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Editorial

I first met Stephen Mumford at a small workshop I organized in Granada in 2007 on causation. I was rather anxious at the prospect of meeting him, as my talk was directly addressed to his work on dispositions, of which I was being rather critical. Soon I discovered that I had no reason to be afraid; he has got such a peaceable nature ... It is perhaps the case that only if you possess that kind of kindness can you convincingly propose a theory that is as controversial as his pandispositionalism, which includes recalcitrant theses such as that all properties are clusters of dispositions; that dispositions are real and can exist unmanifested; that there are no laws of nature, and our delusion that there are can be explained in terms of dispositions; that there is a kind of modality, dispositional modality, which is neither contingent nor necessary but something in between; or that causation is the passing around of dispositions. Especially this last thesis he has developed with Rani Anjum in their recent book *Getting Causes from Powers* published last year by Oxford University Press, which will also be the excuse for this interview. Rani is also full of kindness and joy, also revitalizing the theory of dispositions in its most provocative forms, focusing in particular on dispositional causation and searching for its place within all sorts of sciences. Rani Anjum is Research Fellow in Philosophy at the Norwegian University of Life Sciences where she leads the project *Causation in Science*. In this project, experts in physics, psychology, social sciences and biology collaborate in the search for dispositional causation within their fields. Stephen Mumford is Professor of Metaphysics at the University of Nottingham, and author of *Dispositions* (OUP 1998), *Laws in Nature* (Routledge 2004), *David Armstrong* (Acumen 2007), and *Watching Sport: Aesthetics, Ethics and Emotion* (Routledge 2011), among others.

In *Getting Causes from Powers* Stephen Mumford and Rani Anjum present us with a new theory of causation that is wholly dispositional in kind. Things are disposed towards others by virtue of their causal powers, and the dynamics of the world consists in the passing around of powers. Following the thread of these main theses, a whole new bunch of ideas on causation emerge, challenging the "old" ones: that causes are simultaneous with their effects, that causes are directly perceived, or that the modality of causation is neither contingency nor necessity.

Maria Jose García-Encinas
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Interview with Rani Anjum & Stephen Mumford

Maria Jose García-Encinas: Rani, Stephen, first of all, I would like to thank you for granting me this interview. Naturally, both of you could answer my questions independently, but you have chosen to agree among yourselves before giving me common and meditated answers And thus arises my first question It is becoming more and more common to find philosophical pieces written by more than one philosopher. For a practice like ours, where we seem to be particularly trained to argue, discuss, and criticise almost everything we read and hear, how do you manage to write a whole book together?

Stephen Mumford & Rani Anjum: Co-authoring is actually very hard, especially because we are both very stubborn when it comes to philosophy. There was therefore no way anything would be allowed into the book unless we fully agreed. *Getting Causes from Powers* is the result of intense discussion and debate between us. This is why we would argue that co-authored work requires the Socratic approach to discussion, argument and criticism even more so than single-authored work. Every point in this book was debated many times over during its writing. This process has been possible because we use a method of writing developed by Stephen, where all the thinking, structuring and argument is done in a handout form before a chapter is finally drafted.

It is not easy to find a collaboration that works, and a successful co-authorship is like any other partnerships. In order to have a genuine collaboration, you need a broadly similar outlook as well as mutual respect for each other's views and abilities. Our collaboration is carried out through frank and honest debates. We are the harshest critics of the other's arguments until we find something with which we are both happy. Occasionally when working on the book we had to leave an issue alone because we knew we wouldn't agree, but in most cases we would thrash it out and spend weeks on seemingly small issues until we were both convinced. It was a lot of work, but rewarding because we think it is a better book than either of us could have produced alone.

MJ: *Getting Causes from Powers* is heavily metaphysically laden. Even after the job made by great philosophers such as David Lewis or David Armstrong in this direction, it seems to me that at least in Europe it is not yet a reputable task to do metaphysics within our tradition—you also recall in your book Russell's famous attack on causation in the name of physics... What do you think about this? What do you think, in particular, of the relation between metaphysics and the philosophies of science? Do you think that philosophers of physics, of biology, cognitive sciences... should read books on metaphysics to learn about their own field of work, or that metaphysicians should learn, say, quantum mechanics, neurochemistry or the biology of a cell to be able to say anything about the real world?

S&R: Attacks on metaphysics come and go, and it is often suggested that science can solve all the problems of metaphysics and make it obsolete. But we think this is a mistake. Among other reasons, it seems that the very existence of science is premised on a metaphysical basis. Science deals with explanation, prediction and manipulation. Without them there is no science. But explanation, prediction and manipulation work only because the world itself is ordered and regular to some extent. What is responsible for any order in the world, however, is causation, laws, powers and natural kinds. Some such metaphysics, whatever the correct details are, is the precondition of science. Science is the empirical shadow of a metaphysics of world-order. This is why we are highly critical of the trend where philosophers concede all authority to the scientists and let them adjudicate our metaphysical questions for us. Philosophers have an essential role to play for science.

This is not an attack on science, however. The best option is if scientists and philosophers can work together to develop a full account of nature that is both philosophically grounded and empirically sound. But we are against scientific imperialism where it attempts to invade the realm of metaphysics.

MJ: Rani, in your new project you search for the general existence of causal powers within Science. Do the scientists and the philosophers that you are working with agree with the occurrence of powers in their disciplines?

S&R: We developed the *Causation in Science* project together. It builds on the idea that we just mentioned, that the best situation is one in which philosophers are informed by science and vice versa. There are a number of philosophically unresolved issues related to the notion of causation within the sciences themselves, and here philosophers and scientists must work together. For instance, in physics the issue of causation is tightly linked to the issues of temporality and locality, time and space. In *Getting Causes from Powers* we argue that cause and effect are simultaneous, and that there is a theoretical tension between the views of locality and temporal priority. When causation is denied a role in physics it is usually premised on the orthodox two-event model from Hume, which shows that physical theories rest on more or less explicit metaphysical assumptions. We need to get the metaphysical assumptions out in the open where we can critically discuss them in conjunction with the empirical findings.

MJ: The general picture of the world that seems to follow from some of your theses is quite unconventional. For instance, you claim that manifestations (types) determine the identity of a disposition: to be fragile is, at least in part, to be disposed to be broken. And you also argue that the relation between a disposition and its manifestation is causal. But how could causation and identity come somehow together into the same relation? Let's consider, for instance, the capacity to cut that you claim the pieces of glass causally acquire when the glass breaks. One could say that the pieces had already the disposition to cut while composing the glass. After all if the glass were to be broken in a certain manner, its pieces would cut. But then, the identity of the dispositions of the glass seems to include all that can causally happen to the glass, and all that can causally happen to anything involved in any process that bursts out by the firing of the dispositions of the glass... Moreover, given that dispositions produce different effects or manifest differently depending on their partnerships, the identity of any disposition will include every possible causal conjunction with other dispositions. Are you happy with this picture? Don't these theses lead to some sort of metaphysical monism close to those of Leibniz or Hegel against which Russell and Moore warned us with so much energy?

