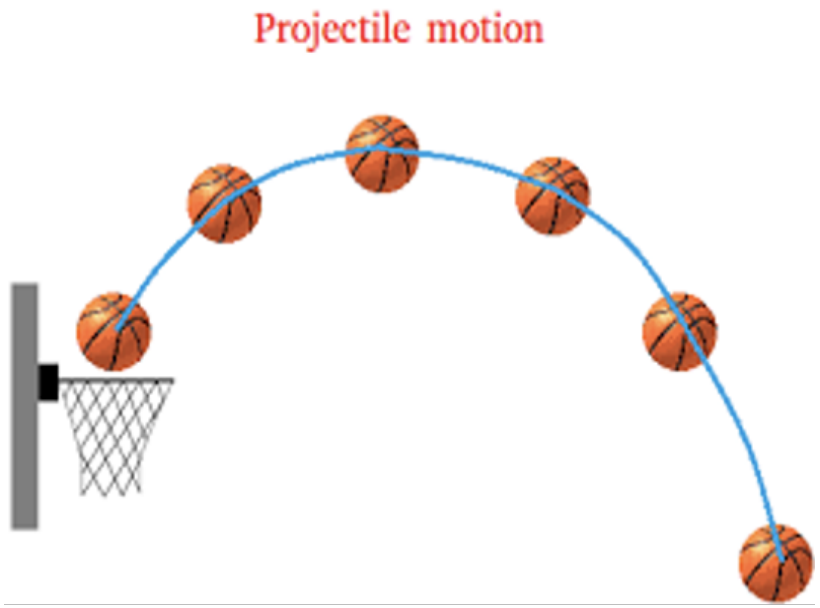
- Sutton, R. I., & Staw, B. M. (1995). What Theory is Not. Administrative Science Quarterly, 40(3), 371. https://doi.org/10.2307/2393788
- Hambrick, D. C. 2007. The field of management's devotion to theory: Too much of a good thing? Academy of Management Journal, 50, 1346-1352.

Lecture - Theory and phenomena

Theory and phenomena: Two sides to a coin

- Theory: foregrounding the parts and **asking why**
- Phenomena: foregrounding the whole and **successfully 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?

