THE REASONER

CONTENTS

EDITORIAL

It's a great pleasure to be providing this month's editorial and interview in *The Reasoner*. I'm in the Dept. of Psychological Sciences at Birkbeck. My main research focus is on rational argument, on similarity, and on judgment and decision-making. But enough of me, because I want to devote all space available to this edition's interview, for which I decided to do something slightly different.

I have been travelling a lot this year, and one of the things academics talk about regularly is how things compare—not just across institutions, but also countries. So what I thought I would do is bring together three philosophers whose work I greatly respect, who work on similar issues (all have made key contributions to the debate on coherence in formal epistemology, for example), but work in different countries. So, here a controlled 'compare and contrast' that hopefully will provide insight not just into these three great researchers, Luc Bovens, Stephan Hartmann, and Erik Olsson, but also to the state of epistemology across Europe. Thanks to all three for taking the time!

ULRIKE HAHN
Psychology, Birkbeck

FEATURES

Interview with Luc Bovens, Stephan Hartmann and Erik Olsson

Ulrike Hahn: So, first question: Could you each say a few words about your educational background?

Luc Bovens: To explain my interest in formal epistemology requires going back many years.

I had a fondness for math in grade school, but for high school the Belgian educational system had decided that Modern Math was 'the future'. This meant newly (as in poorly) trained teachers in Modern Math were set loose on teaching a subject that should have had no place in a high school curriculum. After memorising definitions and funny scribbles, I switched to a full programme in ancient languages—Latin and Greek. This honed my skills in critical reading and textual analysis. As to the Modern Math, the curriculum droned on with more definitions of points, lines, and rotations to end up three

Luc Bovens

years later with functions and then finally becoming interesting. But the designers of the curriculum had realised too late that they had forgotten to teach algebra, making this freshly constructed mathematical object—i.e., 'the function'—quite useless for operational purposes. My co-students could translate Cicero and Homer like no others, but were highly math-phobic. I spent hours and hours tutoring them thinking up examples to make Modern Math tangible and accessible to them. I think that I owe my skills in formal epistemology largely to this didactics of desperation. But nonetheless, though good things came out of it, I do consider myself a casualty of Modern Math.

In my Bachelor's at the University of Leuven, I combined courses in statistics with historical courses in social theory. I then moved on to a Sociology Masters at the University of Minnesota. Don Martindale, a social theorist, sent me over to the Philosophy Department. I immediately fell in love with analytical philosophy and barely finished my Masters in Sociology. I've had much catch up work to do in Math though! It's a bit like second-language learning—if you don't learn a language at the very latest in your teenage years, it doesn't quite get locked in properly anymore. And if I could remember ancient Greek, it would make up for it. But sadly I don't.

Erik Olsson: I started out studying philosophy in Uppsala, Sweden, but then felt that I needed better formal training. I went on to study mathematics and computer science before I enrolled as a doctoral student in theoretical philosophy. (Sweden retains the German distinction between theoretical and practical philosophy.) This was in the early 90s and I had the good fortune of being part of a strong research environment in formal philosophy in Uppsala, where Krister Segerberg held the Chair. I learned a lot from Sven Ove Hansson, who was the supervisor of my doctoral thesis which dealt with the possibility of developing a coherence theory of belief revision. I was lucky to become involved, almost immediately, in an EU project called DRUMS where I participated in a group with Peter Gärdenfors, Sten Lindström and other very capable Swedish researchers working in formal philosophy or philosophical logic.

Erik Olsson

Stephan Hartmann: I always wanted to become a theoretical physicist and really liked doing calculations. I later decided to do a double major (physics and philosophy), but I originally studied philosophy only "for fun" and to (possibly) broaden my education. However, in the course of my studies, I liked philosophy more and more and somehow found myself becoming a professional philosopher. It has to be said, that my philosophy teachers always encouraged me to foster my interest in the sciences, whereas many of my physics professors felt that I was wasting my time doing philosophy.

UH: Do you consider your paths typical or atypical for your discipline in your country?

LB: Belgium is probably also one of the last holdouts in which (some) high school students can choose a curriculum filled with about 40% ancient languages (including Greek bible at Catholic high schools). It is doubtful this is doing much

good, but it somehow served me well. At university level, much of Europe is stuck with a system that requires students to choose a subject before entering. US colleges are much preferable in this respect. They encourage students to develop their interests throughout the first few years and only ask them to declare majors and specialise in later years.

UH: Yes, Stephan's path of having to do 'extra' studies to pursue a more general set of interests is typical there. I had the same issues and problems in Germany. Britain seems a bit more flexible in this regard, though, because, at least, it offers a broad range of 'conversion courses' (typically one-year masters courses that allow you to effectively start changing fields).

EO: It's not that unusual in Sweden amongst scholars in theoretical philosophy to have studies some more "exact" topic, such as mathematics, computer science or physics as well. Several of the postdocs in my division have this background, which tends to give them a competitive edge when they start doing work in epistemology.

SH: In the past, it was less important to know a specific science very well. Much of the current work in philosophy of science is rather detailed and it does not seem to be possible anymore to publish "big picture" work in leading journals. Most people I know now have a serious background in at least one science. This is important. They really know what they are talking about, and they can fruitfully interact with scientists on an equal footing.

Stephan Hartmann

EO: A fair number of my German colleagues also have formal training in some mathematical discipline. But my sense is that it's not as usual in the US to have studied mathematics, say, alongside philosophy. My impression, which may be unreliable, is that there is a stronger separation in the US between the arts and the sciences and that people are less likely to cross borders. The UK may be similar in this regard.

LB: Certainly, quite a few colleagues in formal epistemology and philosophy of science have backgrounds in mathematics and the natural sciences. They bring modelling techniques from their respective disciplines to the practice of epistemology. I personally learned a lot from reading Branden Fitelson's PhD dissertation (2001) and subsequent articles. He definitely brought together his background in computation with his interest in questions in philosophy of science. It was really an innovative piece of work at the time. Of course, it's not just philosophers importing methods from the sciences. It's also practicing scientists who bring their knowledge to philosophy. One source of inspiration for me was Judea Pearl's work on Bayesian Networks and Causation. Here was a computer scientist taking up philosophical questions with remarkable payoff.

UH: So, when you compare your own education with your present research environment, are things now more flexible and do you think this affects the work that is being done?

EO: It's very flexible, and probably more so, in terms of what additional competences you can bring in, although problems may arise if you have too diversified a background and you apply for a PhD scholarship. There are strict rules to the effect that you need to have taken a considerable number of courses in the-

oretical philosophy. Usually courses in mathematics, computer science and so on, though highly relevant, won't be recognized as such. If you are too interdisciplinary in your studies you run the risk of never qualifying for a PhD position. Much the same applies to postdocs. If you have a strong background in another field, and are capable of exploiting that competence in your philosophical work, then you are ideally positioned as a postdoc researcher. But you have to make sure that your background in philosophy is sufficient strong for you to be regarded as belonging to the field.

SH: The Munich Center for Mathematical Philosophy (MCMP) addresses philosophical problems (or problems with philosophical aspects) using mathematical (or, more broadly, scientific) methods. We are especially interested in combining mathematical with empirical methods and believe that there is much to gain here for a philosopher. Our outlook is broadly interdisciplinary, and we aim at attracting more scientists to work with us. This is not always easy as people always get jobs in a specific discipline, and to get a job it is often not helpful to have worked in another department. But we also have a lot of exchanges with people form other disciplines at LMU (e.g., statistics, physics, neuroscience, epidemiology, psychology, economics and political science).

I also think that it is a good idea to combine philosophy, e.g., at bachelor level, with another subject. At Oxford, for example, it is not possible to only study philosophy. One always studies it in a combination such as Philosophy and Physics or Philosophy, Politics and Economics (PPE). Something like this would also be good for our students here, and after their bachelor the students can decide which discipline they want to focus on in their further studies.

LB: We do benefit from the Oxford PPE tradition in the UK. I think offering philosophy programmes that are conjoined with other disciplines is both the proper way to do philosophy and makes students a lot more employable on the job market and our Economics and Philosophy BSc programme in the LSE has one of the strongest placement records compared to any subject in any university in the UK (with our Philosophy, Logic, and Scientific Method BSc not far behind).

