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Title

COURSE DESCRIPTIONS

Code of course: **BMI-LOTD-102E.2**
Title of course: **Logic lecture**
Lecturer: **Márton Gömöri**
General aim of the course: The course provides an introduction to classical first-order logic and its main meta-theorems. **Prerequisites:** The course assumes some familiarity with the basic concepts and methods of formal logic. **Content of the course**: The course covers the following topics: - Syntax and semantics of first-order languages   - First-order calculus   - Soundness and completeness   - Peano arithmetic   - Elements of model theory   - Gödel's incompleteness   **Grading criteria, specific requirements**: Grading is based on homeworks and oral exam. **Required reading**: J. Barwise and J. Etchemendy, *Language, Proof and Logic.* CSLI Publications, 2011. **Suggested further reading**: L. T. F. Gamut, *Logic, Language, and Meaning. Volume I: Introduction to Logic.* University of Chicago Press, 1991. E. Mendelson, *Introduction to Mathematical Logic.* Springer, 1997.

Code of course: **BMI-LOTD17-202E.04**
Title of course: **Theories of Meaning**
Lecturer: **Zsófia Zvolenszky**
General aims of the course: The aim of the course is to review and discuss central issues in philosophy of language based on influential primary and secondary texts. **Prerequisites:** – Students should be prepared to read and discuss materials in English. The language of instruction for the course is English. **Content of the course:** A preliminary list of themes covered (the list is subject to change):   - Frege on sense and reference, on proper names and definite descriptions   - Russell and Strawson on definite descriptions   - Kripke on proper names   - Kripke and Putnam on natural kind terms   - Context-sensitive expressions   - Quine on analyticity   - Grice on meaning   - Austin and Searle on speech acts   - Grice on communication

- Applications of Grice, Frege, Strawson: for example, pejorative language use

Our words, sentences are about—refer to—things in the world: objects, people, events. Plausibly, the meanings of expressions play a central role in explaining this referential feature: for example, it is in virtue of the meaning of the word 'horse' that it refers to horses. But what exactly does this role played by meaning consist in? The answer is not at all straightforward. Consider these two sentences:

Joanne K. Rowling is a famous novelist.

Robert Galbraith is a famous novelist.

How does the meaning of the first sentence differ from the meaning of the second? After all, both are about the same individual: who is called Joanne K. Rowling but has become famous as J. K. Rowling, also writing under the pseudonym 'Robert Galbraith'. Yet—according to Gottlob Frege—the two sentences cannot have the same meaning because someone may rationally believe one (the first, say), without believing the other. This is what Frege's "puzzle" consists in, providing the starting point for 20th-century philosophy of language. In the seminar, our aim is to gain a greater understanding of the nature of meaning and its relation to reference, truth, communication.

Grading criteria, specific requirements:

– 30–40 pages of reading each week

– at the beginning of (almost) every seminar, a short quiz (the 6 highest scores count towards 20% of the final grade)

– posting 2 questions/comments at the course discussion forum each week (the 6 best make up 20 % of the final grade), by 4 p.m. on the previous day

– class participation (worth 15 %)

– writing 3 short (2-3-page-long) response papers during the semester (the best 2 of these go towards 30 % of the final grade)

– once during the semester, acting as MC (Master of Ceremonies) (this involves briefly introducing the readings as well as students' questions and comments, worth 15 %)

You should come to class ready to discuss the readings, having read them all, preferably several times— reading philosophy can be tricky (the "textbook" readings should make it much easier to read the classic papers by Frege, Russell, etc.) You should post 2 questions/comments on the readings by 4 p.m. the previous day. Being Master of Ceremonies (when it's your turn) involves: (i) giving a brief, 3-minute summary of the readings, selecting maximum ten of the student questions/comments posted by students, grouping them by topic, compiling a handout of the questions/comments that you make available to students. Be sure to include the authors of the questions, so we know who made which comment.

In the **response paper**, you should focus on critical assessment, don't just summarize the readings. Instead select an argument or claim that you consider interesting and critique it.

Three useful sites about writing response papers:

http://www.davidhildebrand.org/uploads/3/2/1/2/32124749/hildebrand_how_to_write_a_short_critical_paper.pdf

http://web.mit.edu/sts001/www/responsetips.pdf

http://www.jimpryor.net/teaching/guidelines/writing.html (this one is intended for a longer piece than ours).

It's a good idea to get started early on the response papers, so you can get feedback based on which you can make your next response paper even better. For this reason, you can only hand in one response paper at a time, and by mid-semester you should hand in at least two of your response papers.

Regular preparation, attendance and participation are required. To receive a grade, you must attend at least 7 seminars (including the one when you are M.C.-ing).

Required reading:

Alongside seminal texts in the philosophy of language (by Frege, Grice, Kripke, Strawson, Austin, Searle, Putnam), and a recent survey article on racism in language use (by Langton, Haslanger and Anderson), one more reading will function as a "textbook":

- W. Lycan (ed.) 2008: *Philosophy of Language: A Contemporary Introduction*, 2nd edition. London: Routledge (referred to as 'Lycan' in the schedule below). Excerpts from selected chapters will be assigned. Electronic copies of all required readings are available in the Gmail Drive for the course.

The seminal texts (by Frege, Grice, Kripke and Strawson) can also be found in the following anthology:

- P. Martinich and D. Sosa (eds.) 2012: *The Philosophy of Language*, 6th edition. Oxford: OUP. (Previous editions are ok, except for Frege's "Sense and Reference", which appears in a different translation in earlier editions.)

Langton–Haslanger–Anderson's survey article "Language and Race" can be found in the following anthology of essays:

- G. Russell and D. G. Fara (eds.) 2012: *Routledge Companion to the Philosophy of Language*. New York: Routledge.

The bulk of the articles can also be found in the following anthology:

- P. Martinich (ed.) 1996: The Philosophy of Language. Oxford: OUP.

Suggested further reading:

Further essays, chapters in the volumes used in the course:

- W. Lycan (ed.) 2008: *Philosophy of Language: A Contemporary Introduction*, 2nd edition. London: Routledge (referred to as 'Lycan' in the schedule below). Excerpts from selected chapters will be assigned. Electronic copies of all required readings are available in the Gmail Drive for the course.
- P. Martinich and D. Sosa (eds.) 2012: *The Philosophy of Language*, 6th edition. Oxford: OUP. (Previous editions are ok, except for Frege's "Sense and Reference", which appears in a different translation in earlier editions.)
- G. Russell and D. G. Fara (eds.) 2012: *Routledge Companion to the Philosophy of Language*. New York: Routledge.
- S. Kripke 1972/1980: *Naming and Necessity*. Oxford: Basil Blackwell.

