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EDITORIAL

I am fortunate to work in a department where there is significant support for the idea that philosophy benefits from, and even requires, genuine contact with other disciplines from

the arts, the humanities, and the sciences. Indeed, Achille Varzi's opening remarks at the Woodbridge lectures held at Columbia earlier this year reminded me that our very own *Journal of Philosophy* was originally called the *Journal of Philosophy, Psychology, and Scientific Methods*—Frederick J. E. Woodbridge, who served at Johnsonian Professor of Philosophy at Columbia from 1904 until 1930, was a founding editor. This intellectual climate that I have described is, I believe, well-suited to *formal epistemology* [FE]. I must admit some reservations about the label—relatively little of the work in FE is formal in the sense that is familiar to logicians, and here I am reminded of the efforts of some logicians to replace the term 'recursion theory' with 'computability theory' in discussions that are often concerned with generalizing that very same sense of formality. In any case, the label seems to have taken hold and the field it denotes appears to be on the rise.

The scope of FE is wide and changing. Here is an excerpt from "Agency and Interaction What We Are and What We Do in Formal Epistemology," a recent paper in which Vincent Hendricks and I attempt to give a unifying survey of FE:
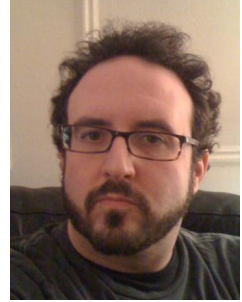
> The point of departure of this essay is rooted in two philosophically fundamental and interrelated notions central to formal epistemology;
>
> - *agency*—what agents are, and
> - *interaction*—what agents do.
>
> Agents may be individuals, or they may be groups of individuals working together. In each of the sections that follow, assumptions are made concerning the relevant features of the agents at issue. For example, such relevant features may include the agent's beliefs about its environment, its desires concerning various possibilities, the methods it employs in learning about its environment, and the strategies it adopts in its interactions with other agents in its environment. Fixing these features serves to bound investigations concerning interactions between the agent and its environment. The agent's beliefs and desires are assumed to inform its decisions. Methods employed by the agent for the purposes of learning are assumed to track or approximate or converge upon the facts of the agent's environment. Strategies adopted by the agent are assumed to be effective in some sense.
>
> We believe that agency and interaction provide the basis of a useful framework in which to understand much of what counts as formal epistemology. In what follows we will attempt to locate predominant paradigms—e.g., epistemic logic, interactive epistemology and game theory, formal learning theory, belief revision theory, probability theory, and decision theory—within such a framework.

It will be clear to many readers that several of the topics mentioned at the end of the given excerpt have been studied partly, and perhaps in some cases even primar-

ily, by people who do not work in a philosophy department; e.g., consider game theory within economics, belief revision theory within computer science, and probability within statistics. It seems clear that some of this work is philosophical, regardless of where it is done—consider L.J. Savage's work on the foundations of statistics. Yet despite the fact that work on some FE topics is already supported in university departments of economics, computer science, and statistics—just to name a few—I think that there is something distinctive and worthwhile about the way these topics tend to be pursued in philosophy departments.

Work on FE that is done in departments of philosophy seems to fall within two categories: (1) investigations into concepts that are assumed in standard theories and (2) applications of these standard theories to established problems within philosophy. An example of the first category might concern the interpretation of *probability* in certain theories that make use of the term. An example of the second might concern an application of probability to some traditional problem in confirmation theory. These categories are crude, to be sure, but I find them useful, and I would not be surprised to learn that most work in FE touches on both the first and the second. That said, I think that there are some clear cases of individuals (and even departments) that work primarily in the first category (i.e., foundations) as well as some clear cases that go the other way around.

Here at Columbia one can find a significant amount of FE-related activity that touches, or at least has the potential to touch, both of the categories mentioned above. We currently have three regular faculty members working on topics in FE—Haim Gaifman, John Collins, and myself—along with Vincent Hendricks as a regular visitor, not to mention distinguished colleagues such as David Albert, Philip Kitcher, and Achille Varzi who work in areas that often connect to FE in natural ways. We also maintain strong ties with the excellent group of logicians at CUNY, a group that includes the likes of Rohit Parikh and Joel Hamkins, and of course the celebrated philosophy departments of NYU, Rutgers, and Princeton are all in our general neighborhood. We have also played host to some major FE-related events. In April 2010 we hosted the most recent *Synthese* conference, a meeting that focused on epistemology and economics. That meeting was followed by a workshop on uncertainty that was sponsored by SIPTA (the Society for Imprecise Probabilities: Theories and Applications). We will host the next Progic conference in September of 2011. Readers will recall that the Progic series is dedicated to interaction between probability and logic. I am very pleased to report that this upcoming installment of Progic will also serve as an occasion to honor the work of my distinguished colleague, Haim Gaifman, who has made seminal contributions to the area. Those who are interested in further details about the meeting—which will include invited talks by Horacio Arlo-Costa, Haim Gaifman, Rohit Parikh, Jeff Paris, and Dana Scott—should visit the conference page at http://sites.google.com/site/progicconference2011/.
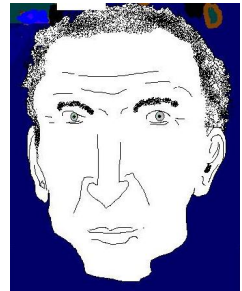
Jeff Helzner
Philosophy, Columbia University

FEATURES

Interview with Haim Gaifman

Haim Gaifman is Professor of Philosophy at Columbia University in the City of New York. A former student of both Abraham Robinson and Rudolf Carnap, Gaifman wrote his dissertation under the guidance of Alfred Tarski during the golden age of logic at UC Berkeley. Gaifman has since made important contributions to several areas of logic and related branches of philosophy.

Jeff Helzner: How did you come to be a mathematical philosopher or philosophical mathematician, whichever you prefer, as opposed to a more mainstream philosopher or mathematician? There is of course a tradition of great thinkers who have drawn significantly upon both disciplines—there are so many examples, from Peirce and Quine and Putnam to Frege and Russell and Tarski. Please tell us about the way in which you came to draw upon mathematics and philosophy.

Haim Gaifman: In a way I was "born into it". I have been interested from a young age, both in the sciences and in the humanities (upon finishing high school, psychological testers actually advised me enroll in the humanities); but in mathematics I felt that I was on firmer, more objective grounds, less susceptible to trendiness and shifting cultural moods. My choice also fitted nicely with my early showing of mathematical ability. My M.Sc. thesis at the Hebrew University and my PhD at UC Berkeley were quite technical and hardly in logic, though they were in the tradition of the Polish school which combined logic with other areas.

I continued nonetheless to pursue a broader range of interest; my master degree at the Hebrew University combined mathematics, philosophy and physics, where, in the philosophy part, Spinoza and Kant (and for me also Nietzsche) figured prominently along with figures like Carnap and Hempel. Other interests of mixed nature arose in Bar Hillel's research group in formal linguistic theory, where, as a student, I got my first new theorem—the equivalence of context-free phrase-structure grammars and categorial grammars (as defined by Lambek). I also had a strong interest in foundational questions and my initial thesis proposal, under the guidance of Abraham Robinson, was in the applications of logic to the foundations of probability. The ideas that were later summed in my paper on probabilities on first order languages had been implicit in that project; the paper in the form of an abstract had been presented in a 1960 conference (Jeffrey's account in *Studies in Inductive Logic and Probability*, I p. 223, is inaccurate in this respect). I had come as a research assistant to Carnap at UCLA on the recommendation of Bar Hillel (Carnap's personal friend); the idea was that I should help him on mathematical questions and that results obtained by me in that capacity would be incorporated in my PhD mathematics thesis at the Hebrew University. During my first year with Carnap I got mathematical results related to works by Tarski, who offered me a research assistantship and a place in the Berkeley PhD pro-

gram in mathematics. Two years later I got my PhD there. My interests in set theory and Peano's arithmetic derive from my stay at Berkeley, and what I consider my best single mathematical result (the technique of iterated elementary embeddings and its applications to measurable cardinals) was obtained one year later when I was a Ritt instructor at Columbia; I was quite isolated then, as the single logician in a mathematics department, which at the time, under Eillenberg's influence, was not logic friendly. But I was free to pursue whatever I chose. Unfortunately—or rather due to my own fault—the full work was published more than 10 years later, though I had circulated earlier abstracts and hand written notes. (Avoiding uninteresting chores, like writing up papers—a lack of discipline or whatever you may call it—has been the cause of a recurring pattern in my career.)