Generally, at the LSE we believe in philosophy that is continuous with the sciences and, being in a school for social policy, with real-life social and political issues. So, many of my colleagues have backgrounds in mathematics, physics, biology, economics and the social sciences. Good things happen when professional philosophers get excited about research in other subjects. The existence of such joint programmes benefit UK academia, both by educating a new generation of philosophers and academic collaborations often take shape when subjects are linked through joint teaching programmes.

What is more problematic is the interference of CV-building administrators who jump on the bandwagon of interdisciplinarity—they start abolishing departments and put staff into interdisciplinary divisions with interdisciplinary seminars etc. You simply can't force these things! There's much fancy talk about the subtle differences between interdisciplinarity, transdisciplinarity, multidisciplinarity, pluridisciplinarity . . . Spare us from all this!

UH: Is there anything you consider to be "Swedish", "English" or "German" about work in epistemology in your country? Or is it all just one big happy international community?

EO: Epistemology was for a long time perhaps the most underdeveloped part of theoretical philosophy in Sweden, which is more known for its contributions to logic and decision theory. I'm thinking of Stig Kanger's early work on possible worlds semantics for modal logic, Bengt Hansson's contributions to rational choice theory, and Dag Pravitz' system natural deduction. The first major Swedish contribution to (formal) epistemology is probably the AGM theory of belief revision due to Peter Gärdenfors, Carlos Alchourrón and David Makinson in the early 80s. The AGM theory quickly developed into a research paradigm in Sweden, and almost all well-known Swedish philosophical logicians have contributed to the development of the theory.

Lately, work on epistemology, formal and mainstream, has largely been concentrated in Lund, but there are also people at other Swedish universities, perhaps mainly Stockholm, doing epistemological work. There is, for some reason, a certain preference for reliabilism in Swedish epistemology, especially in Lund. I'm not sure why this is so, but there may be a connection with the evidentiary value legal tradition in Swedish philosophy of law, which incorporated reliabilist ideas and spilled over to philosophy via Sören Halldén and Bengt Hansson.

LB: I do take pride in the English heritage of empiricism. We have the most solid credentials—Francis Bacon, Isaac Newton, John Locke, with a wink to Scotland, David Hume, John Stuart Mill, and Bertrand Russell. Suffice it to quote Newton's *Principia*: "We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances."

Furthermore, there is something about the English language that is conducive to a kind of no-nonsense philosophy. It is very much a cat-is-on-the-mat language. It proceeds in short and snappy sentences, has the resources of a rich and nuanced vocabulary, and does not tolerate frills—i.e., pretty, meter-enhancing, but utterly meaningless words or phrases that do not add to the meaning of the sentence. English translation is a terrific filter for nonsense!

In general, however, e-mail has radically changed the way we do collaborative work in philosophy. It provides for the immediateness of face-to-face interaction, but permits just the right amount of reflection. Location does not matter anymore. And even if I am working with a colleague in the office next to mine, I often find email the better medium to make progress.

SH: I think it's all just one big happy international community. Really, what is specific about individual countries is the research culture and the organization of things. In Germany, for example, research is organized around a chair and several people work together. The MCMP is an even bigger research environment. In the UK and the US, on the other hand, professors (at least in philosophy) are more working on their own projects and do not run bigger groups. These different structures affect the research that is done and the topics that are chosen.

LB: I thought there was more sanity in the US system. There is a decent and well-coordinated selection process for PhD students, there is a curriculum that permits them to develop as philosophers during the first few years of graduate studies and formulate their research projects, and there is no rush to graduate. Upon graduation, they don't get sucked into research postdocs but start teaching on temporary or tenure-track positions in a wide array of institutions ranging from community colleges to research universities. The system is far from ideal and there is a lot of wasted talent as well, but it seems superior to me to what I see in the UK.

The white elephant in the room is administration. When I

was teaching in the University of Colorado at Boulder I spent about half a day a week on admin (and many colleagues were doing less than that). In the UK, average time spent on administration seems more like 30 to 40%. Mindless paperwork, oversight, centralisation, lack of subsidiarity ...

The consequence of this is that in US research institutions one can comfortably combine research with a regular load of teaching and admin. There is also a freedom to vary one's teaching which provides inspiration for one's research. In the UK one would think twice about putting a new course on the books or even changing course content—the first task is to trace the paper trail that is required for such bold changes. What I notice is that our staff spend more and more time applying for funding to secure buyouts to escape this crushing admin load that comes with teaching and dealing with the university paper trail. Does it benefit students? I don't think so. Does it benefit research productivity? I have my doubts considering that journals continue to be dominated by North-American based academics.

UH: Leaving the horrors of admin, and getting back to why we all became academics in the first place: what are your main research interests at the moment?

EO: I retain an interest in mainstream epistemology and, like my predecessors in Lund, I have done extensive work on reliabilism, defending it against various standard objections like the generality problem. Hopefully, there is a book coming out in a not too distant future which unites all this research, including work on the so-called value problem for this theory of knowledge: explaining why knowledge is more valuable than mere true belief. But most of my work is now on social epistemology. I have been working (with Staffan Angere) on a simulation program for Alvin Goldman's brand of social epistemology. Goldman, in his seminal book *Knowledge in a Social World*, provides the basis for a theory of how social practices can be more or less truth conducive. However, Goldman also notes that it will be computationally extremely difficult to actually determine the amount of truth conduciveness pertaining to a particular social practice. For that purpose one would have to consider various applications of the practice while varying the circumstances. The veritistic performance of the practice would be equated with its mean performance over all this applications. The main idea behind my and Staffan's efforts is to solve Goldman's computational problem using computer simulation. We have a system, called Laputa, that is up and running and which we are applying to a variety of problems not only in epistemology but also, most recently, in cognitive psychology. The simulation framework is fundamentally Bayesian and can be seen as a continuation and development of my research on probabilistic coherence and wisdom of crowds reasoning, which also plays a role in a major research project which I'm heading (with Prof. Olof Sundin, a media scholar) called "Knowledge in a Digital World" (with obvious reference to Goldman's book), which looks at the internet from an epistemological point of view.

LB: Most of my current research is roughly on the intersection of moral philosophy and philosophy of public policy, rationality and formal epistemology.

I just finished a series of articles on the 'Distribution View' which is meant to tell us how to rank policies that impose various types of risk on the people affected. This work is in the wake of Harsanyi's aggregation theorem (benefiting from my collaboration with Marc Fleurbaey).

I am also currently working with Wlodek Rabinowicz on a taxonomy of regret which is meant to provide a much broader picture of regret than what we find in the minimax regret rule. And then there are a number of projects on the table that all have to do with the construction of orderings by fallible judges and the aggregation of such orderings into an ordering that is closer to the truth. The domains of application are very different, but they have a common core. For example, I am doing some work on affirmative action in the construction of shortlists, and I'm interested in burden sharing in asylum policy and would like to assess to what extent host countries order the countries of origin of asylum seekers in the same way when assessing whether asylum seekers of these countries are genuinely subject to persecution.

The LSE is a place where you get exposed to so many interesting ideas day after day. It's not a place for a tortoise, slowly but surely building up its philosophical artifice. Rather, there is constant stimulation and distraction and you need to be firing from a million angles so my philosophical interests tend to be conditioned by contingencies

SH: I am currently working in two main fields:

a. Formal and empirical approaches to individual and collective reasoning and decision making

b. Probabilities in science, esp. physics

I sometimes feel that I am addressing philosophical problems like a physicist addresses a physics problem, i.e., by using a combination of formal and empirical methods. I was interested in the methodology of scientific modelling for a number of years before I realized that it is much more fun to model myself. Luc then got me interested in probabilities and Bayesian Networks and I have been applying these methods ever since. In recent years I've become more and more interested in relating formal models to empirical data (and in getting philosophical inspiration from empirical data), and I am also paying more attention to interpretational questions concerning what the probabilities actually mean. Another recent interest of mine is in imprecise probabilities that are important in the theory of reason as well as in some of the sciences.

UH: So, where do you see epistemology going in the next 10 years?

LB: I have no idea. Typically people will answer a question like this by telling you where *they* would like to see it go and I don't think that I want to steer the boat too much. I do hope that we don't see too much syntax in the void, though (funny squiggles, stating the obvious, without either philosophical payoff or practical applications).

