Foundations of the Formal Sciences VIII:
History & Philosophy of Infinity
Corpus Christi College, Cambridge, U.K.
20-23 September 2013

Scientific & Financial Report.

The conference *FotFS VIII: History & Philosophy of Infinity* created a link between the core of the INFTY network (mathematical logicians dealing with aspects of infinity) and the rich philosophical and conceptual discussion about infinity that goes back to antiquity and has been active and fruitful over the centuries. In our application, we highlighted the *philosophical approach*, the *empirical approach*, and the *historical approach*. All three approaches and the connection to set theory were prominently present at the conference FotFS VIII.

The philosophical approach was represented by speakers such as Charles Parsons (Harvard), Luca Incurvati (Cambridge), Haim Gaifman (Columbia), and Michael Potter (Cambridge). Aspects of the mathematical theory of set theory were linked to philosophical discussions about the foundations of mathematics.

The empirical approach was particularly highlighted by the fact that the conference took place right after the conference *Mathematical Cultures 2* in London, an AHRC-funded activity bringing

together sociologists, cognitive scientists and experts in mathematics education to discuss the philosophical foundations of mathematics as a human discipline. Talks by Matthew Inglis (Loughborough), John Mason (Open University) and Dina Tirosh and Pessia Tsamir (Tel Aviv) represented this approach at the conference and clearly linked to set theoretic issues (e.g., Inglis's talk about reading mathematics was structured around an experiment dealing with texts on cardinality in set theory).

The historical approach covered many different areas of the history of philosophy and mathematics, from the Presocratics (Sieroka's talk on Anaximander) via Aristotle (Hasper, Nawar and Rini) and the middle ages (Chopra and Uckelman) to the centuries in which modern mathematics and set theory developed.

In the following, we give the list of invited speakers:

Haim Gaifman
Philosophy Department
Columbia University
United States of America

Marcus Giaquinto
Philosophy Department
University College London
England
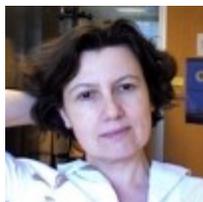
Catherine Goldstein
Institut de Mathématiques de Jussieu
France

John Mason
Department of Mathematics and Statistics
The Open University
England

Luca Incurvati
Magdalene College
University of Cambridge
England

Matthew Inglis
Mathematics Education Centre
Loughborough University
England
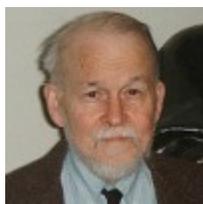
Charles Parsons
Department of Philosophy
Harvard University
United States of America

Michael Potter
Faculty of Philosophy
University of Cambridge
England

Christian Tapp
Lehrstuhl Philosophisch-Theologische Grenzfragen
Ruhruniversität Bochum
Germany
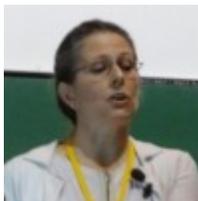
Adriane Rini
School of Humanities
Massey University
New Zealand

Pessia Tsamir
Jaime and Joan Constantiner School
of Education
Tel Aviv University
Israel

Dina Tirosh
Jaime and Joan Constantiner
School of Education
Tel Aviv University
Israel

[Jean Paul Van Bendeghem](#)
Centrum voor Logica en
Wetenschapsfilosofie
Vrije Universiteit Brussel
Belgium

In addition to the invited speakers, the conference received 48 submissions of papers to be presented. The submissions were reviewed by the members of the Scientific Committee and 28 of these submissions were presented at the conference. The submissions ranged from mathematical logic via philosophy of set theory to history of infinity.

The conference was funded by the ESF Research Network *INFTY*, the *Division for Logic, Methodology and Philosophy of Science of the International Union for History and Philosophy of Science* (DLMPS/IUHPS), and the *Analysis Trust.* The funding of DLMPS/IUHPS and the *Analysis Trust* was used for grants for junior researchers.

The organizers have negotiated the publication of a special issue of the prestigious journal *Synthese* devoted to the papers of this conference. All speakers at the conference were invited to submit a full journal version of their paper to *Synthese* and we received 18 submissions that are currently undergoing refereeing. We expect that the editorial process will be finished by the end of 2014 and the special issue will appear in print in 2015 or 2016, fully acknowledging the support of the ESF, the DLMPS/IUHPS and the *Analysis Trust.*

We list the full schedule of the conference on the next pages. The hyperlinks in the schedule link to the conference webpage with the abstracts of the papers. On the page after the schedule, we cite a number of voices of participants who sent us their thanks for the conference.