While doing mathematics I kept my philosophical interests. During 1973–1976 I directed the interdisciplinary program at the Hebrew University in the History and Philosophy of Science; my first "purely philosophical" papers on ontology and conceptual frameworks were written during that time. I also taught various philosophy courses, mostly on the foundations of probability and on Frege, and until my coming to Columbia in 1990 I held a chair in the philosophy of science.

JH: You are from Israel, a country that has long been an important center for mathematical logic and rational choice, two subjects that tend to be of interest to the mathematical philosophers and philosophical mathematicians mentioned above. What brought you to the United States, in general, and Columbia, in particular, as you had been enjoying a successful academic career in Israel, a country with great strengths in many of your research areas?

HG: There were various reasons. I prefer not to enter into some personal ones of a private nature, but will mention those that are more in line with this interview, namely a gradual shift of interest. It is a platitude that mathematical ability is highly correlated with young age. I would like to think that there are exceptions to this rule. With me, at any rate, as time passed, I rather became aware of a shift of interest. I could not become as excited about this or that technical question as I used to, and I judged that New York and in particular Columbia, would be a better place to pursue a more philosophically oriented agenda. The centrality of the place has greater importance in this type of activity. There was also an additional practical consideration. I had planned to work as much as I could into older age and I knew that the laws in Israel would force me to retire at a time were I hoped to be actively engaged in research. As a matter of fact, my cohorts at the Hebrew university have retired or are in the process of doing so; some voluntarily offer courses, and some are spending longer times abroad.

JH: Has being at Columbia influenced your research in any noteworthy ways? I confess that this question might be of special interest to me, as I've been thinking about how being at Columbia has influenced my work. I believe that the philosophical climate at Columbia is distinctive, perhaps in part because it involves an eclectic mix of philosophers but perhaps also in part because of the naturalist and/or pragmatist traditions that remain active here and provide fertile soil for interdisciplinary connections.

HG: I agree with you completely about the virtues of a broad multifaceted department of the kind we have at Columbia. My stay here gave me also time to reflect more on philosophical questions, to devote more energy to a different type of literature, and

to get to know in a more intimate way the completely different working of disciplines in the humanities, with their different tradition and different sociology. Both teaching and exchanging with students and colleagues have led to deeper understanding of subjects I knew—like Frege and to expanding into new areas, like the philosophy of Russell, which I had known only superficially before, Wittgenstein, vagueness, or the problems of contextuality in the philosophy of language. According to an old prescription, a very good way to learn a subject is to teach a course on it. Looking back I find that I often followed this route. There is of course a danger, which in my case is quite real, of spreading myself thin. I often end with notes, ideas, sketches which will take considerable time to develop and to work out systematically.

JH: Progic 2011 will be held at Columbia this September. Like the previous Progic meetings, this one will focus on work that relates to both probability and logic, two areas at the core of formal epistemology. I'm very pleased to say that this installment of Progic will also serve as an occasion to honor your own groundbreaking work at the intersection of probability and logic. Could you tell us a bit about what you take to be your most distinctive work in this area?

HG: The programmatic works with which I am mostly associated, are the early paper on probabilities mentioned above, and the joint work with Mark Snir "Probabilities over rich languages, testing and randomness" from 1982. I suppose that the second could be an answer to your question, except that my own evaluation is changing with time. What distinguishes both is the top-down approach rather than the bottom up approach of Carnap's framework. The second paper presupposes a language that incorporates Peano's arithmetic, with standard semantics, augmented by empirical predicates. Although the quantifiers are of first order, the system is rich enough to incorporate a portion of second order arithmetic and a treatment of real functions. Quite general phenomena can be established in this setting, such as the convergence to each other, upon growing evidence, of the conditional probabilities derived from any two priors, provided that the priors are not dogmatic with respect to each other (i.e., they assign probability 0 to the same sets). Quite a few concepts can be defined and analyzed in that framework. For example, randomness in a general setting is relativized to a given probability function and a class of sentences; a world is random if it satisfies every sentence in the class whose probability is 1. The paper also investigates probabilities with respect to their complexity—measured in term of their definition in the arithmetical hierarchy. The logical richness and sophistication of the setup removes it however from the level of discussion common in statistics, that of random variables and an algebra of events. While basic results in the first part of the paper became quite known, a lot of the later parts did not. I am not sure that this is the right way of approaching the subject. I would like to call attention to other works in which I took a somewhat different approach. One is my work on higher order probabilities (from 1988) in which the setup does not involve a first order language, but is basically Boolean algebraic, augmented with an operator for treating the "higher order" aspect. Another is a more recent one (from 2004) which proposes a way of setting up probabilities subject to bounded resources, in particular—probabilities for the truths of mathematical statements, which can be decided by a computer, but whose decision would take too much time. I would like to add that my own views on the foundations of probability have been undergoing changes. From a "definite Bayesian", I became a

more moderate one. I have recently become more convinced that, without the strong support of regular empirical patterns, we would not even had a subjective probability concept to speak of. I also find the notion of "objective chance", which underlies a great deal of the imprecise probability framework, in need of clarification and I hope to take a closer look at it and into that framework, in the near future.

JH: I mentioned formal epistemology in the previous question. It seems to me that this is a field on the rise. Do you share this impression? Also, I have this sense that this current wave of formal philosophy will eventually be distinguished from its predecessors in at least two ways: the attention given to rationality (in contrast to logic) and alternatives (in contrast to propositions). Care to share one of your own speculations about the future of formal philosophy?

HG: What justifies the grouping of research projects under a common name, is the quantity and quality of research that has been done already in these areas—rather than "administrative convenience" or academic PR. In this respect, yes, the research work that has been done and that can fit under *formal epistemology* does justify this way of organizing the area, and it does look promising (though I would always be cautious about predictions in any field of research). Some of this research is very intriguing. Concerning rationality, I think that this has been with us for quite a time, at least from the days of Ramsey's paper on subjective probabilities. I do not think it is a subsequent development to the attention given to logic, but a parallel and not a competing one. As for alternatives, if you mean by that an additional primitive notion, such as betting, or accepting a *gamble*, or an *act*, or *making a move*—which figure in various systems, I agree—a theory of rationality involves some such notion of acting. But again, this is an additional item not a substitute for propositions, or propositional attitudes. An agent's preferences concerning which proposition is, or is more likely, to be true, must involve propositions—whatever comes under this term of art. It is possible also that psychological factors, analysis of unconscious motives, or subdoxastic elements, may increasingly enter into the analysis of paradoxical behaviors. But then we are no longer speaking of "rational choice".

Scarcity and Saving Lives

John Alexander (*The Reasoner* 4.12) claims that, if human beings have a right to life, then we have a moral obligation to save those lives that can be saved and thus a moral obligation to implement universal health care and liveable wage programmes. However, it has recently been argued that such an interpretation of the right to life is incoherent (see my 'Why Universal Welfare Rights Are Impossible And What It Means,' *Politics, Philosophy and Economics* 9/4 (2010), pp. 428–445). In brief, the reasoning is as follows:

  (a) a right of one person implies obligations on others;

  (b) an obligation may be overridden by another obligation;

  (c) but the obligations implied by rights are overriding obligations in normal circumstances;

(d) for overriding obligations, 'ought' implies 'can;'

(e) scarcity means that we cannot provide (effective) universal health care and live-able wage programmes even under normal circumstances;

(f) therefore, the right to life cannot imply obligations to provide such programmes.

Alexander claims (*The Reasoner*, 5.3, p. 39) that it needs to be shown that there are insufficient resources to provide universal health care and a liveable wage to all who desire them. However, that this is so is a commonplace of the economics literature and it is explained briefly on pp. 430-31 of my paper just mentioned. Alexander proposes a fallback position should it turn out that there is scarcity, namely, that lives to be saved should be prioritised according to an 'agreed upon system of resource distribution' (*The Reasoner*, 5.3, p. 39).

