

Cognition and Causation in Early Modern and Contemporary Philosophy

Request for funding from Strategic Partnership Princeton University–Humboldt Universität zu Berlin

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Summary

We seek seed funding for an initial year of two symposia to be held at Princeton University and Humboldt-Universität zu Berlin to study relations between conceptions of knowledge and theories of causation in early modern and contemporary philosophy. The project is intended to strengthen growing informal and formal networks between the departments of philosophy at Princeton and Humboldt, and to prepare the ground for longer-term collaborations and internationalization initiatives including joint seminars, exchanges of faculty and graduate students, and graduate training workshops.

Scientifically-minded philosophers of the early modern period challenged a dominant Aristotelian framework with new theories of nature and knowledge. Attempts of Descartes, Spinoza, Leibniz and others to rationalize the natural order involved significant appeal to causal principles held to govern relations among bodies, between bodies and minds, and between God and nature. The centrality of causal principles in the epistemology of the period reflects in part attachment to a conception of science as furnishing knowledge not only *that* but *why* facts obtain. Such giving of reasons is understood as derivation from causes—so that metaphysical conceptions of causation/grounding play a foundational role in theories of scientific knowledge. The program aims to study ways in which the metaphysics of causation implicitly and explicitly shaped epistemological theorizing in the period, with a view to achieving better understanding of implications for contemporary research. Following a long period of dominance of Humean anti-realism in contemporary theorizing about causation and explanation, new work at Princeton and Humboldt has been reestablishing an older order of analysis in locating foundations of scientific explanation in metaphysically robust conceptions of real grounding. The reemergence of this traditional paradigm makes the time especially ripe for investigation of possibilities and problems encountered by its historical precedents. The workshops will bring together a diverse group of senior/junior faculty, junior researchers and graduate students with extensive historical and systematic expertise in the program area. The program seeks to build a platform for larger scale multi-year joint initiatives between the departments in the future and it is complementary to Michael Smith and Thomas Schmidt's 2015–6 seed grant application in ethical theory.

1. Program Concept

Central to the conception of Aristotelian science in the middle ages was a notion of scientific knowledge involving what was sometimes called the “highest sort of demonstration” (*demonstratio potissima*). Scientific knowledge, according to Aristotle’s *Posterior Analytics*, finds expression in a deductive system aiming to duplicate the real order of causes. To this end, knowledge traces the causes of objects of scientific investigation to first causes rooted in the natures of things. These natures are expressed by real definitions supplying premises for deductively valid arguments concluding to facts cognized. Scientific knowledge is thus conceived not just as knowledge that something is true or obtains, but *why* it is so—where such giving of reasons is understood as derivation from causes. This idea of knowledge through causes furnished the original meaning of ‘a priori demonstration’ when Albert of Saxony introduced that term into the philosophical lexicon in the fourteenth century.

Notwithstanding gathering opposition to Aristotle’s physics in the early modern period, the traditional model of knowledge through causes continued to exert strong influence. Spinoza’s *Ethics* declares that knowledge of an effect “depends on, and involves, the knowledge of its cause.” Leibniz holds that “a cause in the realm of things corresponds to a reason in the realm of truths. A reason par excellence is the cause, not only of our judgment, but also of the truth itself—which makes it what is known as an ‘a priori reason.’” The very idea of fully scientific knowledge understood in this way involves essential reference to metaphysical dependence or grounding. In such a context, metaphysics itself could be defined by Leibniz’s follower Baumgarten as the “science of the first principles of human knowledge” (*scientia primorum in humana cognitione principiorum*). The definition presupposes a grasp of principles of real grounding, describable as principles of knowledge just because of their metaphysical purchase.

The dependence of scientific knowledge traditionally conceived on metaphysical conceptions of causation/grounding stands in contrast with a more familiar order of analysis in recent times—one also rooted in the early modern period. Hume was led by perceived failure of Locke’s efforts to furnish an empiricist pedigree for the idea of causation to employ an epistemic principle of significance as tool of metaphysical

critique. The result was banishment of necessary connection/real production from the world, and its replacement with a reductive theory of causation as constant conjunction or regular succession. Influential philosophers of science of the late twentieth century, including Lewis and Van Fraassen, continued to be led by Humean scruples regarding intelligibility and empirical accessibility of causation to develop reductive analyses of causation in terms of counterfactual dependence and regularity. These analyses became foundations of sophisticated theories of scientific explanation.

A sharply contrasting approach enjoying systematic development in recent work by Kment at Princeton and Vetter at Humboldt seeks to restore an order of analysis that appears much closer to the traditional conception of scientific understanding. Its idea is to set out from primitive metaphysical notions of causation and grounding, employing these as foundations for theories of modality, counterfactual dependence, and scientific explanation. The reemergence of such metaphysical realism in contemporary philosophy of science suggests that a dialogue regarding possibilities and difficulties encountered by early modern precedents may be especially productive and timely.

Among the issues calling for closer study here are the following: What conceptions of metaphysical dependence/grounding are presupposed by emerging accounts of scientific knowledge in the early modern period? How are these conceptions influenced by efforts to reconcile the new sciences with a traditional theistic worldview? How are they influenced by the mathematization of natural science during the period? It is often said that the Aristotelian model of fourfold causation (efficient, formal, material, final), dominant up to the early seventeenth century, gave way in the early modern period to a model appealing to efficient causation alone. More recently this view has been strongly challenged: it has been argued that post-Cartesian authors still appealed to final and formal causation in the material world, and that Descartes himself did not fully reject these types of causation. It is striking that contemporary philosophy of science is now seeking to rehabilitate metaphysical grounding relations apparently distinct from efficient causation and resembling the formal causes of the tradition. Comparison of early modern and contemporary models may prove fruitful both to historians of the period and systematic philosophers.