Code of course: **BMI-LOTD17-206E.01**
Title of course: **Causality**
Lecturer: **László E. Szabó**

General aim of the course:

What does causation consist in, and, depending on the possible answers, what are the basic characteristics of a causal relationship? -- this is the main topic of the lecture course. We shall also discuss the most important contexts of causality: the relationship of causality to concepts of explanation, law-like regularity, statistical correlation, time, modality, and logical inference. Our considerations will be based on the analysis of the causal narratives in our scientific, first of all, physical theories; rather than our every day experiences or common sense intuition.

Grading criteria, specific requirements:

Oral exam from the material of the lectures. Video records and the slides of the lectures will be available.

Required reading:

1. *Causation*, Oxford Readings in Philosophy, E. Sosa and M. Tooley, eds., Oxford University Press (1997)
2. L.E. Szabó: *A nyitott jövő problémája - véletlen, kauzalitás és determinizmus a fizikában* (The Problem of Open Future - chance, causality, and determinism in physics), Typotex Kiadó, Budapest 2002 (The manuscript of the English edition will be available for the students in PDF form.) Chap. 4-6, 9.4-9.6

Suggested further reading:

- G. Hofer-Szabó, M. Rédei, L. E. Szabó: <u>*The Principle of the Common Cause*</u>, Cambridge University Press, 2013.
- L. E. Szabó: The Einstein--Podolsky--Rosen Argument and the Bell Inequalities, <u>*Internet Encyclopedia of Philosophy*</u> (2008)
- L. E. Szabó: Objective probability-like things with and without objective indeterminism, *Studies in History and Philosophy of Modern Physics* 38 (2007) 626–634.

Code of course: **BMI-LOTD17-208E.01**
Title of course: **Space and Time in Physics and Metaphysics**
Lecturer: **László E. Szabó**

General aim of the course:

Web site: http://phil.elte.hu/leszabo/spacetime2

Contents:

- · Conventionalism, semantic convention, operationalism, constitutive *a priori*
- · Absolute vs. relative conceptions and objectivity
- · Early 20th century definitions of distance and time - Lorentz vs. Einstein
- · The proper understanding of the relativity principle - the lesson from Gallileo
- · Reconstruction of the Lorentzian and the Einsteinan theories
- · Problems with the standard definitions of distance and time - logical and operational circularities
- · The precise empirical definitions of basic spatio-temporal conceptions
- · Relativity to what?
- · Spacetime, determinism, objective becoming
- · Spacetime and existence: presentism vs. eternalism, endurance vs. perdurance
- · Spacetime and causality
- · Spacetime and irreversibility
- · Why just time?

Grading criteria, specific requirements:

Oral exam from the material of the lectures. Video records and the slides of the lectures will be available.

Suggested readings:

- · L. E. Szabó: Empirical Foundation of Space and Time, in M. Suárez, M. Dorato and M. Rédei (eds.), *EPSA07: Launch of the European Philosophy of Science Association*, Springer 2009. [PDF]
- · J. M. E. McTaggart: The Unreality of Time, in: *The Philosophy of Time* (Oxford Readings in Philosophy), R. Le Poidevin, M. MacBeath (eds.), Oxford University Press, 1993. (Eredeti mű: The Nature of Existence, 33. fejezet, Cambridge University Press, Cambridge 1927.)
- · H. Reichenbach: *The Theory of Relativity and A Priori Knowledge*, University of California Press, Berkeley and Los Angeles, 1965.
- · L. E. Szabó: On the meaning of Lorentz covariance, *Foundations of Physics Letters* **17** (2004) pp. 479 - 496 [preprint: PDF]
- · L.E. Szabó: *A nyitott jövő problémája - véletlen, kauzalitás és determinizmus a fizikában* (*The Problem of Open Future - chance, causality, and determinism in physics*), Typotex Kiadó, Budapest 2002 (The manuscript of the English edition will be available for the students in PDF form.)
- · H. Reichenbach: *The philosophy of space and time*, Dover Publications, New York, 1958.
- · M. Friedman: *Foundations of Space-Time Theories -- Relativistic Physics and Philosophy of Science*, Princeton University Press, Princeton, 1983.
- · J. S. Bell: How to teach special relativity, in *Speakable and unspeakable in quantum mechanics*, Cambridge University Press, 1987.
- · A. Einstein, Relativity: The Special and General Theory
- · A. Einstein: *A speciális és általános relativitás elmélete*, Kossuth, 1993.
- · L. E. Szabó: Lorentzian theories vs. Einsteinian special relativity -- a logico-empiricist reconstruction, in A. Maté, M. Rédei and F. Stadler (eds.), *Vienna Circle and Hungary -- Veröffentlichungen des Instituts Wiener Kreis*, Springer 2011. [PDF]
- · L. E. Szabó: Does special relativity theory tell us anything new about space and time? [PDF] (Prolog)

Code of course: **BMI-LOTD17-103E.01**
Title of course: **Foundations of Mathematics**
Lecturer: **Gopaulsingh Alexa Stephanie Maria**
General aim of the course:
To demonstrate the set theoretic build-up of the number systems

Content of the course:

Axioms of set theory; Russell's paradox; Relation, functions, equivalence classes and cartesian products; von Neumann construction of natural numbers, Properties of natural numbers, Peano axioms; Review of groups and group homomorphisms; Building the integers from the natural numbers; Building the Rationals from the Integers, Building the Reals from the Rationals using Dedekind cuts, Properties of Real numbers, Cardinality to measure size of sets, Properties of cardinality, Cantor–Schröder–Bernstein theorem.

Lastly if time permits, a session mentioning alternatives to set theory for a foundation of mathematics eg, Category theory, Mereology. A discussion on generalising size from finite collections to infinite collections using cardinality: What principle(s) about size do we give up when generalising cardinality from finite sets to infinite sets?

Grading criteria, specific requirements:

Required reading:

The Foundations of Mathematics by Ian Stewart and David Tall

Further reading:

Introduction to Metamathematics by Stephen Cole Kleene

Code of course: **BMI-LOTD-306E.01**
Title of course: **Introduction to Forcing**
Lecturer: **Amitayu Banerjee**

General aim of the course:

Getting acquainted with the basics of Forcing. We will also see some applications of forcing in other fields (like in Modal logic, Algebra, Graph theory etc) after covering the contents of the course.