On Alexander's fallback view, which lives are saved will depend upon the competing demands for resources. For example, other things being equal, younger people could be assigned resources before older people, compatriots before foreigners, family before non-family, the relief of contagious diseases before non-contagious ones, and so on. Further, since the demands for resources for saving lives vary over time, someone whose life would have been saved under propitious circumstances would be left to die in a more difficult situation, such as a substantial natural disaster, a global pandemic or a war. This is, of course, all very reasonable. But, it is what already happens, more or less. Since Alexander is making a proposal for change, there must be more to his fallback position than this.

It seems there are two things Alexander wants changed. The first is that we should allocate more resources to saving lives than we currently do. This will require us to shift some resources from their current uses, though he does not say *how great* a shift of resources should be made or suggest *which* things we should stop doing. It would be possible to say that the details of these decisions are a matter for each person's conscience and that Alexander has discharged his obligation by exhorting us to change. But this would not satisfy Alexander himself, because the second change he wants is that the authority to make those decisions should be taken from individuals, who (in his view) are currently making the wrong decisions, and given to a centralised bureaucracy, which (he assumes) will make the right ones. This is implied by his reference to an 'agreed upon system of resource distribution' (quoted above). For example, a man making charitable donations to medical research will face a range of options for potential recipients, such as cancer, heart disease, AIDS, malaria, etc., a range of options for sizes of donations to make, and a range of options for things to give up in the light of his reduced disposable income. He may well articulate and utilise a scheme of priorities for making these decisions. But he does not need to agree that scheme with anyone; it is a matter for him to decide. An *agreed* scheme of priorities, on the other hand, implies some form of collective decision-making.

But with what right can this transfer of authority be made from individuals to a bureaucracy? It would mean that decisions that affect the health, including life or death, of family, friends and the individual herself are no longer decisions for that individual

to take, being taken instead by officials on the basis of priorities agreed through political haggling between vested and ideological interests. The person is thereby rendered powerless in the face of some of the most personally important problems in her life; and she may find incomprehensible the decisions made about those problems by people who have no personal stake in the lives directly affected. That is inhuman.

And why should anyone think that the outcome would be in any way better than the existing situation? One of the lessons of the twentieth century is surely that a centralised bureaucracy, with little or no exposure to open market competition, is wasteful, inefficient and tends to be more concerned with providing benefits for the people who staff it than with meeting its official objectives. Even if the bureaucracy is successful in diverting ever more resources to itself from other areas of spending, it is doubtful that this will result in proportionately more lives saved.

In summary, because of scarcity, the right to life cannot imply an obligation on others to save the life of the right-holder. It can, though, be interpreted as implying an obligation not to kill the right-holder, because refraining from killing someone does not normally consume resources. Transferring resources for health care to a bureaucracy removes from people the authority to make decisions for themselves about matters of health, life and death. It also ensures that resources are wasted and used both inefficiently and inappropriately. At the very least, given the tragic history of socialisation experiments in the twentieth century, Alexander should make a serious attempt to explain why another centralised bureaucracy will not be another gross failure.

<div align="right">DANNY FREDERICK</div>

A paradox related to the Turing Test

I will describe a paradox which arises assuming it is possible to distinguish machines from non-machines. In the "fly on the wall" version of the Turing Test, player A passively observes the dialog of players B and C. Player A's goal is to determine whether B is a machine and whether C is a machine. For simplicity, remove C from the game. Let A observe B as B recites a monologue, and let A try to determine whether or not that recitation is computable.

I further modify the Test as follows. Player A guesses the nature of B after every new line. The Test runs forever and A wins if his guesses are *eventually* always correct: he is allowed finitely many wrong guesses. This is justified because every finite string is computable, so no finite speech can rule out a machine; any finite enunciation can be canned. Only an infinite one has a chance of non-computability. Further, the Test is run by an Operator who delivers B's lines to A.

Suppose Player B is a human trying to appear human and that A can distinguish machines from non-machines. Without further caveats, A will eventually detect B is non-machine and A's guesses will converge to the correct answer.

But suppose the Operator is mischievous. If A most recently guessed that B is non-machine, the Operator will lie and tell A that B said "Wait," storing what B really said. Only if A incorrectly guessed B was a machine does the Operator let the real monologue

go on. What will happen to A's guesses?

When A believes B is a machine, the Operator presents the correct lines from B. Eventually, A will realize from these lines that B is non-machine, and will correct himself. This causes the operator to begin lying, and as far as A knows, B begins saying "Wait" repeatedly. A Turing Machine can produce any finite speech followed by "Wait" forever, so A will eventually think B is a machine. This process continues, causing A to change his mind infinitely often.

But no machine can generate the lines A sees: if they are computable, they remain computable with all "Wait"s removed, meaning B's genuine lines are computable, contradicting that they're supposed to be distinguishable from a machine. The lines which A is told are not mechanical and A eventually realizes so, and stops changing his mind. This contradicts the previous paragraph.

This is a special case of a more general paper. In Alexander (2011: On Guessing Whether a Sequence has a Certain Property, *J. of Integer Sequences*, 1–11) I show that a set S of sequences of naturals is "guessable" (in a sense like the above) if and only if S can be defined in a $\forall x \exists y$ way and also in an $\exists x \forall y$ way. If S is the set of Turing computable sequences, then S can be defined in an $\exists x \forall y$ way: $f : \mathbb{N} \to \mathbb{N}$ is computable iff $\exists x \forall y\, f(y) = \phi_x(y)$. But S cannot be defined in any $\forall x \exists y$ way, so S is nonguessable.

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§3

NEWS

Paradox and Logical Revision, 2–3 April

FLC, The Foundations of Logical Consequence, is an AHRC-funded project run by the Arché Research Centre at the University of St Andrews. The four year project is currently in its third phase, Revisionism in Logic. As part of regular activity, the FLC has just hosted its sixth workshop entitled 'Paradox and Logical Revision'. This is a report on the outcomes of the workshop.

Can a logic—a theory of correct inference—be defective in various ways, and so open to revision? Some have argued that this is, indeed, the case by appeal to the shortcomings of standard logical theory with respect to the semantic and set-theoretic paradoxes. But is there a strong case to be made for revising logic on these grounds? And how does revision of logical theory feed back into the practice that it tries to codify, or impact our understanding of speech acts, cognitive states, and rationality? This workshop brought together top researchers in the field to answer these and other questions about the relation between semantic paradox and the revision of logic.

The first day of talks started with Julien Murzi (Munich) arguing that anyone who rejects the inference of conditional contraction in order to avoid Curry paradoxes involving the conditional should, analogously, reject the rule of structural contraction to avoid

Curry paradoxes involving the validity predicate. Next up, Aaron Cotnoir (Aberdeen) argued for a parity between 'truth-value-gap' and 'truth-value-glut' interpretations of the paradoxes. He used this to motivate a three valued logic for truth which is at the intersection of K3 and LP. Zach Weber (Melbourne) discussed the reconstruction of number theory in paraconsistent (naive) set theory. Amongst other things he showed that, for the paraconsistentist, there is a difference between implying something false and implying something absurd and that '0=1' is just as absurd paraconsistently as it is classically. Roy Sorensen (Washington U.) closed out the first day of talks, drawing a distinction between two stances toward logical revision: a 'naturalist' stance and a 'non-existence' stance. He argued that the only view which can avoid 'the deviant logicians dilemma' is the revisionist who denies the existence of the competing, classical operators.