Another cluster of questions calling for closer study concerns the accessibility of grounding relations in the context of new theories of explanation and modality. According to a still dominant historiographical tradition, many so-called Rationalists of the modern period differ from so-called Empiricists in their appeal to “innate ideas” to solve this problem. However, it is far from clear what these ideas were supposed to be (capacities, concepts, basic principles, etc.) and how they were supposed to be triggered in a given situation. What kind of causal mechanism actualizes an innate capacity or principle? How exactly does the actualization work? What kind of cognitive state will be the result of the process of actualization? Transposed to the contemporary debate, how should models of explanation resting on a foundation of real production/grounding address the problem of epistemic accessibility of such relations? If the answer has recourse to non-empirical concepts and knowledge, what theory of the a priori should be at its basis? How should metaphysical and epistemological considerations be balanced in this context? Will the accessibility problem ultimately direct metaphysical theories of scientific explanation back towards some form of idealism—perhaps a return to Kant? These are increasingly pressing questions given the present state of scholarship, and cooperative investigation of cutting-edge Humboldt and Princeton researchers promises fruitful contributions to current debates.

2. People

The project develops naturally out of strengthening formal and informal connections between faculty and researchers at Princeton and Humboldt in recent years. It will bring together a diverse collection of faculty members, junior researchers, and graduate students from both institutions with broad expertise in the program area. Many graduate students have already expressed their enthusiasm to participate. Among faculty participants, Daniel Garber is Stuart Professor of Philosophy at Princeton University. He is an expert on the relations between philosophy, science and society in the period of the Scientific Revolution. Dominik Perler is Professor of Philosophy at Humboldt-Universität zu Berlin, and currently Global Scholar at Princeton University. His research focuses on medieval and early modern philosophy, with interests in the philosophy of

mind, epistemology and ontology. Desmond Hogan is Associate Professor of Philosophy at Princeton University. His research is focused on Kant, pre-Kantian German philosophy, early modern philosophy, and nineteenth century philosophy. Tobias Rosefeldt is Professor of Philosophy at Humboldt-Universität zu Berlin. He specializes in Kant's theoretical philosophy, early modern philosophy, and German idealism. Barbara Vetter is Junior Professor of Philosophy at Humboldt-Universität zu Berlin. Her research focuses on dispositions and the theory of metaphysical modality, philosophy of action and epistemology. Boris Kment is Assistant Professor of Philosophy at Princeton University. He specializes in metaphysics and epistemology, especially modality, conditionals, essence, causation, and explanation. Hans Halvorson is Professor of Philosophy at Princeton University. His primary research interests lie in the philosophy of science, including philosophy of physics and foundations of quantum field theory, history of analytic philosophy, and category theory.

3. Connections to Ongoing/Prospective Cooperative Endeavors

Recent years have witnessed a flourishing exchange of researchers at all levels of seniority between Humboldt and Princeton philosophy departments. The current trend dates back at least to Prof. Rolf-Peter Horstmann's visit to Princeton University in 2003 as Old Dominion Fellow in the Humanities. Prof. Horstmann's seminar at the Humboldt subsequently attracted many Princeton researchers, and since his retirement the seminar continues to be a major draw under the new leadership of Prof. Tobias Rosefeldt. The outstanding recent success of a graduate-led annual Princeton-Humboldt Graduate Philosophy Conference testifies to the motivation among Princeton graduate students to engage philosophically with their Humboldt peers. Many Princeton students have developed strong German language skills in part through these activities. Some recent graduates of Princeton, including Prof. Jonathan Beere, Dr. Jacob Rosen, and Dr. Catharine Diehl, have gone on to research posts at the Humboldt. Princeton's Professor Ben Morison is currently serving as Senior Fellow in the Excellence Cluster Topoi at Humboldt, and Princeton's Professor Michael Smith has recently spent a year visiting as a Humboldt research scholar. Recent movement in the other direction includes the

Humboldt University's Prof. Dominik Perler, currently in his third year as Global Scholar at Princeton. Ariane Schneck is the latest member of a steady stream of visiting graduate researchers from Humboldt. Further collaborative efforts and exchanges are detailed in Michael Smith and Thomas Schmidt's complementary seed grant proposal in moral philosophy. These exchanges have greatly benefited researchers at both institutions, and helped the research profile of both departments. The present program is intended to build on these welcome trends, many of which emerged organically out of interests and relationships of individual researchers. The program will contribute to the internationalization of both universities by strengthening and providing an institutional platform for these networks. We aim with this program to set the stage for longer-term collaborations between the two institutions, in particular joint seminars, exchanges of faculty and graduate students, and graduate training workshops under the auspices of the new Princeton-Humboldt Strategic Partnership program.

4. Planned events

The program plans a two-and-a-half day symposium during the Fall Semester 2015 at Princeton University followed by another of the same length during Spring Semester 2016 at the Humboldt University in Berlin. We seek funding to cover travel costs and to provide four nights of hotel accommodation in Princeton/Berlin for each of ten workshop participants traveling from Berlin/Princeton. The workshops will include two mornings with coffee and light breakfast, two afternoon coffee breaks, two lunches, and a dinner on the first night. In addition to the traveling participants, we anticipate an equal number of participants from the Princeton/Humboldt communities, who would be included in all the meals. (See attached sheet for a detailed program costing.)