

Introductions
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Readings for Today
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Summative lecture
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Preparation for Next Class
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Class 1

Agenda

- Introductions (30 minutes)
 - Getting to know each other
 - Syllabus and materials overview
 - Typical class flow
- Readings for today (70 minutes, with 5 min break)
- Summative lecture and open discussion (20 minutes)
 - Key principles
 - Additional thoughts

Introductions
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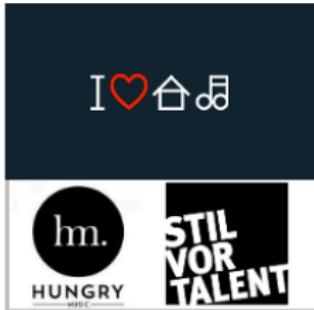
Readings for Today
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Summative lecture
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Preparation for Next Class
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Introductions

A little about me



A little about me



A little about me



A little about you

Let's fill out some introductory surveys: [Pollev.com/drfox](https://pollev.com/drfox)

Syllabus and materials overview

- Syllabus
- Brightspace
- Dropbox

Typical class flow

- *Part I:* Conceptual grounding and agenda setting (10 minutes)
- *Part II:* Core paper discussion (45 minutes):
 - We will discuss the 2-3 papers that all students have been assigned to read in detail
 - These papers typically will provide a mix of conceptual background and how-to guides
- *Break*

Typical class flow

- *Part III: Activity period (40 minutes):*
 - (Weeks 2 – 7) Compare / contrast: One group tasked with reviewing two additional papers to explain their points of intersection, divergence, and ties to core papers
 - (Weeks 8 – 14) Replication: One group tasked with using data from one of my current or published papers to replicate analyses and show the class the process

Typical class flow

- *Part IV:* Summative lecture on concepts (15 minutes):
 - I will make a brief presentation to tie together and highlight key concepts
 - Elements missed in the general discussion will be given greater focus
- *Part V:* Open discussion (5 minutes)

Introductions
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Readings for Today

Preamble

I have provided some discussion questions for us to consider in case we need to get the ball rolling.

We may or may not discuss those questions depending on the flow of the class.

In general, I would rather talk about your ideas and questions rather than these “canned” items.

Popper (2002)

The Logic of Scientific Discovery. [Ch .1]

According to the view that will be put forward here, the method of critically testing theories, and selecting them according to the results of tests, always proceeds on the following lines. From a new idea, put up tentatively, and not yet justified in any way—an anticipation, a hypothesis, a theoretical system, or what you will—conclusions are drawn by means of logical deduction [...]

[Then,] there is the testing of the theory by way of empirical applications of the conclusions which can be derived from it. [p. 9]

Popper (2002)

Discussion Questions

- Reactions? Insights? Disagreements?
- In your view, what is the main point?
- Do this worldview currently inform your work? How might it?

Karl
Popper

The Logic of Scientific
Discovery



Mantere and Ketokivi (2013)

Reasoning in Organization Science. Academy of Management Review, 38(1), 70-89.

Labels aside, a closer look at research practice reveals that researchers across research traditions use all three forms of reasoning. It is hardly surprising to observe that we all make inferences to a case (use deduction), inferences to generalizations (use induction), and inferences to explanations (use abduction). Thus, using reasoning types as labels to describe entire research designs is misleading. Instead, differences between research approaches, whatever they may be, are found not in the types of reasoning used but, rather, in how the three reasoning types are used in conjunction with one another. (p. 76)

Mantere and Ketokivi (2013)

Discussion Questions

- What the hell are they talking about?
 - What mode(s) of reasoning do you tend to rely on in your current work?
 - What concrete practices did you draw from this paper, if any?

Academy of Management Review
35, Part 3B No. 3, 75-89
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REASONING IN ORGANIZATION SCIENCE

SANU MARTINS

第10章 常用的IDE

Principles regarding organization-scientific methodology are typically founded on the researcher's ability to approach problem retentively. In a critical examination of the use of organizational research literature, Johnson (1990) argued that researchers must use to examine this literature. He suggested that, at a minimum, one must consider a more retrospective view of the cognitive capacity of the resources. To this end, we can develop a typology of descriptive, prescriptive, and normative criteria for the analysis of organization-scientific research practice. This typology addresses both cognitive limits and the diversity of research approaches. This methodology facilitates the identification of research practices that are in conflict with the principles of scientific research. It also provides a means for the incorporation of a more cognitive element into the formulation and evaluation of scientific research and arguments.

The objective of scholarly reasoning is to pursue knowledge in a scientific field. The creation of epistemologically sound knowledge, however, has been considered a complex, multi-layered, ranging from epistemological concern (Middeleer & Biesem, 2002) and the role of theory (Kemp, 2002) to the process of construction of knowledge (Axtell, 1995) and scientific rhetoric (Estabrook & Montague, 2002). In this article, we will focus on the concept of extract knowledge in a methodological approach as opposed to observational, psychological, or social approaches. Extract knowledge is considered precise in criminology, because the general understanding of how sciences function, and formulates the specific requirements for research (Brennan et al., 2004), and yet perspectives across a considerable number of disciplines have different standards for defining criteria for methodological rigor. For example, in the field of psychology, the term *precision* typically does not incorporate the cognitive limitations of the researcher, which is considered a primary problem in methodological research (Shapka, 2002).