On the second day, Toby Meadows (Arché) drew connections between two kinds of Kripkean truth definitions and some tree proof methods from recursion theory. He used this connection to motivate an interpretation of partial, Kripkean truth predicates as generalized proof predicates. Stewart Shapiro (Ohio State) discussed the open-texture of concepts and the possibility of precisification. He concluded that if all the technical work in non-classical truth theory at best serves to explicate one ('naive') way of sharpening our truth concept, then perhaps it is not worth the cost. Volker Halbach (Oxford) presented some results about the relative proof-theoretic strength of axiomatizations of 'external' (KFS) vs. 'internal' (PKF) readings of Kripke's truth definition on the Strong Kleene scheme. He showed that PKF is significantly proof-theoretically weaker than KFS, attaching a definite, mathematical cost to the revision of logic. Ole Hjortland (Munich) argued that we can approximate the logic of Field's theory of truth using some results from substructural logic. Field's logic has a lot in common with contraction-free substructural logics, and the similarities raise the prospect that contraction is in some way essential to the paradoxes. Dave Ripley (Melbourne) closed out the workshop with a talk about non-transitive logic for truth. This was motivated by a novel conception of logic on which he regards his logic as an extension of classical logic in much the way quantifier theory extends the propositional fragment of the logic.

The workshop had about 30 participants, and the discussion was extremely fruitful. We hope all of the participants agree that these talks opened up useful paths for future research into the interaction between the paradoxes and the revision of logic debate. Further information about the FLC project can be found at its web page.

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Colin Caret

Arché Research Centre, University of St Andrews

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The Authority of Science, 8–10 April

The conference brought together scientists and philosophers of science to explore the idea that recent developments in philosophy of science can help with the uptake of scientific ideas in public policy. It opened with a public forum (televised and available here) and ran two days of papers, including several plenaries and a keynote address. Christian List's plenary address, which opened the conference, examined the very idea

of the 'voice of science' from the perspective of his recent work on group agency. List emphasised that if the 'voice of science' is considered to be the expression of the views of the scientific community then, whatever aggregation procedure is used, the collective judgment of science may lack essential qualities of a 'voice' which guides policy, such as consistency of opinion across a range of issues. For science to have a coherent 'voice' in this sense, science itself must be a structured institution of the kind that is often regarded as a group agent, such as a corporation or a government. Institutions such as national academies may have adequate structure to count as group agents.

The debate over action on climate change is widely regarded as an example of the failure of science to translate itself into policy. In his plenary address, the distinguished chemist Theodore Brown compared this case to the successful effort to reach international agreement on the control of chlorofluorocarbons to protect the ozone layer. He demonstrated how contingent that outcome was on the timing of events and the interests of particular actors at those times, and how these conditions for successful policy making were absent in the superficially-similar case of international negotiations over greenhouse gas abatement and climate change. Similar themes were explored by academic lawyer Rosemary Lyster, although her focus was on the legal implications. She discussed the recent attempt to bring a case of 'civil conspiracy' against ExxonMobil for misleading the public about climate change, and the legal and moral responsibilities of the media in giving disproportionate coverage to climate-change sceptics.

The keynote address was delivered by Sir Peter Gluckman, who, in his role as the New Zealand Prime Minister's Chief Science Advisor, has just released 'Towards better use of evidence in policy formation: a discussion paper' (see here). In contrast to much recent discussion engendered by the perceived failure to translate climate science into policy, Gluckman argued that to maintain the efficacy of scientific advice, scientists must scrupulously avoid advocacy and seek to act as 'honest brokers' laying out options and facilitating social choice through the normal democratic process.

A general theme that ran through the conference was that there is a genuine need for engaged philosophy of science to help with both the public acceptance of science and the subsequent translation of science into policy. Indeed, this has been something of a recurring theme in all the Sydney-Tilburg philosophy of science conferences; we hope to see such socially-relevant philosophy of science continue in our future conferences.

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Dynamics in Logic, 3 May

On May 3rd the Free University of Brussels hosted the first Dynamics in Logic Workshop. The purpose of the event was to bring together researchers (based around Belgium) active in the field of dynamic logic and stimulate an exchange of ideas between them. The hope of the organizers was that this meeting will tighten collaborations between the different centers active in the study of dynamics in logic from around Belgium and that it will create a *community* of dynamic logicians. This first workshop was successful in the sense that it managed to stir a lot of interest and was attended by researchers from Universities of Amsterdam, Artois, Groningen, Leuven, Paris-Dauphine, Paris-Sorbonne, University Paul Sabatier, IHPST and the Free University of Brussels. The workshop unfolded as follows:

Andreas Herzig presented the Dynamic Logic of Propositional Assignments (DL-PA) and proved that model and satisfiability checking in DL-PA are PSPACE-complete. Andreas also proved that DL-PA with a capability operator embeds van der Hoek et al.'s Coalition Logic of Propositional Control (CL-PC) and that it is embedded in Pauly's Coalition Logic. Thus, DL-PA is 'closer' to Coalition Logic than CL-PC and Andreas showed how permission and constitutive rules can be added to the basic DL-PA logic.

Jérôme Lang connected preference logics with AI preference representation languages. Jérôme presented a preference logic which combines features of existing preference logics and showed that CP-nets are natural fragments of it. This new preference logic offers a more expressive language for preference representation than CP-nets and the computational aspects of this logic carry great importance for the computational aspects of the existing preference logics which have so far been largely neglected.

Patrick Allo presented a way of reformulating the consequence relation of adaptive logic in a modal logic. Through this connection, Patrick presented a way of dealing with preference logic, conditional logic and doxastic logic in an adaptive logic setting. For instance, he showed how belief and conditional belief defined on plausibility orders can be defined on a doxastic adaptive preference model.

Tiago de Lima presented the Coalition Logic with Physical Actions (CALPA) that can encode both *what* the agents can achieve and *how* they can achieve it. CALPA was showed to embed Public Announcement Logic with Assignment and Arbitrary Announcement Logic as well as Group Announcement Logic. Tiago presented a sound and complete axiomatization of CALPA and in future research he aims to encode with this formalism more complex actions such as strategies, preferences, common knowledge and private actions.

Sonja Smets continued her previous work on using dynamic epistemic logic to encode belief revision processes and presented a way of explicitly talking about the trust an agent has towards another. Sonja argued that belief merge can be construed as a belief revision phenomenon and thus can be, as well, captured by dynamic epistemic logic. In this setting merging means finding the right sequence of announcements and speakers so that despite the initial beliefs of the agents a model is reached in which all have the same beliefs. There are more ways of merging beliefs and hence the main question that dynamic epistemic logic can help in phrasing and possibly clarifying is: given all the agents' initial doxastic attitudes towards each other, what types of merges

are realizable?

Francesca Poggiolesi continued her previous work on the proof theory of S5 and presented a new proof theory for $S5_m$ based on Aumann-like Kripke models which only talk about sets and not about accessibility relations. The new sequent calculus which she dubs $HS5_m$ uses indexed hypersequents to reflect the Aumann-Kripke models and is sound and complete for $S5_m$. In her future research Francesca will focus on extending the calculus for $S5_m$ to a calculus for dynamic epistemic logic.

In the end, the participants concluded that they have kindred research interests and that collaborating more closely would be of great interest to all. Thus, they decided to look for ways to organize common research projects and organize similar events in the future. So, keep an eye out for Dynamics in Logic 2.

ALEXANDRU MARCOCI
ILLC, Amsterdam

Philosophy of Mind, Language and Cognitive Science, 14–15 May

The ninth annual PhilMiLCog conference took place at the University of Western Ontario on May 14th and 15th. PhilMiLCog is an internationally recognized two-day graduate conference with a broad and interdisciplinary scope, synthesizing research from the *Phil*osophy of *Mi*nd, *L*anguage, and *Cog*nitive Science, including psychology, linguistics, evolution, and computer science. This year's talks covered a wide range of topics include concepts, perception, intentionality, semantics, evolutionary psychology, and personal identity. Furthermore, this year the commencement of the conference proper was preceded by a neuroscience workshop hosted by the University of Western Ontario's *Center for Brain and Mind*, which included demonstrations of their research and equipment, including transcranial magnetic stimulation and fMRI scans of conference participants.

