Course Syllabus

EVOLUTION ACROSS DISCIPLINES

(inkl. Research and Publish Lab)

Lecturer and lab instructor:	Maria Kronfeldner
Teaching assistant and peer tutor:	Michele Luchetti
No. of Credits:	4
Status:	Elective, PhD level
Teaching format:	4-hour/week (seminar)
Area:	Metaphysics and Epistemology

Time: Tuesday, 15:30-17:10,
Wednesday, 15:30-17:10

Course description

"Light will be thrown on the origin of man and his history", Charles Darwin wrote at the end of his 'On the Origin of Species'. Indeed, the light has expanded since then and continues to do so. Today, more than 150 years after the first publication of the Origin in 1859, evolution is everywhere. It almost seems as if Theodosius Dobzhansky's (1973) famous statement that "[n]othing in biology makes sense except in the light of evolution" mutated to: nothing at all makes sense except in the light of evolution.

In this course, students will get an in-depth knowledge about evolution as a historically changing and philosophically relevant concept that plays multiple roles in contemporary sciences, be it in biology itself, cognitive sciences, in sociology and anthropology, in economics, or in the humanities. The ultimate goal of the course is to enable students to appreciate and also to critically reflect – one of the main jobs of a philosopher (in this case: of science) – the use of such a ubiquitous concept across disciplines.

The course will consist of three parts: I. History of the concept of evolution; II. Contemporary theoretical issues; III. The pros and cons of applying evolutionary thinking across disciplines (e.g. to explain creativity, cultural change, economy, the evolution of mind, religion, etc.).

In addition, the course has a **Research and Publish Lab** attached to it. Students will have the opportunity to train three kinds of know-how related to research and its publication: (a) know-how to *write different formats of texts*, (b) know-how to *use professional databases* for research, and (c) know-how to *publish* one's research results (see below for details). As part of this, students will be required to explore the contemporary literature within groups and present papers that they deem relevant and interesting to the issues explored in the group.

The course-cum-lab setup will allow in-depth reflection and practice of the targeted know-how in relation to actual study assignments connected with the course (rather than abstract, 'dry' or 'disembodied' training). It will also allow students to discuss with peers problems that occur during the research process, since they will all be in similar situations and assisted by a peer tutor. Students will thus approach the learning goals regarding both know-that (the knowledge about the state-of-the art regarding evolutionary thinking across disciplines) and know-how (the knowledge about how to do research and publish it) in a problem oriented, peer-oriented and reflective manner.

The overview of the course structure below illustrates how the know-that and the know-how will be integrated, which written assignments the students will be given and which reflective learning units are planned. Students will have to keep a learning notebook (a "Research-and-Publish Notebook") in which they reflect on their individual learning goals, on methods they learned to reach them and on problems they individually have. Three times in

the term they consult with the peer tutor and discuss the notebook, which is not graded, in contrast to the other assignments.

Three kinds of know-how

(a) *Tacit knowledge about different writing formats in academia*: Students usually write term papers and thus rarely learn about the different actual formats scholars produce. Consequently, differences between a book review, a peer-review report and an argumentative piece are often not well understood. The *Research and Publish Lab* takes a step in the direction of teaching how to write *more realistic formats of texts,* i.e., the formats actually used by scholars. Students have to write (as assignment): a book review, a literature report, an argumentative piece and a peer-review.

(b) *Tacit knowledge about using professional databases*: How to do research in philosophy has changed a lot with the change in availability of online resources. It is usually not the case anymore that students cannot find enough publications on any given topic. The problem is rather that there is so much of it that it is difficult to find the 'needle in the haystack', those publications that are of relevance and quality. Students sometimes get some training from library staff, but this seems not to be as efficient as intended, presumably because it is 'disembodied', i.e., independent of actual study assignments.

(c) *Tacit knowledge about publishing:* Students often lack knowledge about how the world of publishing works (e.g., how journals are ranked, how double or triple blind-review works, what citation circles are, why there are publication biases, etc.). The course tries to deepen their know-how related to publishing by (c1) imitating an almost complete double-blind-review process, by including (c2) an introduction to the world of publishing and (c3) a special session where they "Meet the Editor" of a philosophy journal.

Learning goals

- To understand the history and contemporary philosophical and scientific issues about evolutionary thinking.
- To understand the impact of evolution on related issues in the philosophy of science such as explanation, agency, individuals, species.
- To understand major critiques of evolutionary thinking across disciplines.
- To acquire the three kinds of know-how mentioned above.

Assessment: 1/4 participation in class and group activities, 3/4 written assignments.

Written assignment (graded, replace term paper)**:**

- **Book review** (1000 words)
- **Literature report** on your topic of choice (500 words)
- **Argumentative piece** on your topic of choice (3000 words) (Final submission deadline of your argumentative piece: standard departmental deadline)
- **Peer review** (250 words)

Activities: In addition to the **Lab activities**, each student has to do provide **two presentations**: a presentation on material related to the book we read and a presentation on research literature with respect to the research focus the student chooses during the course.

