

## **BUS 80000 – FA20**

### **Philosophy of Science: Philosophical and Methodological Foundations of Business Research**

(tentative course outline, subject to change)

*v1.0 - 08/28/20*

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Office: VC 13-251  
Office Hours: by appointment  
Class hours: F 2 – 5pm  
Venue: Zoom

#### **Course Overview**

BUS 80000 -- Philosophy of Science: Philosophical and Methodological Foundations of Business Research is an important course for doctoral students in business. It provides the necessary background in the philosophy of science so that the students are better prepared to conduct high quality productive research. The course will develop the process of reorienting the student's thinking from the receptive mode of thinking that occurs in traditional graduate classes to the critical mode of thinking necessary for doctoral research. Key content elements in this course include the problem of appropriately defining concepts for business research, the problem of providing evidence in support of a claim, and the problem of identifying philosophical assumptions in social science research as well as the epistemological and methodological constraints that those assumptions imply.

Most work in the philosophy of science focuses almost exclusively on natural science. Most of this, in turn, focuses on physics, with some examples from other natural sciences. This work, while interesting, does not provide much useful guidance for social science research of which business research is a subfield. Natural science attempts to discover what is 'out there' in the world and the philosophy of natural science examines the quality of the ways in which we do that. Social science is not concerned with the natural world. Instead it is concerned with a social reality – a set of shared assumptions we have about how the social world operates. So, in that case, the philosophy of natural science has limited application. That is why we use books on the philosophy of organizational and social science research. Still, the philosophy of social science applies more to economics, psychology, and sociology than it does to business. Hence, this course has been carefully tailored to avoid arcane philosophical issues and focus rather on those that have great practical value for business research. While methodologies provide a conceptual framework for research, philosophy of science provides a conceptual framework for methodologies. If one is doing research in an area that is well understood, where all questions of method and evidence are agreed upon, then one may not need to understand anything about the philosophy of science. However, if that is the case then it could be argued that such a person is only doing data collection and not really research. So, understanding key philosophical issues is critical to good research.

In physical science we study the natural world – elements of the world, properties of those elements, and how elements relate to other elements. In social science we study concepts. Concepts are abstract generalizations of experience and do not exist in the natural world in the same way that the objects of natural science do. Because they do not exist in the world in the same way that rocks and trees exist, they tend to change over time making social science research a little tricky at times. Most social science research is of the form concept A is related to concept B according to some relationship R. If concepts A and B, and relationship R are not well defined then the research will be weak and nothing can be done to shore it up later. So, theorizing concepts is a key to solid social science research. One might think that all the important concepts have already been clearly defined. However, all one has to do is to look at the literature on productivity, motivation, leadership, customer/user satisfaction, technology adoption, or any number of other business concepts to realize that these concepts are far from well defined.

## Learning Goals

The goals of this seminar are to help students

1. Appreciate the nature of the scientific endeavor.
2. Become familiar with key issues in philosophy of science.
3. Understand the structure of theories and the theory construction process.
4. Critically read and evaluate research articles.
5. Develop skills in initiating research, crafting manuscripts and dealing with the journal review process.
6. Develop skills in (leading) class discussions.

## Grading

Grades will be based on the following structure:

1. Contribution to class discussions	20%
2. Weekly Memos	10%
3. Paper 1 (cross-disciplinary analysis; team project)	30%
4. Paper 2 (position paper; individual project)	40%

## Course Components

Contributions to Class Discussions (20%): This includes constructive contributions to in-class discussion (including Blackboard) as well as the briefings of assigned readings.

Weekly Memos (10%): Every week, you will write a 1-2 page memo that reflects on the key points made in the readings assigned for the week and discussed in class and present them in an organized and integrated fashion. It is important that you point out commonalities and differences among the different authors and viewpoints in terms of assumptions, perspectives, and purposes of their writings. Finally, the memo should also include your personal perspective as well one specific question related to the readings that you find particularly interesting and think would benefit further discussion in class.