I guess that I am somewhat wary of the basic enterprise of epistemology. There is something odd about doing careful conceptual work on the notions of 'belief' and 'knowledge' as they are used in ordinary language.

We have a perfectly good theory involving degrees of belief which is well-integrated in decision-theory and utility-theory. Now when someone asks me whether I believe P, I may respond as a joke that my degree of belief is .7457... But of course we don't do so in ordinary language. We like to have some shorthand. In some contexts, we like to have the linguistic resources to say that the rhino I saw in the zoo seemed pretty heavy rather than that it weighed 1274 kg. Here it would be quite absurd to ask for a precise account of what I mean by 'pretty heavy'. Similarly, once we resort to the shorthand

of 'belief', it seems absurd to ask for a precisification of the concept.

So what should we be doing?

I would much rather see an epistemology that is a handmaiden of philosophy of science. I would like us to think about the evaluation of evidence, about how to conduct meta-analyses, how to aggregate uncertain information, how to construct meaningful categorisations etc. In particular, in the social sciences, there seem to be so many challenges and yet much of what I hear sounds like old hat. There is much rehashing of objectivity and value freedom in Weber's *Methodology of the Social Sciences* or Windelband's distinction between the ideographic versus nomothetic sciences. It is all constantly being put into new dresses as time progress, but it seems very *déjà vu* to me. At the same time the social sciences have been massively productive in developing and putting to use new methodological techniques which cry out for philosophical interpretation—e.g., think of the construction of abstract concepts (such as 'intelligence' in the IQ debate) through latent variable analysis.

Now one might say that this would all be nice, but it wouldn't be epistemology. Well, a rose by any name ... But granted, this may all be more aptly classified under philosophy of science. So let me try again. I do think that the mark of a good philosophical problem is that it can be turned into a crisp paradox. (Did Bertrand Russell say this?) And a crisp paradox is a paradox which would make a class of bright undergraduates light up. I am thinking about the surprise paradox, the Judy Benjamin, or the Sleeping Beauty here. I think that there is an essential distinction between these puzzles and say Kripke's Pierre puzzle—the monolingual French-speaking Pierre who believes that Londres est joli (after browsing travel brochures) and that London is ugly (after being dropped off on Holloway Road, say). The latter kind of puzzle is a puzzle relative to philosophical theories. The former puzzles engage our sense of pre-philosophical wonder.

SH: Formal methods and empirical methods will play an even more important role than now, there will be interesting work that combines the two methods, there will be more work that is related to scientific and policy related questions (e.g., in social epistemology). At the same time I also expect that traditional, i.e., non-scientific philosophy will get stronger and that there will be a clearer separation between scientifically oriented and non-scientific epistemology. This is at least what I expect.

EO: I can see two tendencies that may well live side by side for some time to come. One is a traditional, mainstream approach which will probably become less dominant than it once was. This approach, which may not in the end be theoretically very fruitful, is attractive for psychological and sociological reasons, I speculate, because it preserves the integrity of the discipline. It is its own distinctive field with few connections to other disciplines and scholarly work. Hence, there is little risk of being assimilated, like Quine wanted to assimilate epistemology to cognitive science, or made redundant. Deep down, mainstream epistemology in the Chisholm tradition is in my view a protectionist strategy where considerable energy is devoted to the integrity and protection of the field. For researchers in this tradition, the fact that some theory or result can be applied is a sign that it wasn't true, deep epistemology after all. The second trend is a more open approach—the one I favour myself (when I'm not in my mainstream mode and write on the Gettier problem)—which makes use of whatever resources there are out there if they can be of any help in answering epis-

temological questions. From this perspective, even the concept of an epistemological question may be in need of rethinking. Traditionally, an epistemological question is—and here I stick my neck out once again—one which was once formulated by a Great Philosopher (Plato, ultimately). But why isn't the problem how to search the internet just as much an epistemological question? It seems to me that any issue which deals with the concept of knowledge or how we should best acquire it is ultimately epistemological. If so, there may be a lot more for epistemologists to do than anyone could ever have imagined. To me that's an attractive proposition.

UH: So all of you see an increasing role for empirical results in epistemology? And philosophy more generally?

EO: I think that pure intuition-based mainstream epistemology is losing ground. It is probably true that the attacks on this tradition coming from experimental philosophy have not always been based on solid and representative studies. Nevertheless, even if some of the studies can be questioned, it can hardly be denied that mainstream epistemology has taken a severe blow. Having said this, intuitions will always play some role in epistemology, as in philosophy at large. My own favourite take on the role of intuitions in philosophy owes much to Rudolf Carnap and his theory of "explication". An explication is a constructive definition, or "rational reconstruction", which takes ordinary use, or intuitions, as its starting point but also attaches weight to factors like fruitfulness, exactness and simplicity. Thus, in defining an epistemological concept (knowledge, justification and the like) the starting point may very well be a consultation of one's intuitions. However, the final definition may be quite remote from that starting point, due to considerations of desiderata like the ones just mentioned. Thus, a definition of knowledge that does not accord precisely with our intuitive concept, if such there be, may in the end be preferred because it is theoretically more useful. This way of thinking may not sound revolutionary, especially not to a formal epistemologist, but it is in deep conflict with mainstream methodological thinking. Sometimes I wish more students would adopt this way of thinking. As I mentioned, I'm deeply involved in computer simulations of epistemological phenomena. Generally, I'm all for using more input than just intuitions as a basis for epistemological theorizing, and computer simulations have proved to be a particularly valuable addition to the epistemological toolbox.

The situation in philosophy generally is much the same as in epistemology, as I see it.

SH: I think empirical data will also become more important in other parts of philosophy (e.g., in ethics and political philosophy), but I would also predict that the split between the two approaches—the scientifically oriented one and the non-scientifically oriented one—will become even bigger. I imagine that the scientifically oriented philosophers will prefer to work with scientists rather than with fellow philosophers, and that the two approaches diverge more and more.

LB: I believe in a philosophy that is continuous with the sciences. But the interaction can take many forms. Philosophy should reflect on the practice of the sciences. It should reflect on moral questions in the interaction between science and society. But it may also borrow new techniques from the sciences (as Erik, Stephan and I did when we put Bayesian Networks to work in thinking about the coherence theory of justification and various other topics in epistemology and philosophy of science). I think that importing these methods from the sciences has opened up some new avenues.

But I do think that there are certain applications that are more problematic. There has been a huge industry lately of testing philosophical intuitions by means of experimental work—e.g., think of the trolley problem. Subjects disagree in their assessments of these questions. Now this doesn't worry me too much. These thought experiments are precisely designed to bring out philosophical tensions by engaging our pre-philosophical intuitions and pulling strings in opposite directions. It is nice to see that this is confirmed in experimental work, but it strikes me as an experiment that did not need to be done.

Things do get more interesting when answers to these philosophical puzzles are split on gender lines, ethnic lines etc. And if we then show that the majority of philosophers side with the opinions of white males, we have the perfect ingredient to light up the culture wars cinder box and sparks will start flying—philosophy on the first page of the popular press, who could have dreamed of that. But I don't believe a word of it. Much of the work is poorly conducted. It needs the input of properly trained methodologists. Attempts at replication have been dismal! (Cf. recent work by my PhD student Hamid Seyedsayamdost.)

UH: Hmmm, maybe time to bring in the experimental psychologists? Either way, though, I think these are exciting times.

SH and EO: Indeed!

LB: I think it's more business as usual in philosophy, but at the same time the world's always full of philosophical ideas to be mined. So let's neither gloat nor be gloomy. There certainly is plenty of reason to whistle on our way to work!

Mizrahi and Moretti on Seemings and Trustworthiness

In a series of papers, Mizrahi (2013, "Against Phenomenal Conservatism," *The Reasoner*, 7(10), 117–118, and 2014, "Against Phenomenal Conservatism: a Reply to Moretti," *The Reasoner*, 8(3), 26) and Moretti (2013, "Mizrahi's Argument against Phenomenal Conservatism," *The Reasoner*, 7(12), 137–139) have addressed the important question of whether the method of fixing belief (MFB) based on *seemings* (MFB_S) is trustworthy.