We thank three anonymous AMR reviewers for their helpful, critical, and constructive evaluations of the manuscript. We are also grateful to Dr. Michael J. Hirsch for his useful suggestions on how to crystallize our argument. We dedicate this article to Bill McNaught, whose encouragement and helpful comments on our work on reasoning over the years have played a crucial role in the maturation of the article.

Nosek and Errington (2020)

What is replication? PLOS Biology: 1-8.

To be a replication, 2 things must be true: outcomes consistent with a prior claim would increase confidence in the claim, and outcomes inconsistent with a prior claim would decrease confidence in the claim. The symmetry promotes replication as a mechanism for confronting prior claims with new evidence. Therefore, declaring that a study is a replication is a theoretical commitment. Replication provides the opportunity to test whether existing theories, hypotheses, or models are able to predict outcomes that have not yet been observed. Successful replications increase confidence in those models; unsuccessful replications decrease confidence and spur theoretical innovation to improve or discard the model. (p. 2)

Nosek and Errington (2020)

Discussion Questions

- Do you agree with their definition of replication?
- What are the benefits and drawbacks of applying such a definition?
- How does this fit in with the replication crisis?

PLOS BIOLOGY

PERSPECTIVE

What is replication?

Brian A. Nosek^{1,*},²,³,⁴,⁵,⁶,⁷,⁸,⁹,¹⁰,¹¹,¹²,¹³,¹⁴,¹⁵,¹⁶,¹⁷,¹⁸,¹⁹,²⁰,²¹,²²,²³,²⁴,²⁵,²⁶,²⁷,²⁸,²⁹,³⁰,³¹,³²,³³,³⁴,³⁵,³⁶,³⁷,³⁸,³⁹,⁴⁰,⁴¹,⁴²,⁴³,⁴⁴,⁴⁵,⁴⁶,⁴⁷,⁴⁸,⁴⁹,⁵⁰,⁵¹,⁵²,⁵³,⁵⁴,⁵⁵,⁵⁶,⁵⁷,⁵⁸,⁵⁹,⁶⁰,⁶¹,⁶²,⁶³,⁶⁴,⁶⁵,⁶⁶,⁶⁷,⁶⁸,⁶⁹,⁷⁰,⁷¹,⁷²,⁷³,⁷⁴,⁷⁵,⁷⁶,⁷⁷,⁷⁸,⁷⁹,⁸⁰,⁸¹,⁸²,⁸³,⁸⁴,⁸⁵,⁸⁶,⁸⁷,⁸⁸,⁸⁹,⁹⁰,⁹¹,⁹²,⁹³,⁹⁴,⁹⁵,⁹⁶,⁹⁷,⁹⁸,⁹⁹,¹⁰⁰,¹⁰¹,¹⁰²,¹⁰³,¹⁰⁴,¹⁰⁵,¹⁰⁶,¹⁰⁷,¹⁰⁸,¹⁰⁹,¹¹⁰,¹¹¹,¹¹²,¹¹³,¹¹⁴,¹¹⁵,¹¹⁶,¹¹⁷,¹¹⁸,¹¹⁹,¹²⁰,¹²¹,¹²²,¹²³,¹²⁴,¹²⁵,¹²⁶,¹²⁷,¹²⁸,¹²⁹,¹³⁰,¹³¹,¹³²,¹³³,¹³⁴,¹³⁵,¹³⁶,¹³⁷,¹³⁸,¹³⁹,¹⁴⁰,¹⁴¹,¹⁴²,¹⁴³,¹⁴⁴,¹⁴⁵,¹⁴⁶,¹⁴⁷,¹⁴⁸,¹⁴⁹,¹⁵⁰,¹⁵¹,¹⁵²,¹⁵³,¹⁵⁴,¹⁵⁵,¹⁵⁶,¹⁵⁷,¹⁵⁸,¹⁵⁹,¹⁶⁰,¹⁶¹,¹⁶²,¹⁶³,¹⁶⁴,¹⁶⁵,¹⁶⁶,¹⁶⁷,¹⁶⁸,¹⁶⁹,¹⁷⁰,¹⁷¹,¹⁷²,¹⁷³,¹⁷⁴,¹⁷⁵,¹⁷⁶,¹⁷⁷,¹⁷⁸,¹⁷⁹,¹⁸⁰,¹⁸¹,¹⁸²,¹⁸³,¹⁸⁴,¹⁸⁵,¹⁸⁶,¹⁸⁷,¹⁸⁸,¹⁸⁹,¹⁹⁰,¹⁹¹,¹⁹²,¹⁹³,¹⁹⁴,¹⁹⁵,¹⁹⁶,¹⁹⁷,¹⁹⁸,¹⁹⁹,²⁰⁰,²⁰¹,²⁰²,²⁰³,²⁰⁴,²⁰⁵,²⁰⁶,²⁰⁷,²⁰⁸,²⁰⁹,²¹⁰,²¹¹,²¹²,²¹³,²¹⁴,²¹⁵,²¹⁶,²¹⁷,²¹⁸,²¹⁹,²²⁰,²²¹,²²²,²²³,²²⁴,²²⁵,²²⁶,²²⁷,²²⁸,²²⁹,²³⁰,²³¹,²³²,²³³,²³⁴,²³⁵,²³⁶,²³⁷,²³⁸,²³⁹,²⁴⁰,²⁴¹,²⁴²,²⁴³,²⁴⁴,²⁴⁵,²⁴⁶,²⁴⁷,²⁴⁸,²⁴⁹,²⁵⁰,²⁵¹,²⁵²,²⁵³,²⁵⁴,²⁵⁵,²⁵⁶,²⁵⁷,²⁵⁸,²⁵⁹,²⁶⁰,²⁶¹,²⁶²,²⁶³,²⁶⁴,²⁶⁵,²⁶⁶,²⁶⁷,²⁶⁸,²⁶⁹,²⁷⁰,²⁷¹,²⁷²,²⁷³,²⁷⁴,²⁷⁵,²⁷⁶,²⁷⁷,²⁷⁸,²⁷⁹,²⁸⁰,²⁸¹,²⁸²,²⁸³,²⁸⁴,²⁸⁵,²⁸⁶,²⁸⁷,²⁸⁸,²⁸⁹,²⁹⁰,²⁹¹,²⁹²,²⁹³,²⁹⁴,²⁹⁵,²⁹⁶,²⁹⁷,²⁹⁸,²⁹⁹,³⁰⁰,³⁰¹,³⁰²,³⁰³,³⁰⁴,³⁰⁵,³⁰⁶,³⁰⁷,³⁰⁸,³⁰⁹,³¹⁰,³¹¹,³¹²,³¹³,³¹⁴,³¹⁵,³¹⁶,³¹⁷,³¹⁸,³¹⁹,³²⁰,³²¹,³²²,³²³,³²⁴,³²⁵,³²⁶,³²⁷,