Students are required to share their drafts with other students via the e-learning course site.

It is essential to participate regularly.

See also **general guidelines for course participation and deliverables**.

OVERVIEW

Wk	Tuesday	Wednesday	Reflective Learning Units
1	Introduction to the course topic (Lecture) Reading: Bowler	Introduction to the course topic (Seminar) Reading: Mayr, Lewontin	Start a Research-and-Publish Notebook by writing down your individual learning goals
2	*Lab workshop 1:* „**How to write a book review**“, **Part I**: A few words on how to do a book review Evolution from the abstract point of view: Basics Reading: Godfrey-Smith, Ch. 1-2 Further preparation tasks for Tuesday: Search for a good book review in the field (but not one on the book we were reading!)	Evolution from the abstract point of view: Basics Reading: Godfrey-Smith, Ch. 3	Make your notes regarding how to write a book review Make notes for your book review
3	Evolution from the abstract point of view: General ontology Reading: Godfrey-Smith Ch. 4-5	Evolution from the abstract point of view: General ontology Reading: Godfrey-Smith, Ch. 6	Make notes for your book review
4	Evolution from the abstract point of view: Special topics Reading: Godfrey-Smith, Ch. 7	Evolution from the abstract point of view: Special topics Reading: Godfrey-Smith, Ch. 8	Make notes for your book review
5	*Lab workshop 1*: „**How to write a book review**“, **Part II** **Discussion** of recommendations/handouts for how to do a book review Reading: see posting	*Lab workshop 1*: „**How to write a book review**“, **Part III** **Triadic feedback groups** on your book reviews Preparation Task for Wednesday: Write a **draft of your book review** (1000 words) and bring three print outs for triadic feedback groups in class	Make notes on what you learn from the peer feedback about your writing of book reviews
6-7	*Lab workshop 2*: “**How to find the needle in the haystack?**”, **Part I-IV** (details to be decided in cooperation with the library) Tasks (to be specified further): - Search online for 30 minutes the way you usually do - Search in Google Scholar - Discuss your keywords - Search in a professional philosophical database - Search in a general database (e.g. Web of Science)		Make your notes regarding database search

	- Learn how to get the information organized (e.g. via Zotero, WorldCat) - Compare the results, discuss pros-and-cons of the different ways of searching - Produce your literature report		
8	Discussion of research literature Task: Present the best paper you found on your research topic and how you want to develop a research project with it as an anchor	Discussion of research literature Task: as before	
9	Discussion of research literature Task: as before	*Lab workshop 3*: **How to develop an argument of your own and participate in peer-review processes, Part I** Discussion on: How are you developing an argument? Share your technique and develop it Write down the standards of evaluation.	Make your notes on what you want to learn in regards to giving critique and taking critique Mid-term questionnaire feedback unit (***** in cooperation with the CTL)
10	*Lab workshop 3*: **How to develop an argument of your own and participate in peer-review processes, Part II** **Discussion** on how to do a peer review Practice: Do a blind peer-review of an argumentative piece from your peers (250 words) Preparation for Tuesday: Draft your argumentative piece (2000 words) and bring one copy of it.	*Lab workshop 3*: **How to develop an argument of your own and participate in peer-review processes, Part III** **Triadic Feedback Group Discussions** (your argumentative piece) Preparation for Wednesday: Revise your argumentative piece (2000 words) and bring three copies of it.	Make notes on what you learned and what you still wish to learn regarding peer review processes Start thinking about what you learned and what you still wish to learn regarding academic publishing
11	*Lab workshop 4:* **How to get a research paper published, Part I** **Prepare for meeting with an editor**	*Lab workshop 4*: **How to get a research paper published, Part II** **Meet the editor** (with an editor of a journal from the field)	Make notes on what you learned and what you still wish to learn regarding academic publishing
12	*Lab workshop 4*: **How to get a research paper published, Part III** **Guest lecture: The world of publishing** (trends and problems in academic publishing, e.g. with respect to biases, role of editors, citation metrics, open access)	**Final discussion** on issues regarding your learning goals Finalize your Research-and-Publish Notebook	Make notes as last week End-term feedback unit (* in cooperation with the CTL)

MAJOR STUDY MATERIAL TO BEGIN WITH

Bowler, Peter J. 1975. The changing meaning of evolution. *Journal of the History of Ideas* 36: 95-114.

Godfrey-Smith, P. 2009. Darwinian Populations and Natural Selection. Oxford: Oxford University Press. (not provided online)

Lewontin, R. C. 1970. The units of selection. *Annual Review of Ecology and Systematics*, *1*, 1–18.

Mayr, Ernst. 1985. Darwin's five theories of evolution. In D. Kohn & M. J. Kottler (Eds.), *The Darwinian Heritage* (pp. 755–772). Princeton, NJ: Princeton University Press.

