Sharon Elizabeth Berry

CONTACT

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EDUCATION

Ph.D. in Philosophy, Harvard University, spring 2012 (expected)
BA in Philosophy and Mathematics (double major), Columbia University, spring 2004
summa cum laude

AREAS OF SPECIALIZATION

Epistemology, Philosophy of Mathematics, Mathematical Logic, Philosophy of Science, Metaphysics, Aesthetics

AREAS OF COMPETENCE

Philosophy of Language, Philosophy of Mind, Moral Philosophy, Bio-ethics, History of Early Analytic Philosophy, Early Modern Philosophy

DISSERTATION

Title: The Marriage of Rationalism and Empiricism: A New Approach to the Access Problem
Committee: Ned Hall (chair), Peter Koellner, Warren Goldfarb, Bernhard Nickel
Abstract: Mathematical facts are abstract in a way that makes our knowledge of them seem hard to explain. I argue that we can explain knowledge of mathematics by drawing on knowledge of combinatorial possibility (possibility with regard to the most general principles about how any objects can be related by any relations), together with observations about patterns of behavior of concrete physical objects. Our observations of the actual relationships between concrete objects can ground true beliefs about how it is combinatorially possible for any objects to be related by any relations. In getting largely correct principles for reasoning about what is combinatorially possible, I argue, we can get largely correct axioms and inference rules for reasoning about mathematical objects as well.

AWARDS/HONORS

Year-long Research Fellowship from the Martin Fund 2010-11 Harvard Philosophy Dept.
Summa Cum Laude 2004 Columbia University
Dean's List 2000-2004 Columbia University
Arthur Rose Teaching Assistantship 2003 Columbia University

REFEREED PRESENTATIONS

- "Mathematical Knowledge and Combinatorial Possibility: A Two-Pronged Strategy for Solving the Access Problem"
  - Columbia-NYU Annual Philosophy Graduate Conference 2011
  - Cambridge Graduate Conference on the Philosophy of Logic and Mathematics 2011
  - Southeast Philosophy Graduate Conference 2011
- "Investigator's Paradise: An Epistemic Approach to Resuscitating Kant's Aesthetic Formalism"
  - Midsouth Philosophy Conference 2011,
  - Intermountain West Graduate Philosophy Conference 2011 (paper accepted)

- "Contra Kim on Epistemic Normativity" Brandeis Graduate Philosophy Conference 2011

- "Malament-Hogarth Spaces and the Empirical Revision in Mathematics"
  - Cambridge Graduate Conference on the Philosophy of Logic and Mathematics 2009;
  - Northwest Philosophy Conference 2009
- "A Priority and the Doctoroids"
  - Rocky Mountain Philosophy Conference 2009

Selected Other Presentations

- "Stipulative knowledge of existence facts? A response to Eklund on Quantifier Variance"
  - Harvard Metaphysics and Epistemology Workshop 2011
- "The Access Problem for the Nominalist"
  - Harvard-MIT "Eminees" 2010
  - Harvard Metaphysics and Epistemology Workshop 2010
- "Can Mathematical Facts Explain Mathematical Beliefs?"
  - Harvard Metaphysics and Epistemology Workshop 2010
- "The Problem of a Priori *Analytic* Knowledge" *and* "What Neo-Meinongians might mean".
  - Harvard-MIT "Eminees" 2008
- "Problems for Meta-semantic Solutions to the Access Problem"
  - Harvard Metaphysics and Epistemology Workshop 2008
- "The Access Problem and the Applications Problem: Can we get Scylla and Charbdis to fight?"
  - Harvard Metaphysics and Epistemology Workshop 2008
- "Cyborgs and the Silence of the Senses" [This presentation defended some ideas from Charles Travis' The Silence of the Senses]
  - Harvard-MIT "Eminees" 2007

Harvard MIT Graduate Conference 2009
Comments on Jacob Stegenga's "New New Problem of Induction"

