Philosophy of Biology. On sex, death, cooperation, cancer, and morality

Course Number:
FIL2208/4200

Place and Time:
GM 204 (UiO, Blindern)
Friday 10:15-12:00

Course Instructor:
Sebastian Watzl
Office: GM 639
Email: sebaswat@csmn.uio.no
Office Hours: tba

Course Description:
In this course, we will consider what biology, and especially the theory of evolution, teaches us about some of life's biggest questions. We will be especially focused on - arguably surprising - interrelations of the topics mentioned in the title: sex, death, cooperation, cancer, and morality. While pursuing these questions, will also - on a more theoretical side - consider the structure of evolutionary explanations, their application to human psychology and sociology, the notion of a biological individual, and the nature of species.

Readings:

We will use the following two textbooks

- LB: Laland, Kevin N., & Brown, Gillian R. (2011). *Sense and nonsense: Evolutionary perspectives on human behaviour*. Oxford University Press.
- SG: Sterelny, Kim, & Griffiths, Peter E. (1999). *Sex and death: An introduction to philosophy of biology*. University of Chicago press.

In addition, we will use texts that are made available on Fronter. Please note that readings may shift around a bit as the semester continues. Students are responsible for checking Fronter and their email regularly.

Assessment:

Students will be assessed on the basis of a "Portfolio Exam" which comprises the following graded requirements (all to be submitted on Fronter):

A. Two 2-3 page critical responses to a reading

Critical responses are to be submitted on the day the relevant text is discussed (i.e. not the week after the text is discussed). You cannot, for example, submit a response on the readings for session 2 in session 3.

- Critical responses should not focus on providing a summary of the relevant text. Instead, they should focus on critical engagement: how might an opponent of the author's position respond to her/his argumentation? How could the author's argumentation be extended or improved? What are important considerations the author fails to take into account? An ideal critical response focuses on one important point in the essay that it discusses, and provides a detailed critical analysis or response to that point.

Due dates:

- The **first critical response** must be on either one of session 2 or 3 (last due date: **February 13th**). 15 % of grade
- The **second critical response** must be on a reading from sessions 4-8 (last due date: **March 20th**). 30 % of grade

B. One 5-6 page essay

The essay should be on a topic of one of the sessions (students may also focus on one of the supplementary readings). The topic should be different from the topics students wrote their critical responses for (students who wish to write an essay on a particular topic thus should choose the topics for their critical responses wisely). Essays cannot just be summaries of texts. They must show critical engagement and self-standing philosophical argumentation.

- The essay should have a shape that is similar to the critical responses. Yet it should be longer, more detailed, and more self-standing. It should be a self-standing piece of philosophical argumentation. An ideal essay would be one that could be presented in a short presentation at a professional conference on the relevant topic.

Due dates:

- The essay is due on **May 8th**. 55 % of grade

Classroom policies and rules

From Ned Markosian:

Philosophical discussions (whether in class, after a talk, or in informal settings) can vary along a number of different dimensions. One of these is a spectrum that ranges from (a) a competitive, zero sum game that involves scoring points and trying to appear smart, on one end, to (b) a cooperative and fun activity aimed at discovering and solving interesting philosophical problems, on the other end. In general, the closer a discussion is to the cooperative end of this spectrum, the better it will be better because it produces better philosophy, and better also because it is more enjoyable for everyone involved.

Here are some rules designed to keep us on the right end of this spectrum.

1. Don't be mean.
2. Never interrupt. If you have a great point, it will still be a great point when it is your turn to speak.

3. Don't dominate the discussion. Some people are more shy than you. Many of them have excellent things to say. It pays to listen.
4. Think in terms of abstract ideas that, once expressed, are on their own, rather than ideas that belong to a particular person.
5. Don't try to impress anyone.
6. Do try to build on the points that have been made by others.
7. Try to make connections between the point currently under consideration and previous points.
8. Every once in a while, during the discussion, someone should offer a big picture comment. "So it seems to me that we were discussing X and Y. Did we ever come to any conclusion about whether X is consistent with Y?"
9. If you notice someone else breaking one of the first two rules, speak up right away, even if especially if you are not the victim

You may also consult the NYU guidelines for respectful philosophical discussion, or Daniel Dennett's ideas on how to criticize with kindness.