**** Further readings will be provided at the online learning course site. Think pieces have to be uploaded to the online learning course site.

FURTHER REFERENCES

Bowler, Peter J. 2003. *Evolution: The History of an Idea*. Berkeley: University of California Press.

Depew, David J. & Weber, Bruce H. 1995. *Darwinism Evolving: Systems Dynamics and the Genealogy of Natural Selection*. Cambridge, MA: MIT Press.

Glass, Bentley & Owsei Temkin, Willliam L. Straus, Jr. (eds.). 1959. *Forerunners of Darwin: 1745-1859*. Baltimore: Johns Hopkins Press.

Godfrey-Smith, Peter. 2009. *Darwinian Populations and Natural Selection*. Oxford: Oxford University Press.

Greene, Adam. 1959. *The Death of Adam: Evolution and Its Impact on Western Thought.* Ames, Iowa: Iowa State UP.

Jablonka, Eva, and Marion J Lamb. 2005. Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral and Symbolic Variation in the History of Life. Cambridge, MA: MIT Press.

Laland, K. N. & G. R. Brown. 2002. *Sense and Nonsense: Evolutionary Perspectives on Human Social Behavior*. Oxford: Oxford University Press.

Lewontin, R. C. 1968. The concept of evolution. In D. Sills (Ed.). *International Encyclopedia of the Social Sciences*, Vol.5. New York: Macmillan, 202-209.

Maynard-Smith, John & Eörs Szathmary. 1995. *The Major Transitions in Evolution*. New York: Freeman.

Mayr, Ernst. 1982. *The Growth of Biological Thought.* Cambridge, MA: Harvard UP. (dt.: 1984. *Die Entwicklung der biologischen Gedankenwelt: Vielfalt, Evolution, Vererbung*. Aus dem Am. v. K. de Sousa Ferreira. Berlin u.a.: Springer.)

Richards, R. 1992. Evolution. In Keller & Lloyd 1992: 95-105.

Richards, R. J. 1987. Darwin and the Emergence of Evolutionary Theories of Mind and Behavior. Chicago: University of Chicago Press.

Ruse, Michael. 2009. *Philosophy after Darwin: Classic and Contemporary Readings*. Princeton: Princeton University Press.

Sober, Elliott (ed.). 1994. *Conceptual Issues in Evolutionary Biology: An Anthology*. Cambridge, MA: MIT Press.

Sober, Elliott. 2000. *Philosophy of Biology*. 2. ed. Oxford: Oxford University Press.

Sterelny, K. & P. E. Griffiths. 1999. *Sex and Death: An Introduction to Philosophy of Biology.* Chicago, London: University of Chicago Press.

DICTIONARIES

Futuyama, Douglas. 1998. *Evolutionary Biology*. Third Ed. Sunderland, MA: Sinauer.

Keller, E.F. and E.A. Lloyd. 1992. *Keywords in Evolutionary Biology*. Cambridge, MA: Harvard UP.

Pagel, Mark (ed.). 2002. *Encyclopedia of Evolution*, 2 Bde. Oxford: Oxford UP.

GENERAL RULES: PARTICIPATION, PRESENTATIONS, WRITTEN ASSIGNMENTS

Maria Kronfeldner

Interaction in class should be based on mutual reliability and mutual respect, a fair and open intellectual exchange.

Participation

- Students are required to **attend classes regularly**.
- Students should **participate actively in seminar discussions** and
- have to **prepare the required reading** for the course.
- They should **be able to ask questions** and **make comments on that reading** and
- **respond to the presentations of other student**.

Presentations should

- include the **reconstruction of the main arguments of the text** and
- **interpretative remarks** or
- **questions for discussion**.
- If asked, students also have to **exhibit research skills** (e.g. referring to further literature regarding the topic)
- Students are expected to **prepare and distribute a maximum two page long handout** that they distribute before their presentation. A multimedia presentation (e.g. powerpoint) is possible but is not replacing the handout.

Written assignments
Format of the written assignments varies. See course syllabus on this. If a term paper is assigned as an argumentative piece, this can be:

- either a careful **critical reconstruction** of a particular and important argument for some position,
- a **comparison** between competing arguments about alternative solutions to a problem,
- or a **defense of some particular position**/argument against some relevant criticism.

In all these cases, your own argumentation, your critical voice, should be a significant part of the paper.

I will **evaluate assignments** according to the following criteria (if applicable):

Specific criteria	**1** Yes	**2**	**3**	**4**	**5** No
Does the paper have a precise, meaningful, independent and relevant question, structure and upshot?					
Are the arguments precise and coherent?					
Are important concepts explicated?					
Does the paper critically engage with the literature (e.g. anticipating counterarguments, developing an original argumentation)?					
Is there an indication for adequate comprehension of the relevant literature?					
Is the paper well-referenced (mentioning relevant references) and does it conform to the standards of academic writing?					