This discussion originates from Mizrahi 2013's attempted reductio of the principle, advocated by M. Huemer's Phenomenal Conservativism (Huemer, 2007, "Compassionate Phenomenal Conservatism," *Philosophy and Phenomenological Research* 74, 30–55), according to which

(1) '(PC) If it seems to S that p, then, in the absence of defeaters, S thereby has at least some degree of justification for believing that p'.

Mizrahi correctly observes that, sometimes,

(2) It seems to S_1 that p, and it seems to S_2 that $\neg p$.

In such cases, PC entails that

(3) S_1 has prima facie justification for believing p, and that S_2 has prima facie justification for believing $\neg p$.

Mizrahi however contends that

(4) If a MFB produces prima facie justification for contradictory beliefs it is *untrustworthy*,

and then concludes that MFB_S is untrustworthy.

Moretti (2013) has observed that many intuitively trustworthy $MsFB$ potentially generate distinct pieces of evidence supplying prima facie justification for contradictory beliefs. To prevent the counterintuitive commitment to regarding these $MsFB$ as untrustworthy, Moretti has suggested that (4) should be turned into (4*), saying that

(4*) If a MFB produces prima facie justification for contradictory beliefs *on the basis of the same evidence*, it is untrustworthy.

With (4*) in the place of (4), however, Mizrahi's reductio no longer goes through.

In reply, Mizrahi has contended that

(4**) If a MFB generates distinct pieces of evidence *of the same type* providing prima facie justification for contradictory beliefs it is untrustworthy; for in this case, it undermines its own credibility.

Mizrahi contends that with (4**) in the place of (4*) the reductio again establishes its conclusion, for

(2*) S_1's seeming that p and S_2's seeming that $\neg p$ *are* distinct pieces of evidence of the same type providing prima facie justification for contradictory beliefs.

Although I agree with Moretti's criticism of Mizrahi's original reductio, I also believe that its most fundamental problem passes unnoticed by him. More importantly, I believe that the same problem also afflicts Mizrahi's new proposal.

Premise (4)—as well as (4*), and (4**)—is not fully explicit, because it doesn't say *for whom* and *under what circumstances* a trustworthy MFB should not generate prima facie justification for contradictory beliefs. One possibility is to read (4) as maintaining that

(4.1) A trustworthy MFB should not supply the same subject S—or two different subjects S_1 and S_2, when they are similar in all relevant respects—under circumstances of approximately the same type with prima facie justification for contradictory beliefs.

A second possibility is to read (4) as maintaining that

(4.2) A trustworthy MFB, independently of the features of their epistemic situations, should not supply S_1 with prima facie justification for believing p, and S_2 with prima facie justification for believing $\neg p$.

With (4) read as (4.2), Mizrahi's reductio goes through. (4.2) seems clearly mistaken, though. Take the MFB based on perceptual experience (MFB_{PE}), and let p be the proposition that there is a real barn over there. Suppose that S_1 is placed before the building referred to within p, and that S_2 is behind it, thereby occupying an ideal position to see that in fact it is a barn façade. By applying MFB_{PE}, S_1 acquires evidence supplying prima facie justification for believing p, while S_2 acquires evidence supplying prima facie justification for believing $\neg p$. From this it does not seem to follow that MFB_{PE} is untrustworthy in any epistemologically damaging sense. The problem, if there is any, with a MFB generating prima facie justification for

contradictory beliefs is when this happens relative to the same subject—or distinct but relevantly similar subjects—under circumstances of approximately the same sort.

(4) must then be read as (4.1). If we do so, however, the success of Mizrahi's reductio becomes more questionable. To begin with, PC and (2) do not entail that MFB_S generates evidence supplying prima facie justification for contradictory beliefs *for the same subject* under circumstances of approximately the same sort. In a parallel way, PC and (2*) do not entail that MFB_S generates evidence of the same type supplying prima facie justification for contradictory beliefs *for the same subject* under circumstances of approximately the same sort. The only possibility left for either reductio to establish the conclusion that MFB_S is untrustworthy in the sense of 4.1 is then to show that premise (2) and (2*) revolve around subjects that are relevantly similar; namely to show that MFB_S possibly supplies, if not one and the same subject, at least two distinct but relevantly similar subjects, acting under circumstances of approximately the same sort, with justification for believing contradictory propositions (respectively, to show that MFB_S generates evidence of the same type supplying prima facie justification for contradictory beliefs for two distinct but relevantly similar subjects acting under circumstances of approximately the same sort).

The latter alternative is however fraught with problems, and its prospects for success seem dim. To begin with, it is not clear—and Mizrahi does nothing to explain—whether in his examples of conflicting intellectual seemings (2013), S_1 and S_2 should count as sufficiently similar or as acting under circumstances of approximately the same sort. More importantly, it seems independently questionable that S_1 and S_2 should count as being similar in all relevant respects. For it is prima facie plausible to suppose that whether it (intellectually) seems to S that p depends to a great extent on S's training, expertise, attention, overall beliefs etc. So, it seems prima facie plausible that S_1 and S_2, to the extent to which their seemings conflict, *are not* relevantly similar and *have* acted under epistemic circumstances that are *not*, *not even approximately*, of the same sort.

TOMMASO PIAZZA
Philosophy, University of Pavia

Reflection, Conditionalization and Indeterminacy about the Future

Van Fraassen (1984: "Belief and the Will," *Journal of Philosophy* 81, 235–256. and 1995: "Belief and the Problem of Ulysses and the Sirens," *Philosophical Studies* 77, 7–37) has famously defended two principles of reflection in the context of an attempt to develop an epistemology capable of avoiding the kind of probabilistic incoherence that arises in light of the possibility of diachronic Dutch books. This is of special importance in understanding probabilistic rationality in dynamic contexts and these principles are especially important in defining rationality with respect to foresight about our own future opinions. Van Fraassen (1984) understands special reflection as follows (where a is an agent):

(Special Reflection) $P_{a,t}(A|P_{a,t+1}(A) = r) = r$.

Special reflection says that the probability of claim A conditional on one's future assignment of probability r to A is equal

to r. In other words, if one knows that one will assign probability r to A in the future, then one ought to assign r to the probability of A conditional on one's future assignment of probability r to A. It is clear however that $P_{a,t+1}(A) = r$ is a contingent claim about the future. Specifically, it is a claim about one's future confidence that A is true.

Van Fraassen (1995) understands general reflection as follows:

(General Reflection) My current opinion about an event E must lie in the range spanned by the possible opinions I may come to have about E at a later time t, as far as my present opinion is concerned.

In that paper he argues that general reflection implies special reflection and van Fraassen accepts both specific and general reflection as basic principles of probabilistic rationality. Moreover, he argues that general reflection is implied by conditionalization. So, he argues that rational opinion ought to satisfy the general and special reflection principles, rather than the stronger principle of conditionalization.

As it applies to foresight, conditionalization is understood as follows (see Talbott 1991: "Two Principles of Bayesian Epistemology," *Philosophical Studies* 62, 135–150):

(Conditionalization) $P_{a,t+1}(A) = P_{a,t}(A|E)$.

So understood, conditionalization says that if you know that tomorrow your degree of confidence in the truth of A will be r, then your degree of confidence in the truth of A given E today should be r. Again, it is clear here that $P_{a,t+1}(A)$ is a contingent claim about the future. Specifically, it is a claim about the probability one will assign to A in the future.

There has been serious debate both about the relationship between conditionalization and reflection and about the probity of reflection in particular (see Arntzenius, 2003: "Some Problems for Conditionalization and Reflection," *Journal of Philosophy* 100, 356–370; Christensen, 1991: "Clever Bookies and Coherent Beliefs," *The Philosophical Review* 100, 229–247; Green and Hitchcock, 1994: "Reflections on Reflection: Van Fraassen on Belief," *Synthese* 98, 297–324; and Weisberg, 2007: "Conditionalization, Reflection and Self-knowledge," *Philosophical Studies* 135, 179–197). Nevertheless, even critics of reflection argue that it is rational to obey reflection in many cases (see Weisberg 2007).

Whatever one thinks about these principles it is interesting to see that they all raise a deeply serious problem for any view of the truth values of future contingent propositions (i.e., contingent claims about the future) that either (1) denies that they are truth valued or (2) treats them as false. With respect to conditionalization, the problem arises due to the following fundamental principle of the probability calculus that defines conditional probability:

(conditional probability) $P(A|E) = P(A\&E)/P(E)$, for $P(E) > 0$.