S&R: That our view is unconventional is something we are quite proud of, as long as it is also a defensible view. You talk of identity and causation co-existing in the same relation, but this sounds wrong. The power is not identical with what it causes, but the identity of a power is determined by its causal role. Powers have functional essences: what they are is fixed by what they are for. If we pick something out by what it is able to do then there are some pitfalls to be avoided. Disposition D would be a power to cause M, for instance. It is a trivial truth that the cause of M caused M but only because D is being characterized in causal terms and this in no way rules out D being the true and non-trivial cause of M, if it does indeed produce M.

A further pitfall is, as you identify, that the same disposition seems to produce different effects according to which mutual manifestation partners it meets. How then can its manifestations fix its identity? Our answer to this is that the same power makes the same contribution to each mutual manifestation partnership in which it participates. This gives us an additive model where component powers can come together to be a resultant. But such a model works only for linear causation and we know that many cases of composition of causes in nature are nonlinear. In nonlinear cases, the powers interact and affect each other's contribution. Our writing partnership is a kind of nonlinear mutual manifestation, for example, as we start to change the thoughts of each other. But we still think that the contribution of a power can fix its identity. In the nonlinear case, we say that the same power always makes the same input into the partnership, even if the partnering then affects it. This is like saying that the same power always gives the same input to the nonlinear function that could characterize the partnership.

We are not so worried about ending up in some form of monism, although we are not sure that our theory entails it. While we work with the tools of analytic philosophy, such as its approach of argument and clarity, we are not that keen on its metaphysics of discrete atomic particulars.

MJ: The main proposal in your book is that dispositions are causally laden. Dispositions are dispositions to cause, to manifest... in more dispositions. When, say, something is hot it has the power to heat other things. This could be a rather uncontroversial thesis. But you want to say much more than this; you want to say that, when something is hot, to be hot is to have the power to heat (and perhaps also to have other powers). Being hot is a cluster of powers. But this is not what we seem to mean when we say that something is hot, right? When my coffee is hot it is something, it is more than a capacity to do/be. Sure, my hot coffee can causally warm close enough things such as my cup and hands, but being able to warm seems not to be the same as being hot. Equally, when a glass breaks into pieces and these causally acquire the capacity to cut, the glass seems also to be broken. How do you explain the wrongness of these strong intuitions?

S&R: You are right that there are some intuitions in this direction, but we think that the most plausible explanation of them comes out in causal terms. All that we know of properties depends on their causal role, even where you feel their effect on your skin or senses. The broken pieces of glass have the power to cut, yes, but they also have a power to cause a certain kind of visual experience in observers. And a hot object is able to cause a certain experience within us: an epistemic counterpart to heat. We are not sure whether this actually amounts to an intuition that properties have essences underlying their causal roles. There are also intuitions in the opposite direction, against haecceities, for instance. What would be left of a property if we were able to strip away its causal role? Nothing, really, it seems.

MJ: Another striking thesis in your book is that causation is not a contingent relation, but neither it is necessary. Your argument against necessity seems to be that even if c causes e (where c is understood as the total Millian cause of e), there is always the possibility that some other factor could have occurred and, had it occurred, even if c occurred, e did not: a gust of wind is added to the otherwise causally successful situation where the match would have lighted, and it does not light. Why cannot we think of the alleged possible situation as just a situation where the total cause has changed? Is not your reasoning like saying that it is not necessary that 2 + 2 is 4 because there is always the possibility that another number is added? Or like saying that it is not necessary that bachelors are unmarried men because there is always the possibility that they find a bride and get married?

S&R: Here we think it is essential to distinguish between *de re* and *de dicto* modalities. In the book we argue that there is only one worldly modality, dispositionality. But we don't think that natural causal processes operate in the same way as mathematical or classificatory truths. There are good explanations for the presence of necessity in our statements about the world: analyticity or identity, for example. In causation we cannot find any legitimate source of necessity, and non-monotonic reasoning seems absolutely standard and accepted.

The argument against causal necessity is the one that philosophers have been most opposed to when we have presented our theory. And in the book we go through and try to answer a number of objections to our argument. A common move to secure causal necessity has been to rule out the addition of interfering factors, for instance. But we take this as a tacit concession that such an addition could indeed prevent the effect. In contrast, a bachelor is always a married man, no matter what else they are. And if they marry, they simply cease being a bachelor, which is then not a counterexample. In contrast, a fragile object can fail to break when dropped while still being fragile throughout. While we oppose causal necessitarianism, we also must emphasize that we are equally against the Humean world of pure contingency. We deny modal dualism. A power provides a third, in-between modality, a definite tendency towards one kind of outcome rather than others. In the book we make the case that dispositionality is the most basic modality, from which we derive our notions of necessity and pure contingency by extrapolation.

MJ: All properties are clusters of dispositions; causation is dispositional, modality is dispositional; laws can be eliminated in the name of dispositions, ...Moreover, the aesthetics of sports could find an alternative explanation in our likeness, and disposition, towards the exercise of dispositions; perhaps all entities—including persons?—are dispositional in nature; and I know that both of you are actually working to solve the problem of freedom and moral responsibility with the aid of dispositions; could you tell us more about these ideas and projects?

S&R: You are right that many areas can benefit from dispositional treatments. Alone or together we have applied dispositionalism to philosophy of language, ethics, philosophy of law, aesthetics, philosophy of sport and even philosophy of sex, as well as a host of central problems in philosophy of science, metaphysics and epistemology. We are very excited about the explanatory potential of the powers metaphysics. It is what

unites us as a writing team and gives us a project for future work. One such project is to work on causation in health sciences, but we also want to solve the problem of free will in terms of the empowerment of agents. We like to have philosophically ambitious projects and at this stage we think that we have a novel and sound argument for a new libertarianism. If all goes well, some distance down the road we will have a book called something like *Free Will and Empowerment*.

S: It belongs to the story that I had been a compatibilist for around 20 years. After arguing about it on and off since 2006, Rani finally persuading me that a causal dispositionalist should be a libertarian about free will. It summed up our partnership: a lot of work and pain to get to that point but so thrilling when we realized we had a common solution.

MJ: Talking about new fields for dispositions, how do your views on causation relate to causal reasoning and inference?

S&R: The dispositional view fits really well with the data of causal reasoning and inference. To know that something has a causal power warrants an inference that if it is in a certain kind of situation, it will behave a certain way. But we also know that our causal inferences are defeasible. We think that necessitarian accounts of causation do not adequately explain why predictions sometimes fail. A tendency, in contrast, is a good basis for a prediction that is reliable to some degree but not totally. A tendency can be stronger or weaker, but no matter how strong it is there is always the possibility that some causally relevant factor was not considered. This is why we take the problem of induction to be a pseudo-problem. It is only a problem if we think that causes should necessitate their effects.

MJ: Anything that dispositions cannot explain?

S&R: There could perhaps be some parts of philosophy where powers are irrelevant, but we struggle to find them.

MJ: Thank you!

On Linnebo's Well-Foundedness Requirement and Unrestricted Quantification

There are unjustified double standards afflicting some positions that support unrestricted quantification and, particularly, Linnebo's criticism of Williamson's argument against unrestricted quantification (Williamson, T. 2003. 'Everything', in J. Hawthorne and D. Zimmerman (eds), *Philosophical Perspectives 17 (1): Language and Philosophical Linguistics*. Blackwell, Boston and Oxford, p. 415–465); (Linnebo, O. 2006. 'Sets, Properties, and Unrestricted Quantification', in A. Rayo and G. Uzquiano (eds). *Absolute Generality*. Oxford University Press, Oxford, p. 149–178).