*Comparative Analysis Paper (30%):* Your team (of 2 students) will identify two or three research papers that made an important contribution to your own discipline. The papers should differ substantially in their underlying philosophy of science and they should be published in top journals in the field. Please email a copy of your picks along with a short explanation how and why you chose the papers for this assignment to me by **September 25**. Your project paper (max **6 pages**) will present a comparative analysis of the example research articles submitted by all students of the class. Your analysis should address and reflect on the following issues: what is the research area of the papers and what research questions are examined; what are the underlying philosophical assumptions made in the articles (they may be implicit or explicitly stated); what are the methodologies used in the research papers (and why are they appropriate); what is the role of data and theory in the papers; what kind of results and claims are generated by the studies; what contributions do the papers make (and why are these important); what general insights can be derived across the different papers. Teams will submit a paper draft and present their paper in class (**October 16**). Team presentations should be no longer than 15 mins (including discussion). Teams have the opportunity to revise their paper and incorporate feedback from their presentation (**due October 23**).

*Position Paper (40%):* a draft of the paper is due on the last day of class (**December 11**) when you will present in class. Your class briefing of your paper should be no longer than 10 mins (including at least 5mins for discussion). Based on the feedback you receive at your in-class presentation you will revise your paper. The final version is **due on December 18**. In this paper (max **6 pages**), you will present the philosophy of science that is underpinning your own PhD research work and discuss which implications it has on your research conduct and the findings you can generate.

## **Class Materials**

### Required Texts

1. Alexander Rosenberg, *Philosophy of Social Science*, 5<sup>th</sup> ed., Routledge, 2015.
2. Andrew H. van de Ven, Engaged Scholarship: A Guide for Organizational and Social Research, Oxford University Press, 2007.

### Other Recommended Books

1. Thomas D. Cook and Donald T. Campbell, Quasi-Experimentation: Design & Analysis Issues for Field Settings, Houghton Mifflin, 1979.
2. Robert Dubin, *Theory Building*, 2<sup>nd</sup> ed, The Free Press, MacMillan Publishing, 1978.
3. Peter Fingar, *Cognitive Computing*, Meghan-Kiffer Press, 2015.
4. John Gerring, *Social Science Methodology: A Unified Framework (Strategies for Social Inquiry)*, 2<sup>nd</sup> ed., Cambridge University Press, 2012
5. Francesco Guala, The Methodology of Experimental Economics, Cambridge University Press, 2005.
6. Shelby D. Hunt, Foundations of Marketing Theory: Toward a General Theory of Marketing. New York: M.E. Sharpe, Inc, 2002.  
Shelby D. Hunt, Controversy in Marketing Theory: For Reason, Realism, Truth, and Objectivity. New York: M.E. Sharpe, Inc., 2003.

7. Fred N. Kerlinger, Foundations of Behavioral Research, 3<sup>rd</sup> ed., Holt, Reinhart, and Winston, 1986.
8. Jum C. Nunally, Psychometric Theory, 2<sup>nd</sup> ed, McGraw Hill, 1978.
9. Robert Rosenthal and Ralph L. Rosnow, Essentials of Behavioral Research, 2<sup>nd</sup> ed., McGraw Hill, 1991.
10. Alex Rosenberg, Philosophy of Science: A Contemporary Introduction, 2<sup>nd</sup> ed., Routledge, 2005.
11. Vernon L. Smith, Rationality in Economics, Cambridge University Press, 2008.
12. Robert F. DeVellis, Scale Development, 2<sup>nd</sup> ed., Sage Publications, Applied Social Research Methods Series, Vol. 26, 2003.
13. Zaltman, Gerald, Karen LeMasters and Michael Heffring, Theory Construction in Marketing: Some Thoughts on Thinking. New York, NY: John Wiley & Sons, 1982.