Content of the course:

Basics of Forcing, Cardinal collapse prevention after forcing, Cohen forcing, Levy collapse, Prikry forcing, Product forcing, Iterated forcing, Martin's axiom and Forcing axioms, Independence of General Continuum hypothesis (GCH) and independence of the Axiom of choice(AC) from other axioms of Zermelo--Fraenkel set theory with choice (ZFC).

Grading criteria, specific requirements:

Oral exam and assignments.

Required reading:

Parts from (Chapter 14, 15, and 16 of Thomas Jech), Set theory, Springer Monographs in Mathematics, Springer-Verlag, Berlin, 2003, The third millennium edition, revised and expanded, DOI: 10.1007/3-540-44761-x, MR 1940513.

Suggested further reading:

(Chapter 7, and 8 of Kenneth Kunen), Set theory, Studies in Logic and the Foundations of Mathematics, vol. 102, North-Holland Publishing Co., Amsterdam-New York, 1980, An introduction to independence proofs, DOI: 10.2307/2274070, MR 597342.

Note: There are a lot of terminological differences between the contents of the above two mentioned books.

Code of course: **BMI-LOTD17-307E.01**
Title of course: **Model Theory II.**
Lecturer: **Ildikó Sain**

General aim of the course:

This course intends to be an introduction to model theory, but in a greater speed than the first Model theory course.

The basic notions of model theory are structures and first-order logic; model theory is essentially the study of the relationships between these two notions.

Content of the course:

1. Structures
2. Terms and varieties

3. Sentential logic
4. First-order logic
5. The compactness theorem
6. Basic model theory
7. Morley's theorem
8. Morley rank
9. Interpolation
10. Countable models
11. The number of types and models

Grading criteria, specific requirements:

There will be a final written exam, but there will be tests during the semester, too, The results of all the tests will contribute to the final grade.

The students must have a background in naive set theory, first order logic, and sentential logic. Some background in universal algebra is also useful.

Required reading:

We will follow (parts of) the lecture notes by J. D.
Monk, http://euclid.colorado.edu/~monkd/m6000.pdf

Code of course: **BMI-LOTD-328E.05**	
Title of course: **Introduction to Non-Classical Logics**	
Lecturer: **William Brown**	

Content of the course:

Method of evaluation: Oral exam or presentation at the end of the semesterExam requirements:-For the oral exam: Understanding of the material covered in class.-Presentation: Elaboration and presentation of a small original research work related tothe course.Introduction to non-classical logicsThere are different ways to define what classical logic is, however by classical logic mostlogicians mean propositional logic and first-order logic. Non-classical logics are all the otherlogical systems (except the second and higher-order extensions of classical first-order logic).We will discuss more precisely the definitions of classical and non-classical logic at thebeginning of the course.Non-classical logics can be obtained in a variety of ways, for instance by various extensionsand modifications on classical logic. New logical constants can be added (for example we canadd a modal operators such as necessity and obtain a modal logic), more than 2 truth valuescan be allowed (and get many-valued logic), various laws of classical logic can be rejected(excluded middle, explosion principle, double negation, etc.) to obtain new systems andfamily of systems, etc. Unsurprisingly, non-classical logic is a very large class of logics.We will study various extensions and modifications of classical logic, and see what family of(non-classical) logics we thus obtain (and how those families can be defined and classified).Within each of these families we will study various specific logical systems.Some families of logics we will study throughout the semester include: modal logics,many-valued logics, intuitionistic logics, conditional logics, paraconsistent logics, relevantlogics, etc.

Grading criteria, specific requirements:

Method of evaluation: Oral exam or presentation at the end of the semester

Exam requirements:-For the oral exam: Understanding of the material covered in class.-Presentation: Elaboration and presentation of a small original research work related tot he course.

Required reading:

- Priest, G., An Introduction to Non-Classical Logic. Cambridge University Press, 2ndEdition, 2008.
- Gabbay, Handbook of Philosophical Logic, Springer, 2nd Edition. (various chapters acrossseveral volumes, the relevant ones will be mentioned during the classes)
- Beal, J.C., Frassen, van B.C., Possibilities and Paradox: An Introduction to modal andmany-valued logic. Oxford University Press, 2003.

Code of course: **BMI-LOTD-329E.04**
Title of course: **Algebraic Provability Logic**
Lecturer: **Övge Öztürk**
General aim of the course: Getting familiar with the concept of provability, fixed points theorems, modal completeness and compactness, algebraization, Provability logic and Magari algebras   **Content of the course:** Basics of Universal Algebraic Logic, Introduction to Modal Logic, Provability Logic, Magari Algebras, Algebraic Semantics, Algebraization, Compactness Characterization   **Grading criteria, specific requirements:** Weekly assignments   **Required reading:** Boolos, G. (1994). The Logic of Provability. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511625183   **Suggested further reading:**   Andreka, H., Nemeti, I. and Sain, I., Algebraic Logic. In: Handbook of Philosophical Logic Vol.II, 2nd Edition. Editors: D. M. Gabbay and F.Guenthner. Kluwer Academic Publishers, 2001.   Artemov S.N., Beklemishev L.D., Provability Logic. In: Handbook of Philosophical Logic, 2nd Edition. Handbook of Philosophical Logic, Vol 13. Editors: Gabbay D., Guenthner F. Springer, Dordrecht, 2005. The fixed-point theorem for diagonalizable algebras. Stu-dia Logica, Vol. 34, No. 3, 239–251, 1975.   Blackburn, P., de Rijke, M., Venema, Y., Modal Logic and Their Al-gebras. In: Algebraic Tools for Modal Logic. Editors: Gehrke, M., Venema,Y. Helsinki, Finland, 2001.   Blok, W.J Pigozzi, D., Algebraizable logics. Memories of the Amer-ican Mathematical Society, Providence, Rhode Island, USA, 1989.   Magari, R., Representation and duality theory for diagonalizable al-gebras. Studia Logica, Vol. 34, No. 4, 305–313, 1935.