Conference webpage:

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http://www.math.uni-hamburg.de/home/loewe/HiPhI/
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Schedule.

Friday, 20 September 2013.

Time		
12:45-14:00	*Lunch & Registration*	
14:00-14:30	**Opening Session** *McCrum Lecture Theatre*	
14:30-15:30	Matthew Inglis: *Reading about Cardinality* *McCrum Lecture Theatre*	
15:30-15:50	*Coffee Break*	
15:50-16:20	Norman Sieroka: *Anaximanders notion of the "apeiron" – A forerunner of the modern concept of infinity?* *Harley-Mason Room*	Sam Sanders: *The ghosts of departed quantities as the soul of computation* *Law Room*
16:20-16:50	Tamer Nawar: *An Aristotelian Approach to Infinite Causal Sequences* *Harley-Mason Room*	Marco Forti: *How to measure the size of sets: Aristotle-Euclid or Cantor-Zermelo?* *Law Room*
16:50-17:20	Pieter Sjoerd Hasper: *Aristotle on infinity* *Harley-Mason Room*	Markus Pantsar: *In search of $\aleph_0$ – how infinity can be created* *Law Room*
17:20-17:40	*Coffee Break*	
17:40-18:40	Charles Parsons: *Infinity and a critical view of logic* *McCrum Lecture Theatre*	

Saturday, 21 September 2013.

Time		
10:00-11:00	Catherine Goldstein: *This side of infinity* *McCrum Lecture Theatre*	
11:00-11:15	*Coffee Break*	
11:15-11:45	John Wigglesworth: *Modal set theory* *Harley-Mason Room*	Gabriel Tarziu: *Infinities in Science* *Law Room*
11:45-12:15	Matthew Parker: *Gödel's argument for Cantor's Cardinals* *Harley-Mason Room*	Susan Edwards-Mckie: *Wittgenstein, Einstein and Leibniz: Härte des Logischen Zwangs and Unendliche Möglichkeit. Some remarks arising from Wittgenstein's 'Cosmic Fragment'* *Law Room*
12:15-12:45	Philip Ehrlich: *Cantorian and non-Cantorian Theories of Finite, Infinite and Infinitesimal Numbers and the Unification Thereof* *Harley-Mason Room*	Andrew Nicholson: *Plenitudinous Platonism, the Multiverse of Sets and Infinity* *Law Room*
12:45-14:00	*Lunch Break*	
14:00-15:00	Michael Potter: *Making sense of potential infinity* *McCrum Lecture Theatre*	
15:00-15:15	*Coffee Break*	
15:15-15:45	Carolin Antos, Sy-David Friedman, Radek Honzik, Claudio Ternullo: *Multiverse conceptions and the hyperuniverse programme* *Harley-Mason Room*	Françoise Monnoyeur-Broitman: *Nicholas of Cusa's Methodology of the Infinite* *Law Room*
15:45-16:15	Peter Koepke: *Embedding uncountable cardinality techniques into the realm of countable sets* *Harley-Mason Room*	Murtaza Chopra: *The musical inspiration of procedures involving infinite in Nicole Oresme's Treaties of Configurations* *Law Room*
16:15-16:45	Benjamin Rin: *Infinity and recursion* *Harley-Mason Room*	Sean Winkler: *Being of Essence, Being of Existence: Spinoza and The Finite* *Law Room*
16:45-17:15	*Coffee Break*	
17:15-18:15	Adriane Rini: *Aristotle on Thomson's lamp* *McCrum Lecture Theatre*	

Sunday, 22 September 2013.