³²⁸,³²⁹,³³⁰,³³¹,³³²,³³³,³³⁴,³³⁵,³³⁶,³³⁷,³³⁸,³³⁹,³⁴⁰,³⁴¹,³⁴²,³⁴³,³⁴⁴,³⁴⁵,³⁴⁶,³⁴⁷,³⁴⁸,³⁴⁹,³⁵⁰,³⁵¹,³⁵²,³⁵³,³⁵⁴,³⁵⁵,³⁵⁶,³⁵⁷,³⁵⁸,³⁵⁹,³⁶⁰,³⁶¹,³⁶²,³⁶³,³⁶⁴,³⁶⁵,³⁶⁶,³⁶⁷,³⁶⁸,³⁶⁹,³⁷⁰,³⁷¹,³⁷²,³⁷³,³⁷⁴,³⁷⁵,³⁷⁶,³⁷⁷,³⁷⁸,³⁷⁹,³⁸⁰,³⁸¹,³⁸²,³⁸³,³⁸⁴,³⁸⁵,³⁸⁶,³⁸⁷,³⁸⁸,³⁸⁹,³⁹⁰,³⁹¹,³⁹²,³⁹³,³⁹⁴,³⁹⁵,³⁹⁶,³⁹⁷,³⁹⁸,³⁹⁹,⁴⁰⁰,⁴⁰¹,⁴⁰²,⁴⁰³,⁴⁰⁴,⁴⁰⁵,⁴⁰⁶,⁴⁰⁷,⁴⁰⁸,⁴⁰⁹,⁴¹⁰,⁴¹¹,⁴¹²,⁴¹³,⁴¹⁴,⁴¹⁵,⁴¹⁶,⁴¹⁷,⁴¹⁸,⁴¹⁹,⁴²⁰,⁴²¹,⁴²²,⁴²³,⁴²⁴,⁴²⁵,⁴²⁶,⁴²⁷,⁴²⁸,⁴²⁹,⁴³⁰,⁴³¹,⁴³²,⁴³³,⁴³⁴,⁴³⁵,⁴³⁶,⁴³⁷,⁴³⁸,⁴³⁹,⁴⁴⁰,⁴⁴¹,⁴⁴²,⁴⁴³,⁴⁴⁴,⁴⁴⁵,⁴⁴⁶,⁴⁴⁷,⁴⁴⁸,⁴⁴⁹,⁴⁵⁰,⁴⁵¹,⁴⁵²,⁴⁵³,⁴⁵⁴,⁴⁵⁵,⁴⁵⁶,⁴⁵⁷,⁴⁵⁸,⁴⁵⁹,⁴⁶⁰,⁴⁶¹,⁴⁶²,⁴⁶³,⁴⁶⁴,⁴⁶⁵,⁴⁶⁶,⁴⁶⁷,⁴⁶⁸,⁴⁶⁹,⁴⁷⁰,⁴⁷¹,⁴⁷²,⁴⁷³,⁴⁷⁴,⁴⁷⁵,⁴⁷⁶,⁴⁷⁷,⁴⁷⁸,⁴⁷⁹,⁴⁸⁰,⁴⁸¹,⁴⁸²,⁴⁸³,⁴⁸⁴,⁴⁸⁵,⁴⁸⁶,⁴⁸⁷,⁴⁸⁸,⁴⁸⁹,⁴⁹⁰,⁴⁹¹,⁴⁹²,⁴⁹³,⁴⁹⁴,⁴⁹⁵,⁴⁹⁶,⁴⁹⁷,⁴⁹⁸,⁴⁹⁹,⁵⁰⁰,⁵⁰¹,⁵⁰²,⁵⁰³,⁵⁰⁴,⁵⁰⁵,⁵⁰⁶,⁵⁰⁷,⁵⁰⁸,⁵⁰⁹,⁵¹⁰,⁵¹¹,⁵¹²,⁵¹³,⁵¹⁴,⁵¹⁵,⁵¹⁶,⁵¹⁷,⁵¹⁸,⁵¹⁹,⁵²⁰,⁵²¹,⁵²²,⁵²³,⁵²⁴,⁵²⁵,⁵²⁶,⁵²⁷,⁵²⁸,⁵²⁹,⁵³⁰,⁵³¹,⁵³²,⁵³³,⁵³⁴,⁵³⁵,⁵³⁶,⁵³⁷,⁵³⁸,⁵³⁹,⁵⁴⁰,⁵⁴¹,⁵⁴²,⁵⁴³,⁵⁴⁴,⁵⁴⁵,⁵⁴⁶,⁵⁴⁷,⁵⁴⁸,⁵⁴⁹,⁵⁵⁰,⁵⁵¹,⁵⁵²,⁵⁵³,⁵⁵⁴,⁵⁵⁵,⁵⁵⁶,⁵⁵⁷,⁵⁵⁸,⁵⁵⁹,⁵⁶⁰,⁵⁶¹,⁵⁶²,⁵⁶³,⁵⁶⁴,⁵⁶⁵,⁵⁶⁶,⁵⁶⁷,⁵⁶⁸,⁵⁶⁹,⁵⁷⁰,⁵⁷¹,⁵⁷²,⁵⁷³,⁵⁷⁴,⁵⁷⁵,⁵⁷⁶,⁵⁷⁷,⁵⁷⁸,⁵⁷⁹,⁵⁸⁰,⁵⁸¹,⁵⁸²,⁵⁸³,⁵⁸⁴,⁵⁸⁵,⁵⁸⁶,⁵⁸⁷,⁵⁸⁸,⁵⁸⁹,⁵⁹⁰,⁵⁹¹,⁵⁹²,⁵⁹³,⁵⁹⁴,⁵⁹⁵,⁵⁹⁶,⁵⁹⁷,⁵⁹⁸,⁵⁹⁹,⁶⁰⁰,⁶⁰¹,⁶⁰²,⁶⁰³,⁶⁰⁴,⁶⁰⁵,⁶⁰⁶,⁶⁰⁷,⁶⁰⁸,⁶⁰⁹,⁶¹⁰,⁶¹¹,⁶¹²,⁶¹³,⁶¹⁴,⁶¹⁵,⁶¹⁶,⁶¹⁷,⁶¹⁸,⁶¹⁹,⁶²⁰,⁶²¹,⁶²²,⁶²³,⁶²⁴,⁶²⁵,⁶²⁶,⁶²⁷,⁶²⁸,⁶²⁹,⁶³⁰,⁶³¹,⁶³²,⁶³³,⁶³⁴,⁶³⁵,⁶³⁶,⁶³⁷,⁶³⁸,⁶³⁹,⁶⁴⁰,⁶⁴¹,⁶⁴²,⁶⁴³,⁶⁴⁴,⁶⁴⁵,⁶⁴⁶,⁶⁴⁷,⁶⁴⁸,⁶⁴⁹,⁶⁵⁰,⁶⁵¹,⁶⁵²,⁶⁵³,⁶⁵⁴,⁶⁵⁵,⁶⁵⁶,⁶⁵⁷,⁶⁵⁸,⁶⁵⁹,⁶⁶⁰,⁶⁶¹,⁶⁶²,⁶⁶³,⁶⁶⁴