Quantification is unrestricted iff its domain is absolutely universal. What follows is an informal version of Williamson's 2003 argument against the possibility of unrestricted quantification (u.q. henceforth).

Assume the possibility of u.q. and let L be a formal language with some individual constants and at least one unary predicate letter P. M is an L-interpretation that uses L to speak about L-interpretations. Since u.q. is possible, M can use L to speak about all L-interpretations, also about M itself (we say that M is in its own universe of discourse). In particular, M interprets L's predicate letter P as the set of all L-interpretations *x* such that the L-sentence 'P(x)' is not true under *x*.

Let 'M' be a constant in L denoting M under M. The question is now whether 'P(M)' is true under M.

Assume it is. Then M is not one of the interpretations in M's interpretation of P (M(P), hereafter). Thus, 'P(M)' is not true under M. Contradiction.

Assume it is not. Then M is one of the interpretations in M(P). So, 'P(M)' is true under M. Contradiction.

Williamson infers that u.q. is impossible. Linnebo objects that M(P) is not well-founded. Here's Linnebo's well-foundedness requirement:

> "My account of what properties there are is based on the requirement that individuation be well-founded. According to this requirement, the individuation of some range of entities can only presuppose such objects as have already been individuated" (2006, p. 167)

It's not hard to argue for the ill-foundedness of M(P): M(P) is defined on the basis of how L-interpretations *x* evaluate 'P(x)'; since M is one of those *x*, M(P)'s definition involves M, which in turn involves M(P) itself.

My concern with Linnebo's counterargument is this: if M is allowed to speak about itself (as u.q. requires), then the definition of M must involve M (in defining M we say it makes L speak about all L-interpretations, M among them) and so must do the definition of M(P) because in defining M(P) we just separate a subset from the universe of discourse of M, of which M is a member. It makes no sense to allow the definition of M to involve M in order to preserve u.q., while requiring from the definition of M(P) not to involve M in order to preserve well-foundedness. This is a nonsensical double standard. In fact, Linnebo's well-foundedness was lost as soon as M was permitted to speak about absolutely all L-interpretations, M included, since this forced the definition of M to involve M.

In a formula: whatever is available to be quantified over must also be available to play a role in a definition. In particular, if, on pain of ill-foundedness, an object *t* should not figure in a definition, then *t* should not be in the universe of discourse of that definition.

This leads us to a simpler case that compels supporters of u.q. to related double standards: Russell's paradox. Let's assume that u.q. is possible, hence also quantification over all sets. Then we can state for all sets the following instance of Excluded Middle:

(1) $\forall x\ (x \in x \vee x \notin x)$

Also the following instance of Contradiction:

(2) $\forall x\ \sim(x \in x\ \&\ x \notin x)$

The truth of (1) and (2) for the specified domain entails that self-membership or lack thereof is definite for all sets; for each set *x* exactly one disjunct is the case: either *x* is self-membered or it is not. Since self-membership and lack thereof are definite properties for all sets, either should be available for the purpose of separating a definite set from the universe of all sets. Therefore, non self-membership should be allowed to play its role in defining set R:

(3) $\forall x\ (x \in R \leftrightarrow x \notin x)$

But (3), if quantifying over absolutely all sets, as assumed, defines no set, for otherwise it would entail

(4) $R \in R \leftrightarrow R \notin R$

The partisans of u.q. will typically contend that (3), together with (1) and (2), succeeds in quantifying over all sets but fails in defining a set; they will consider (3) viciously circular. Laurence Goldstein has suggested to me that this circularity becomes apparent when one considers that the universal quantifier in (3) can be expanded into an infinite conjunction of biconditionals of the form 'a∈R ↔ a∉a', one of which is the obviously circular (4). But the problem arises again: if R is not available to figure in its own definition (on pain of ill-foundedness), how is it that it should be available, if existent, to be quantified over in that same definition in (3)? For it is only the assumption that it should be so that permits going from (3) to (4) and makes the paradox arise!

In contrast, opponents to u.q. may deem (3) able to define a set precisely because they may consider it unable to quantify over all sets and, particularly, over R itself; then the inference from (3) to (4) becomes illegitimate. They are also likely to believe that R diagonalizes out of (3)'s universe of discourse extending it by one set, namely, R. For them, R is available *neither* to be quantified over *nor* to play a role in the definition of R.

As a consequence of the double standard expounded above, the supporters of u.q. seem committed to yet another double standard in Russell's problem: they must contend that non self-membership is, on the one hand, definite for all sets and, on the other, not definite enough to specify a set.

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The Problem with Fitch

However did the so-called 'Paradox of Knowability' get about?

It is certainly true that if 'K' is a factive operator which obeys conjunction elimination, then 'K(p & ¬Kp)' is contradictory, since it implies 'Kp & K¬Kp', and so 'Kp & ¬Kp'. But if one supposes that (p)(p ⊃ ⋄Kp), then it follows, given that q & ¬Kq for some 'q', that ⋄K(q & ¬Kq), which seems to lead to a contradiction. For, on the standard semantics for possible worlds, one then must have that K(q & ¬Kq) in some possible world. Hence if (p)(p ⊃ ⋄Kp) that seems to imply that not for any 'q' is it the case that q & ¬Kq, and so that (p)(p ⊃ Kp). A great many people have been troubled by this result, since it seems to disprove Verificationism (see, e.g., Williamson, T. 1982: 'Intuitionism Disproved?' *Analysis* 42, 201–207, and Percival, P. 1990: 'Fitch and Intuitionistic Knowability', *Analysis* 50, 182–187).

But in Fitch's initial rendering of his so-called problem he says (Fitch F.B. 1963: 'A Logical Analysis of Some Value Concepts', *Journal of Symbolic Logic* 28.2, p. 139) 'Suppose that p is true but not known by the agent. Then since knowing is a truth class closed with respect to conjunction elimination, we conclude ... that there is some true proposition which cannot be known by the agent'. Here maybe Fitch had in mind simply a true proposition that was not known to be true at some time t. Certainly it cannot be known to be true at some time t both that some proposition is true and that that proposition is not known to be true at time t. But it does not follow that that proposition and its not being known to be true at time t cannot be known to be true at any other time, and so cannot be known at all. Likewise, while the same person cannot both know something and know that he or she does not know it, if there are two people then the second person can both know something and know that the first person does not know it.

It is attention to the same kind of relativisation that gets us out of the paradox of knowability. In symbols (with 'Kip' as 'it is known in world i that p', and 'a' as the actual world) the supposition is

(p)(p ⊃ (∃i)Kip),

which with 'q & ¬Kaq' produces merely the non-contradictory

(∃i)Ki(q & ¬Kaq).

The supposition would have to be

(p)(p ⊃ Kap)

to produce, with 'q & ¬Kaq', the contradiction

Ka(q & ¬Kaq).