Other rules:

- Laptops in class are a BAD IDEA (everyone will probably learn less and get worse grades).
- Nevertheless, laptops and similar devices are permitted in class, but only for (a) taking notes and (b) for viewing the texts (i.e. no quickly checking something on the internet, no texting, no nothing). If you plan to use laptop or something similar, talk to me and be ready to swear that you will only use them for (a) and (b).
- No mobile phones in class (switch them off before class)

The Syllabus

Please note: I intend to post links to additional material on Fronter. This can be links to additional texts, but also links to videos, blog posts, etc. Please check regularly in order to find out!

Week 1: Evolution. The received view

An introduction to the topics of the course, and the standard evidence of evolution by natural selection, and the theoretical framework.

Main Readings:

- SG, Chapter 2 "The Received View of Evolution" (pp. 22-51)

Week 2: Adaptationism. Does evolution lead to perfection? Case study: the female orgasm

Evolutionary explanation often appeals to selection for a particular trait because it served a particular function (giraffes have long necks because that allowed them to feed from the tall trees). Today we will discuss of the role of adaptation in evolutionary explanation: is "adaptationism" problematic? Does the best

evolutionary explanation often not appeal to natural selection for a specific function? We will look specifically at the evolutionary explanation of the female orgasm.

Main Readings:

- SG, Chapter 10 (pp. 217-252)
- Lloyd, Elisabeth A. (2009). Introduction In: The case of the female orgasm: Bias in the science of evolution (pp. 1-21), Harvard University Press.

Week 3: Contingency. Is evolution progressive?

Is the history of life on earth progressive? Do organisms over time get, for example, more and more complex? If so, what are the major steps on the evolutionary ladder? Or is evolution radically contingent? (we may also discuss the idea that evolution shows that we are the product of chance)

Main Readings:

- SG, Chapter 10 "Life on Earth: the Big Picture" (pp. 280-310)
- Gould, Steven J. (1980). Double trouble. In: *The panda's thumb: More reflections in natural history. New York: Norton*: pp. 35-47

First Assignment due (2-3 page essay)

Week 4: Organisms and genes: are genes selfish?

The received view of evolution has organisms at its center. Populations of organisms evolve due to the pressures of natural selection. But Richard Dawkins has powerfully argued for and made famous a view of evolution that puts *genes* rather than organisms at its center. On this view, genes are selfish (sometimes the idea is put in terms of genes just using organisms as a kind of tool for their replication). What should we make of this gene centered view of evolution?

Main Readings:

- SG, Chapter 3+4 "The Gene's Eye View of Evolution" and "The Organism Strikes Back" (pp. 55-93)
- Dawkins, Richard (1989), Chapter Two: The Replicators, In: *The Selfish Gene*, Oxford University Press, pp. 12-20

Week 5: Organisms and development: are genes really all that special?

This week we consider an alternative to both the received view and the gene centered view of evolution. Both of these views tend to neglect development. The view we discuss today, by contrast, puts development at its center. According to this "developmental systems" view, genes have no privileged status. The fundamental unit of evolution is a whole life cycle, and genes are just one of many factors that shape those life cycles.

Main Readings:

- SG, Chapter 5 "The Developmental Systems Alternative" (pp. 94-111)

- Oyama, Susan (1985). Introduction, In: The ontogeny of information. Developmental Systems and Evolution (pp. 1-12), Cambridge University Press

Week 6: Epigenetics and niche construction: do we inherit acquired traits?

It is usually considered to be one of the great distinctions of Darwin's theory of evolution that organisms do not inherit acquired traits (in contrast to *Lamarckian* evolution). But this consensus has come under attack in the last decade. Epigenetic inheritance systems are now widely discussed. What should we make of this?

Main Reading:

- Jablonka, Eva and Lamb, Marion (2006), Chapter Four: Epigenetic Inheritance Systems. In*: Evolution in Four Dimensions*, Bradford Books, pp. 113-154

Week 7: Multi-level selection, cooperation, and the major transitions: why are there multi-cellular organisms at all (and, for that matter, eukaryotes and bee hives)? Case study: bacterial slime

In this session, we will consider whether groups of organisms can themselves be units of evolution. We will connect this discussion with a general discussion of what it takes for something to be a unit of evolution or selection.