According to conditional probability, $P_{a,t}(A|E)$ should equal $P(A\&E)/P(E)$, for $P(E) > 0$. But, since $P_{a,t+x}(A)$ is a statement about the future—specifically a statement about one's future assignments of credence—any view that either assigns a value of false or indeterminate to claims about the future will render *every* instance of conditionalization indeterminate, even though

such probability assignments are supposed to be straightforwardly defined by conditional probability. This implies directly that adopting any view that either assigns a value of false or indeterminate to claims about the future will imply violations of conditionalization and thus opens anyone who adopts such a view to a diachronic Dutch book. As a result, adopting these views of the truth of future contingents is probabilistically irrational and this constitutes a probabilistic reductio of such views.

With respect to reflection, the same sort of problem arises. In the case of special reflection $P_{a,t+1}(A) = r$ is a contingent claim about the future and so any view that either assigns a value of false or indeterminate to claims about the future will require appealing to conditional probabilities that are conditional on a false proposition or a proposition that has an indeterminate truth value. So, such conditional probabilities are themselves indeterminate. With respect to general reflection we get the same result. According to general reflection, one's current opinion about an event E must lie in the range spanned by the possible opinions one may come to have about E at a later time t, as far as one's present opinion is concerned. Where those future opinions are either false or indeterminate, we get the result that the probabilities of current opinions are indeterminate. So, as in the case of conditionalization, adopting these views of the truth of future contingents is probabilistically irrational with respect to reflection and this also constitutes a probabilistic reductio of such views. As a result, these views of future contingent claims make applications of these principles incoherent. So, anyone who defends such metaphysical views about the future is committed to probabilistic irrationality. So, we ought to reject such views of the future for this reason.

MICHAEL SHAFFER
Philosophy, St. Cloud State University

NEWS

Computational Methods in Philosophy, 11 April

The Munich Center for Mathematical Philosophy (MCMP) hosted a workshop on Computational Methods in Philosophy on April 11th. The workshop explored the use of computer simulations in philosophy, which aligns with the MCMP's emphasis on mathematical methods in philosophy.

The workshop was opened by Kevin Zollman (Carnegie Mellon University), who defended the use of computational methods in philosophy from the skepticism it frequently encounters. Zollman argued that the use of computers in philosophical pursuits is actually consonant with the methodology of philosophy as a whole, indicating a historical precedent, and pointing out that computer simulations are a very natural extension of the thought experiment, a common and important tool in philosophy. Indeed, it may be said that a computer simulation is an improvement on the typical thought experiment, in that it *fully* specifies all relevant details, and allows for greater complexity in the phenomena we model. Zollman considered some objections to computer simulation in philosophy, like the claim that such methods are not harmonious with the philosophical aim of finding truth, and argued that such objections do not stand as reasons to exclude simulations from philosophy altogether, but are suggestions for how simulations may be used most effectively.

Following this presentation, two MA students and two Ph.D. students from the MCMP presented recent work involving computer simulation. Will Nalls considered the involvement of deception in the evolution of signaling systems. It is known that small groups of agents with common interests, can, with only very simple learning protocols, learn to form a signaling system. As one might expect, deception can have a negative effect on this signaling system, once formed; using a computer simulation, Nalls asked the question, 'How significant is the presence of deception in the emergence of signaling systems?' Berta Grimau explored possible explanations for the evolution of fairness by means of the Ultimatum Game. Empirical results show that fairness has more of a presence than the game-theoretic equilibrium merits. Two possible sources of this fairness are considerations of empathy and a disposition to punish unfairness. Grimau used a simulation of repeated Ultimatum Games to see whether or not these sources could account for the emergence of fairness between agents.

Hannah Übler presented work on modeling the emergence of standing ovations at public performances. Übler expanded on a model of the phenomenon recently developed by Ryan Muldoon. The original model expressed the speed with which an entire crowd rises to applaud as a function of 'internal propensity to stand', 'social sensitivity', and the number of agents each agent can see. Übler explored the impact on the model when 'internal propensity to stand' and 'social sensitivity' are Beta distributions, rather than constant values, and found that the resulting speed of convergence as a function of internal propensity was a more accurate representation.

Dr. Soroush Rad constructed a formal model for rational deliberation in a Bayesian framework, and compared two different methods of group decision making, focusing on epistemic properties: deliberation and majority voting. Rad found that in homogenous groups, the process is truth conducive, and that voting performs better; with the aid of computer simulations, Rad found that in inhomogenous groups, deliberation is truth conducive, and that the comparison between voting and deliberation depends on several factors, including the agents' abilities to assess each other's degrees of reliability.

WILL NALLS
Philosophy, MCMP

Games, Interaction, Reasoning, Learning and Semantics, 28–30 April

The third conference on Games, Interaction, Reasoning, Learning and Semantics (GIRLS'14) took place on April 28–30, 2014 at the department of Philosophy and Cognitive Science, Lund, Sweden.

The theme was "Evolution and Cooperation". It brought together researchers from various disciplines: philosophy, logic, cognitive science, economics, computer science, and anthropology. Despite the diverse backgrounds, presenters shared a naturalistic viewpoint, understanding cooperation as a question of evolutionary or normative behaviour, or as a design problem among artificial agents. There was also a large degree of overlap in the methods employed by researchers from these disciplines, perhaps most notably the use of evolutionary game theory, experimental laboratory games, and statistics, as well as simulations and computational methods.

On the experimental side Anna Dreber Almenberg (Stockholm Schools of Economics) studied the indefinitely repeated

Prisoners' dilemma with noise. She found that subjects use more lenient and forgiving strategies than what is commonly assumed for games without noise. Friederike Mengel (University of Essex) looked at finitely repeated public goods games with punishment. They capture a neglected aspect of many real life public goods games, namely that a subject's endowment in one game is the accumulated earnings of previous games. The punishment theme was also taken up by Erik Mohlin (University of Oxford), who showed that specialized enforcers benefit from costly punishment of defection since this increases the total surplus they can tax.

Jorge M. Pacheco (Universidade do Minho) used simulations and analytic results to study finitely repeated public goods games with thresholds and applied them to climate change. He showed that introducing uncertainty about the threshold had a negative effect and that splitting the big global problems into smaller local games may increase cooperation. Using simulations, Tamas David-Barrett (University of Oxford) showed that coordinating behaviour by using a simple language allows players to avoid inefficient outcomes in collective action problems.

Jason McKenzie Alexander (London School of Economics) discussed the effect of social or spatial structure in game-theoretic models of evolution and social learning. He explained how structure (as opposed to uniform random matching) leads to evolution of more cooperative behaviour. Hannah Rubin (UC Irvine) suggested that sexual selection, as represented by Hardy-Weinberg dynamics, may serve as an alternative explanation of altruism and conditional cooperation. Justin Bruner (UC Irvine) studied the evolution of conditional cooperation and preferences for punishment when preferences are partially observed and hence function as a kind of commitment device.

Some less formal talks provided valuable perspectives on game theory and the naturalistic approach dominant among participants. Glen Koehn (Huron University College) discussed Ken Binmore's natural justice approach, and Ivan Mosca (University of Torino) addressed social ontology and games.

Vera Te Velde (UC Berkeley) took a behavioural economics perspective to study the effects of norms, and understand how conformist and other motives interact with norms when norms are not shared by a whole population.

Agneta Gulz (University of Lund) provided a more applied perspective on learning and cooperation. She presented a research program centered on educational computer programs where pupils are invited to learn through collaboration with avatars. On a more foundational and experimental level Inga Jonaityte (Ca' Foscari University Venice) studied learning in complex changing environments where multiple cues are available.

Claes Strannegård (University of Gothenburg and Chalmers University of Technology) has developed a general artificial intelligence learning algorithm for symbolic reasoning, which can be taught to learn both arithmetic rules and propositional logic. Another use of formal logic was by Mathias Winther Madsen (University of Amsterdam), who presented a probabilistic resolution to the surprise examination paradox.

In conclusion, despite the "non philosophical" background of many speakers, the ideas developed were highly relevant for philosophers. We hope that more cross-fertilization of this sort will be most useful for developing new ideas in philosophy.