So where does the confusion lie? It lies in the standard symbolisation for this kind of case. For the standard semantics for Modal Logic does not allow for the application of that semantics to semantical evaluations themselves. Standardly we can say, for instance, that the hatter was mad in the world of Alice in Wonderland, i.e., V(Mh, w) = 1, but not that, in the world according to so and so the hatter was not mad in the world of Alice in Wonderland, i.e., V(V(Mh, w) = 1, s) = 0. Allowing such iterations of semantic expressions is what gets us out of the paradox of knowability. For when, for instance, we are supposing that, although in fact the parity of the number of hairs on Tim Williamson's head at the turn of 2010 was unknown, still in certain other circumstances (where the number of his hairs does not change) the actual parity might have been known, we are not entering in our imagination into a delusional world where the opinion is that it was known in the actual world what the parity was. The world we are entering into is not a world where V(Kap, w) = 1, allowing us to acknowledge, still, that the parity is unknown in the actual world, i.e., V(Kap, w) = 0. Instead we are entering into a world where V(Kwp, w) = 1, i.e., where the parity *in that world* is known, that parity being the same as it was in the actual world due to the specification that the number of Williamson's head hairs does not change in the supposed other circumstances.

So the Verificationist supposition is not in trouble on the present score: formalising the matter in terms of a bare 'K' without relativisation to a world was simply not discriminating enough. But that means that a parameter for the world must be inserted into the object language, as in the first place of the formal valuation expressions immediately above, while such a world parameter standardly only occurs in the meta-language where the truth evaluation is taking place, i.e., only in the second place in such formal valuation expressions. Hence it is best to dispense with the meta-linguistic semantics, and write 'it is true in world i that p' as the operator, 'Tip', where (i)(Ti¬p ≡ ¬Tip) and Tap ≡ p. We can then represent 'it is possible that p is known' as '(∃i)Kip', as in the previous formal remarks, and so have, in the case above, that Tap and that Ta¬Kap, while Twp and TwKwp, and still that Tw¬Kap.

The flight to a meta-linguistic modal semantics ultimately derives from Tarski's difficulties with the Liar Paradox. But

I have shown in a number of publications that the same difficulties do not arise with operator truth (see, e.g., 2010: 'What Priest (amongst many others) has been missing' *Ratio* XXIII.2, 184–198). Of course, in doing so I am just amplifying what Arthur Prior said in chapter 7 of his *Objects of Thought* (Clarendon Press, Oxford, 1971).

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News

Logica, 18–22 June

Logica 2012 was the 26th event in the series of conferences annually held in the Czech Republic. This symposium is organized by the Department of Logic in the Institute of Philosophy of the Czech Academy of Sciences. Logica 2012 took place at Hejnice Monastery (North Bohemia) from 18th to 22nd June. As usually, the contributions (4 invited plus 27 contributed talks) were devoted to various branches of logic. Invited speakers were Sergei Artemov, Warren Goldfarb, David Makinson and Barbara Partee.

Several papers were focused on Wittgenstein and his view of logic. Warren Goldfarb explored what Wittgenstein sought to put in the place of the criticized Frege-Russell construction of number. Timm Lampert claimed in his remarkable talk that in the framework of a Wittgensteinian alternative to mathematical logic (called "New Logic") Church's theorem does not hold. Lampert sketched a new approach to decidability of first order logic. Victor Rodych addressed Gödel's incompleteness theorems from the perspective of Wittgenstein's philosophy of mathematics.

Among historically oriented lectures we should mention especially Barbara Partee's talk on the history of formal semantics presented as interdisciplinary field closely related to linguistics, logic, philosophy and some other disciplines.

The concept of truth is among those topics which are regularly discussed at Logica symposia. Theodora Achourioti presented a paper concerned with modelling the word "true" as it occurs in natural language. She argued that this word is better captured as an operator rather than a predicate. Ole Hjortland compared different revisionist formal theories of truth. Sergei Artemov gave a talk on the Brouwer-Heyting-Kolmogorov (BHK) semantics that identifies truth with provability. Artemov presented a formalization of the first-order BHK semantics based on the so called first-order logic of proofs.

Among other subjects often debated at Logica can be included also paraconsistent, substructural, and especially relevance logics. This year, for example, David Makinson explored possible ways in which relevance logic can be understood as an extension of classical logic. Michael Dunn constructed a formal framework that enables us to explain why contradictory information is often better than no information. Igor Sedlár worked out a philosophical interpretation of the ternary relation which occurs in the semantics of substructural logics.

To illustrate the variety of topics addressed at Logica 2012, we will shortly mention some other talks. Christian Fermüller explored formal rationality principles in logical dialogue games. Three papers were concerned with the logic of questions (Chris Fox, Pawel Lupowski and Michal Peliš in a joint paper with Ondrej Majer). Libor Běhounek spoke about fuzzy plurivaluations and Petr Švarný focused on some semantical issues of temporal branching structures.

Selected papers from Logica 2012 will be published in *The Logica Yearbook 2012* (College Publications).

For many years Logica has been sponsored by the Czech brewery Bernard.

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Rationality Frameworks for Conditionals, 17 August

Conditionals are one of the central themes of the Priority Program 1516 *New frameworks of rationality*, which is funded by the German Research Foundation. The guiding questions are of formal nature (what is rational reasoning with conditionals?) and of empirical nature (is human conditional reasoning rational?). Niki Pfeifer organized the *Rationality frameworks for conditionals* workshop at the Munich Center for Mathematical Philosophy. This workshop aimed to bring together computer scientists, philosophers, and psychologists to shed new light on conditionals, from formal and empirical points of views. Six individual projects of the Priority Program 1516 participated in the workshop:

1. *Explanatory reasoning: Normative and empirical considerations* (project leader (PL): Hartmann/Sprenger)
2. *Rational reasoning with conditionals and probabilities: Logical foundations and empirical evaluation* (PL: Kern-Isberner/Pfeifer)
3. *Testing and extending a dual-source model of everyday conditional reasoning* (PL: Klauer/Beller)
4. *The role of meta-induction in human reasoning* (PL: Schurz)
5. *Reflexive rationality: A theory of dynamic choice* (PL: Spohn)
6. *Agents and causes: Reconciling competing theories of causal reasoning* (PL: Waldmann)

Additionally, Igor Douven—who is collaborating with project 2—was invited as external speaker.

This workshop was generously supported by the *Munich Center for Mathematical Philosophy* (more than 70% of the travel and hotel costs, as well as lunch and dinner on the workshop day; Alexander von Humboldt Foundation). The coordination project of the Priority Program 1516 (German Research Foundation), which is responsible to support collaborations among the projects, contributed 30% of the travel and hotel costs.

In the workshop's opening talk Niki Pfeifer gave an overview of the themes of *Rationality frameworks for conditionals*.

Gabriele Kern-Isberner held the tutorial *Understanding conditionals through conditional structures*. The theory of conditional structures extends classical logic in significant respects. Conditionals are interpreted as (trivalent) conditional events and the notions of verification and falsification are introduced. Moreover, a constructive schema is elaborated to find adequate models for inductive reasoning. Conditional structures allow for making complex interactions between various conditionals

explicit and technically manageable. Kern-Isberner illustrated her approach by several examples and discussed how conditional structures can be linked to probability theory and Spohn's ranking functions.