Code of course: **BMI-LOTD17-412.04**
Title of course: **Advanced Topics in the Philosophy of Language: The Role of Language in Racism, Sexism, and Other Forms of Social Injustice**
Lecturer: **Zsófia Zvolenszky**
General aim of the course: This is an advanced philosophy of language seminar exploring preliminary and secondary texts from the 20th and 21st centuries on ways in which language can and has been used – and abused – as a tool of oppression, subordination and exclusion of others based on group membership: because of the color of their skin, their gender, their sexual orientation, their financial or education status, their views about religion, and in numerous other ways.   **Prerequisites:**   – Students should be prepared to read and discuss materials in English. The language of instruction for the course is English.   – This is an advanced course intended for students with some familiarity with contemporary Anglo-American analytic philosophy, its approach, tools, readings. Students are expected to have taken at least one course in: logic, philosophy of language, metaphysics, epistemology, philosophy of mind.   – If you haven't yet taken a course in one of the above areas: the instructor's permission is required for taking this Advanced Topics course.   **Content of the course:**   What are various ways in which language can be used to oppress, subordinate, demean, exclude, disempower, silence? And what are various ways language can be used to counteract these forms of oppression, exclusion? We'll be relying on speech act theory and pragmatic accounts of what speakers convey (via presuppositions, conversational implicatures, conventional implicatures, for example) beyond the conventional meaning of the words they use in order to better understand phenomena of oppression via language.   **Grading criteria, specific requirements:**   – 30–40 pages of reading each week and 20-40 minutes of podcast listening   – posting questions/comments at the course discussion forum each week

– class participation

– writing a seminar paper or several shorter response papers

– once during the semester, acting as MC (Master of Ceremonies) (this involves briefly introducing the readings as well as students' questions and comments)

In the **seminar paper or response papers**, you should focus on critical assessment, don't just summarize the readings. Instead, select an argument or claim that you consider interesting and critique it.

Three useful sites about writing response papers:

http://www.davidhildebrand.org/uploads/3/2/1/2/32124749/hildebrand_how_to_write_a_short_critical_paper.pdf

http://web.mit.edu/sts001/www/responsetips.pdf

http://www.jimpryor.net/teaching/guidelines/writing.html (this one is intended for a longer piece than ours).

It's a good idea to get started early on the response papers, so you can get feedback based on which you can make your next response paper even better. For this reason, you can only hand in one response paper at a time, and by mid-semester you should hand in at least two of your response papers.

Regular preparation, attendance and participation are required. To receive a grade, you must attend at least 7 seminars (including the one when you are M.C.-ing).

Required readings, materials include:

- Course readings will include works by, among others, Myisha Cherry, Cassie Herbert, Quill (Rebecca) Kukla, Kate Manne, Jennifer Saul, Jason Stanley.

A good introduction to some of the topics in the course can be found here:

- Jennifer Saul, Esa Diaz-Leon 2017: Feminist Philosophy of Language, *Stanford Encyclopedia of Philosophy*. https://plato.stanford.edu/entries/feminism-language/

A philosophy podcast we'll be regularly listening to during the course:

- on contemporary, society-oriented approaches in philosophy by philosophers with diverse backgrounds: a podcast by Myisha Cherry called *Unmute* https://unmutetalk.podbean.com (also on your podcast player), and published in 2019 as a book by OUP, entitled *Unmuted: Conversations on Prejudice, Oppression, and Social Justice*.

Code of course: **BMI-LOTD17-106E.03**

Title of course: **Philosophy of Mind and Contemporary Neuroscience**

Lecturer: **Luis F. Murillo**

General aim of the course:

This course is a one semester overview and introduction to psychology, with a strong emphasis on Historical Problems, Philosophical underpinnings of the Discipline, Psychoanalysis, Biological Psychology, Sensory Physiology of Vision, and Pathological Psychology

Content of the course:

Course Objectives

- develop familiarity with technical language

- provide students with foundational knowledge in the basic areas, and major currents of enquiry in psychological research

- gain familiarity with the basic structure of the nervous system

- define questions of consciousness and embodiment, and the variety of methods for collecting research and analyzing data throughout the history of the discipline.

- address the question of the unconscious

- illustrate the critical evaluation of research methodologies

- gain competency in comprehending scholarly literature

Procedures

Information will be presented in the form of lectures with interactive student participation. We will view and comment videos about scientific research.

Classroom format: Interactive lecture, discussion of readings and videos

Active class participation is extremely important.

Required Text

R.L. Atkinson, et. al. Hilgard's Introduction to Psychology
A secondary text is available electronically from the instructor upon request

Semester Schedule

1. The study of psychology. Fields, approaches, historical background, methodological problems
2. Psychoanalysis and the Freudian theories of Personality and Socialisation
3. Neurobiological and physiological basis of psychology / Neuroplasticity
4. Biological basis of pleasure and reward mechanisms / addiction
5. The nervous system and its functions. Sensory physiology. Presentation of Dr. Murillo's own research on colour vision
6. Sensory Process: Nature vs. Nurture debate. Perception and attention

Mid-term test

7. Psychopathology
8. Social psychology, mental attribution, Classical conditioning

Grading criteria, specific requirements: Assignments and grading
- Attendance is important.
Grades drop precipitously after 3 unexcused absences.
- There will be regular quizzes.
Calculating grades
Class participation – 30%
Ten best out of 12 quizzes - 20 %
Final test – 50 %
Required reading:
Week 1
What am I doing here?
Administrative Introduction –
Course logistics: Textbook / Grading and Absence policy
Why study psychology and why did you chose Psychology
Are robots with rat brains possible?
What does it feel to be like one?
Week 2
Am I a brain in a vat? How do I know you guys aren't zombies?
Thematic Introduction –Consciousness and Behaviour the Object of Psychology.
The problem of consciousness. A robot with a rat brain. Is a thermostat conscious?
How do we study consciousness?
Embodiment (rubber hand), Neuroplasticity
Subfields. Experimental approach
Week 3
What did the mind think about itself before I was born?
How the brain creates your reality – from attributions to embodiment, to voices in your head. History of Psychology from Hippocrates to Penfield
Wundt (Structuralism), measuring the speed of thought
James (Functionalism and evolutionary theory)
Week 4
Am I really who I think I am?
Freud and defense mechanisms
Week 5
How do I know what I know is not bogus?
Research Methods: Experiments, Naturalistics Observations, ceteris paribus
Research Techniques
electrophysiology, tracers, scanners, optogenetic
Broca, Penfield (localisationism)
Week 6
What part of me makes me me?
Am I really seeing what I think I am seeing?
Anatomy of CNS and PNS
Split Brain