,⁶⁶⁵,⁶⁶⁶,⁶⁶⁷,⁶⁶⁸,⁶⁶⁹,⁶⁷⁰,⁶⁷¹,⁶⁷²,⁶⁷³,⁶⁷⁴,⁶⁷⁵,⁶⁷⁶,⁶⁷⁷,⁶⁷⁸,⁶⁷⁹,⁶⁸⁰,⁶⁸¹,⁶⁸²,⁶⁸³,⁶⁸⁴,⁶⁸⁵,⁶⁸⁶,⁶⁸⁷,⁶⁸⁸,⁶⁸⁹,⁶⁹⁰,⁶⁹¹,⁶⁹²,⁶⁹³,⁶⁹⁴,⁶⁹⁵,⁶⁹⁶,⁶⁹⁷,⁶⁹⁸,⁶⁹⁹,⁷⁰⁰,⁷⁰¹,⁷⁰²,⁷⁰³,⁷⁰⁴,⁷⁰⁵,⁷⁰⁶,⁷⁰⁷,⁷⁰⁸,⁷⁰⁹,⁷¹⁰,⁷¹¹,⁷¹²,⁷¹³,⁷¹⁴,⁷¹⁵,⁷¹⁶,⁷¹⁷,⁷¹⁸,⁷¹⁹,⁷²⁰,⁷²¹,⁷²²,⁷²³,⁷²⁴,⁷²⁵,⁷²⁶,⁷²⁷,⁷²⁸,⁷²⁹,⁷³⁰,⁷³¹,⁷³²,⁷³³,⁷³⁴,⁷³⁵,⁷³⁶,⁷³⁷,⁷³⁸,⁷³⁹,⁷⁴⁰,⁷⁴¹,⁷⁴²,⁷⁴³,⁷⁴⁴,⁷⁴⁵,⁷⁴⁶,⁷⁴⁷,⁷⁴⁸,⁷⁴⁹,⁷⁵⁰,⁷⁵¹,⁷⁵²,⁷⁵³,⁷⁵⁴,⁷⁵⁵,⁷⁵⁶,⁷⁵⁷,⁷⁵⁸,⁷⁵⁹,⁷⁶⁰,⁷⁶¹,⁷⁶²,⁷⁶³,⁷⁶⁴,⁷⁶⁵,⁷⁶⁶,⁷⁶⁷,⁷⁶⁸,⁷⁶⁹,⁷⁷⁰,⁷⁷¹,⁷⁷²,⁷⁷³,⁷⁷⁴,⁷⁷⁵,⁷⁷⁶,⁷⁷⁷,⁷⁷⁸,⁷⁷⁹,⁷⁸⁰,⁷⁸¹,⁷⁸²,⁷⁸³,⁷⁸⁴,⁷⁸⁵,⁷⁸⁶,⁷⁸⁷,⁷⁸⁸,⁷⁸⁹,⁷⁹⁰,⁷⁹¹,⁷⁹²,⁷⁹³,⁷⁹⁴,⁷⁹⁵,⁷⁹⁶,⁷⁹⁷,⁷⁹⁸,⁷⁹⁹,⁸⁰⁰,⁸⁰¹,⁸⁰²,⁸⁰³,⁸⁰⁴,⁸⁰⁵,⁸⁰⁶,⁸⁰⁷,⁸⁰⁸,⁸⁰⁹,⁸¹⁰,⁸¹¹,⁸¹²,⁸¹³,⁸¹⁴,⁸¹⁵,⁸¹⁶,⁸¹⁷,⁸¹⁸,⁸¹⁹,⁸²⁰,⁸²¹,⁸²²,⁸²³,⁸²⁴,⁸²⁵,⁸²⁶,⁸²⁷,⁸²⁸,⁸²⁹,⁸³⁰,⁸³¹,⁸³²,⁸³³,⁸³⁴,⁸³⁵,⁸³⁶,⁸³⁷,⁸³⁸,⁸³⁹,⁸⁴⁰,⁸⁴¹,⁸⁴²,⁸⁴³,⁸⁴⁴,⁸⁴⁵,⁸⁴⁶,⁸⁴⁷,⁸⁴⁸,⁸⁴⁹,⁸⁵⁰,⁸⁵¹,⁸⁵²,⁸⁵³,⁸⁵⁴,⁸⁵⁵,⁸⁵⁶,⁸⁵⁷,⁸⁵⁸,⁸⁵⁹,⁸⁶⁰,⁸⁶¹,⁸⁶²,⁸⁶³,⁸⁶⁴,⁸⁶⁵,⁸⁶⁶,⁸⁶⁷,⁸⁶⁸,⁸⁶⁹,⁸⁷⁰,⁸⁷¹,⁸⁷²,⁸⁷³,⁸⁷⁴,⁸⁷⁵,⁸⁷⁶,⁸⁷⁷,⁸⁷⁸,⁸⁷⁹,⁸⁸⁰,⁸⁸¹,⁸⁸²,⁸⁸³,⁸⁸⁴,⁸⁸⁵,⁸⁸⁶,⁸⁸⁷,⁸⁸⁸,⁸⁸⁹,⁸⁹⁰,⁸⁹¹,⁸⁹²,⁸⁹³,⁸⁹⁴,⁸⁹⁵,⁸⁹⁶,⁸⁹⁷,⁸⁹⁸,⁸⁹⁹,⁹⁰⁰,⁹⁰¹,⁹⁰²,⁹⁰³,⁹⁰⁴,⁹⁰⁵,⁹⁰⁶,⁹⁰⁷,⁹⁰⁸,⁹⁰⁹,⁹¹⁰,⁹¹¹,⁹¹²,⁹¹³,⁹¹⁴,⁹¹⁵,⁹¹⁶,⁹¹⁷,⁹¹⁸,⁹¹⁹,⁹²⁰,⁹²¹,⁹²²,⁹²³,⁹²⁴,⁹²⁵,⁹²⁶,⁹²⁷,⁹²⁸,⁹²⁹,⁹³⁰,⁹³¹,⁹³²,⁹³³,⁹³⁴,⁹³⁵,⁹³⁶,⁹³⁷,⁹³⁸,⁹³⁹,⁹⁴⁰,⁹⁴¹,⁹⁴²,⁹⁴³,⁹⁴⁴,⁹⁴⁵,⁹⁴⁶,⁹⁴⁷,⁹⁴⁸,⁹⁴⁹,⁹⁵⁰,⁹⁵¹,⁹⁵²,⁹⁵³,⁹⁵⁴,⁹⁵⁵,⁹⁵⁶,⁹⁵⁷,⁹⁵⁸,⁹⁵⁹,⁹⁶⁰,⁹⁶¹,⁹⁶²,⁹⁶³,⁹⁶⁴,⁹⁶⁵,⁹⁶⁶,⁹⁶⁷,⁹⁶⁸,⁹⁶⁹,⁹⁷⁰,⁹⁷¹,⁹⁷²,⁹⁷³,⁹⁷⁴,⁹⁷⁵,⁹⁷⁶,⁹⁷⁷,⁹⁷⁸,⁹⁷⁹,⁹⁸⁰,⁹⁸¹,⁹⁸²,⁹⁸³,⁹⁸⁴,⁹⁸⁵,⁹⁸⁶,⁹⁸⁷,⁹⁸⁸,⁹⁸⁹,⁹⁹⁰,⁹⁹¹,⁹⁹²,⁹⁹³,⁹⁹⁴,⁹⁹⁵,⁹⁹⁶,⁹⁹⁷,⁹⁹⁸,⁹⁹⁹,⁹⁹⁹⁹