The talks began with Gerardo Viera (University of British Columbia) who examined Fodor's "publicity constraint" on concept individuation in the context of interpersonal Frege cases, arguing that the constraint is *not* a non-negotiable requirement for a theory of concept individuation as Fodor would have it. Next, David Ivy (University of Texas at Austin) offered a defense of the naïve realist theory of visual perception against the so-called "screening-off" problem of visual hallucination, and contrasted his view with the intentionalist theory of visual perception. Lisa Pelot (University of Western Ontario) then looked at the differing accounts of intentionality in the work of Searle and Dennett, with particular emphasis on Searle's concept of *intrinsic* or *original* intentionality. She argued that Dennett's rejection of intrinsic intentionality creates a fatal problem in his account that threatens it with a vicious regress. Finally, the day was capped off by the first keynote speaker, Susan Schneider (University of Pennsylvania), who described her pragmatist theory of concepts and argued that Fodor himself is a committed to a form of pragmatism, despite his objections to the theory.

Starting off the second day of the conference, Matt LaVine (University of Buffalo) offered a new theory of the semantics of proper names which combined aspects of both of the traditional Millian and descriptivist positions, arguing that not all proper names

admit of the same semantic analysis. Next, Chris Chalmers (Dalhousie University) examined two competing research programs in evolutionary psychology—*narrow* evolutionary psychology and *developmental* evolutionary psychology—and argued that, contrary to the claims of Timothy Keteelar and others, the two differing programs do not share a "hard core" in the sense of Imre Lakatos's methodology of scientific research. Then Oliver Gill (The Open University, UK) examined the debate between Parfit and Lewis on the issue of personal identity, and defended the former's view against the objections of the latter regarding the assertion that there is a "logical wedge" between personal identity and what Parfit calls the "R-relation". Finally, the conference was capped off with a keynote address by William Lycan (University of North Carolina, Chapel Hill), who argued that the traditional semantic analysis of desire as a propositional attitude modeled on belief fails to capture the actual content of desires, and that a deeper, more fine-grained analysis that makes essential reference to tacit conditions of satisfaction is necessary.

Matt LaVine

Department of Philosophy, University of Buffalo

Calls for Papers

Reasoning with Context in the Semantic Web: special issue of the *Journal of Web Semantics*, deadline 15 June.

C. L. Hamblin and Argumentation Theory: special issue of *Informal Logic*, deadline 30 June.

The Problem of the Criterion: special issue of *Philosophical Papers*, deadline 30 June.

Modalities: Semantics & Epistemology: special issue of *Philosophia Scientiae*, deadline 1 July.

Philosophy of Information: book symposium published by *Etica&Politica* on 'Philosophy of Information' by Luciano Floridi, deadline 1 July.

Composition, Counterfactuals and Causation: special issue of *Humana.Mente*, deadline 30 July.

A Computational Foundation for the Study of Cognition: special issue of the *Journal of Cognitive Science* devoted to David Chalmers's 1993 paper, deadline 15 August.

Deontic Logic: special issue of *Journal of Logic and Computation*, deadline 1 September.

Extended Cognition and Epistemic Action: special issue of *Philosophical Exploration*, deadline 15 September.

20 Years of Argument-based Inference: Special Issue of the *Journal of Logic and Computation*, deadline 1 October.

AILACT Essay Prize: to the best paper on teaching/theory of informal logic, critical thinking, or argumentation theory, with publication on *Informal Logic*, deadline 31 October.

The Alan Turing Year: special issue of *Philosophia Scientiæ*, deadline 1 November.

Between Two Images. The Manifest and the Scientific Understanding of Man, 50 Years On: special issue of *Humana.Mente*, deadline 30 November.

§4

What's Hot in . . .

. . . Logic and Rational Interaction

In news from the area of Logic and Rational Interaction, a two-volume set entitled Logic at the Crossroads has recently appeared in Springer's Synthese Library. The volumes highlight the many connections of contemporary research in logic with other disciplines such as rational choice theory, epistemology, game theory and informatics. Topics explored include "Social Software", the logic-language-cognition interface and the Indian tradition in logic. Thematically, the first volume focuses on logic, computation and agency, and the second one on games, norms and reasons.

Contributions to LORIWEB on topics relevant to the area of Logic and Rational Interaction are always welcome. In particular, we invite announcements, reports on past conferences and new publications. Please submit your news items to Rasmus Rendsvig, our web manager, or to the loriweb address.

Ben Rodenhäuser
Philosophy, Groningen

. . . Mind and Cognition

This is a new occasional feature brought to you by the Mind and Cognition group at the University of Edinburgh.

April 26 was David Hume's 300th birthday, and the Edinburgh air rang with praise and pundits. A local brewery produced a special Enlightenment Ale, guaranteed to keep reason in its place! But seriously, Hume's attempts to sketch the shape of a true science of human nature are surely among the key early moments in the study of mind and reason. Among the many tributes, Edinburgh University hosted an enlightening panel discussion that is available on youtube. For many more events coming up this year, see here.

For my money (since I'm writing the column for us this month!) the hottest thing in Mind and Cognition right now is what I am calling the 'predictive processing' model of mind. For a bite-size introduction see here. This brings together large-scale integrative theories in computational neuroscience (such as Karl Friston's 'Free Energy' account) and major advances in machine learning that explore algorithms for learning using multi-layer artificial neural networks (the flagship work here is by Geoffrey Hinton and colleagues). The key idea is that the brain uses generative models to try to predict the unfolding sensory data, at multiple spatial and temporal scales. It all falls appealingly under a broadly Bayesian umbrella (the models implement versions of the

so-called Bayesian Brain) and specific versions are able to make new predictions that are now successfully being probed by fascinating new work in neuroimaging. For example, a 2010 paper from the Tobias Egner lab shows that the fusiform face area responds strongly to the experimentally induced top-down prediction of a face even if the actual image is of a house, putting substantial pressure on simple bottom-up feature detection models of visual processing—see here.

Taken together, I think this emerging body of work hints at the shape of the 21st century sciences of mind.

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ANDY CLARK
Philosophy, University of Edinburgh

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§5

EVENTS

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Logicism Today: Besse-en-Chandesse, France, 14–17 June.

CSR: 6th International Computer Science Symposium in Russia, St. Petersburg, 14–18 June.

Another World is Possible: Conference on David Lewis, University of Urbino, Italy, 16–18 June.

Knowing and Understanding Through Computer Simulations: IHPST, Paris, 16–18 June.

Conceptual Analysis and 2-D Semantics: University of Cologne, 18–19 June.

PNSE: International Workshop on Petri Nets and Software Engineering, Kanazawa, Japan, 20–21 June.

EEIC: International Conference on Electric and Electronics, Nanchang, China, 20–22 June.

Defending Realism: Ontological and Epistemological Investigations: University of Urbino, Italy, 20–23 June.

Emergence and Panpsychism: International Conference on the Metaphysics of Consciousness, Munich, Germany, 20–24 June.

LOGICA: Institute of Philosophy, Academy of Sciences of the Czech Republic, Hejnice, Northern Bohemia, 20–24 June.

Open Mind: University of Bucharest, 21 June.

LICS: Logic in Computer Science, Toronto, Canada, 21–24 June.

ASC: 14th International Conference on Artificial Intelligence and Soft Computing, Crete, Greece, 22–24 June.

George Berkeley: Mind, Perception and Knowledge: University of Zürich, Switzerland, 22-24 June.

SPSP: Society for Philosophy of Science in Practice, University of Exeter, Exeter, UK, 22–24 June.

Ordinary Language, Linguistics, and Philosophy: Arché Research Centre, University of St Andrews, 23–25 June.

Metaphysics of Mind: Centre for the Study of Perceptual Experience, University of Glasgow, 24–25 June.

AMT: 2nd International Conference onAdvanced Measurement and Test, Nanchang, China, 24–26 June.

EPISTEME: Social Epistemology Meets Formal Epistemology: Recent Developments and New Trends, Center for Formal Epistemology, Department of Philosophy, Carnegie Mellon University, 24–26 June.

CMMSE: Computational and Mathematical Methods in Science and Engineering, Benidorm, Alicante, Spain, 26–30 June.

Extended Cognition: Amsterdam, 27–28 June.

Evolution, Cooperation and Rationality: Philosophical Perspectives: University of Bristol, 27–29 June.

QI: 5th International Symposium on Quantum Interaction, Aberdeen, UK, 27–29 June.

