Michael Baumgartner

Curriculum Vitae

University of Pittsburgh
Center for Philosophy of Science
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Academic Appointments

2007-2008 **Visiting Fellow** at the Center for Philosophy of Science, University of Pittsburgh

2003-2007 **Lecturer in Philosophy** at the University of Bern

2001-2003 **Research and Teaching Assistant** at the University of Bern

Education

2005 **Ph.D. in Philosophy**, *University of Bern*.

2001 **M.A. in Philosophy**, *University of Bern*.

1995-2000 Studies in Philosophy, History, and German, *Universities of Bern, Freiburg, and Konstanz (Germany)*.

1994-1995 Studies in English, *Clark College, Portland (USA)*.

Ph.D. Thesis

title *Complex Causal Structures. Extensions of a Regularity Theory of Causation* (for a detailed description of the thesis see p. 4 below.)

supervisors Prof. G. Grasshoff (University of Bern) / Prof. M. Esfeld (University of Lausanne)

url For a copy of the thesis see:
http://www.philoscience.unibe.ch/leute/docs/ext_reg.pdf

Research Interests

Areas of Specialization Causation, Philosophy of Science, Philosophy of Logic

Areas of Competence Empiricism, Metaphysics, Kant, 19th Century British Philosophy, Philosophy of Mind

Publications

Monograph Kausalität und kausales Schliessen. Eine Einführung mit interaktiven Übungen (Causality and Causal Reasoning. An Introduction with Interactive Exercises), Bern Studies, Bern 2004. (with G. Grasshoff)

Articles Adequate Formalization, *Synthese*,
URL = <http://www.springerlink.com/content/36777m05417335t0/> (2007). (refereed) (with T. Lampert)

Regularity Theories Reassessed, *Philosophia*, (in press). (refereed) [Preprint available in the PhilSci archive: http://philsci-archive.pitt.edu/archive/00003610/01/regul_recon3.pdf]

Informal Reasoning and Logical Formalization, in: *Ding und Begriff* ed. by S. Conrad and S. Imhof, Peter Lang, Bern (in press). (invited)

Die Probleme einer theoretischen Analyse der Kausalrelation, in: N. Kersten and U. Rose, Kausales Schliessen auf der Grundlage von Beobachtungsstudien, BAUA Dortmund 2007, pp. 16-34. (invited)

Kausalität, in: *Neues Handbuch philosophischer Grundbegriffe*, ed. by Armin G. Wildfeuer and Petra Kolmer, Karl Alber, München/Freiburg 2006. (invited)

Book Review — 'Die richtige Formel. Philosophische Probleme der logischen Formalisierung' by G. Brun, *Erkenntnis* 60.3 (2004), pp. 417-421. (with T. Lampert)

Preprints and Papers Under Review

Monograph — Complex Causal Structures. Extensions of a Regularity Theory of Causation, Ph.D.-thesis, University of Bern 2005. [A copy can be found here: http://www.philoscience.unibe.ch/leute/docs/ext_reg.pdf]

Papers — The Unity of Logical Form (under review). (with T. Lampert) [A copy can be found here: http://www.philoscience.unibe.ch/leute/docs/log_form2.pdf]

The Causal Chain Problem (under review). [A copy can be found here: http://www.philoscience.unibe.ch/leute/docs/chain_problem2.pdf]

Inferring Causal Complexity (under review). [Preprint available in the PhilSci archive: http://philsci-archive.pitt.edu/archive/00002879/01/infer_c.pdf]

Causal Slingshots (under review). [A copy can be found here: http://www.philoscience.unibe.ch/leute/docs/sling2.pdf]

Talks

Sept. 2007 — The Causal Chain Problem, *Center for Philosophy of Science*, University of Pittsburgh.

Mar. 2007 — The Inference to Chains, *Workshop on Contemporary Research in Philosophy*, University of Lausanne.

