

BioSci 935 Graduate Seminar: *The evolution of objective knowledge* – Fall 2021

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Meetings: TUE 3:00 - 4:40 pm, LAP 103

Scope and focus:

This seminar covers how objective knowledge arises by means of organic and cultural evolution. We begin with a brief discussion of the different ways in which organisms can be said to know how to survive and thrive in their environment. We will spend most of the seminar on the question of whether the organic-cultural mechanisms we have for error-correction and production of objective knowledge can continue to function indefinitely, or whether there are limits to progress or to the topics that can be addressed. This is a crash course on the philosophy of science, with a special focus on defending the scientific enterprise against current opposition from various political and ideological orientations.

The basis for the seminar is the book *The beginning of infinity* by David Deutsch (2012, Penguin Books). We will read it entirely along the semester. We will also read selected chapters from the book *Inside jokes. Using humor to reverse engineer the mind* by MM Hurley MM, DC Dennett DC & Adams RB (2011, MIT) and additional papers.

Evaluation: student presentation and student-led discussions.

Schedule

Month	Day	Chapter / paper	Presenter
Sept	7	Introduction to the seminar	Rafa
	14	Deutsch 2012, Introduction, chapters 1-3	Rafa
	21	Deutsch 2012, chapter 4	
	28	Hurley et al. 2011 chapters 1-3	
Oct	5	Hurley et al. 2011 chapters 5-7	
	8	Hurley et al. 2011 chapters 8-10	
	12	Hurley et al. 2011 chapters 12-13, epilogue	
	19	Deutsch 2012, chapters 5-7	
	26	Deutsch 2012, chapter 8-9	
Nov	2	Deutsch 2012, chapter 10	
	9	Deutsch 2012, chapters 11-13	
	16	Deutsch 2012, chapter 14 vs Prum 2013 <i>Biol Philos</i> 28, 811-832	
	23	Thanksgiving week	
	30	Deutsch 2012, chapters 15-18	
Dec	7	TBD	
	14	TBD	

For further reading:

Frank SA. 2009. Natural selection maximizes Fisher information. *J Evol Biol* 22, 231-244.

Popper KR. 1959. *The logic of scientific discovery*. Routledge.

Popper KR. 1962. *The open society and its enemies*. 1. *Plato*. Princeton.

Popper KR. 1962. *The open society and its enemies*. 2. *Hegel and Marx*. Princeton.