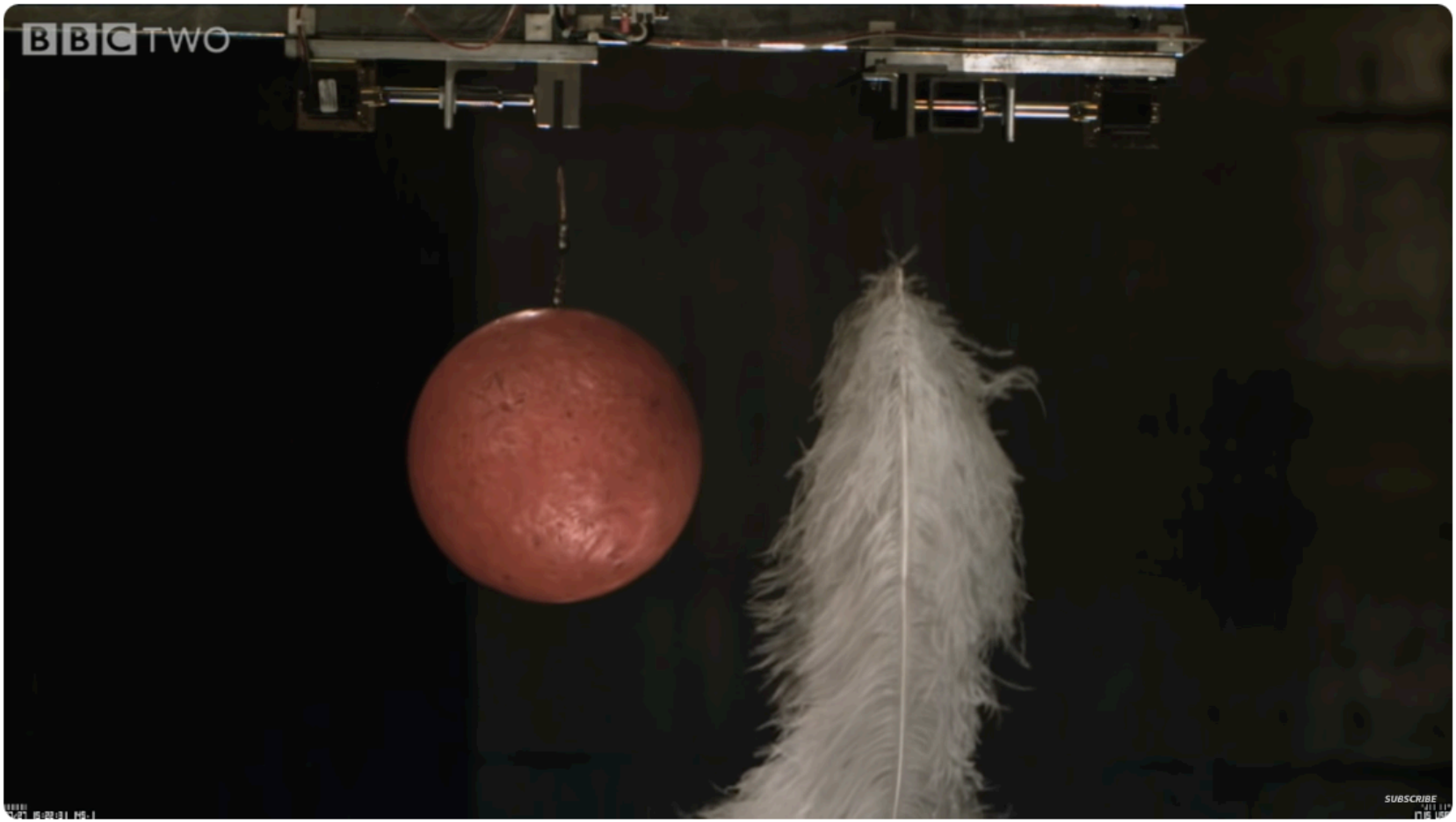
Aside - Turtles all the way down

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

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?

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

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 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)

Summary

To oversimplify, here is my mental model:

- Phenomena specify a universe of dependent variables and independent variables to define a particular context
- Theories provide the "rules" for how a specific set of IVs and DVs interrelate across contexts
- But we also need **parameters** to capture differences across contexts

Here is one way I try to keep both in mind as I read papers: http://briancfox.com/vfront/

Towards model building

Different foci, different **nomological networks**

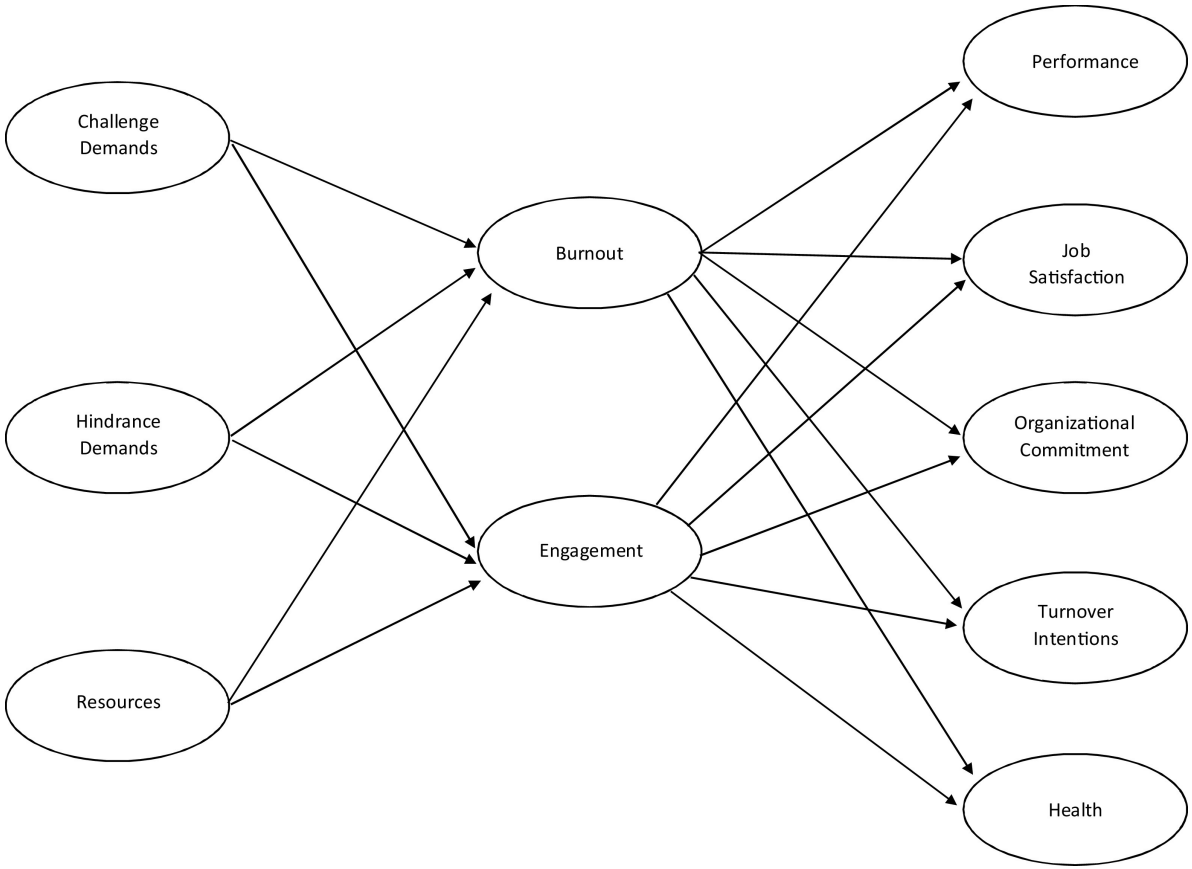
- Theory-focused: Construct / relationship / proposition centric
- Phenomenon-focused: Variable / prediction / hypothesis centric