Rynes and Bartunek (2017)

Evidence-Based Management: Foundations, Development, Controversies and Future.

Management academics have long noted a large gap between academic research and managerial practice. [...] Some have viewed the causes of the gap as lying primarily with academic researchers, who are characterized (perhaps caricatured) as having become overspecialized, self-referential, obsessed with theory, excessively mathematical, jargonladen, unconcerned about practical problems, and dismissive of practitioners [...] Others have focused on practitioners, who are sometimes characterized or caricatured as research phobic, anti-intellectual, susceptible to unproven fads and fashions... (p. 236)

Rynes and Bartunek (2017)

Discussion Questions

- Are you familiar with evidence-based practice from your current work?
- In your PhD studies so far, have you seen a concerted effort to move towards evidence-based management?
- Where might you fit in helping to advance evidence-based management? How might you do about doing it?



Evidence-Based Management:
Foundations, Development,
Controversies and Future

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Keywords: evidence-based management, evidence-based practice, research-practice gap, academic-practitioner relationship, spillover effects

Abstract: We review the recent development of evidence-based management (EBM) and its trajectory to begin closing gaps between research and practice, through examining various studies and the emergence of evidence-based management (EBM) as a discipline. We also highlight the challenges of EBM and the need for more detailed studies advancing its use. We then review categories of articles that comprise the EBM agenda: advocacy studies, theory or processes, teaching, and application. Finally, we discuss the future of EBM. Categories include political, epistemological, and methodological issues directly pertinent to EBM. Epistemological issues concern the nature of knowledge base on which EBM depends. Our suggestions for future research emphasize the need for more studies on the development of EBM and its potential studies in EBM. Topics of particular interest include research co-creation by academics and practitioners, process and outcome studies of EBM implementation, and the role of EBM in spillover effects across different domains. We also call for broader types of spillover sources (OKs) that have previously been overlooked in the organization sciences.

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Summative lecture

Preamble

What follows is my personal, idiosyncratic synthesis of the pieces that we have read to date. To be clear, many interpretations are possible due to these articles' collective:

- richness
- overlap
- distinctive features

Furthermore, there are multiple plausible criteria to judge quality research and a lack of universal consensus given the multiplicity of aims and epistemological orientations.

This is not to say anything goes; rather, I am trying to highlight the limits of my knowledge and my unique lens that necessarily abstracts away features from complex topics.

Some key principles of research design

- Falsifiability
- Defensibility
- Applicability
- Replicability

Falsifiability

- Falsifiability provides a basis for to use abductive reasoning to augment pure deductive reasoning. The latter is true a priori if the premises and statements are valid. Thus, pure deduction can transform our understanding of the system, but cannot generate truth from outside the established system - this must be uncovered by other means.

