

*Conference Report: The Generalized  
Theory of Evolution, Duesseldorf  
Center for Logic and Philosophy of  
Science, January 31 – February 3, 2018*



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According to Theodosius Dobzhansky's famous dictum, "nothing in biology makes sense except in the light of evolution" [3]. On the other hand, philosophers like Ludwig Wittgenstein used to be rather skeptical concerning the relevance of evolutionary thinking to philosophy: "The Darwinian theory has no more to do with philosophy than has any other hypothesis of natural science" [6, 4.1122].

In the last decades, however, – in particular since Richard Dawkins coined the term 'meme' for the cultural counterpart of the gene [2] – the application of evolutionary principles has been successfully pursued in areas other than biology. The central principles are reproduction, variation, and selection [4]. Based on these principles, several models, methods, and theories of a wide range of phenomena have been developed – not confined to the realm of biology. More generally, philosophy of science, social sciences, psychology, economics, and many other areas show a growing interest in a generalized theory of evolution.

Like in many disciplines and areas of research, the publication of an introductory textbook indicates a certain stage of maturity. Such a textbook has been provided (in German) by Gerhard Schurz [5]. An updated English version is currently in preparation.

Being one of the first big conferences in this area, "The Generalized Theory of Evolution" brought together international researchers, scholars, and an interested audience to discuss the current state and trends of the interdisciplinary field of a generalized theory of evolution.

## **1 Facts and Figures**

"The Generalized Theory of Evolution" was organized by members of the Duesseldorf Center for Logic and Philosophy of Science (DCLPS): Karim Baraghith, Christian J. Feldbacher-Escamilla, Corina Strößner, and Gerhard Schurz. The event took place from January 31 to February 3, 2018 at the *House of the University* in Düsseldorf, hosting approx. 100 international and interdisciplinary participants from more than 15 countries.<sup>1</sup>

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*Kriterion – Journal of Philosophy*, 2018, 32(1): 93–97.

<http://www.kriterion-journal-of-philosophy.org>

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The conference featured seven keynote lectures (briefly described in section 2) and 34 contributed talks (see section 3). The percentage of women of the conference’s participants was approx. 20%.

Definitely a highlight of the conference was a round table discussion session: “Cultural Evolution or Social Darwinism? Prospects and Problems of a Generalized Evolutionary Theory” at the beginning of the conference. Some of the keynote speakers (see below) participated in a round table discussion on the first evening of the conference – an excellent opportunity to get to know each other, to find differences and commonalities, setting the stage for the rest of the conference.

“The Generalized Theory of Evolution” was sponsored and supported by the DCLPS, the Heinrich Heine University Düsseldorf, and the DFG (Deutsche Forschungsgemeinschaft).

More details and a comprehensive repository are available at the conference website: <http://dclps.phil.hhu.de/genevo.2>

## 2 Keynote Lectures

Daniel C. Dennett (Tufts University) started off the conference with his keynote talk “Tools Making Tools: the recursive de-Darwinization of human culture”. As one of the key figures in developing and promoting the idea of cultural evolution, he traced the history of the meme concept and defended it. He also stressed that competence and comprehension need to be kept apart.

On the second day of the conference, Alex Mesoudi (University of Exeter) continued with a lecture entitled “The Viability of a Theory and Science of Cultural Evolution”. He investigated the parallels and differences between biological and cultural evolution. In particular, he argued for the feasibility and adequacy of evolutionary cultural explanations.

Gerhard Schurz (University of Düsseldorf) summarized the central pieces of a generalized theory of evolution in his lecture “Generalizing Evolution Theory: Evolution in nature and culture”. After outlining the abstract principles of a generalized theory of evolution and differences between biological and cultural evolution, he distinguished different kinds of evolutionary dynamics, depending on the selection parameters.

Brian Skyrms (University of California, Irvine) gave an overview of “Some Evolutionary Dynamics of Signaling Games”. He presented a *tour de force* of evolutionary dynamics and learning dynamics in different kinds of signaling games. The robustness of the results of some dynamical models calls for their applicability in real-world settings.