Feb. 2007 — On Adequate Formalization, *Research Colloquium of the* `meaning.ch` *group*, University of Bern.

Nov. 2006 — Causal Relevance of Negative Factors, *Workshop on* Contemporary Issues in Causation, Karman Center for Advanced Studies in the Humanities, Bern.

Okt. 2006 — Quine and Strawson, *Workshop on* Strawson's Individuals, *meaning.ch*, University of Bern.

Sept. 2006 — Event Identity in Causal Contexts, *GAP 6 (6th international congress of the German Society for Analytic Philosophy)*, Freie Universität Berlin.

Nov. 2005 — Problems of an Analysis of the Causal Relation, *Workshop on: Causal Reasoning Based on Observational Studies*, Bundesanstalt für Arbeitsschutz und Arbeitsmedizin Berlin.

Jan. 2005 — Inferring Causal Complexity, *Philosophy of Science Research Colloquium*, University of Bern.

May 2002 — Complex Minimal Theories, *Philosophy of Science Research Colloquium*, University of Bern.

Courses Taught (University of Bern)

2007 (summer) — Laws of Nature (http://www.philoscience.unibe.ch/lehre/event?id=224)

2006 (winter) — Determinism (http://www.philoscience.unibe.ch/lehre/event?id=174)

Mind-Body Interaction (http://www.philoscience.unibe.ch/lehre/event?id=175)

2006 (summer) — Introduction to Classical Logic (http://www.philoscience.unibe.ch/lehre/event?id=155)

British Empiricism (http://www.philoscience.unibe.ch/lehre/event?id=154)

2005 (winter)	Seminar on Karl Popper's Philosophy of Science (http://www.philoscience.unibe.ch/lehre/event?id=134)
2005 (summer)	Seminar on Realism vs. Anti-Realism (http://www.philoscience.unibe.ch/lehre/event?id=121)
2004 (winter)	Seminar on J.S. Mill's *System of Logic* (http://www.philoscience.unibe.ch/lehre/event?id=110)
2003/2005/2007 (summer)	Introduction to the Philosophy of Causation (http://www.philoscience.unibe.ch/lehre/event?id=15)

Grants

2007	Fellowship for Visiting Fellows from the University of Pittsburgh
2006	Fellowship for Prospective Researchers from the Swiss National Science Foundation
2001-2003	Ph.D. Grant from the Swiss National Science Foundation for a research project directed by G. Grasshoff

- Travel grants from the University of Bern and from the Swiss National Science Foundation

Other Educational Experience

- 3rd International Summerschool in Konstanz on 'Causality, Uncertainty, and Ignorance' (2004)

Professional Services

- Referee for *Erkenntnis*, *Synthese*, *Facta Philosophica*
- Co-Editor of the *Bern Studies in the Philosophy of Science*

Professional Memberships

- American Philosophical Association
- Gesellschaft für analytische Philosophie (German Society for Analytic Philosophy)

References

- Prof. Gerd Grasshoff, University of Bern, Department of Philosophy
  gerd.grasshoff@philo.unibe.ch
- Prof. Michael Esfeld, University of Lausanne, Department of Philosophy
  Michael-Andreas.Esfeld@unil.ch
- Prof. James Woodward, California Institute of Technology, Division of the Humanities and Social Sciences
  jfw@hss.caltech.edu
- PD Dr. Klaus Petrus, University of Bern, Department of Philosophy
  klaus.petrus@philo.unibe.ch
- Prof. Andreas Graeser, University of Bern, Department of Philosophy
  andreas.graeser@philo.unibe.ch
- Prof. Christian Wüthrich, University of California at San Diego, Department of Philosophy
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- Dr. Timm Lampert, Carnegie Mellon University, Department of Philosophy
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Ph.D. Thesis Description

Complex Causal Structures. Extensions of a Regularity Theory of Causation
http://www.philoscience.unibe.ch/leute/docs/ext_reg.pdf