Björn Meder presented joint work with Michael Waldmann and York Hagmayer on *causal reasoning with the "do-operator"*. The difference between merely observing and manipulating states of causal variables is one of the basic intuitions in Pearl's rationality framework for causal inference. The "do-operator" formalizes the manipulation of the states of causal variables within Bayesian networks. Meder presented empirical data which support the psychological reality of the distinction between observation and manipulation in causal inference.

The talk by Paul Thorn (joint work with Gerhard Schurz) *Reward versus risk in uncertain inference* presented a computer simulation study of central probability-logical reasoning systems that deal with "high"-probability conditionals. Specifically, the systems O, P, Z, and QC were evaluated by comparing the respective performances w.r.t. the ability of drawing true and informative conclusions and dealing with the risk of drawing false and non-informative conclusions. The simulation study revealed that System Z provides the best balance between safety and inferential power.

Henrik Singmann gave the talk *Disentangling suppression effects with the dual-source model of probabilistic conditional reasoning* (joint work with Sieghard Beller and Christoph Klauer). The suppression effect denotes a class of empirical data that show that the endorsement rate of conditional argument forms can be raised or lowered by additional premises, i.e., that people reason nonmonotonically. The dual-source model of probabilistic conditional reasoning integrates formal properties of argument forms and background knowledge as key parameters to model human conditional reasoning. Singmann presented data that show dissociations for different suppression effects, which are explained within the dual-source model.

In his talk *Ten ways for conditionals to express conditional belief* Wolfgang Spohn adopted an expressivist strategy to investigate conditionals. He explained how ranking theory helps to disentangle at least ten distinct ways how conditionals express conditional belief. The Ramsey test is only one of those ten ways. Other ways include different kinds of relevance and a "circumstances are such that" reading of conditionals. The latter is relevant for expressing causal relations and thus counterfactuals, which usually have a causal reading. Spohn concluded his talk by discussing truth conditions in the proposed rationality framework for conditionals.

Stephan Hartmann (joint work with Soroush Rafiee Rad) gave the talk *Updating on conditionals = Kullback-Leibler + causal structure*. The idea that learning conditionals should minimize the Kullback-Leibler divergence between the prior and posterior probability distributions has been criticized in the literature. Hartmann proposed to extend this idea by considering the causal structures to obtain intuitively appropriate posterior distributions. He illustrated his approach by formalizing paradigm examples from the learning conditionals literature.

Igor Douven gave the talk *Conditionals and evidential support*. In his theory of evidential support, the acceptability of indicative/concessive conditionals is defined by (1) corresponding high conditional probabilities and (2) the impact of positive/negative relevance of the antecedent on the respective conditionals. Douven presented an experiment which supports the psychological plausibility of both conditions. Closure conditions for the acceptability of conditionals were discussed as avenues for future formal and empirical research.

Program, abstracts, slides and handouts are available at the workshop website.

Niki Pfeifer
Munich Center for Mathematical Philosophy, LMU Munich

Frontiers of Rationality and Decision, 29–31 August

What better way to end the Dutch rainy summer of 2012 than with a nice indoor conference? Fortunately, such an occasion was provided by the philosophy department of the University of Groningen.

The fifth and (unfortunately) final meeting of the Rationality and Decision (R&D) Network (with preceding meetings in Groningen, Leuven, London and Munich) had as a theme the Frontiers of R&D. In practice this meant that there was much room for new ideas and work in progress. And with over thirty talks in two and a half days one is bound to pick up some inspiration along the way.

The conference was characterized by its setup with five main themes to each of which three presentations and an extensive discussion session were devoted. The session on formal epistemology started with the invited lecture by Branden Fitelson who talked about coherence requirements for belief sets. While his investigation on avoiding the well-known paradoxes focused on the synchronic account of logics for belief, Johan van Benthem and Eric Pacuit were more concerned with the dynamics of beliefs. Especially, Eric proposed that this approach should precede the static one even for understanding a belief state at a single time-slice, for the history leading up to this point may be important. Another issue in the discussion was if a logic of belief should be built on a theory of credences or whether it should be the other way around.

Kevin Zollman opened the session on social epistemology with a presentation on how a veritistic and system-oriented approach can help to gain insight on the classical problem of testimony. The computer simulations he presented provide philosophically important results on the performance of different strategies for believing testimonies. In contrast to the all-or-nothing acceptance of testimonies in Kevin's models, Luc Bovens presented work on a suggestion for coming up with degrees of acceptance for expert predictions by fixing a reliability parameter. Rory Smead, on the other hand, gave a presentation on the evolution of simple trial and error learning behavior of multiple agents in a game-theoretic setting.

The interdisciplinary aspects of R&D came more in focus during the session on the psychology of reasoning. Katya Tentori presented experimental research that indicates that people are more accurate in making inductive inferences when they concern evidential impact on hypotheses rather than probabilistic credibilities of hypotheses. This is taken to suggest that theories on evidential support may be more successful as normative theories than traditional probabilistic approaches to assessing a hypothesis' credibility. The tension between normative and descriptive theories for rationality was further discussed by Annika Wallin. Inspired by the recent results in the psychology of reasoning, Catarina Dutilh-Novaes presented an approach to 'reasoning biases' based on non-monotonic (defeasible) logics.

During the session on decision theory, Jeff Helzner presented a revisionary approach to the foundations of decision theory with a special emphasis on optimization demands of rationality. In a similar revisionary spirit, Richard Bradley discussed the possibility for extending standard Bayesianism to cover decision making of bounded agents, e.g., agents not fully aware of all relevant prospects. Closing this session, Conrad Heilmann talked about the scope and limits of the discounting approach to weighing preferences, juxtaposing it with the probability approach. Several difficulties have been raised as to how preferences changing over time should be evaluated.

While models of learning are most fluent in game theory, Simon Huttegger, in the session on formal ethics, discussed the question of whether similar models can have socially desirable outcomes when appropriate learning procedures are assumed. For example, whether strategies which require cooperation can come out rather than risk aversing strategies. Martin van Hees presented a theorem which purports to show that strict libertarianism is inconsistent. On the more metaphysical level was Wlodek Rabinowicz's talk presenting a framework for compatibilism on the issue of free will. The crux of the framework is that while it retains the possibility for an agent to act otherwise it also implies the impossibility of freely acting otherwise.

Besides the five sessions there were also many additional contributed talks. Although it would be too much to mention all of them, some personal favorites are worth consideration. Tjerk Gauderis presented the idea that some discrepancies in the theory of belief may stem from disregarding the idea that two doxastic attitudes may be discerned. Exemplifying the differences then allows one to draw a sharper distinction between, e.g., the use of 'belief' in modal models and Bayesian models. Toby Handfield presented compelling arguments against prospectivism and, more generally, the status of completions of preferences in decision theory. Hanti Lin asked how traditional epistemology contributes to rational decisions. To grapple with this issue, he proposed a formal qualitative approach to decision theory in which the primary role is given to propositional belief rather than probabilistic belief.

In sum, the Frontiers of R&D conference provided the opportunity to compare various formal and informal approaches to rationality and decision, and to see how normative and descriptive theories approximate towards 'reflective equilibrium'. And last but not least, it gave the flavor of upcoming shifts in formal epistemology and decision theory, in particular, shifts towards qualitative, bounded agent- and system-oriented approaches to belief and decision.