Positions and Experience

- Research Assistant for Harvard College Program in General Education: Designed and built a website that generates self-correcting practice problemsets for EMR 17 Deductive Logic, in a team of two.
- Sole Instructor
  - Junior Tutorial: A Priori Knowledge
- Teaching Fellow
  - Introduction to Philosophy
  - Philosophy of Mathematics
  - Philosophy of Language
  - Intermediate Logic
  - The Later Philosophy of Wittgenstein
  - QR22 (Introductory Logic)
  - Intermediate Logic
  - Epistemology
  - Plato
  - Philosophy of Physics
  - The Rationalists
  - Philosophy of Language
  - Introduction to Moral Philosophy;
  - Social Protest
  - Introduction to Symbolic Logic (with Professor Achille C. Varzie, Columbia University)
- Mathematics Tutor for Underprivileged New York City High School Students. Double Discovery Center, Columbia University

Service to Profession

2011

Reviewed 350 page book manuscript on concepts for Oxford University Press

2001-2004

Undergraduate Philosophy Forum, Columbia University	Co-Chairperson	
2002-2004		
Columbia Undergraduate Philosophy Review, Columbia University	Editor-in-Chief	09/2002 to 05/2003
	Senior Editor	09/2003 to 5/2004

LONG ABSTRACT

If math is about causally inert abstract objects (like numbers and sets), it can seem puzzling that physical creatures like us manage to know so much about it. In response to this difficulty, some philosophers deny the existence of abstract objects, and suggest that mathematics is about some suitably abstract, but nominalist subject matter like: what would be true in a mathematical fiction, or what's a logical consequence of some second order axioms, or what's mathematically necessary. However, knowledge of this abstract subject matter can seem equally puzzling. Facts about what would have to be true in fictions are just as causally removed from us as facts about abstract objects would be. To dissipate the puzzle, what's needed is a theory of how we can possess accurate starting points in mathematical theorizing, and inference procedures that we can use to take us from those starting points to mathematical proofs.

In my thesis, I propose to explain how mathematical knowledge is possible, by drawing on our knowledge of broadly logical or combinatorial possibility (possibility with regard to the most general principles about how any objects can be related by any relations), and connecting this knowledge, in turn, to our observation of the behavior of concrete physical objects. Our observations of the actual relationships between concrete objects, I argue, ground true beliefs about how it is combinatorially possible for any objects to be related by any relations. This process gives us access to facts about combinatorial possibility, access that is fallible and limited.

With empirically-grounded knowledge of combinatorial possibility in hand, I argue that facts about combinatorial possibility are intimately related to facts about mathematics, in such a way that getting correct general principles about combinatorial possibility can lead us to get mathematics right as well. I propose a form of realism about mathematical objects, on which facts about what mathematical objects like sets and numbers exist systematically reflect facts about what patterns of relationships between concrete objects are combinatorially possible. For example, I suggest that what it takes for there to be a set at some ordinal level α of the hierarchy of sets, is for a) all the putative members of the set to be either physical objects or sets that first appear at some level lower than α and b) it to be combinatorially possible that some property applies to all and only these putative members.

SELECTED PAPERS IN PROGRESS

- **A Priori Knowledge and the Doctoroids** We seem to be able to know certain claims, like 'if it is raining then it is raining' and '1+1=2', without being able to give further non-question-begging argument for them. Imagine creatures, the doctoroids, who are psychologically disposed to find certain truths of organic chemistry and medicine immediately obvious in much the same way that we find '1+1=2' obvious. Would the doctoroids count as knowing the truths which they find obvious? In this paper I compare the prospects for a number of different lines of response.
- **Investigator's Paradise: An Epistemic Approach to Resuscitating Kant's Aesthetic Formalism** In this paper I propose an epistemic twist on Kant's infamous formalism about beauty. Beautiful objects are ones that, "facilitate... the play of the two mental powers (intellect and imagination) [in] that proportioned

attunement which we require for cognition in general" in the following sense. Merely applying a kind of epistemic due diligence that's relevant for investigating *anything* to these objects suffices to generate a chain of repeatedly aroused and satisfied curiosity, and thereby (under normal circumstances) an experience of pleasure.