Perception vs Sensation
Visual system
Gestalt Psychology
Week 7
Why do I feel the way I do?
Introduce assignment essay on sensation vs perception
The biology of emotions
The biology of pleasure and addiction
Hippocampus, Medial Forebrain Bundle (MFB)
Papez Circuit
Week 8
Am I mentally ill?
Intro to Psychopathology
Main types of Mental Illness
Week 9
What are those voices in my head?
Schizophrenia
Dopamine Theory
Week 10
Does all my life depend on a single protein?
Movie Awakenings
Week 11
Can I express my thoughts clearly?
Student presentations: Mental Illness
Week 12
Am I just a machine?
Learning classical conditioning
Week 13
Is my brain pro-social?
Mental Attribution, Theory of Mind, Conformity
FINAL EXAM

Code of course: **BMI-LOTD17-204E.01**	
Title of course: **Set Theory**	
Lecturer: **Amitayu Banerjee**	

General aim of the course:
The course assumes some familiarity with the basic concepts and methods of standard first-order logic.
Content of the course:
The course provides a philosophical introduction to set theory. The lectures will cover the following topics:
1. informal introduction to Cantor's paradise;
2. naive set thory as a formal system: the classical paradoxes;
3. the axioms of Gödel-Bernays set theory;
4. a reconstruction of the natural numbers;
5. well-ordered classes;
6. ordinal numbers;
7. the axiom of choice;
8. cardinal numbers;
9. finitization of the axiom system;
10. Gödel's constructible universe.

The topics may change during the course, in accordance with student demand.
Grading criteria, specific requirements: TBA
Required reading:
- [Lecture notes](#) (Last updated at December 11.)

- Smullyan, R.and Fitting, M., *Set Theory and the Continuum Problem*. Oxford UP, 1996.
- Mendelson, E., *Introduction to Mathematical logic*. 4th ed. Springer, 1997.

Code of course: **BMI-LOTD17-210E, BMI-LOTD17-108E.3**

Title of the course: **Seminar in Logic and Theory of Science II, IV (LaPoM)**

Lecturer: **Zsófia Zvolenszky**

General aim of the course:

LPS is the student & staff workshop seminar of the Department of Logic. Its central aim is to give a place for students and professors to present their achievements. (theses, publications).

Content of the course:

The Seminar encompasses logic, philosophy of mathematics, philosophy of physics, and all related topics of modern metaphysics, epistemology, philosophy of language, history of philosophy, history of science, and particular issues in natural and social sciences, important for the discourses in the main scope of the Seminar.

Grading criteria, specific requirements:

For a grade, you should give a presentation containing original results or submit a seminar paper and revise it based on comments.

Code of course**: BMI-LOTD-106E.01, BMI-LOTD-515E**

Title of the course: **The Unconscious Mind**

Instructor: **Ufuk Tura**

Short Description:

This course aims to provide an introduction to the concept of the unconscious mind and to discussions about related issues in contemporary philosophy of mind.

Course Requirements & Grading:

Presentation of a paper 40 %

Active participation 20 %

A final paper 40 % (Length depends on level of study; B.A: 5 pages, M.A. 10 pages (1,5 spacing) (around 2000 & 4000 words respectively))

Level of course: introductory/intermediate

I. PHILOSOPHY OF THE UNCONSCIOUS

1. Introduction to the Unconscious mind

Freud, S. (1915). The Unconscious: Collected Papers. Vol. IV.

2-3. Unconscious as Mental

Berger, J. (2014). Mental States, Conscious and Nonconscious. *Philosophy Compass*, 9(6), 392-401.

Searle, J. R. (1991). Consciousness, Unconsciousness and Intentionality. *Philosophical Issues*, 1, 45-66.

Van Gulick, R. 1995. Why the Connection Argument Doesn't Work. *Philosophy and Phenomenological Research*, 55 (1), 201-207.

Smith, D. L. (2013). Freuds Philosophy of the Unconscious (Vol. 23). Springer Science & Business Media. (excerpt), 137-155.

4. Unity of the Unconscious Mind

Crane, T. (2013). Unconscious Belief and Conscious Thought. In Uriah Kriegel (ed.) *Phenomenal Intentionality*. Oxford, Oxford University Press, 156-173.

Crane, T. (2016). The Unity of Unconsciousness. *Proceedings of the Aristotelian Society* 117 (1),1-21

Block, N. (20119. The Anna Karenina Theory of the Unconscious. *Neuropsychoanalysis 13* (1), 34–37.

Block, N. (2016). The Anna Karenina Principle and Skepticism about Unconscious Perception. *Philosophy and Phenomenological Research, 93*(2), 452-459.

5-6. Unconscious Perception

Phillips, I. (2016). Consciousness and criterion: on Block's case for unconscious seeing. *Philosophy and Phenomenological Research,* 93(2), 419-451.

Block, N. – Phillips, I. 2019. Debate on Unconscious Perception. In Nanay, B. (ed.) *Current Controversies in the Philosophy of Perception*. New York, Routledge, 163-192.

Phillips, I. (2018). Unconscious Perception Reconsidered. *Analytic Philosophy*, 59(4), 471-514.

Quilty-Dunn, J. (2019). Unconscious Perception and Phenomenal Coherence. *Analysis*. 79(3), 46.

Peters, M. A., Kentridge, R. W., Phillips, I., Block, N. (2017). Does Unconscious Perception Really Exist? Continuing the ASSC20 debate. *Neuroscience of Consciousness*, 3(1), 1-469.*

Berger, J., & Nanay, B. (2016). Relationalism and Unconscious Perception. *Analysis*, 76(4), 426-433.*

Anaya, A., & Clarke, S. (2017). Naïve realism and Unconscious Perception: A Reply to Berger and Nanay. *Analysis*, 77(2), 267-273.*

7. Unconscious Knowledge

Brakel, L. A. W., (2018). Unconscious knowing: psychoanalytic evidence in support of a radical epistemic view. In Boag, S., Brakel L.A.W, Talvitie, V (eds.) *Psychoanalysis and Philosophy of Mind*. New York, Routledge, 193-237.

Berger, J., Nanay, B., & Quilty-Dunn, J. (2018). Unconscious Perceptual Justification. *Inquiry*, 61(5-6), 569-589.

II.   Unconscious Mentality in Theories of consciousness

8. First-Order & Higher-order Theories

Rosenthal, D.M. (2002) Explaining Consciousness (excerpt). In Chalmers, D. (ed.) *Philosophy of Mind. Classical and Contemporary Readings*. New York – Oxford, Oxford University Press, 406-421.