Main Reading:

- SG, Chapter 8 "Organisms, Groups, and Superorganisms" (pp. 151-179)

Week 8: Being someone: what is a biological individual? Case study: plant individuality

This session continues and builds on last week's discussion. We will discuss the question of a biological individual in more detail. What may seem clear when we think about lions and elephants is much less clear when we look at other parts of the biological world, like plants and microorganisms.

Main Reading:

- Clarke, Ellen (2011). Plant individuality and multilevel selection theory, In: Kim Sterelny and Brett Calcott (eds.), The Major Transitions Revisited, The MIT Press, pp. 227-250
- Clarke, Ellen (2013). The multiple realizability of biological individuals, Journal of Philosophy 110(8): 413-435.

Second Assignment Due (2-3 page essay)

Week 9: Species. What are species? Case study: are human races a bit like species?

Darwin's main work on evolution tries to explain "the origin of species." But what actually are species? This week we look at this – controversially discussed – question. Are the distinctions between species real or important at all? What characterizes species? Are human races (black, white, Asian, etc.) like sub-species of the species home sapience?

Main Readings:

- SG, Chapter 9 "Species", pp. 180-213
- Kitcher, Phillip (2007). Does 'race' have a future?. *Philosophy & Public Affairs*, *35*(4), 293-317

Week 10: Becoming human. What do we know about human evolution?

In the last four sessions, we will look specifically at the evolution of human behavior. What insights into who we are can, if any, can we gain from the theory of evolution. This week, we will set the background. We will provide a brief overview of the history of evolutionary approaches to human behavior.

Main Readings:

- LB, Chapters 1+2 "Sense and Nonsense" and "A history of evolution and human behavior (pp. 1-48)

Week 11: Evolutionary Psychology. What does evolution teach about our psychological capacities? Case study: is the disposition for male violence a biological adaptation?

In this session, we will look at evolutionary psychology research program. We will look at how they aim to explain specific aspects of human behavior, and will critically assess them. As a specific case study, we will consider the evolutionary explanation of male aggression.

Main Readings:

- LB, Chapter 5 "Evolutionary Psychology" (pp. 105-138)
- Vickers, A. Leah., & Kitcher, Phillip. (2003). Popsociobiology reborn: The evolutionary psychology of sex and violence. In C.B. Travis (ed.), *Evolution, gender, and rape*, The MIT Press: pp. 139-168.

Week 12: Culture. What does evolution teach about human culture?

This week, we look both at the question of whether culture itself is subject to evolutionary process and at the idea that genes and culture co-evolve.

Main Readings:

- LB, Chapter 6 "Cultural Evolution" and Chapter 7 "Gene-Culture Co-evolution" (pp. 139-194)

Week 13: Intelligence. Does social life make us smart?

Why are we so smart? Why would anyone or anything be smart – evolutionarily speaking? In this session, we will consider the evolution of intelligence and cognition. We will consider specifically, the hypothesis that there is close connection between our

social capacities and our intelligence. Maybe social complexity is what drives the evolution of intelligence and allows it to evolve?

Main Readings:

- Humphrey, Nicholas (1976). The social function of intellect. In: Growing points in ethology (eds. P. P. G. Bateson & R. A. Hinde), Cambridge University Press: 303–317.
- Moll, Henrike, and Tomasello, Michael (2007). Co-operation and human cognition: The Vygotskian intelligence hypothesis. Philosophical Transactions of the Royal Society 362: 639-648.

Week 14: Morality. Where does morality come from (evolutionarily speaking)?

In this, last, session, we take a look at evolutionary approach to morality. Can evolution explain were morality comes from? If so, what implications may that have for the normativity of morality?

Main Reading:

- Kitcher, P. (2006). Between Fragile Altruism and Morality: Evolution and the Emergence of Normative Guidance. In: Evolutionary Ethics and Contemporary Biology (Eds. G. Boniolo and G. De Anna), Cambridge University Press: 159-177.

Third Assignment Due (5-6 page essay)