Ershov Informatics Conference: Novosibirsk, Akademgorodok, Russia, 27 June–1 July.

Journées Arithmétiques: Vilnius, Lithuania, 27 June–1 July.

Models of Computation in Context: Sofia, Bulgaria, 27 June–2 July.

ICML: 28th International Conference on Machine Learning, Bellevue, WA, USA, 28 June–2 July.

MODELS AND MECHANISMS IN COGNITIVE SCIENCE: School of Philosophy, Psychology, and Language Sciences, University of Edinburgh, 29 June.

ECSQARU: 11th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, Belfast, Northern Ireland, UK, 29 June–1 July.

EXPRESSIVISM, PROJECTION AND RULES: University of Sydney, 29 June-1 July.

JULY

PERCEIVING OTHERS' MINDS: University of Manchester, 1 July.

AAHPSSS: Australasian Association for the History, Philosophy and Social Studies of Science, Christchurch, New Zealand, 1–3 July.

RUTGERS-ARCHÉ KNOWING HOW WORKSHOP: University of St Andrews, 2–3 July.

COGNITIO. NONHUMAN MINDS: ANIMAL, ARTIFICIAL OR OTHER MINDS: Montreal, Qc., Canada, 3–5 July.

BAYESIAN CAPTURE-RECAPTURE: Centre for Research into Ecological and Environmental Modelling (CREEM), University of St Andrews, 4–6 July.

ICMC: 2nd International Choice Modelling Conference, Leeds, UK, 4–6 July.

THE COMPUTATIONAL TURN: PAST, PRESENTS, FUTURES?: International Association for Computing and Philosophy, Aarhus University, 4–6 July.

ICALP: 38th International Colloquium on Automata, Languages and Programming, Zürich, Switzerland, 4–8 July.

PANHELLENIC LOGIC SYMPOSIUM: Ioannina, Greece, 4–8 July.

TABLEAUX: Automated Reasoning with Analytic Tableaux and Related Methods, Bern, Switzerland, 4–8 July.

LGS7: 7th International Conference on "Logic, Games Theory and Social Choice", National School of Political Studies and Administration, Bucharest, Romania, 6–9 July.

ICLP: 27th International Conference on Logic Programming, Lexington, Kentucky, USA, 6–10 July.

SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY: Université du Québec à Montréal, Montreal, Canada, 6–10 July.

DGL: 5th Workshop in Decisions, Games & Logic, Maastricht University, The Netherlands, 7–9 July.

REASONING ABOUT OTHER MINDS: LOGICAL AND COGNITIVE PERSPECTIVES: Groningen, the Netherlands, 11 July.

IWSM: 26th International Workshop on Statistical Modelling, Valencia, 11–15 July.

TARK: Theoretical Aspects of Rationality and Knowledge, Groningen, the Netherlands, 11–15 July.

LOGIC COLLOQUIUM: Barcelona, Catalonia, Spain, 11–16 July.

AUSTRALASIAN APPLIED STATISTICS CONFERENCE: Palm Cove, Tropical North Queensland, Australia, 12–15 July.

UAI: 27th Conference on Uncertainty in Artificial Intelligence, Barcelona, Spain, 14–17 July.

CAV: 23rd International Conference on Computer Aided Verification, Cliff Lodge, Snowbird, Utah, 14–20 July.

Quantum Physics meets TARK: Theoretical Aspects of Rationality and Knowledge, Groningen, the Netherlands, 15 July.

ACC: 3rd World Congress in Applied Computing, Computer Science, and Computer Engineering, Kota Kinabalu, Malaysia, 16–17 July.

WCT: Workshop on Computability Theory, Barcelona, Spain, 17 July.

ARCOE: Automated Reasoning about Context and Ontology Evolution, Barcelona, Spain, 17–18 July.

CLIMA: 12th International Workshop on Computational Logic in Multi-Agent Systems, Barcelona, Spain, 17–18 July.

SING: 7th Spain-Italy-Netherlands Meeting on Game Theory, Paris, 18–20 July.

WORLDCOMP: World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, Nevada, USA, 18–21 July.

ICIAM: 7th International Congress on Industrial and Applied Mathematics, Vancouver, British Columbia, Canada, 18–22 July.

IJCAI: 22nd International Joint Conference on Artificial Intelligence, Barcelona, Spain, 19–22 July.

CLMPS: 14th Congress of Logic, Methodology, and Philosophy of Science, Nancy, France, 19–26 July.

MJCAI: 3rd Malaysian Joint Conference on Artificial Intelligence, Kuala Lumpur, Malaysia, 20–22 July.

ICMSA: 7th IMT-GT International Conference on Mathematics, Statistics and its Applications, Bangkok, Thailand, 21–23 July.

IADIS: International Conference Intelligent Systems and Agents, Rome, Italy, 24–26 July.

ISIPTA: 7th International Symposium on Imprecise Probability: Theories and Applications, University of Innsbruck, Austria, 25–28 July.

ICCS: 19th International Conference on Conceptual Structures, Derby, England, UK, 25–29 July.

ICBO: International Conference on Biomedical Ontology, University at Buffalo, NY, 26–30 July.

Beyond the Possible: in Memoriam of Richard Sylvan: The University of Melbourne, 27–29 July.

IJCNN: International joint Conference on Neural Networks, San Jose, California, 31 July 31–5 August.

CADE: 23nd International Conference on Automated Deduction, Wroclaw, Poland, 31 July–5 August.

August

The Classical Model of Science II: The Axiomatic Method, the Order of Concepts and the Hierarchy of Sciences from Leibniz to Tarski, Vrije Universiteit Amsterdam, The Netherlands, 2–5 August.

SET THEORY AND HIGHER-ORDER LOGIC: FOUNDATIONAL ISSUES AND MATHEMATICAL DEVELOPMENTS: Institute of Philosophy, London, 5–6 August.

ICFOCS: International Conference on Frontiers of Computer Science, Bangalore, Karnataka, India, 7–9 August.

AAAI: 25th Conference on Artificial Intelligence, San Francisco, California, 7–11 August.

EPISTEMIC AUTONOMY: Humboldt-Universität zu Berlin, 8–10 August.

ECAL: European Conference on Artificial Life, Paris, France, 8–12 August.

LOGICAL CONSTANTS: Ljubljana, Slovenia, 8–12 August.

EPISTEMIC INCLUSIVENESS AND TRUST: 3rd Copenhagen Conference in Epistemology, University of Copenhagen, 15–17 August.

TEMPORAL ASYMMETRY: Monash University, 16–17 August.

ECAI: 19th European Conference on Artificial Intelligence, Lisbon, Portugal, 16–20 August.

CONVENTIONAL PRINCIPLES IN SCIENCE: Department of Philosophy, University of Bristol, 18–19 August.

CHANCE & THE PRINCIPAL PRINCIPLE: Monash University, 19–20 August.

YSI: Young Statisticians Meeting, Dublin, Ireland, 19–21 August.

ISI: 58th Congress of the International Statistical Institute, Dublin, Ireland, 21–26 August.

KDD: 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, San Diego, CA, 21–24 August.

FCT: 18th International Symposium on Fundamentals of Computer Theory, Oslo, Norway, 22–25 August.

AiML: 8th International Conference on Advances in Modal Logic, Moscow, 24–27 August.

ICDL-EPIROB: IEEE Conference on Development and Learning, and Epigenetic Robotics, Frankfurt am Main, Germany, 24–27 August.

PHILOSOPHY OF THE SOCIAL SCIENCES: University of Copenhagen, 25–26 August.

UNCERTAINTY MODELING IN KNOWLEDGE ENGINEERING AND DECISION MAKING: Istanbul, Turkey, 27–29 August.

SEPTEMBER

BISP: 7th workshop in Bayesian Inference for Stochastic Processes, Getafe, Spain, 1–3 September.

ECAP: 7th European Conference in Analytic Philosophy, Milan, Italy, 1–6 September.

INEM: Conference of the International Network for Economic Method, Helsinki, Finland, 2–3 September.

COMPUTER MODELLING AND SIMULATION: Brno, Czech Republic, 5–7 September.