Dretske, F. (2002). Conscious Experience (excerpts). In Chalmers, D. (ed.) *Philosophy of Mind. Classical and Contemporary Readings*. New York – Oxford, Oxford University Press, 422-435.

Lycan, W., Representational Theories of Consciousness. *The Stanford Encyclopedia of Philosophy* (Fall 2019 Edition), Edward N. Zalta (ed.), URL =
<https://plato.stanford.edu/archives/fall2019/entries/consciousness-representational/>.*

Tye. Representationalist Theories of Consciousness
https://www.academia.edu/26902577/Representationalist_Theories_of_Consciousness *

Rosenthal, D. M. (2004). Varieties of the Higher-Order Theory. In In Gennaro, R. J. (ed.) *Higher-Order Theories of Consciousness: An Anthology*. Amsterdam – Philadelphia, John Benjamins.*

9. Phenomenal Intentionality (PIT)

Horgan, T. – Tienson, J. (2002). Intentionality of Phenomenology and the Phenomenology of Intentionality. İn Chalmers, D. (ed.) *Philosophy of Mind. Classical and Contemporary Readings*. New York – Oxford, Oxford University Press, 520-533.

Kriegel, U. (2011). Cognitive Phenomenology as the Basis of Unconscious Content. In T. Bayne – M. Montague (eds.), *Cognitive Phenomenology*. Oxford University Press, 79–102.

10. Other Theories of Consciousness

Baars, B. J. (1997). In the theatre of consciousness. Global Workspace Theory, a Rigorous Scientific Theory of Consciousness. *Journal of Consciousness Studies*, 4(4), 292-309.

Bayne, T. (2018). On the Axiomatic Foundations of the Integrated Information Theory of Consciousness. *Neuroscience of Consciousness*, 2018(1), niy007.

III.   Unconscious Mind in Psychoanalysis

11. Introduction to Freudian Metapsychology

Freud, S. (1895). Project for a Scientific Psychology.*
Freud, S. (1900) Interpretation of Dreams (excerpt Chapter VII).*
Freud, S. (1923). The Ego and the Id. *

IV.   The Cognitive Unconscious

12. Nature of the Cognitive unconscious

Kihlstrom, J. F. (2008). The psychological unconscious. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of Personality: Theory and Research*. New York, The Guilford Press, 583–602.

Bargh, J. A., & Morsella, E. (2008). The Unconscious Mind. *Perspectives on Psychological Science*, 3(1), 73-79.

Dijksterhuis, A., & Nordgren, L. F. (2006). A Theory of Unconscious Thought. *Perspectives on Psychological Science*, 1(2), 95-109.

V. Neuropsychoanalytic Perspective

13. Is The Integration Possible?

Solms, M. (2016). "The unconscious" in psychoanalysis and neuroscience. Leuzinger- Bohleber, M – Arnold, S – Solms, M. (eds). *The Unconscious: A Bridge between Psychoanalysis and Cognitive Neuroscience*. Oxford, Routledge.

Epstein, S. (1994). Integration of the Cognitive and the Psychodynamic Unconscious. *American Psychologist*, 49(8),709.

Westen, D. (1999). The Scientific Status of Unconscious Processes: Is Freud Really Dead? *Journal of the American Psychoanalytic Association*, 47(4), 1061-1106.*

Solms, M. (2017). What is "the Unconscious," and Where is it Located in the Brain? A neuropsychoanalytic perspective. *Ann. NY Acad. Sci*, 1406, 90-97.*

Suggested Readings:

The texts marked by '*' and:

Mitchell, S. A. – Black, M. J. (2016). *Freud and Beyond: A History of Modern Psychoanalytic Thought*. London, Hachette.

Levy, D. (1996). *Freud among the Philosophers: the Psychoanalytic Unconscious and its Philosophical Critics*. New Haven, Yale University Press.

Smith, D. L. (2013). *Freud's Philosophy of the Unconscious* (Vol. 23). Springer Science & Business Media.

Boag, S., Brakel, L. A., & Talvitie, V. (eds.). *Psychoanalysis and Philosophy of Mind: Unconscious Mentality in the Twenty-First Century*. Oxford, Routledge.

Hassin, R. R., Uleman, J. S., & Bargh, J. A. (Eds.). (2004). *The New Unconscious*. Oxford University Press.

Northoff, G. (2011). *Neuropsychoanalysis in Practice: Brain, Self and Object*s. Oxford, Oxford University Press.

McIntyre, A. C. (1976). *The Unconscious: A Conceptual Analysis*. Routledge and Kegan Paul.

Code of course: **BMI-LOTD-308E.04**

Title of course: **Logic & Relativity**

Lecturers: **Judit Madarász, Gergely Székely**

General aim of the course:
Getting some familiarity with the basic assumptions and fundamental concepts of special relativity from the point of view of logic and definability theory.

Content of the course: Building up special relativity theory in first order logic: Axioms; Paradigmatic effects; Faster than light motion; Exploring the first-order logic conceptual structure (algebra of explicitly definable relations) of special relativistic and classical spacetimes.

Grading criteria, specific requirements: Grading is based on homework.

Required reading:
H. Andréka, J. X. Madarász, I. Németi and G. Székely:
On Logical Analysis of Relativity Theories
Hungarian Phil. Review; 54 2010/4; 20, arXiv:1105.0885
H. Andréka, J. X. Madarász, I. Németi and G. Székely:
A logic road from special relativity to general relativity
Synthese 186(3) pp. 633-469 (2012), arXiv:1005.0960v2

Suggested further reading:
Robert Goldblatt: Orthogonality and Spacetime Geometry, Springer-Verlag, 1987.

Code of course: **BMI-LOTD-317E.02**

Title of course: **Gödel's Incompleteness Theorems**

Lecturer: **András Máté**

General aim of the course:
Competence in proving the central theorems of metalogic.

Content of the course:

The course will strictly follow Raymond Smullyan's book with the same title (details see below). The book investigates the theorems and some related theorems (Tarski, Shepherdson) in a rather broad and general framework. It contains several excercises that are substantial to the understanding. The classes will usually begin with solving some of these excercises specified at the previous class.

Grading criteria, specific requirements:

Knowledge of classical first-order logic is a prerequisite.

The mark will depend on the student's achivement in excercise solving.