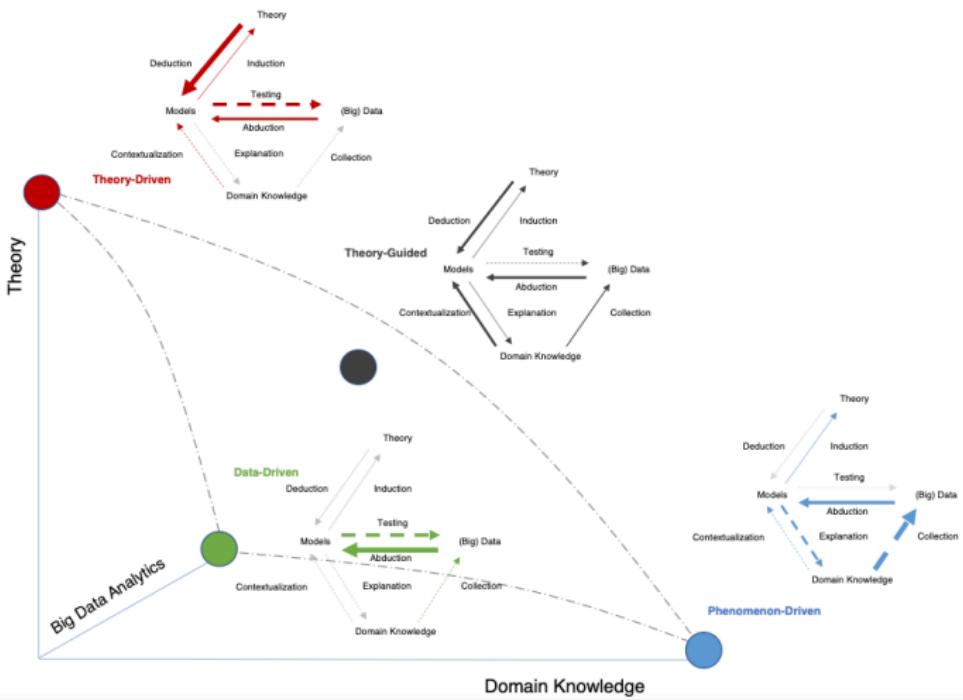
Falsifiability

My proposal is based upon an asymmetry between verifiability and falsifiability; an asymmetry which results from the logical form of universal statements. For these are never derivable from singular statements, but can be contradicted by singular statements. - Popper (2002, 19)

Defensibility

- If the logic of our arguments are defensible and the evidentiary basis is sound, we are better able to act upon the conclusions with confidence.
- We rely on multiple modes of inference to assert our claims credibility - my coauthors and I argue that the relative importance of each depends on the type of research design employed and intended contribution.

Defensibility



Defensibility

One way to map out the defensibility of an argument is with a Toulmin diagram:

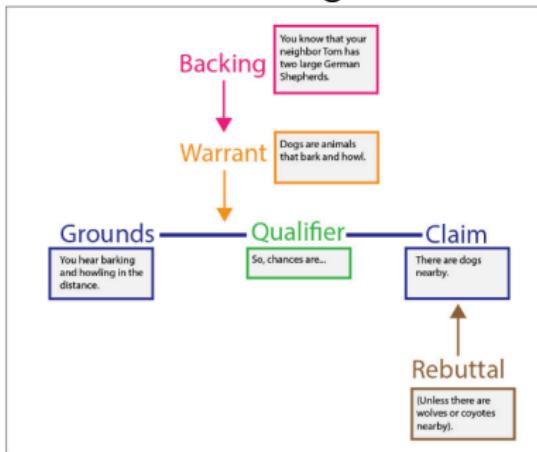


Figure 3: An example Toulmin diagram

Applicability

But our arguments and conclusions, even if correct, are irrelevant if they aren't applicable to real-world problems.

There are two corollaries to this:

- We should pick problems that actually matter, not just intellectual curiosities.
- We should not be hamstrung by our ability to tackle important problems.

Applicability

I was recently at a brown-bag seminar where a pair of management colleagues were seeking advice about a preliminary research idea. It took just a few minutes for us all to agree that their research question was fascinating. It addressed an extremely interesting issue that both academics and practicing managers would like to learn more about. The only problem: the presenters had no theory. So, we spent the entire session going through our collective mental catalogues of theories that might be invoked so that the project could proceed and have some prospect of publication. People were mentioning theories I'd never heard of. We became frenzied, nearly desperate: "Good god, there must be a theory out there that we can latch onto." - Hambrick (2007)

Replicability

- Finally, the structure of our empirical base presumes that the research was performed in good order and that the findings are replicable within their domain of applicability.

Replicability

[A]n accumulation of evidence that points to empirical regularities provides us with a much broader and more generalized understanding of the world. Such empirical regularities are known as 'stylized facts'. - Helfat (2007)

The relative importance of each principle

We can consider four basic “classes” of research in management:

- basic disciplinary research (primary studies in AER, AJS)
- applied research conducted in a management context (primary studies in AMJ)
- data-driven decision making derived from primary studies (systematic reviews in IJMR, JOM)
- practitioner-focused outlets (articles in HBR, CMR, popular press)

Where might, for example, applicability be more highly valued?
Falsifiability?