Justine Jacot
Philosophy and Cognitive Science, Lund University

Necessary Connections, 2–3 May

Since Hume, necessary connections between distinct existences have largely had a bad press. According to a standard objection, they would need to be unexplained or metaphysically brute. Recently, metaphysicians have tried to identify certain relations of metaphysical explanation, such as grounding. Those relations, in turn, lead to necessary connections. Do they thereby rehabilitate the idea that distinct existences might be necessarily connected? This two-day workshop tried to shed light on different aspects of this question. It allowed metaphysicians working in Scotland to discuss topics of common research interest with invited speakers from Germany, Spain, and Switzerland. The workshop was organized by Stephan Leuenberger and Fraser MacBride, and supported by the Scots Philosophical Association, the Mind Association, the Aristotelian Society, and the School of Humanities of the University of Glasgow.

Fraser MacBride (Glasgow) started with a brief historical account of the relationship of three concepts in the title of his talk—"Particulars, Universals & Necessary Connections". He then developed an interpretation of G.E. Moore's early work, according to which both of the co-eval notions of the particular and the universal ought to be rejected. He argued that this allows us to avoid getting embroiled in necessary connections. Benjamin Schnieder (Hamburg) examined the relationship between two much-studied hyperintensional concepts: grounding and dependence. He stressed that these concepts are indeed distinct, and discussed how they might be related. Umut Baysan (Glasgow) presented a puzzle for Shoemaker's subset view of realization, and proposed a solution that appeals to the notion of relative fundamentality. Stephanie Rennick (Macquarie/Glasgow) addressed the question whether foreknowledge requires predestination—a potentially objectionable necessary connection between the present and the future.

On the second day, Campbell Brown (Glasgow) examined the relationship between two types of necessary connections: supervenience and definability. Specifically, he formulated conditions under which Frank Jackson's claim that supervenience entails definability holds for classes of relations as well as classes of properties. Fabrice Correia (Neuchâtel) addressed the problem of finding a semantics with respect to which the impure logic of ground is sound and complete, and introduced a version of truth-maker semantics that does the job. Ghislain Guigon (Geneva) presented several extensions of standard counterpart theory in order to articulate deflationary conception of metaphysician's talk of 'grounding', 'essence', and certain cognate terms. In the last talk of the workshop, Philipp Blum (Barcelona) developed Kit Fine's suggestion that there are two different notions of metaphysical reality: that of the factual and that of the fundamental. He argued that much of contemporary work on truthmaking and grounding is marred by the failure to recognize that distinction.

The different perspectives represented by the speakers led to lively exchanges, both in the question and answer sessions and over food and drinks. A number of keenly participating other philosophers, many of them graduate students, also helped to make it an enjoyable and intellectually stimulating workshop.

Stephan Leuenberger
Philosophy, Glasgow

Calls for Papers

What's Hot in ...

Logic and Rational Interaction

"How to be both rich and happy at the same time". Choosing this title for their current paper, Nils Bulling and Valentin Goranko definitely don't want to waste time on minor questions. Asking a game theorist the first question alone, how to become rich, will inevitably produce the answer: Maximize. Choose the option that promises the highest expected pay-off.

But we are not alone in the world. Together with other agents, we form a society. Every agent in a society has his own needs and values. To accommodate all these, behaviour is regulated by social norms, a set of rules determining which actions and states are appropriate and which are not. If our agent wishes to remain in his society, he better observe these rules. In other words, there is a logical formula, determining how to be, become and remain happy.

So how to become rich and happy at the same time? How to maximize utility without violating some binary constraints. This is the goal of Goranko and Bulling's paper. They devise a logic to deal with satisficing, maximization and their interplay in human reasoning. Game theory has proven a useful tool for analyzing the individual interactive situations an agent can encounter, for instance discussing which movie to go to tonight. Which situation he faces next can depend upon the outcome of the first situation: If our agent manages to decide upon a movie with his friends, they have to coordinate on a time and a particular cinema.

Clearly, present behaviour can impact future interactions. To be allowed to play a certain option, I might have to prove my trustworthiness in prior interactions. Also, the action with the highest pay-off, buying some wine while on holiday in France to sell at home, might only be available if my savings are high enough for the initial investment. The interplay between satisfying goal formulae and maximizing is complex; goal formulae connect current encounters with the past and the future.

The authors model ongoing, sequential social interaction. Each small interactive situation defines a game between the agents. The set of all possible situations is depicted in a concurrent game model, given by a set of possible situations together with a transition function determining the next social situation the players face as well as their income from their current behaviour. The game model also specifies how the agents' past success determines their available moves in future games.

For reasoning about such social situations the authors suggest a variant of ATL, a logic depicting the goals and strategic abilities of individuals or groups together with a representation of the agent's accumulated income. As the authors show, this language is highly expressive. As usual, this expressivity comes at a high price. Depending on the exact parameters, the problem of model checking and of satisfiability are either undecidable or have a high degree of complexity.

For modeling interactive behaviour of partially strategic human agents, a crucial ingredient is missing in the current framework. In interactive game situations, agents reason about each other, their abilities, mental states and future actions. This type of reasoning becomes even more salient when the opponent's future options depend on the outcomes of current games. From diplomats negotiating with each other all the way to experienced badminton players reasoning about the three or four returns following their current shot, all types of mutual interaction are guided by restricting the opponent's future options. By neglecting epistemic states, the proposed framework fails to account for this part of interactive reasoning. Classical concurrent game models grant the agents full knowledge of each individual social situation they face. This does not hold in the proposed framework. Facing a co-ordination game in some node, the agent will not know whether he truly is in a coordination situation or whether the other agent is restricted in his available options, even up to limiting him to a single available move. To overcome these problems and to move from a framework for coordinated planning to a model for true interaction, the logic needs to take epistemic states into accounts.

The authors classify their paper as an initial step in a research agenda incorporating the interplay of qualitative and quantitative reasoning. The current paper is a valid first step, now it needs to be followed by future work incorporating epistemic information.

<div align="right">

Dominik Klein
TiLPS, Tilburg University

</div>

Uncertain Reasoning

Back in 1906, economist Irving Fisher remarked that

> Risk is one of the direst economic evils, and all of the devices which aid in overcoming it—whether increased guarantees, safeguards, foresight, insurance or legitimate speculation—represent a great boon to humanity.

One hundred years on, some very sophisticated risk-management devices turned a 'great boon to humanity' into weapons of financial mass destruction, leading to one of the biggest financial and economic disasters in modern history. Whilst the global economy is now steadily recovering from the 2007–08 crisis, there is a widespread opinion to the effect that something must be done to prevent disasters of that kind. In particular, there's been much pressure to regulate the 'legitimate speculation', in Fisher's words, of financial institutions worldwide. The Third Basel Accord (or Basel III) is often seen as a substantial step in this direction. The goal of Basel III, which will be implemented in 2018, is to set capital requirements as a percentage of a bank's assets, with the value of the assets weighted by their riskiness. Crucially, the Accord requires measuring the riskiness of each financial institution. And one element which distinguishes Basel III from its predecessor is the prescription to the effect that banks should move from a risk measure known as Value-At-Risk (VaR) to Expected Shortfall (ES) which, in essence, is the expected loss given the default of the institution.

One of the reasons which led experts to shift from VaR to ES is that the former is an *incoherent risk measure*. The concept of a coherent risk measure was introduced by P. Artzner, F. Delbaen, J-M. Eber,and D. Heath (1999: "Coherent Measures of Risk". *Mathematical Finance*, 9, 203-228) and is characterised (among other requirements) by the subadditivity and the positive homogeneity of the measure. VaR is incoherent because it fails to be subadditive. The central intuition underlying the desirability of the subadditivity property for risk measures lies in the fact that subadditivity promotes the diversification and decentralisation of risk-management, thereby complying with one of the key principles in financial and indeed economic thinking. In particular, as argued by Artzner et al (1999), subadditivity allows risk managers to set an upper bound to the riskiness of the financial institution. And this is clearly appealing to those who think that the downside of financial risk should be mitigated.