DOMAINS: Swansea University, Wales, UK, 5–7 September.

ECML PKDD: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Athens, Greece, 5–9 September.

VARIETIES OF REPRESENTATION: Kazimierz Dolny, Poland, 5–9 September.

WPMSIIP: Workshop on Principles and Methods of Statistical Inference, University of Ljubljana, Slovenia, 5–10 September.

Perceptual Memory and Perceptual Imagination: University of Glasgow, 6–9 September.

SOPhiA: 2nd Salzburg Conference for Young Analytic Philosophy, Salzburg, Austria, 8–10 September.

Progic
The fifth workshop on Combining Probability and Logic, Columbia University, New York, 10–11 September

CSL: 20th Annual Conference of the European Association for Computer Science Logic, Bergen, Norway, 12–15 September.

CP: 17th International Conference on Principles and Practice of Constraint Programming, Perugia, Italy, 12–16 September.

EANN/AIAI: Engineering Applications of Neural Networks and Artificial Intelligence Applications and Innovations, Corfu, Greece, 15–18 September.

PLM: Philosophy of Language and Mind, Stockholm University, 16–18 September.

Experimental Philosophy Group UK: University of Sheffield, 17–18 September.

ICSC: International Conference on Semantic Computing, Palo Alto, California, United States, 18–21 September.

CaEitS
Causality and Explanation in the Sciences, Faculty of Arts and Philosophy, Ghent University, 19–21 September

FedCSIS: Federated Conference on Computer Science and Information Systems, Szczecin, Poland, 19–21 September.

Statistical Computational & Complex Systems: University of Padua, 19–21 September.

Understanding Other Minds. Embodied Interaction and Higher-Order Reasoning: Bochum, Germany, 20–21 September.

Computer Simulations and the Changing Face of Scientific Experimentation: Stuttgart, Germany, 21–23 September.

Social Ontology: Metaphysical and Empirical Perspectives: Workshop of the European Network on Social Ontology (ENSO), Luiss Guido Carli, University, Rome, Italy, 21–23 September.

Kant and the Exact Sciences: University of Notre Dame, 23–24 September.

AS: Applied Statistics, Ribno (Bled), Slovenia, 25–28 September.

Semantics & Philosophy in Europe: Ruhr University Bochum, Germany, 26 September–1 October.

Copenhagen Lund Workshop in Social Epistemology: University of Copenhagen, Denmark, 27 September.

SYNASC: 13th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, Timisoara, Timis, Romania, 26–29 September.

Formal Epistemology Meets Experimental Philosophy: Tilburg Center for Logic and Philosophy of Science, 29–30 September.

Language, Logic and Computation: Kutaisi, Georgia, 26–30 September.

October

DKB: Dynamics of Knowledge and Belief, Workshop at KI-2011, Berlin, Germany, 4–7 October.

ALT: 22nd International Conference on Algorithmic Learning Theory, Aalto University, Espoo, Helsinki, Finland, 5–7 October.

DS: 14th International Conference on Discovery Science, Aalto University, Espoo, Finland, 5–7 October.

EPSA: 3rd Conference of the European Philosophy of Science Association, Athens, Greece, 5–8 October.

European Workshop on Experimental Philosophy: Eindhoven University of Technology, The Netherlands, 7 October.

EPIA: 15th Portuguese Conference in Artificial Intelligence, Lisbon, 10–13 October.

TPrag: Theoretical Pragmatics, Berlin, Germany, 13–15 October.

Case Studies in Bayesian Statistics and Machine Learning: Carnegie Mellon University, Pittsburgh, PA, 14–15 October.

Alvin Goldman and Social Epistemology: Saint Louis University Philosophy Graduate Student Conference, 20–21 October.

PSX: 2nd International Workshop on the Philosophy of Scientific Experimentation, University of Konstanz, 21–22 October.

ADT: Algorithmic Decision Theory, DIMACS, Rutgers University, 26–28 October.

IUKM: International Symposium on Integrated Uncertainty in Knowledge Modelling and Decision Making, College of Computer Science and Technology, Zhejiang University, Hangzhou, China, 28–30 October.

IDA: 10th International Symposium on Intelligent Data Analysis, Porto, Portugal, 29–31 October.

SASA: South African Statistical Association Pretoria, South Africa, 31 October–4 November.

November

Philosophy of Medicine Roundtable: University of the Basque Country, Donostia-San Sebastian, Spain, 2–3 November.

Latin Meeting in Analytic Philosophy: Universidade de Lisboa, 2–4 November.

The Plurality of Numerical Methods in Computer Simulations and Their Philosophical Analysis: IHPST, University of Paris 1, 3–5 November.

CAS: Complex Adaptive Systems: Energy, Information, and Intelligence, Arlington, VA, 4–6 November.

Semantic Content: University of Barcelona, 4–6 November.

Biologically Inspired Cognitive Architectures: Arlington, Virginia, 5–6 November.

ICTAI: 23rd IEEE International Conference Tools with Artificial Intelligence, Boca Raton, Florida, USA, 7–9 November.

History and Philosophy of Computing: Celebrating the 75th anniversary of the famous 1936 Papers by A. Church, E.L. Post and A.M. Turing, Ghent University, Belgium, 7–10 November.

IDEAS OF OBJECTIVITY: Tübingen, 7–11 November.

SPR: ILCLI International Workshop on Semantics, Pragmatics, and Rhetoric, Donostia, 9–11 November.

M4M: 7th Methods for Modalities workshop, Osuna, Spain, 10–12 November.

ACML: 3rd Asian Conference on Machine Learning, Taoyuan, Taiwan, 13–15 November.

ATAI: 2nd Annual International Conference on Advances Topics in Artificial Intelligence, Singapore, 24–25 November.

MICAI: 10th Mexican International Conference on Artificial Intelligence, Puebla, Mexico, 26 November–4 December.

ICDEM: 1st International Conference on Decision Modeling, Kedah, Malaysia, 29 November–1 December.

SOLOMONOFF MEMORIAL CONFERENCE: Melbourne, Australia, 30 November–2 December.

§6
COURSES AND PROGRAMMES

Courses

CARNEGIE MELLON SUMMER SCHOOL IN LOGIC AND FORMAL EPISTEMOLOGY: Department of Philosophy, Carnegie Mellon University, Pittsburgh, 6–23 June.

STRUCTURAL EQUATION MODELLING: Lancaster University, 8–9 June.

CAUSAL INFERENCE: Summer Institute, University of Washington, 13–15 June.

MLSS SINGAPORE: Machine Learning Summer School, Biopolis, Singapore, 13–17 June.

MLSS @ PURDUE: Machine Learning Summer School, Departments of Statistics and Computer Science, Purdue University, 13–24 June.

RELATIVISM AND DISAGREEMENT, FALLIBILISM AND INFALLIBIISM, TRUTH AND PARADOX: Northern Institute of Philosophy Summer School, University of Aberdeen, 28 June–30 June.

ADVANCED STATISTICS AND DATA MINING: Technical University of Madrid, 4–15 July.

EASSS: 13th European Agent Systems Summer School, Girona, Catalonia, Spain, 11–15 July.

DAVID LEWIS ON LANGUAGE AND MIND: 3rd Graduate International Summer School in Cognitive Sciences and Semantics, University of Latvia, Riga, 18–21 July.

LxMLS: Lisbon Machine Learning Summer School, Instituto Superior Técnico (IST), Lisbon, Portugal, 20–25 July.

EXPERIMENTS IN ECONOMICS, EXPERIMENTS IN PHILOSOPHY: Summer school on Economics and Philosophy, San Sebastian, 27–29 July.

INTERACTIVIST SUMMER INSTITUTE: University of the Aegean, Syros, Greece, 29 July 29–1 August.

SET THEORY AND HIGHER-ORDER LOGIC: FOUNDATIONAL ISSUES AND MATHEMATICAL DEVELOPMENTS: Institute of Philosophy, London, 1–4 August.

ESSLLI: European Summer School in Logic, Language and Information, Ljubljana, Slovenia, 1–12 August.