Required reading:

Raymond M. Smullyan, Gödel's Incompleteness Theorems. Oxford-New York: Oxford University Press, 1992.

Code of course: **BMI-LOTD-325E.02**
Title of course: **Algebraic Logic**
Lecturer: **Zalán Molnár**

General aim of the course:

To show the algebraic side of logic.

Content of the course:

On the course of the development of philosophical logic, there have been developed a great number of various logical systems, e.g. propositional logic, classical rst order logic and its variants (like nite-variable fragments of it or its rank-free version), many versions of modal- and multimodal logic, to mention just some of the most traditional systems. Starting from the 60-s of the 20th century, the development of theoretical computer science also brought about / brought to the light a huge number of further logical systems (e.g. several versions of dynamic logic of programs, lambda calculus etc.). After a while, it became apparent that, when checking some logical properties of these logical systems (from now on \logics", for short), certain patterns of ideas, concepts, proofs kept being repeated with only slight dierences. It was time to develop appropriate abstract levels of the subject. Several schools have been formed (like abstract model theory, the theory of institutions and others). Some of these schools beneted from using universal algebraic methods. The most outstanding of these schools was led by Alfred Tarski. First they concentrated on the algebraic counterpart of rst order logic, developing this way the theories of cylindric-, polyadic- and relation algebras. These studies naturally led to nding the algebraic counterparts of some other logics (e.g. that of rst order logic with innitary conjunction, modal- and multi modal logics). The theories of these classes of algebras can, and have been developed in the way of developing just any class in abstract algebra (like group theory or ring theory). Indeed, in Henkin-Monk-Tarski [1] the theory of cylindric algebras has been built up in such a fashion. However, the logical motivation can also be felt strongly, throughout the monograph. Some researchers wished to make this feeling more explicit via concretely describing and investigating the process of \turning logics into algebras"; and concentrating on a two way connection between the \country" of LOGIC and that of ALGEBRA.

The ambition here is to nd, via a general method or algorithm:

(1) the specic class(es) of algebras belonging to a given logic (e.g., to propositional logic, this class is the class of Boolean algebras);

(2) the algebraic counterparts of concrete logical properties. In this course we will look into this process of algebraization of logic. We will concentrate more on the semantical aspects than the syntactical ones. We will show / illustrate how to gain new knowledge in logic via algebraic methods.

<u>Thematic order of course:</u>

1. Introductory example: Propositional Logic.
2. A general concept of logic. Examples.
3. Further examples for logic.

4-5-6-7. Basics of universal algebra. The concept of an algebra, simple examples. Subalgebras, homomorphic images, congruences, direct products. Varieties and quasi-varieties.

8. Refining our concept of a logic. Logical connectives, compositionality, lter property, syntactical substitution property, semantical substitution property.

9. Working on examples.

10. Parametrized logical systems.

11. The algebraic counterparts of logics. Basic features and examples.
12. Hilbert type inference systems. Algebraic characterization of completeness of a logical system.

Grading criteria, specific requirements:

Oral exam.

Required reading:

1. L. Henkin, J. D. Monk and A. Tarski: Cylindric Algebras Part I and Part II. North Holland, Amsterdam, 1971 and 1985.
2. H. Andréka, I. Németi and I. Sain: Algebraic Logic. In: D. M. Gabbay and F. Guenther, editors, Handbook of Phylosophical Logic Volume II, Second Edition, pages 133-247. Kluwer Academic Publishers, 2001.

Code of course: **BMI-LOTD-326E.02**

Title of course: **Category Theory**

Lecturer: **Ildikó Sain**

General aim of the course:

Category theory looks like just another abstract algebraic discipline at the first glance, but owing to its inner nature, it is much more philosophical than, say, group theory, or the theory of ordered fields. Category theory is relevant to structuralism, and it contributes to the foundation of mathematics. Because it is very abstract, it appears as basic language in several branches of scienece, e.g. theoretical physics.

Content of the course:

1. Reasoning via arrows (affects) instead of structures (black box point of view)
2. Definition of a category and basic examples (Set, Mod_t, Alg_t, BAO, BA, CA, discrete category, Poset, Monoid, etc.)
3. Mono, epi, iso morphisms. Principle of duality
4. Categorial product, coproduct. Equaliser, coequaliser. Universal property.
5. Limit, colimit.
6. Functor, natural transformation
7. Reflexivity
8. Adjoint situation
9. Factorozation systems
10. Algebroidal categories
11. Cone injetivity, small trees (category theoretical abstract model theory)

Grading criteria, specific requirements:

There will be a final written exam, but there will be tests during the semester, too, The results of all the tests will contribute to the final grade.

The students must have background in naive set theory and first order logic. Some background in universal algebra is also useful.

Required reading:

I will send you material for reading, written by myself. R. Goldblatt: Topoi: The Categorial Analysis of Logic can be of additional help.

Code of course: **BMI-LOTD-514E.01**

Title of course: **Knowledge and Power**

Lecturer: **Attila Mráz**

General aim of the course:

The course offers a survey of epistemological issues that are pressing for social and political philosophers—also known as 'political epistemology'—on the one hand, and it surveys issues in political philosophy that should be pressing for epistemologists and philosophers of science, on the other. In short, we are interested in what is the meaning and relevance of knowledge, justified belief, disagreement and expertise for the justified exercise of political power in liberal democracies—and we will examine how social and political inequalities and power imbalances shape our collective practices of knowledge formation, as well as asking how they should not. These theoretical explorations have wide-ranging applied implications, helping us

reflect on political polarization, politically shaped scientific agendas, academic freedom, technocratic politics, sexist or racist scientific and political agendas, and conspiracy theories.

Content of the course:

Topics:

- social epistemology, problems of testimonial evidence in politics
- the epistemology of disagreement, and the political philosophy of reasonable vs. unreasonable disagreement
- the role of science and expertise in democracy, and the role of democracy in scientific and academic inquiry
- epistemic injustices and epistemic discrimination
- conspiracy theories

Grading criteria, specific requirements:

All students taking the class for credit must submit a term paper of ca. 2500 words on a topic approved by the instructor.

Required reading:

(Some of the topics will cover more than more class.)

1. *Social Sources of Knowledge: Testimonial Evidence (in Politics)*

Goldman, Alvin. (1987). "Foundations of Social Epistemics", *Synthese*, 73(1): 109–144. doi:10.1007/BF00485444

Han van Wietmarschen. (2019). "Political Testimony", *Politics, Philosophy and Economics,* 18 (1):23–45.