The axiomatisation of coherent risk measures provided by Artzner et al (1999) bears rather obvious similarities with P. Walley's (1991 *Statistical Reasoning with Imprecise Probabilities*, Wiley) axiomatisation of "desirable gambles". This provides one of the characterisations of upper previsions and probabilities, which are both subadditive and positively homogeneous. In hindsight, this is hardly surprising, given de Finetti's interpretation of probability-as-price. Still one wonders how virtually identical ideas surface in rather distinct areas.

A useful analysis of the relation between coherent risk measures and imprecise probabilities is provided by P. Vicig (2008: "Financial risk measurement with imprecise probabilities", *International Journal of Approximate Reasoning*, 49(1), 159-174).

Hykel Hosni
Marie Curie Fellow,
CPNSS, London School of Economics

xkcd.com

Events

June

MSLP: Mathematising Science, University of East Anglia, 1–3 June.

F& MI: Fundamentality and Metaphysical Infinitism, University of Helsinki, Finland, 2–3 June.

ALGMATHLOG: Algebra and Mathematical Logic: Theory and Applications, Kazan, 2–6 June.

The Evidence Workshop

University of Kent, 4–5 June

CWAP: Normativity of Meaning, Belief and Knowledge, Krakow, Poland, 4–6 June.

LogicMathPhysics: Ontario, Canada, 5–6 June.

Ground: The Logic of Ground, Oslo, 5–6 June.

TechnoCog: Innovation and Scientific Practice, Barcelona, 5–6 June.

Bergen: Philosophy of Science workshop, Bergen, 5–6 June.

Explanatory Power: University of Duisburg-Essen, 5–6 June.

BWS: Wittgenstein and Epistemology, Edinburgh, 5–6 June.

Proper Names: University of Göttingen, Germany, 5–6 June.

LMP: Graduate conference in Philosophy of Logic, Math, and Physics, Western University, Ontario, Canada, 5–6 June.

POP: 4th LSE Graduate Conference in Philosophy of Probability, London, 6–7 June.

LG& M: Logic, Grammar, and Meaning, University of East Anglia, 7–9 June.

EC: 15th ACM Conference on Economics and Computation, Stanford University, CA, USA, 8–12 June.

MoT: Truthmaking as Grounding: For and Against, Barcelona, 9–10 June.

CCR: 9th International Conference on Computability, Complexity and Randomness, Singapore, 9–13 June.

SCE: Social Cognition & Emotion, Manchester, 10–11 June.

Paraconsistency: Paraconsistent Reasoning in Science and Mathematics, Munich, Germany, 11–13 June.

Social Cognition: Ruhr-Universität Bochum, Germany, 12–14 June.

IYSM: International Young Statistician Meeting, Universitá di Cagliari, Italy, 13–14 June.

COLT: 27th Annual Conference on Learning Theory, Barcelona, 13–15 June.

Public Reason: Birmingham, 16–17 June.

LOGICA: Hejnice, Czech Republic, 16–20 June.

MAEB: Metaphors and Analogies in Evolutionary Biology, Bristol, 17–18 June.

Common Minds: workshop with Philip Pettit, University College Dublin, 18 June.

SILFS: International Conference of the Italian Society for Logic and Philosophy of Sciences, University of Rome "Roma TRE", 18–20 June.

				4			9	7
		9		1			5	
6				2	5	1		
			2			3	4	
	3		7		8		2	
	5	6			4			
		5	1	7				4
	1			3		8		
4	6			8				

Sm6c-comics.com

BEST: Boise Extravaganza in Set Theory, University of California, Riverside, 18–20 June.

AMSTA: 8th International KES Conference on Agents and Multi-agent Systems—Technologies & Applications, Crete, Greece, 18–20 June.

FEW: 11th Annual Formal Epistemology Workshop, University of Southern California, Los Angeles, CA, 20–22 June.

SEP: 42nd Annual Meeting of the Society for Exact Philosophy, California Institute of Technology, Pasadena, CA, 22–24 June.

3RD REASONING CLUB CONFERENCE

University of Kent, 23–24 June

CiE: Computability in Europe, Budapest, Hungary, 23–27 June.

CaMaL: Causal Modeling & Machine Learning, Beijing, China, 25–26 June.

SPS: Metaphysics of Science, Lille, 25–27 June.

A & N: The "Artificial" and the "Natural" in the Life Sciences, University of Exeter, 25–27 June.

CogSciJR: Jagiellonian-Rutgers Conference in Cognitive Science, Kraków, Poland, 25–29 June.

RAN: Reasons, Agency and Normativity, University of Kent, Canterbury, 26 June.

EPISTEMIC INJUSTICE: Bristol, 26–27 June.

SPE: Semantics and Philosophy in Europe, Berlin, 26–28 June.

& HPS: Integrated History and Philosophy of Science, Vienna, Austria, 26–29 June.

EGEC: 4th Annual Edinburgh Graduate Epistemology Conference, University of Edinburgh, 27–28 June.

IPSP: Imprecise Probabilities in Statistics and Philosophy, LMU Munich, 27–28 June.

SELF-KNOWLEDGE: Radboud University Nijmegen, the Netherlands, 27–28 June.

EEN: European Epistemology Network Meeting, Madrid, 30 June–2 July.

FUR: 16th Conference on Foundations of Utility and Risk, Rotterdam, Netherlands, 30 June–2 July.

JULY

IACAP: Annual Meeting of the International Association for Computing and Philosophy, Thessaloniki, Greece, 2–4 July.

WCT: workshop on Computability Theory, Prague, 3–4 July.

YSM: Young Statisticians' Meeting, Bristol, 3–4 July.

OPEN MINDS: University of Manchester, 4 July.

SotFoM: Symposium on the Foundations of Mathematics, Kurt Gödel Research Center, University of Vienna, 7–8 July.

CICM: Intelligent Computer Mathematics, University of Coimbra, Portugal, 7–11 July.

TiLXIV: Trends in Logic, Ghent University, Belgium, 8–11 July.

FLoC: 6th Federated Logic Conference, Vienna, 9–24 July.

BSPS: British Society for the Philosophy of Science, University of Cambridge, 10–11 July.

SIS: Scientific Meeting of the Italian Statistical Society, Cagliari, Italy, 11–13 July.

DEON: 12th International Conference on Deontic Logic and Normative Systems, Ghent, Belgium, 12–15 July.

CLC: Classical Logic and Computation, Vienna, Austria, 13 July.

SAT: 17th International Conference on Theory and Applications of Satisfiability Testing, Vienna, Austria, 14–17 July.

IPMU: 15th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, Montpellier, France, 15–19 July.

LATD: Logic, Algebra, and Truth Degrees, Vienna, 16–19 July.

PSC: Proof, Structure and Computation 2014, Vienna, Austria, 17–18 July.

NMR: 15th International Workshop on Non-Monotonic Reasoning, Vienna, Austria, 17–19 July.

IJCAR: 7th International Joint Conference on Automated Reasoning, Vienna, Austria, 19–22 July.

KR: 14th International Conference on Principles of Knowledge Representation and Reasoning, Vienna, Austria, 20–24 July.

CCA: Computability and Complexity in Analysis, Darmstadt, Germany, 21–24 July.

PAAR: 4th Workshop on Practical Aspects of Automated Reasoning, Vienna, Austria, 23 July.

PRUV: International Workshop on Logics for Reasoning about Preferences, Uncertainty and Vagueness, Vienna, Austria, 23–24 July.

AUAI: Uncertainty in Artificial Intelligence Conference, Quebec, Canada, 23–27 July.

KRC: Reasoning Conference, Konstanz, Germany, 24–27 July.

IJCAI: 24th International Joint Conference on Artificial Intelligence, Buenos Aires, Argentina, 25 July–1 August.

Causal Inference: Quebec, Canada, 27 July.

STARAI: 4th Workshop on Statistical Relational AI, Quebec, Canada, 27–28 July.

LOFT: Eleventh Conference on Logic and the Foundations of Game and Decision Theory, University of Bergen, Norway, 27–30 July.

UCM: Uncertainty in Computer Models 2014, University of Sheffield, 28–30 July.

SLALM: 6th Latin American Symposium on Mathematical Logic, Buenos Aires, Argentina, 28 July–1 August.

IR: Inconsistency Robustness, Stanford University, 29–31 July.