Next, Ruth Mace (University College London) provided fascinating insights into the field of anthropology in her talk “No Need for an Upgrade: Using the toolkit from behavioural ecology to study cultural evolution”. By looking at examples of evolutionary patterns of residence and kinship from China and Africa, she argued for the relevance of Tinbergen’s framework for studying human cultural behavior.

Thomas Reydon (University of Hannover) delivered his lecture via Skype: “Towards Applicability Criteria for Generalized Evolutionary Theories: The concept of real populations”. He raised the question as to what the requirements are for a process to fall into the domain of a generalized theory of evolution. His answer lies in a generalized concept of populations which serves as a criterion for deciding whether a process meets these requirements.

Finally, Eva Jablonka (Tel Aviv University) concluded the conference with her lecture “Culture: An Evolutionary-Developmental Approach”. She pointed out the importance of George Price’s distinction between Darwinian selection and sample selection, discussing examples from epigenetic variations and reinforcement learning, respectively. Within this framework, she elaborated a developmental systems approach to cultural evolution.

### ***3 Contributed Talks***

In addition to the keynote lectures, which took place each morning and evening, a total number of 35 talks were given by researchers with various backgrounds. This diversity was structured into slots in two parallel sessions, each with a length of one hour and a half to two hours. For each talk, 20 minutes speaking time and 10 minutes discussion time had been reserved.

A variety of interesting contributions were presented, including theoretical and experimental work from biology, philosophy, game theory, economics, history, anthropology, sociology, technical studies, and many others. The organizers managed to accommodate this diversity of topics in sessions, ranging from “Complexity”, “Communication & Language”, and “EvoDevo” to “Generalized Evolutionary Modelling”. For more details on individual talks, see the abstract book, which can be downloaded from the conference website.<sup>3</sup>

## 4 Summary

While the theory of evolution continues to be a central topic in philosophy of biology, the generalized theory of evolution is an interdisciplinary field in which the theory of evolution itself becomes a powerful framework, within which a variety of questions from biology, philosophy, social sciences, economics, anthropology, etc. can be addressed. The conference in Düsseldorf showed how active and fruitful this area of research currently is. The scientific community is looking forward to seeing more events like this and to discussing more fascinating insights in the future. Within the generalized theory of evolution – to adapt Charles Darwin [1, p. 490]<sup>4</sup> – wonderful ideas “have been, and are being, evolved”.

## Notes

- 1 Thanks to Christian J. Feldbacher-Escamilla and Karim Baraghith for providing me with the numbers.
- 2 Videos of the keynote lectures and the round table, together with an introduction video, as well as some of the presentation slides can be accessed at the conference website’s repository: <http://dclps.phil.hhu.de/genevo/repository>.
- 3 Available at: <http://dclps.phil.hhu.de/genevo/programme>.
- 4 Quoted from *Darwin Online*, accessed 02-14-2018: <http://darwin-online.org.uk/content/frameset?itemID=F373&viewtype=text&pageseq=508>.

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## References

- [1] Charles R. Darwin. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. John Murray, 1859.
- [2] Richard Dawkins. *The Selfish Gene*. Oxford University Press, 1976.

- [3] Theodosius Dobzhansky. “Nothing in Biology Makes Sense Except in the Light of Evolution”. In: *The American Biology Teacher* 35.3 (1973), pp. 125–129. DOI: [10.2307/4444260](https://doi.org/10.2307/4444260).
- [4] Richard C. Lewontin. “The Units of Selection”. In: *Annual Review of Ecology and Systematics* 1 (1970), pp. 1–18. DOI: [10.1146/annurev.es.01.110170.000245](https://doi.org/10.1146/annurev.es.01.110170.000245).
- [5] Gerhard Schurz. *Evolution in Natur und Kultur: Eine Einführung in die verallgemeinerte Evolutionstheorie*. Spektrum Akademischer Verlag, 2011.
- [6] Ludwig Wittgenstein. *Tractatus Logico-Philosophicus*. Kegan Paul, Trench, Trubner & Co., 1922.