2. *Peer Disagreement and Epistemic Justification*

Christensen, David, 2009, "Disagreement as Evidence: The Epistemology of Controversy", *Philosophy Compass*, 4(5): 756–767. doi:10.1111/j.1747-9991.2009.00237.x

3. *Reasonable Disagreement in Contemporary Liberal Political Philosophy*

Rawls, John. (1993). *Political Liberalism*. New York: Columbia UP. II. § 2. ("The Burdens of Judgment"): pp. 54-58.

Christiano, Thomas. (2008). *The Constitution of Equality. Democratic Authority and Its Limits*. Oxford: Oxford University Press. pp. 197–200: "Egalitarian Public Deliberation".

Kelly, Thomas. (2013). Disagreement and the Burdens of Judgment. In David Phiroze Christensen & Jennifer Lackey (eds.), *The Epistemology of Disagreement: New Essays*. 31-53. Oxford, Oxford University Press.

4. *The Possibility of Politics amidst Deep Disagreement*

Ebels-Duggan, Kyla (2010). The Beginning of Community: Politics in the Face of Disagreement. *The Philosophical Quarterly* 60(238) 50-71.

5. *Expertise and Democratic Decision-Making*

Anderson, Elizabeth. (2006). "The Epistemology of Democracy", *Episteme: A Journal of Social Epistemology*, 3(1): 8–22. doi:10.1353/epi.0.0000

Peter, Fabienne. (2016). The Epistemic Circumstances of Democracy. In: Miranda Fricker, Michael Brady (eds.), *The Epistemic Life of Groups*. pp. 133 – 149. Oxford, OUP.

Goldman, Alvin. (2001). "Experts: Which Ones Should You Trust?", *Philosophy and Phenomenological Research*, 63(1): 85–110. doi:10.1111/j.1933-1592.2001.tb00093.x

6. *Epistemic Injustice*

Miranda Fricker (2007). *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford–New York: Oxford University Press. Ch. 1: "Testimonial Injustice", pp. 9–29; Ch. 3: "Towards a Virtue Epistemological Account of Testimony", pp. 86–109.

Miranda Fricker (2007). *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford–New York: Oxford University Press. Ch. 7: "Hermeneutical Injustice", pp. 147–175.

7. *Epistemic Discrimination*

Katherine Puddifoot. (2018). Epistemic Discrimination. In: Kasper Lippert-Rasmussen (ed.), *The Routledge Handbook of the Ethics of Discrimination*. London & New York: Routledge. pp. 54–67.

8. *Democratizing Scientific Inquiry*

Philip Kitcher. (2001). *Science, Truth and Democracy*. Oxford UP. Ch. 10: "Well-Ordered Science". pp. 117-136.

9. *Conspiracy Theories and Liberal Democratic Responses*

Cassam, Quassim (2019). Why Conspiracy Theories Are Deeply Dangerous. *The New Statesman*, 7 October 2019. https://www.newstatesman.com/world/north-america/2019/10/why-conspiracy-theories-are-deeply-dangerous

Cíbik, Matej & Pavol Hardos (2020). Conspiracy theories and reasonable pluralism. 1-21. *European Journal of Political Theory*. Online First, published 1 April 2020. https://doi.org/10.1177/1474885119899232.

Code of course: **BMI-LOTD-612E.01**
Title of course: **Reduction and emergence**
Lecturer: **Márton Gömöri**

General aim of the course:

The aim of this course is to survey the main philosophical issues surronding the notions that one theory reduces to another and one phenomenon emerges from another.

Content of the course:

The course will touch on various logical, epistemological, metaphysical and specific scientific aspects of reduction and emergence:

- classical models of theory reduction: Nagel and Suppes
- supervenience
- explicit and implicit definability, Beth's theorem
- elimination, Ramsey sentence and Craig's theorem
- emergent properties
- singular limits
- physicalism and the mind-body problem
- the causal theory of time
- the reduction of thermodynamics to statistical mechanics
- individualism and holism in the social sciences

Grading criteria, specific requirements:

Grading is based on presentations of the reading material and participation in classes.

Prerequisites: some knowledge of logic and formal methods is beneficial.

Required reading:

Nagel, E. (1979). The Structure of Science: Problems in the Logic of Scientific Explanation. Hackett, Indianapolis.

Suppes, P. (1967). What is a scientific theory? In Morgenbesser, S., editor, Philosophy of Science Today, pages 55–67. Basic Books, New York.

McLaughlin, B. and Bennett, K. (2014). Supervenience. In Zalta, E. N., editor, The Stanford Encyclopedia of Philosophy. Metaphysics Research Lab, Stanford University.

Oppenheim, P. and Putnam, H. (1958). Unity of Science as a Working Hypothesis. Minnesota Studies in the Philosophy of Science, 2:3–36.

Rudolf Carnap, 1966, Philosophical Foundations of Physics: An Introduction to the Philosophy of Science, New York: Basic Books.

Feyerabend, P. K. (1962). Explanation, Reduction, and Empiricism. In Maxwell, G. and Feigl, H., editors, Scientific Explanation, Space and Time, volume III of Minnesota Studies in Philosophy of Science, pages 28–97. University of Minnesota Press, Minneapolis

Batterman, R. W. (2002). The Devil in the Details: Asymptotic Reasoning in Explanation, Reduction, and Emergence. Oxford University Press.

Butterfield, J. (2011b). Less is Different: Emergence and Reduction Reconciled. Foundations of Physics, 41(6):1065–1135.

Samuel C. Fletcher, Similarity Structure and Emergent Properties, Philosophy of Science 87(2): 281-301. 2020.

H. Field: Physicalism, in J. Earman (ed.) Inference, Explanation, and Other Frustrations, Univ. of Clifornia Press, Berkeley 1992.

Orly Shenker: Flat Physicalism: some implications, Iyyun 66:211-225 (2017).

D. Chalmers: The Conscious Mind: In Search of a Fundamental Theory (1996). Oxford University Press.

M. Hemmo, O. Shenker: The road to Maxwell's demon: conceptual foundations of statistical mechanics, Cambridge University Press.

D. Malament: Causal Theories of Time and the Conventionality of Simultaniety, Noûs, 11: 293–300 (1977).

Christian List & Kai Spiekermann: Methodological Individualism and Holism in Political Science: A Reconciliation, American Political Science Review 107 (4):629-643 (2013).