Nomological networks

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



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)

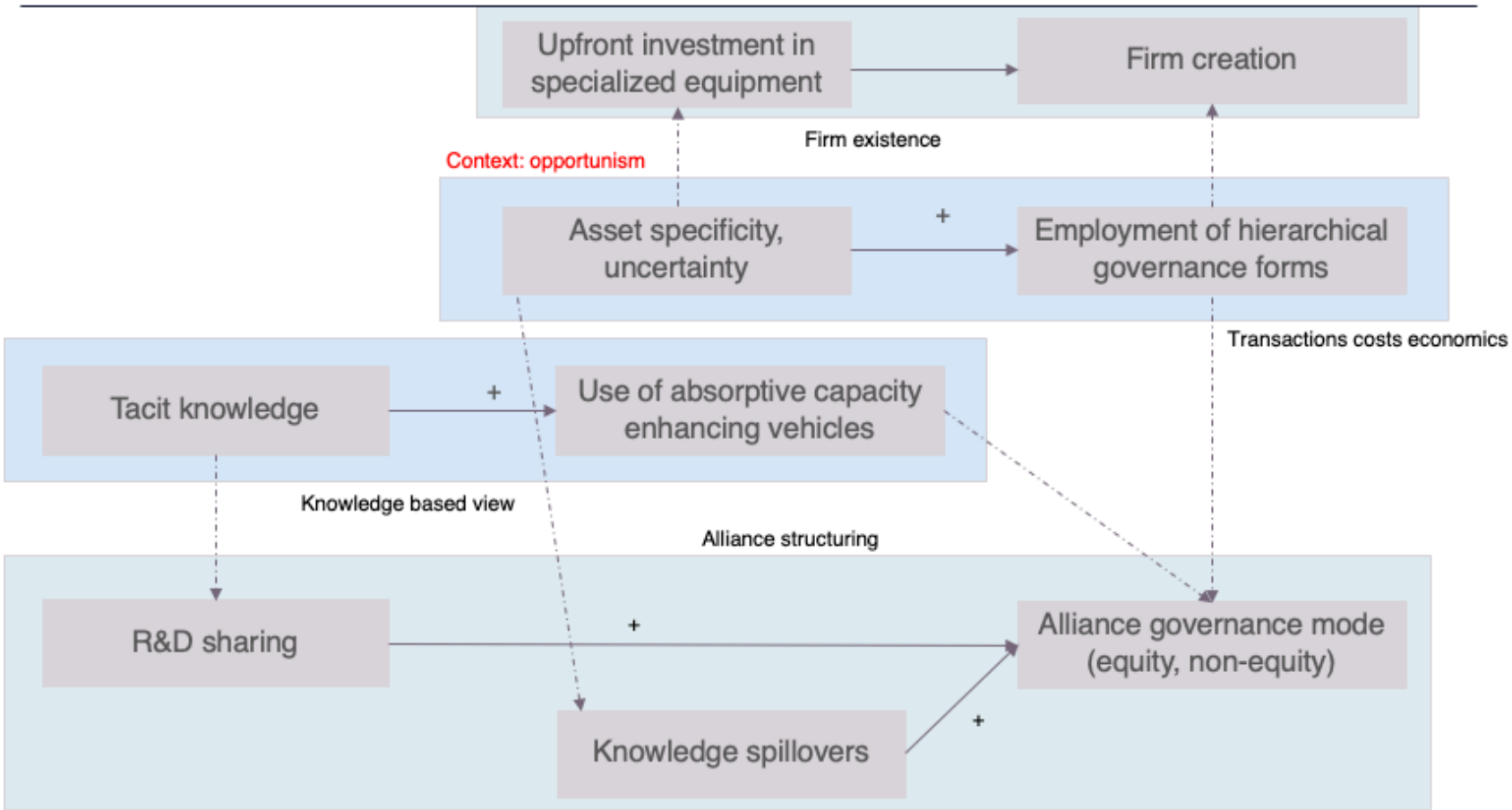
Phenomenon-focused models

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)

Comparing theoretical and phenomological nomological networks



Preparation for next class

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.