Ronnie Hermens
Patryk Dziurosz-Serafinowicz
Philosophy, University of Groningen

Evidence and Causality in the Sciences, 5–7 September

Evidence and Causality in the Sciences (ECitS) was the 7th event in the Causality in the Sciences (CitS) conference series and was hosted by the Centre for Reasoning at the University of Kent in Canterbury. The aim of the conference was to examine the relation between causality and evidence by addressing questions such as *what is evidence? and how does it contribute to causal knowledge?*

Plenary speakers were Atocha Aliseda, Iain Chalmers, Mathias Frisch, David Lagnado, and Sandra Mitchell. Aliseda gave a talk on *Abduction and Evidence in Medical Diagnosis* and maintained, among other things, that an argument for (against) an hypothesis is *infused* with confirming (falsifying) evidence. Chalmers gave an account of the events which led him to recognise that "do-gooders" sometimes do more harm than good and then gave his account of what kind of research evidence ought to inform health policy when *Trying to do more good than harm*. Frisch gave a talk on *Physics and the Human Face of Causation* arguing that, *contra* neo-Russellians, causal notions play no less of an important role in physics than they do in other sciences. Lagnado drew some morals concerning the psychology of evidential reasoning by paying close attention to a particular legal case. Mitchell outlined some problems for the standard methods of eliciting causal knowledge from experiment and observation that result from the *robustness* (i.e., the property that allows a system to maintain its functions against internal and external perturbations) and context sensitivity of causation in complex biological systems.

Further talks on day one were given by Catherine Laurent (*Evidence-aware policies, causality and plurality of science*), Elena Popa (*Causality, Evidence and Intervention in Conceptual Development*), Sean Muller (*External validity, causal interaction and randomised trials*), Jaakko Kuorikoski (*Mechanism-based extrapolation: the case of neuroscience of addiction*), and Samantha Kleinberg (*Quantifying the Impact of Rare Causes*). There was also a poster presentation session with contributions from Ciprian Jeler (*Causal partitioning and causal status in multi-level natural selection*), Sara Matera (*Evidence and causality in climate change debate*), Horia Tarnovanu (*Causal evidence for moral assessment*), and Ramona Bongelli, Carla Canestrari, Ilaria Riccioni, Andrzej Zuczkowski, Cinzia Buldorini, and Ricardo Pietrobon (*Evidentiality and Epistemicity in a Corpus of Scientific Biomedical Papers from the British Medical Journal*).

Day two featured talks by Benjamin Hawkins and Justin Parkhurst (*Evidence and Health Policy: the conceptual, political and institutional dynamics of evidence informed policy making*), Roger Kerry (*Causal ontology and evidence-based practice*), Patrick McGivern (*Evidence and inter-level inference*), Andrew Turner (*How should evidence-based medicine's hierarchies be interpreted?*), Barbara Osimani (*Hunting side effects and explaining them: should we reverse evidence hierarchies upside down?*), Adam La Caze (*When randomized trials?*), Margaret MacDougall (*Assessing the integrity of clinical data: when is causality too good to be true?*), and Mike Joffe (*Evidence and causation in biology and economics*).

Day two included also an Arts and Humanities Research Council symposium on the hierarchy of evidence featuring Mauricio Barreto, Brendan Clarke, Jeremy Howick, Mike Kelly, Elseljin Kingma, Jacob Stegenga, and Kurt Straif. Each participant was given an opportunity to present their theoretical and practical perspective on various issues relating to the relationship between evidence-based medicine, evidence of mechanisms, and causality, before the topic was then opened up to discussion between participants and audience members.

Day three featured talks by Dieneke Hubbeling (*Predicting effects of interventions in psychiatry*), Chris Miller (*Causation in personal injury law: the case for a probabilistic approach*), Katie Steele (*Crime, punishment, and 'specific' evidence*), J.A. Coster van Voorhoot (*What causes legal evidence and what does legal evidence cause?*), Nancy Cartwright (*If*

you aren't doing arguments, you aren't doing evidence), Phil Dawid and Monica Musio (*From statistical evidence to evidence of causality*), Mauricio Suarez (*The contextual character of causal evidence*), and Wolfgang Pietsch (*The structure of causal evidence in deterministic settings*).

More information regarding particular talks is available in the form of their abstracts (available here) or presentation slides (available here).

The conference was organized by Phyllis Illari and Federica Russo and received financial support from the UK AHRC, the Mind Association, the British Society for the Philosophy of Science, and the University of Kent. A special issue on 'Evidence and Causality in the Sciences' has been secured with *Topoi*. For more information see the conference website. The next events in the CitS conference series will be 'Causality and Experimentation in the Sciences' (CaEitS) at the University of Paris IV, France, 1-3 July 2013, and 'Causality and Complexity in the Sciences' (CaCitS) at the University of Cologne, Germany, 2014.

Michael Wilde
Philosophy, University of Kent

UK Experimental Philosophy Group, 8–9 September

> 'This workshop has been an excellent opportunity to learn about current developments in experimental philosophy and discuss our own work with interdisciplinary-minded philosophers and psychologists in an atmosphere of intellectual openness and curiosity. It is one of the prime occasions to do so within Europe and consistently over the years has attracted outstanding speakers from both fields and from both sides of the Atlantic.' (Feedback from an anonymous workshop delegate, taken from a comments slip.)

The workshop this year was on *Intuitions, Experiments and Philosophy*, and was attended by academics and students from the UK, other European countries, the US and Asia. Thanks to the generosity of the Mind Association and the University of Nottingham, we were able to invite three keynote speakers: Jessica Brown (St Andrews), Shaun Nichols (Arizona), and Simone Schnall (Cambridge).

Simone Schnall gave a talk on 'Embodied Morality', presenting empirical evidence for the claims that moral judgements are influenced by emotional responses to irrelevant factors in the environment and that pro-social behaviour can be increased by the uplifting effects of inspirational stories.

Jessica Brown talked about 'X-phi and Epistemic Norms', arguing that the different concepts response fails to address the concerns of experimentalists about the normative project of epistemology.

Shaun Nichols, in 'Two Senses of Self', reported on his recent experimental work, manipulating participants' views of personal identity, showing that there are two distinct conceptions of the self, only one of which is tied to psychological properties.

Parallel sessions were held on Intuitions, Action and Intent, Experimental Ethics and Compatibilism / Incompatibilism. These talks (papers by Goodman; Pedersen; Andow; Pavarini; Bunge *et al.*; Nanay; Bruder & Tanyi; Hannikainen, Cushman & Miller; Cova; Chan & Deutsch), covered such diverse topics as the explosion of 'intuition'; the overdemandingness of consequentialism; excuse-giving and the principle of alternate possibilities; agent and patient foci; mapping the concept of intentionality; the behaviour of anarchic hands; and attributions of divine intent; amongst others.

This year we also had a lively poster presentation session, with a range of methodological approaches represented—qualitative, quantitative and non-experimental, and topics that included colour veridicality, inferential conditionals (across three languages), meta-ethics, free will, and the role of intuitions in epistemological theorising.