- **Malament-Hogarth Machines and Empirical Revision of Mathematical Beliefs** You might think that no experience could ever justify revising a mathematical belief. However, as Kripke pointed out, observations of a calculators can justify us in revising our mathematical beliefs. One might try to parry this objection by arguing that experience can only correct our beliefs by showing cases where we failed to correctly apply our own rules. In this paper I argue that consideration of the epistemic possibility of Malament-Hogarth machines[1] shows that this constraint on rational revision of mathematical beliefs in response to experience is not correct.

- **Stipulative Knowledge of Existence Facts and Eklund's Criticisms of Quantifier Variance** In this paper I propose an account of how the world determines the truth of existential claims which makes room for a process of merely making "coherent" stipulations can reliably yield knowledge of existential claims. I will show that this theory allows us to make sense of mathematicians' apparent ability to stipulate, while avoiding the general problems for ontological pluralist theories expressed in Matti Eklund's recent article, 'On the Picture of Reality as an Amorphous Lump'.

- **Contra Kim on Epistemic Normativity** In 'What is Naturalized Epistemology?' Jaeguon Kim argues that we need epistemically normative notions like justification in order to make sense of belief. I argue in this paper that attributing beliefs does not require the presence of any person-level beliefs about justifications. Neither does accepting the notion of belief commit us to giving a non-trivial conceptual analysis of believing, in the course of which we might have to appeal to notions like justification. Thus, if there are such things as reasons, Kim hasn't given us any good ones for believing in epistemic normativity.

Misc

Citizenship: US
Languages: English, German, Latin, C, Lisp, Javascript, Haskell

[1] In the literature on the Church-Turing thesis it has been pointed out that certain solutions to the equations for general relativity would allow a person and a sufficiently sturdy computer to take different paths through space-time in such a way that information from infinitely many computations in the computer reach the person within what is (for them) a finite amount of time. There has been much debate about whether such 'Malament-Hogarth machines' count as *computers*, however for my purposes all that matters is whether such machines could be known to function reliably.

Unofficial Transcript

Courses Taken for credit

2006-2007	Carnap and Quine *Warren Goldfarb* Metaethics *Selim Berker*
2005-2006	Independent Research: Hume on Conceivability *Allison Simmons* (summer)
	Set Theory *Gerald Sacks* (Mathematics Department) Seminar on Metaphysics *Edward Hall* Kant's Philosophy of Mathematics *Daniel Sutherland* Topics in Philosophical Logic *Vann McGee* (Cross-Registered at MIT)
	Introduction to Mathematical Logic *Gerald Sacks* (Mathematics Department) The Later Philosophy of Wittgenstein *Warren Goldfarb* Seminar on Philosophy of Psychology *Charles Travis*
2004-2005	Kant's Ethical Theory *Christine Korsgaard* Logic and the Foundations of Mathematics *Peter Koellner* Plato *Raphael Wolf* Practical Reason *Doug Lavin* First Year Colloquium
	Seminar on Wronging *Nico Kolodney* Philosophy of Logic *Charles Parsons* Frege Russell and Early Wittgenstein *Warren Goldfarb* First Year Colloquium

Recent Courses Audited

2010-2011	Computability and Randomness *Rachel Epstein* (Mathematics Department) Topics in Logic Proseminar I *Peter Koellner* Topics in Logic Proseminar II *Peter Koellner* How to Scandalize Readers: Vladimir Nabokov's English Novels *Leland de la Durantaye* (English Department) The Reflection of Reality: Novels of the 19th and 20th-Century *Leland de la Durantaye* (English Department)
2009-2010	Quine *Warren Goldfarb* Self-Consciousness and Self-Knowledge: Seminar *Matthew Boyle* Aesthetics *Richard Moran* An Introduction to 20th-Century Literary Theory *Leland de la Durantaye* (English Department)