### Additional Readings

(some readings may be substituted and/or added during the semester)

1. J.B. Berg, H.R. Campbell, and D. Hirshleifer, How to Write and Effective Referee Report and Improve the Scientific Review Process, *Journal of Economic Perspectives*, 31(1), 231-244, 2017.
2. Clayton Christensen, Why Hard-Nosed Executives Should Care About Management Theory, *Harvard Business Review*, pp 66-74, September 2003.
3. Richard L. Daft, Learning the Craft of Organizational Research, *The Academy of Management Review*, pp 539-546, 1983.
4. Richard L. Daft and Arie Y. Lewin, Rigor and Relevance in Organization Studies: Idea Migration and Academic Journal Evolution, *Organization Science*, 19(1), 177-183, 2008.
5. Gerald F. Davis, What is Organizational Research For? *Administrative Science Quarterly*, 60(2), 1790188, 2015.
6. Kathleen Eisenhardt, Building Theory for Case Study Research, *The Academy of Management Review*, Vol. 14(4), pp. 532-550, 1989.
7. Kathleen Eisenhart and Melissa Graebner, Building Theory from Cases: Opportunities and Challenges, *Academy of Management Journal*, Vol. 50(1), pp 25-32, 2007.
8. Daniel H. Hausman, Economic Methodology in a Nutshell, *The Journal of Economic Perspectives*, Vol. 3, No. 2, pp. 115-127, 1989.
9. Martin Kilduff, Publishing Theory, *Academy of Management Review*, 31(2), 252-255, 2006.
10. John Van Maanen, Style As Theory, *Organization Science*, Vol. 6, No. 1, pp. 133-143, 1995.
11. Markham, A. (2011) "Internet Research," in Silverman, D. (ed), *Qualitative Research: Issues of Theory, Method, and Practice*, , 3rd edition, Sage Publications, Thousand Oaks, CA, 111-127.
12. John Mingers, A. Mutch, and L. Willcocks, Critical Realism and Information Research, in *Information Systems Research*, *MIS Quarterly*, 37(3), 795-802, 2013.
13. L.R. Sandman and C. Thornton, Bridging Scholarship, *Journal of Higher Education Outreach and Engagement*, 12(3), pp 223-229.
14. Herbert A. Simon, Random Thoughts about Methods of Research, Carnegie Mellon University, Working Paper, 1991.
15. J. Symons and R. Alvarado, Can we trust Big Data? Applying Philosophy of Science to Software, *Big Data & Society*, 1-17, July – December 2016.

16. Vernon L. Smith, Rational Choice: The Contrast between Economics and Psychology, *Journal of Political Economy*, 99(3), pp. 877-897, 1991.
17. Vernon L. Smith, Constructivist and Ecological Rationality in Economics, *American Economic Review*, 93(3), pp. 465-508, 2003.
18. Stanford, Introduction of Artificial Intelligence, *Stanford Encyclopedia of Philosophy*, 2018.
19. Robert Sutton and Barry Straw, What Theory is not, *Administrative Science Quarterly*, 40, 371-384, 1995.
20. Detmar Straub, Why Top Journals Accept Your Paper, Editors Comments, *MIS Quarterly*, pp iii-x, 2009.
21. A. M. Turing, Computing Machinery and Intelligence, *Quarterly Review of Psychology and Mind*, Vol. 59, 433-460, 1950.
22. Viswanath Venkatsh, Susan Brown, and Yulia Sullivan, Guidelines for Conducting Mixed-Methods Research, *Journal of the Association of Information Research*, 17(7), 436-495. 2016.
23. Andrew H. van de Ven, Nothing Is Quite so Practical as a Good Theory, *The Academy of Management Review*, Vol. 14, No. 4, pp. 486-489, 1989.
24. Karl E. Weick, Theory Construction as Disciplined Imagination, *Academy of Management Review*, 14(4), 516-531, 1989.
25. Karl E. Weick, What Theory is not Theorizing is, *Administrative Science Quarterly*, 40, 385-390, 1995.
26. Karl E. Weick, Theory Construction as Disciplined Reflexivity, *Academy of Management Review*, 24(4), pp 797-806, 1999.
27. David A. Whetten, What Constitutes a Theoretical Contribution? *The Academy of Management Review*, Vol. 14(4), pp. 490-495, 1989.
28. Amos Tversky and Daniel Kahneman, Judgment under Uncertainty: Heuristic and Biases, *Science*, Vol. 185, pp 1124-1131, 1974.
29. Varian, H., Big Data: New Tricks for Econometrics, *Journal of Economic Perspectives*, 28(2), 3-28, 2014.
30. M. Vasquez-Manoff, The Mind Readers Brains are talking to computers, and computers to brains. NYT 2020.
31. Markos Zachariadis, Susan Scott, Michael Barret, Methodological Implications of Critical Realism for Mixed-Methods Research, *MIS Quarterly*, 37(3), 855-879.