It was good to welcome researchers to our UK group from a number of other countries (US; Germany; Brazil; Japan; Belgium; Portugal; Netherlands; China; Switzerland), as many of us were able to gain valuable insights into cultural differences, particularly in the area of free will, as well as opportunities to network with people we might otherwise not have encountered. For some it was their first trip to the UK.

All delegates were invited to an informal open meeting to give feedback and discuss future events, and the weekend ended with drinks at the foot of Castle Rock in the September sunshine, discussing our plans, experimental philosophy more generally, whether people have hands (animalism), and whether a stroll at 2.00 am is an appropriate time to listen to music.

Bryony Pierce
Philosophy, Bristol

Salzburg Conference for Young Analytic Philosophy, 13–15 September

On 13–15 September, the University of Salzburg hosted the third SOPhiA conference, organised by Albert J.J. Anglberger (MCMP, LMU Munich), Christian J. Feldbacher (University of Innsbruck), Alexander Gebharter (HH University Düsseldorf), Laurenz Hudetz (University of Salzburg) and Christine Schurz (University of Salzburg). The conference aims to unite young researchers from all fields of philosophy, without any restriction of topic, sharing the same methodological approach of analytic philosophy.

The conference included two affiliated symposia, one on Causality and one on Analytic Philosophy of Religion, two plenary talks concerning the topic of Bayesianism and 54 talks within a vast array of topics including Ethics, Logic, Metaphysics and Philosophy of Mind, given in English and German. In addition to Austria and Germany, the conference attracted once again international participants coming from Canada, France, Italy, Poland, Switzerland, the Netherlands, the United Kingdom and the USA. Due to a noticeable increase in the number of submissions, many of them had to be rejected. The contributed talks were therefore of high quality with insightful discussions.

The opening lecture was given by Stephan Hartmann (Center for Logic and Philosophy of Science, Tilburg University) who presented joint work with Soroush Rafiee Rad (Tilburg University) titled "Updating on Conditionals = Kullback-Leibler + Causal Structure". It explores in a Bayesian perspective how agents should change their belief in the light of new indicative conditionals. Despite many counterexamples about the probability of conditionals in the literature, the proposed procedure works if the causal structure of the problem is taken into ac-

count.

The second keynote speaker, Charlotte Werndl, presented her work on "A Bayesian Perspective on Confirmation and Calibration Illustrated by Climate Science". In her talk, she discussed the problem of "double counting" in science, which is especially present in the climate science literature. The problem is a concern often expressed by scientists with the fact that the same data are often used for the calibration and for the confirmation of the models. She argues that, even though double counting can be a failure, it remains legitimate: there is no need to use separate data.

The affiliated symposium on Analytic Philosophy of Religion was opened by Paul Weingartner's (University of Salzburg) talk on the relation between religious belief and scientific belief. He argued that, although both differ in the source of belief and the degree of awareness of the own possible faultiness, both share the same logical principles and metaprinciples of belief. Adam Green (University of Innsbruck) then talked about "Ritual Spaces and the Extended Mind". He analysed the way the extranatural is treated in different social groups depending on the society's focus on religion or magic. Furthermore he examined the question of how the otherworldly could be experienced in worldly ritual spaces, e.g., churches. The symposium closed with Patrick Todd's (University of Innsbruck, Munich School of Philosophy) "Why Your Modal Analysis Won't Work". He argued for a usage of the distinction between intrinsic and extrinsic properties as a tool to analyse first-order metaphysical accounts.

The affiliated symposium on causality presented talks defending the importance of this concept. Alexander Gebharter presented joint work with Gerhard Schurz (HH University Düsseldorf), "Causality is not superfluous", showing that you need to assume directed causal relations in order to explain screening off and linking-up. Andreas Hüttemann (University of Cologne) then presented "A disposition-based process-theory of causation". He defines causation as a disturbing factor modifying the inertial behaviour of a system. Finally, Michael Grodzicki (University of Salzburg) discussed the question "Does physics provide evidence of a causal structure of nature?". He argued that the knowledge provided by physics does not fulfil our desiderata about causation.

Karine Fradet
Philosophy, Université de Montréal
Seraphin A. Frimmer
Munich Center for Mathematical Philosophy, LMU Munich

Calls for Papers

Dummett's Legacy: special issue of *teorema*, deadline 15 October.

Science vs. Society? Social epistemology meets the philosophy of the humanities: special issue of *Foundations of Science*, deadline 31 October.

Evidence and Causality in the Sciences: special issue of *Topoi*, deadline 1 November.

Machine Learning for Science and Society: special issue of *Machine Learning*, deadline 16 November.

Grammatical Inference: special issue of *Machine Learning*, deadline 1 December.

What's Hot in ...

Logic and Rational Interaction

Our partner website LORIweb, the website for Logic and Rational Interaction, has received a major overhaul, both on the aesthetic and the functional side. The site now sports a new, fresh theme which aids both overview and navigation. On the functional side, the cleaner user interface definitely makes the site much more readable. But the most prominent feature is the new calendar that has been implemented. It is shown in a big window, which combined with the various view modes (posterboard, agenda, month, etc.) gives a great overview of upcoming events. Further, these can be filtered by category, so when looking specifically for upcoming CfP or job announcements, these will be easy to find.

Equally important, new events will be easy to remember, for the calendar also features one-click buttons for adding a single event to your personal calendar! Overall, we think that the updated site is a big improvement.

LORIweb is always happy to publish new content on topics relevant to the area of Logic and Rational Interaction—including announcements about new publications and recent or upcoming events. Please submit such news items to our web manager Rasmus K. Rendsvig.

Dominik Klein
TiLPS, Tilburg University

Uncertain Reasoning

On 12 June 2012 Università Bocconi in Milan hosted a public event focussed on uncertainty in economics. The meeting was occasioned by Massimo Marinacci's newly established Axa-Bocconi Chair in Risk, which he inaugurated by delivering a lecture titled *The beauty of uncertainty*. This *lectio inauguralis* provides a very accessible overview of some of the key topics in the economic modelling of uncertainty and it is freely available as a video podcast from the event's webpage along with two other lectures, one by Itzhak Gilboa, and one by Nobel Laureate Thomas Sargent.

In less than twenty minutes, Marinacci makes a clear case for the topicality of uncertainty and how its modelling is fundamental in applications as diverse as finance and climate change, in addition to being a most rewarding intellectual enterprise. By doing so he touches on a number of points of great foundational interest, including the "objective vs subjective" and "aleatory vs epistemic" contrasts which occupy an increasingly central stage in decision theory under uncertainty. I have briefly discussed some aspects of this in the November and December 2011 issues of *The Reasoner*.

It might be of interest to the wider uncertain reasoning community to note that Marinacci's chair is part of a larger funding programme, the details of which are available here. With this scheme Axa sets out to finance "basic research contributing to understand and prevent risks" in the areas of environmental risks, life risks and socio-economic risks. Currently the scheme includes the following typologies: "chairs", "calls for projects", "post-doctoral fellowships" and "doctoral fellowships".