Motivation and main results

The motivation for the research behind "*Complex Causal Structures. Extensions of a Regularity Theory of Causation*" has been twofold. First, after having been disregarded for a long time, regularity theories of causation have lately received increasing attention – essentially induced by problems encountered within other theoretical frameworks. The following studies can be seen as exemplary cases of this revived interest in regularity accounts:

- Charles C. Ragin, *Fuzzy-Set Social Science*, University of Chicago Press, Chicago 2000.
- John F. Halpin, Scientific Law: A Perspectival Account, Erkenntnis, 58 2003, pp. 137-168.
- Gerd Grasshoff and Michael May, Causal Regularities, in: *Current Issues in Causation*, ed. by Spohn, W., Ledwig, M., Esfeld M., Mentis, Paderborn 2001, pp. 85-114.

Second, up to recent years philosophical analyses of the causal relation focussed on direct causal dependencies among single causes and effects. For a long time it was generally assumed that complex causal structures could be straightforwardly accounted for once a successful analysis of atomic causal dependencies would be available. This confidence, however, has meanwhile turned out to have been premature for many prominent theoretical accounts of causation. Complex structures may well be equivalent as regards a respective theoretical framework (e.g. probabilistically or counterfactually equivalent) without being equivalent in causal terms.

Thus, this thesis fills two gaps in the available literature on causation. On the one hand, it reassesses the prospects and merits of regularity theoretic analyses of causation and presents an up-to-date regularity theory, which, as I claim, is unaffected by the criticism traditionally raised against regularity accounts and which, furthermore, provides valuable analytical means not available within other theoretical frameworks. On the other hand, it develops an algorithm of causal reasoning that does not build up complex structures layer by layer by suitably combining atomic causal dependencies among single factors. The algorithm directly maps complex structures onto sets of coincidently instantiated factors. I argue, that thereby the ambiguities encountered upon distinguishing between different complex causal structures can be avoided.

Abstracts of the single chapters

Chapter 2 provides the conceptual fundament of the subsequent regularity theory. An evaluation of the debate over fact vs. event causation shows that analyzing the relata of causation in terms of facts has unclear and very broad philosophical follow-ups, whereas taking causes and effects to be events offers grounds to meet all requirements of a successful analysis of the causal relata without such uncontrollable theoretical spin-offs. Furthermore, chapter 2 introduces the notion of *causal relevance* – the central analysandum of a regularity theory –, reviews the atomic forms of causal dependencies, and discusses the causal principles presupposed by a regularity account.

The core of chapter 3 consists in the analysis of causal relevance. Causal regularities are accounted for by means of first-order logic and the notion of a *minimal theory* is introduced as a conceptual skeleton of our analysis. Apart from clarifying causal relevance subsisting among positive factors, chapter 3 accounts for causation among absences or negative factors, for the direction of causation, for variable specifiability of causal structures, and for the construction of complex structures from a limited set of atomic causal dependencies.

In chapter 4 I then call attention to a problem arising from ambiguities as regards the composition of complex structures, especially causal chains, from simple ones. It is demonstrated that for every chain there exists an empirically equivalent epiphenomenon. That means, there is no empirical warrant for the existence of one of the most central and ubiquitous causal structures: causal chains. Chapter 4 then proposes a solution to this problem and provides the theoretical basis for a procedure that maps complex causal structures onto sets of coincidently instantiated factors.

Finally, chapter 5 develops a procedure of causal reasoning based on the results obtained in chapter 4. An algorithm of causal reasoning is proposed that assigns complex structures to sets of coincidently instantiated factors. Contrary to existing procedures, this so-called *coincidence analysis* does not build up complex structures layer by layer by suitably combining atomic causal dependencies among single factors. Rather, it directly maps complex structures onto coincidence sets. Thereby the ambiguities encountered upon distinguishing between chains and epiphenomena can be avoided.