## **Outline and Weekly Topics (subject to change)**

### **Week 1 - Introduction**

- Why Philosophy of Science?
- Epistemology and Ontology

#### Readings:

1. Rosenberg, Ch. 1
2. Simon (1991)
3. Sandman & Thornton (2008)

### **Week 2 – Scholarship in Professional Schools**

- Organizational Research
- Engaged Scholarship

Readings:

1. Van de Ven, Ch.1
2. van de Ven, (2018)
3. Davis (2015)

### **Week 3 - Philosophy of Science Schools of Thought**

- Empirical and Theoretical Research
- Positivistic Research
- Interpretive Research
- Critical Theory

Readings:

1. Rosenberg, Ch 2
2. van de Ven, Ch. 2
3. Zacharias et al (2013)
4. Mingers (2013)

### **Week 4 - The Nature of Science**

- Explanation of Human Action
- The Scientific Approach
- Behavioral Research
- Problems and Hypothesis
- Constructs, Variables, and Definitions

Readings:

1. Rosenberg, Ch. 3
2. Kerlinger, Ch. 1-3
3. Rosenthal & Rosnow, Ch. 1

### **Week 5 – Explanation, Causation, and Laws**

- Action and Intentionality
- Causal Inference
- Inductive Reasoning
- Deductive Reasoning

Readings

1. Cook & Campbell, Ch.1
2. Zaltman, Ch. 3 and 5
3. Rosenberg, Ch. 4

### **Week 6 - Measurement Theory**

- Foundations of Measurement

- Reliability and Validity

Readings

2. Nunally, Ch. 1
3. de Vellis, Ch. 1
4. Rosenberg, Ch. 5

**Week 7 - Rational Choice**

- Constructivist Rationality
- Ecological Rationality
- Judgment under Uncertainty

Readings:

1. Rosenberg, Ch 6
2. Smith, Ch. 1 and 2 [or Smith 2003]
3. Tversky and Kahneman (1974)

**Week 8 – Social Construction of Society**

- Interpretational Social Science
- Social Institutions

Readings:

1. Rosenberg, Ch 7

- Student Presentations (Team Project)

**Week 9 - Theory Building**

- Discovering Theory
- Constructing Theory
- Justifying Theory
- Theorizing

Readings

1. van de Ven, Ch. 4
2. Dubin, Ch. 2
3. Whetten (1989)
4. Sutton and Staw (1995)
5. Weick (1989, 1999)
6. Eisenhart (1989, 2007)
7. van Maanen (1995)

**Week 10 - Variance and Process Models**

- Designing Variance Studies
- Designing Process Studies

## Readings

1. van de Ven, Ch. 5-7

## **Week 11 – Digital Research**

- Designing Internet Studies

## Readings

1. Markham (2011)

## **Week 12 – Cognitive Computing and AI**

- Big Data Research
- Data Analytics and Machine Learning
- Artificial Intelligence

## Readings

1. Varian (2014)
2. McCarthy (2006)
3. Symons and Alvarado (2016)
4. Bringsjord and Arkoudas (2007)
5. Stanford SEP (2018)
6. Velasquez-Manoff (2020)

## **Week 13 - Communicating Research and Research Ethics**

- Research for Journal Publications
- Research for Business Practitioners
- Ethical Issues in Social Inquiry

## Readings

1. Rosenberg, Ch. 13
2. van de Ven, Ch. 8
3. Daft (1983)
4. Daft and Lewin (2008)
5. Christensen (2003)
6. Kilduff (2006)
7. Straub (2009)
8. Berg et al (2017)

## **Week 14 – Conclusions and Enduring Questions**

## Readings



1. Rosenberg, Ch. 14 & 15
  2. Van de Ven, Ch. 9
  3. Van de Ven (2018)
- Student Briefings (Term Project)