COPENHAGEN SUMMER SCHOOL IN PHENOMENOLOGY AND PHILOSOPHY OF MIND: Center for Subjectivity Research, University of Copenhagen, 8-12 August.

NETWORK DYNAMICS: Groningen, the Netherlands, 29 August–6 September.

ANALYSIS METHODS FOR CROSS-NATIONAL COMPARISONS: Leuven, Belgium, 28 August–4 September.

MLSS FRANCE: Machine Learning Summer School, Bordeaux, France, 4–17 September.

RELYING ON OTHERS. NEW PERSPECTIVES IN SOCIAL EPISTEMOLOGY: University of Cologne, 7–10 September.

SPR: ILCLI International Workshop on Semantics,Pragmatics, and Rhetoric, Institute for Logic, Cognition, Language, and Information, University of the Basque Country at Donostia, 9–11 November.

Programmes

APHIL: MA/PhD in Analytic Philosophy, University of Barcelona.

DOCTORAL PROGRAMME IN PHILOSOPHY: Language, Mind and Practice, Department of Philosophy, University of Zurich, Switzerland.

HPSM: MA in the History and Philosophy of Science and Medicine, Durham University.

MASTER PROGRAMME: Philosophy and Economics, Institute of Philosophy, University of Bayreuth.

MASTER PROGRAMME: Philosophy of Science, Technology and Society, Enschede, the Netherlands.

MA IN COGNITIVE SCIENCE: School of Politics, International Studies and Philosophy, Queen's University Belfast.

MA IN LOGIC AND THE PHILOSOPHY OF MATHEMATICS: Department of Philosophy, University of Bristol.

MA IN METAPHYSICS, LANGUAGE, AND MIND: Department of Philosophy, University of Liverpool.

MA IN MIND, BRAIN AND LEARNING: Westminster Institute of Education, Oxford Brookes University.

MA IN PHILOSOPHY: by research, Tilburg University.

MA IN PHILOSOPHY OF BIOLOGICAL AND COGNITIVE SCIENCES: Department of Philosophy, University of Bristol.

MA IN RHETORIC: School of Journalism, Media and Communication, University of Central Lancashire.

MA PROGRAMMES: in Philosophy of Language and Linguistics, and Philosophy of Mind and Psychology, University of Birmingham.

MRES IN COGNITIVE SCIENCE AND HUMANITIES: LANGUAGE, COMMUNICATION AND ORGANIZATION: Institute for Logic, Cognition, Language, and Information, University of the Basque Country, Donostia, San Sebastian.

MRES IN METHODS AND PRACTICES OF PHILOSOPHICAL RESEARCH: Northern Institute of Philosophy, University of Aberdeen.

MSC IN APPLIED STATISTICS AND DATAMINING: School of Mathematics and Statistics, University of St Andrews.

MSc in Artificial Intelligence: Faculty of Engineering, University of Leeds.

> ### MA in Reasoning
>
> An interdisciplinary programme at the
> University of Kent, Canterbury, UK.
> Core modules provided by Philosophy and further modules from Psychology,
> Computing, Statistics, Social Policy, Law, Biosciences and History.

MSc in Cognitive & Decision Sciences: Psychology, University College London.

MSc in Cognitive Science: University of Osnabrück, Germany.

MSc in Cognitive Psychology/Neuropsychology: School of Psychology, University of Kent.

MSc in Logic: Institute for Logic, Language and Computation, University of Amsterdam.

MSc in Mathematical Logic and the Theory of Computation: Mathematics, University of Manchester.

MSc in Mind, Language & Embodied Cognition: School of Philosophy, Psychology and Language Sciences, University of Edinburgh.

MSc in Philosophy of Science, Technology and Society: University of Twente, The Netherlands.

MRes in Cognitive Science and Humanities: Language, Communication and Organization: Institute for Logic, Cognition, Language, and Information, University of the Basque Country (Donostia San Sebastian).

Open Mind: International School of Advanced Studies in Cognitive Sciences, University of Bucharest.

PhD School: in Statistics, Padua University.

§7
Jobs and Studentships

Jobs

Assistant Professor: AOS: possibly one among History of Philosophy, Metaphysics, Philosophy of Mind, Philosophy of Science, and Philosophy of Language, Department of Philosophy, Western Michigan University, Kalamazoo, MI, until filled.

Assistant Professor: AOS: Metaphysics and Epistemology broadly construed, Philosophy Department, Kansas State University, until filled.

Post-doc Fellowship: Center for Collective Intelligence, Sloan School of Management, until filled.

Post-doc position: in the area of developmental robotics and robot learning, INRIA, Bordeaux, until filled.

Two Post-doc positions: in Machine Learning, in the project "Composing Learning for Artificial Cognitive Systems", INRIA Lille, until filled.

One-year Postdoctoral Fellowship: AOS: logic or philosophy of science, Department of Philosophy, University of Calgary, Alberta, Canada, deadline 15 April or until filled.

RESEARCH ASSOCIATE: in Natural Language Processing and Machine Learning, Department of Computer Science, University of Sheffield, deadline 1 June.

POST-DOC RESEARCH FELLOW: in Computational Neuroscience, UWS Bioelectronics and Neuroscience (Bens) Research Group, University of Western Sydney, deadline 5 June.

PROFESSOR OR READER: in Philosophical Logic, Philosophy of Logic, Philosophy of Science, Metaphysics, Philosophy of Mathematics or Formal Epistemology, School of Philosophical, Anthropological & Film Studies, University of St Andrews, deadline 9 June.

PROFESSOR: in Mathematical Statistics, Department of Mathematics and Mathematical Statistics, UmeåUniversity, Sweden, deadline 9 June.

SENIOR LECTURER: in Mathematical Statistics, Department of Mathematics and Mathematical Statistics, UmeåUniversity, Sweden, deadline 9 June.

LECTURER: in philosophy, AOS: logic, metaphysics, epistemology, and the philosophy of mind, Department of Philosophy, Birkbeck, deadline 13 June.

BRUNEL POSTDOCTORAL FELLOWSHIPS: in Statistics, in the research programme "Statistics underpinning Science, Technology and Industry", University of Bristol, deadline 13 June.

TWO CHAIRS: of Statistics, Department of Statistical Science, UCL, deadline 26 June.

ASSISTANT PROFESSOR: Theoretical Information Science, School of Information Science, Japan Advanced Institute of Science and Technology, deadline 27 June.

LECTURER: in Statistics, School of Computer Science and Statistics, Trinity College Dublin, deadline 27 June.

PROFESSOR/ASSOCIATE PROFESSOR/SENIOR LECTURER: in Statistics, Institute of Information & Mathematical Sciences, College of Sciences, Massey University, deadline 30 June.

ONE-YEAR FELLOWSHIPS: Center for Mind, Brain and Cognitive Evolution, Ruhr-University of Bochum, deadline 10 July.

THREE LECTURING POSITIONS: in philosophy, La Trobe University, Melbourne, Australia, deadline 17 July.

VISITING INTERNATIONAL FELLOWSHIP: in Social Research Methods, Department of Sociology, University of Surrey, Guildford, UK, deadline 30 September.

PROFESSOR: in Philosophy of Science, AOS: Philosophy of biology and environmental sciences, Université du Québec à Montréal, Montreal, Canada, deadline 14 November.

EIGHT 3-YEAR RESEARCH FELLOWSHIPS: within the project "The Turing Centenary Research Project: Mind, Mechanism and Mathematics", John Templeton Foundation, deadline 16 December.

Studentships

13 DOCTORAL TRAINING GRANTS: School of Computing, Faculty of Engineering, University of Leeds, until filled.

PHD SCHOLARSHIP: "Rating and ranking sports players and teams using Minimum Message Length", Clayton School of Information Technology, Monash University, to be filled asap.

PHD POSITION: in the area of developmental robotics and robot learning, INRIA, Bordeaux, until filled.

PHD STUDENTSHIP: "Hyper-heuristics for Grouping Problems", School of Computer Science, University of Nottingham, until filled.

PHD STUDENTSHIP: "Optimal Decision Making under Uncertainty", Department of Computing, Imperial College London, deadline 30 June.