Other thoughts: Useful types of thinking when conducting research

- Skeptical thinking
- Bayesian thinking
- Strategic thinking
- First principles thinking

Skeptical thinking

*"Science depends on organized skepticism, that is, on continual, methodical doubting. Few of us doubt our own conclusions, so science embraces its skeptical approach by rewarding those who doubt someone else's." Neil deGrasse Tyson, *Origins: Fourteen Billion Years of Cosmic Evolution**

Skeptical thinking

MasterClass

Neil deGrasse Tyson

—

Teaches Scientific Thinking
and Communication



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2:43

A promotional image for a MasterClass course featuring Neil deGrasse Tyson. The image is framed by a dark border. In the top left corner, the "MasterClass" logo is visible. The central focus is a portrait of Neil deGrasse Tyson, a Black man with short, dark hair and a mustache, wearing a dark suit jacket over a blue button-down shirt. To the left of his portrait, the title "Neil deGrasse Tyson" is displayed in large, white, sans-serif font, with a horizontal line separating it from the subtitle. Below the title, the subtitle "Teaches Scientific Thinking and Communication" is written in a smaller, white, sans-serif font. In the bottom right corner of the image frame, there is a small black box containing the number "2:43", likely indicating the duration of the video segment.

Bayesian thinking

Implicit in the discussions above is a question of degree of belief.

- Nosek and Errington talk about how replication increases or decreases our degree of belief.
- Popper uses the asymmetry of verification to achieve binary outcome of disconfirmed evidence.
- But couldn't we be more subtle in our treatment of beliefs?
 - Indeed, we can through the application of Bayesian logic and Bayes' Rule.
 - I will not be teaching you the statistical methods that follow from this, but you can find them.

Bayesian thinking

Heart of Bayes' theorem

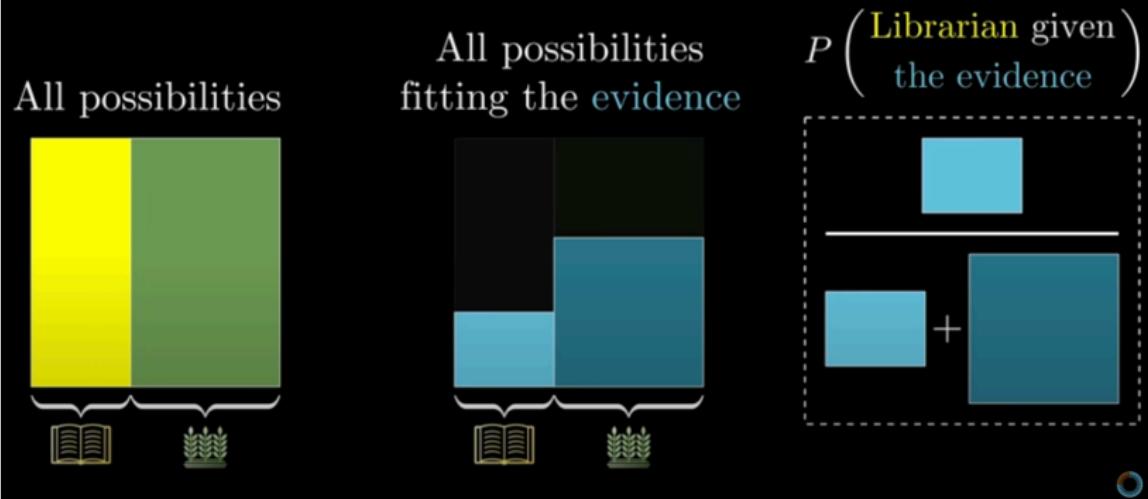


Figure 5: A Primer on Bayesian Thinking

Strategic thinking

Finally, it helps to be strategic when thinking about designing and evaluating research. By this I mean thinking that embraces three characteristics:

- Rigor
- Complexity
- Ambiguity

Strategic thinking

- Rigor
 - Comprehensive – focusing attention on both the forest (a research program) and the trees (discrete methods or studies)
 - Adaptive – balancing multiple goals and knowing what progress can be made against one or more of them simultaneously
 - Inferential – moving from what is known to what can be reasonably inferred

Strategic thinking

- Complexity
 - Dynamics – accounting for first and second order effects that are material across actors, choices, and time
 - Allocentricity – outcomes often jointly determined by internal and external factors, often other parties or agents

Strategic thinking

■ Ambiguity

- Unstable – non-linear shifts across time and situations may limit generalizability and heighten the role of context
- Unforeseeable – many research projects are a full reinforcement learning problem, learning while doing is necessary to reveal the evolving state of the world

Strategic thinking

Thinking Strategically

*The Art of Reasoning
for a Rapidly Changing World*

BIG THINK +



First principles thinking

A first principle is a basic assumption that cannot be deduced any further. Over two thousand years ago, Aristotle defined a first principle as “the first basis from which a thing is known.” First principles thinking is a fancy way of saying “think like a scientist.” Scientists don’t assume anything. They start with questions like, What are we absolutely sure is true? What has been proven? - James Clear

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Next class

Research II: Positions

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- 3 Simsek, Z., Heavey, C., Fox, B. C., & Yu, T. 2022. Compelling Questions in Research: Seeing What Everybody Has Seen and Thinking What Nobody Has Thought. Journal of Management, 48(6), 1347-1365.

Next class

Research II: Positions

Our first compare and contrast discussion will take place.

Presenters, please reach out if you have questions or concerns!

4 Compare / Contrast

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