August

AiML: Advances in Modal Logic, University of Groningen, 5–8 August.

ICPP: 13th International Conference on Philosophical Practice, Belgrade, 15–18 August.

CLIMA: 15th International Workshop on Computational Logic in Multi-Agent Systems, Prague, Czech Republic, 18–19 August.

STAIRS: 7th Starting AI Researcher Symposium, Prague, Czech Republic, 18–19 August.

SBQ: Science and the Big Questions, VU University Amsterdam, 18–21 August.

ECAI: 21st European Conference on Artificial Intelligence, Prague, Czech Republic, 18–22 August.

DARE: International Workshop on Defeasible and Ampliative Reasoning, Prague, Czech Republic, 19 August.

ROBO-PHILOSOPHY: Aarhus University, Denmark, 20–23 August.

Causal Explanation: in Psychiatry, VU University Amsterdam, 22 August.

Hypo: Hypothetical Reasoning, Tübingen, Germany, 23–24 August.

SLS: 9th Scandinavian Logic Symposium, University of Tampere, Finland, 25–27 August.

ECAP: 8th European Conference of Analytic Philosophy, University of Bucharest, Romania, 28 August–2 September.

Social Mind: Origins of Collective Reasoning, University of Oslo, 29–30 August.

September

WoLLIC: 21st Workshop on Logic, Language, Information and Computation, Valparaiso, Chile, 1–4 September.

SOFIA: Salzburg Conference for Young Analytic Philosophy, Austria, 4–6 September.

DGN: Decisions, Groups, and Networks, LMU Munich, 8–9 September.

WPMSIIP: 7th Workshop on Principles and Methods of Statistical Inference with Interval Probability, Ghent, Belgium, 8–12 September.

COMMA: 5th International Conference on Computational Models of Argument, Scottish Highlands, 9–12 September.

BPPA: British Postgraduate Philosophy Association Conference, Leeds, 9–12 September.

ENPOSS: 3rd European Network for the Philosophy of the Social Sciences Conference, Madrid, 10–12 September.

GANDALF: 5th International Symposium on Games, Automata, Logics and Formal Verification, Verona, Italy, 10–12 September.

CI: Collective Intentionality, Indiana, USA, 10–13 September.

X-Phi: 5th Workshop of Experimental Philosophy Group UK, Oxford, 11–12 September.

LANCOG: workshop on Modal Syllogistic, Lisbon, 11–13 September.

PAM: Predicate Approaches to Modality, MCMP, LMU Munich, 12 September.

SCLC: 10th Symposium for Cognition, Logic and Communication, University of Latvia, Riga, 12–13 September.

SUM: 8th International Conference on Scalable Uncertainty Management, Oxford, UK, 15–17 September.

CCC: Continuity, Computability, Constructivity: From Logic to Algorithms, University of Ljubljana, 15–19 September.

NoR& N: Nature of Rules and Normativity, Prague, Czech Republic, 17–19 September.

IWSBP: 11th International Workshop on Boolean Problems, Freiberg, Germany, 17–19 September.

ICTCS: 15th Italian Conference on Theoretical Computer Science, Perugia, Italy, 17–19 September.

PGM: 7th European Workshop on Probabilistic Graphical Models, Utrecht, The Netherlands, 17–19 September.

EERG: Buffalo Annual Experimental Philosophy Conference, Buffalo, 19–20 September.

ICSS: International Conference on Social Sciences, Bucharest, Romania, 19–20 September.

FOIS: 8th International Conference on Formal Ontology in Information Systems, Rio de Janeiro, 22–25 September.

KI: 37th German Conference on Artificial Intelligence, Stuttgart, 22–26 September.

LAP: Logic and Applications, Dubrovnik, Croatia, 22–26 September.

JELIA: 14th European Conference on Logics in Artificial Intelligence, Madeira Island, Portugal, 24–26 September.

EoM: Epistemology of Modality, Aarhus University, Denmark, 24–26 September.

IEEE: Intelligent Systems, Warsaw, Poland, 24–26 September.

LANCOG: Workshop on Analyticity, Lisbon, 25–26 September.

EoP: Epistemology of Perception, KU Leuven, 25–26 September.

Johan van Benthem: ILLC, Amsterdam, 26–27 September.

Belief: 3rd International Conference on Belief Functions, Oxford, 26–28 September.

PMR: Proof Theory, Modal Logic and Reflection Principles, Mexico City, 29 September–2 October.

October

WCPA: Western Canadian Philosophical Association, Vancouver, BC, 3–5 October.

FPMW: 6th French Philosophy of Mathematics Workshop, Toulouse, 9–11 October.

Descartes Lecture: Leitgeb on Rational Belief, Tilburg University, Netherlands, 20–22 October.

EBC: Explanantion Beyond Causation, LMU Munich, 23–24 October.

ILCS: Inductive Logic and Confirmation in Science, University of Utah, 24–25 October.

MDAI: Modeling Decisions for Artificial Intelligence, Tokyo, Japan, 29–31 October.

IDA: 13th International Symposium on Intelligent Data Analysis, Leuven, Belgium, 30 October–1 November.

Courses and Programmes

Courses

NASSLLI: 6th North American Summer School in Logic, Language and Information, University of Maryland, College Park, 21–29 June.

EASLLC: 3rd East-Asian School on Logic, Language and Computation, Tsinghua University, China, 2–8 July.

Carnegie Mellon: Summer School in Logic and Formal Epistemology, 2–20 July.

INEM / CHESS: Summer School in Philosophy and Economics, University of the Basque Country, Donostia-San Sebastian, Spain, 21–23 July.

SIPTA: 6th SIPTA School on Imprecise Probabilities, Montpellier, France, 21–25 July.

MCMP: MCMP Summer School on Mathematical Philosophy for Female Students, Munich, Germany, 27 July–2 August.

ESSLLI: 26th European Summer School in Logic, Language and Information, University of Tübingen, Germany, 18–22 August.

Epistemology & Cognition: Groningen, 25–29 August.

CLPA: Summer School on Argumentation: Computational and Linguistic Perspectives on Argumentation, University of Dundee, Scotland, 4–8 September.

CSSiP: 9th Cologne Summer School in Philosophy on Practical Reasons, Cologne, 15–19 September.

Programmes

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

Master Programme: MA in Pure and Applied Logic, 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: in Statistics, University College Dublin.

LoPhiSC: Master in Logic, Philosophy of Science & Epistemology, Pantheon-Sorbonne University (Paris 1) and Paris-Sorbonne University (Paris 4).

Master Programme: in Artificial Intelligence, Radboud University Nijmegen, the Netherlands.

Master Programme: Philosophy and Economics, Institute of Philosophy, University of Bayreuth.

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 Programmes: in Philosophy of Science, University of Leeds.

MA in Logic and Philosophy of Science: Faculty of Philosophy, Philosophy of Science and Study of Religion, LMU Munich.

MA in Logic and Theory of Science: Department of Logic of the Eotvos Lorand University, Budapest, Hungary.

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, Science and Society: TiLPS, 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 Methods and Practices of Philosophical Research: Northern Institute of Philosophy, University of Aberdeen.

MSc in Applied Statistics: Department of Economics, Mathematics and Statistics, Birkbeck, University of London.

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

A programme at the University of Kent, Canterbury, UK. Gain the philosophical background required for a PhD in this area. Optional modules available from Psychology, Computing, Statistics, Social Policy, Law, Biosciences and History.

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

MSc in Cognitive Systems: Language, Learning, and Reasoning, University of Potsdam.

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 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 Sebastián).

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

Jobs and Studentships

Jobs

Post-doc Position: in Set Theory, Torino University, until filled.

Professor: of Uncertainty Quantification, School of Mathematical Science, University of Nottingham, until filled.

Assistant Professorships: in Philosophy of Science, TiLPS, Netherlands, deadline 15 June.

Post-doc Position: in Epistemology, Philosophy of Science or Mind, University of Hradec Králové, Czech Republic, deadline 23 June.

Lecturer: in Philosophy of Language or Logic, University of Durham, deadline 25 June.

Post-doc Position: on the project "Roots of Deduction", Philosophy, University of Groningen, deadline 10 July.

Studentships

PhD Position: on project "Set Theory and Truth", Philosophy, University of Aberdeen, deadline 6 June.