Time		
10:00-11:00	John Mason: *The Role of the As-Yet-Specified as a Bridge between Unfolding & Completed Infinity in Teaching & Learning Mathematics* *McCrum Lecture Theatre*	
11:00-11:15	*Coffee Break*	
11:15-11:45	Ramzi Kebaili: *Poincaré and Brouwer on infinity* *Harley-Mason Room*	Sara L. Uckelman *The Logic of Categorematic and Syncategorematic Infinity* *Law Room*
11:45-12:15	Erich Reck: *On Dedekind's Explanation of the Finite in Terms of the Infinite* *Harley-Mason Room*	João Cortese: *The Pascalian notion of infinity – what does "infinite distance" mean?* *Law Room*
12:15-12:45	Silvia De Bianchi: *When series go in indefinitum, ad infinitum and in infinitum. Concepts of infinity in Kant's philosophy and cosmology* *Harley-Mason Room*	Henrik Kragh Sørensen: *Infinity and intuition in analysis between Euler and Weierstraß* *Law Room*
12:45-14:00	*Lunch Break*	
13:50-14:50	Dina Tirosh & Pessia Tsamir: *Teaching and learning about infinity: The case of infinite sets* *McCrum Lecture Theatre*	
14:50-15:10	*Coffee Break*	
15:10-15:40	Monica Solomon: *The Case of Infinite Series: Wallis and Newton* *Harley-Mason Room*	Christopher Menzel: *Modal Realism and the Absolute Infinite* *Law Room*
15:40-16:10	Helmut Pulte: *"Understanding the World from the infinitely small": Bernhard Riemann's Philosophy of Geometry and Science in Context* *Harley-Mason Room*	Yoshihiro Maruyama: *Continuous vs. Discrete Infinity in Foundations of Mathematics and Physics* *Law Room*
16:10-16:30	*Coffee Break*	
16:30-17:30	Luca Incurvati: *Finitism and open-texture* *McCrum Lecture Theatre*	
17:30-18:30	Haim Gaifman: *Infinity and the passage from the epistemic to the ontological* *McCrum Lecture Theatre*	
19:30-late	Conference Dinner *Hall*	

Monday, 23 September 2013.

Time	
10:00-11:00	Christian Tapp: *Infinity in Aquinas* *McCrum Lecture Theatre*
11:00-11:30	*Coffee Break*
11:30-12:30	Jean Paul Van Bendegem: *A true(r) history of strict finitism* *McCrum Lecture Theatre*
12:30-12:45	***Closing Session*** *McCrum Lecture Theatre*
12:45-13:50	*Lunch*

Voices of participants

Thank you so much for organizing such a fantastic conference. I head back up to Cambridge at the end of this week to begin my Master's research and I look forward to delving further into some of the issues on infinity discussed during the conference. It really was a great way to begin my academic career. (Marion Boulicault)

I will keep very nice memories of the days spent at Corpus Christi College. The conference was simply great and the environment stimulating. (Silvia De Bianchi)

Thank you for this enjoyable conference ! (Catherine Goldstein)

Thank you again for inviting me to such a great conference -- there was a very pleasant atmosphere, and I learnt a lot. (Luca Incurvati)

Many thanks again for the invite, I really enjoyed the conference. Hope that I'll see you at future such events. (Matthew Inglis)

Just to thank you again for helping me with last minute register! I had a wonderful time at Corpus. (Caroline Kuhn)

Thanks again for the conference - it was quite enjoyable. (Lorenzo Lane)

Thank you for your excellent organization. (Yoshihiro Maruyama)

Very enjoyable conference, thanks for everything you put into organizing it. (Christopher Menzel)

Thank you for organizing this exhilarating meeting, the sweetest on infinity. (Françoise Monnoyeur-Broitman)

It was a nice and fruitful meeting. (Roman Murawski)

Thank you once more for a very fruitful event. It was a real pleasure to meet you. (Dina Tirosh)

Thank you for organizing an incredibly interesting, successful, and fun conference this weekend. And thank you for having me speak. I had a wonderful time. (John Wigglesworth)

Financial Report.

The participants were accommodated at Corpus Christi College where we also had the conference dinner during which the research discussions of the conference were continued. We covered accommodation and travel for the organizers and invited speakers, as well as the costs of their full registration. All other participants had to pay for the registration (including the costs for coffee breaks and the conference dinner) via Corpus.

We covered the costs for Gaifman, Goldstein, Incurvati, Inglis, Larvor, Löwe, Mason, Parsons, Potter, Rini, Schlimm, Tapp, Tirosh, Tsamir, and Van Bendegem. Other costs included internet access for some of the participants (who were not accommodated in college) and the costs for badges and printing of handouts.

Total costs for accommodation: **EUR 6323.42**
Total costs for travel: **EUR 3093.92**
Total costs for catering: **EUR 637.35**
Total costs for other expenses: **EUR 101.77**

TOTAL   **EUR 10,156.46**