Hykel Hosni
Scuola Normale Superiore, Pisa
CPNSS, LSE

Events

October

Departing from Sainsbury: University of Barcelona, 1–2 October.
PSS: Workshop on Inferentialism in the Philosophy of Language, Mind, and Action, Madrid, 3–5 October.
Computational Logic: 70th Birthday Celebration Honoring Melvin Fitting, CUNY, New York, 4–5 October.
SMPS: 6th International Conference on Soft Methods in Probability and Statistics, Konstanz, 4–6 October.
FPMW: 4th French PhilMath Workshop, Collège de France, Paris, 4–6 October.
Philosophy of Scientific Experimentation: University of Colorado, Boulder, 5–6 October.
The Evolution of Argumentation: University of Windsor, Canada, 5–6 October.
TiC2: Turing in Context II: Historical and Contemporary Research in Logic, Computing Machinery and AI, Brussels, 10–12 October.
Causal Inference: Concepts and Methods in Causal Inference, Swansea, Wales, 11–12 October.
Formal Ethics: Munich, 11–13 October.
CoMiC: Graduate Conference in Philosophy of Mind and Cognitive Science, Edinburgh, 12–13 October.
The Roles Of Experience in A Priori Knowledge: University of Cologne, Germany, 13–14 October.
PhiloSTEM: Midwest Workshop in Philosophy of Science, Technology, Engineering, and Mathematics, Indiana University-Purdue University, Fort Wayne, IN, 19–20 October.
Numbers & Truth: The Philosophy and Mathematics of Arithmetic and Truth, University of Gothenburg, Sweden, 19–21 October.
ATAI: Advanced Topics in Artificial Intelligence, Bali, Indonesia, 22–23 October.
ECREA: 4th European Communication Conference, Istanbul, Turkey, 24–27 October.
IDA: 11th International Symposium on Intelligent Data Analysis, Helsinki, Finland, 25–27 October.
What If?: On the Meaning, Scientific Relevance, and Epistemology of Counterfactual Claims and Thought Experiments, Konstanz, 25–27 October.
ISELL: International Symposium Of Epistemology, Logic And Language, Lisbon, Portugal, 29–30 October.

November

MAgg: AAAI Fall Symposium on Machine Aggregation of Human Judgment, Arlington, VA, USA, 2–4 November.
ACML: 4th Asian Conference on Machine Learning, Singapore, 4–6 November.
BotB: Bayes on the Beach, Queensland, Australia, 6–8 November.
Cultures of Mathematics and Logic: Guangzhou, China, 9–12 November.
URSW: Uncertainty Reasoning for the Semantic Web, Boston, USA, 11–12 November.
Arché/CSMN: Graduate Conference, University of Oslo, Norway, 17–18 November.
SILFS: Italian Society of Logic and Philosophy of Science Conference, University of Milan-Bicocca, 20–21 November.
Modal Logic in the Middle Ages: University of St Andrews, 22–23 November.
CSE: Intuition and Experimental Epistemology, University of Sherbrooke, Quebec, 23–24 November.
CogSc: ILCLI International Workshop on Cognitive Science, Donostia, San Sebastian, 28–30 November.
René Descartes Lectures: Tilburg Center for Logic and Philosophy of Science, 28–30 November.
ABNMS: 4th Annual Conference of the Australasian Bayesian Network Modelling Society, University of Wollongong, 28–30 November.
Intentions: Philosophical and Empirical Issues, Rome, Italy, 29–30 November.
LEMMing: Graduate Conference, Cologne, Germany, 29 November–1 December.
Weighing Reasons: Princeton University, 30 November–1 December.

December

The Analysis of Theoretical Terms: Munich, Germany, 1 December.
LENLS 9: Logic and Engineering of Natural Language Semantics, Miyazaki, Japan, 1–3 December.
NIPS: Neural Information Processing Systems Conference and Workshops, Nevada, USA, 3–8 December.
MM2012: Models and Mechanisms, TiLPS, Tilburg, Netherlands, 6–7 December.
K-NMTD: Konstanz-Naples Model Theory Days, University of Konstanz, Germany, 6–8 December.
CPH-LU: 5th Copenhagen Lund Workshop on Social Epistemology, Lund University, 7 December.
Bayesian Optimization and Decision Making: Nevada, USA, 7 December.
MLINI: 2nd Workshop on Machine Learning and Interpretation in NeuroImaging, Nevada, USA, 7–8 December.
Probabilistic Programming: Foundations and Application, Nevada, USA, 7–8 December.
25 Years in Contradiction: University of Glasgow, 7–9 December.
AGI12: 5th Artificial General Intelligence Conference, University of Oxford, 8–11 December.
AGI-Impacts: 1st Conference on Impacts and Risks of Artificial General Intelligence, University of Oxford, 10–11 December.
ICMLA: 11th International Conference on Machine Learning and Applications, Florida, USA, 12–15 December.
EGaCRiS: Conference on Epistemic Groups and Collaborative Research in Science, Nancy, France, 17–19 December.
International Triennial Calcutta Symposium on Probability and Statistics: Kolkata, West Bengal, India, 27–30 December.

January

SODA: ACM-SIAM Symposium on Discrete Algorithms, New Orleans, Louisiana USA, 6–8 January.
LFCS: Symposium on Logical Foundations of Computer Science, San Diego, California, USA, 6–8 January.
TARK: 14th Conference on Theoretical Aspects of Rationality and Knowledge, Chennai, India, 7–9 January.
ICLA: 5th Indian Conference on Logic and its Applications, Chennai, India, 10–12 January.

CGCotPoM&L: 6th Annual Cambridge Graduate Conference on the Philosophy of Mathematics and Logic, Cambridge University, 19–20 January.

Courses and 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: 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.
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 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 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: 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.

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.

Jobs and Studentships

Jobs

Post-doc Position: on Data Analysis for Knowledge Discovery and Decision Making, Department of Electrical, Computer, and Systems Engineering at Rensselaer Polytechnic Institute (RPI), Troy, NY, until filled.
Associate Professor or Professor: in Logic and the Philosophy of Science, University of Calgary, until filled.
Post-doc Position: in Probabilistic Reasoning, Vienna University of Technology, Austria, until filled.
Post-doc Position: in cognitive psychology and/or computational modelling at the Center of Experimental Psychology and Cognitive Science, Justus Liebig University Giessen, until filled.
Post-doc Position: in Graphical Models / Structural Learning, Uncertainty Reasoning Laboratory, Queens College / City University of New York, until filled.
Post-doc Position: in Artificial Intelligence / Biomedical Informatics, Stevens Institute of Technology, until filled.
Post-doc Position: Berlin School of Mind and Brain and the Philosophical Institute of Humboldt-Universität zu Berlin, deadline 5 October.
Post-doc Position: in Philosophy on the AHRC-funded "Extended Knowledge" project, University of Edinburgh, deadline 12 October.
Assistant Professor: AOS: Logic, Stanford University, deadline 1 November.
Assistant Professor: AOS: Philosophical or Mathematical Logic or Philosophy of Mathematics, Kansas State University, Manhattan, Kansas, USA , deadline 2 November.

Studentships

PhD Position: on Data Analysis for Knowledge Discovery and Decision Making, Department of Electrical, Computer, and Systems Engineering at Rensselaer Polytechnic Institute (RPI), Troy, NY, until filled.

PhD Positions: in the Statistics & Probability group, Durham University, until filled.
PhD Positions: in Cognitive Neuroscience and Philosophy of Mind, San Raffaele University Milan / IUSS Pavia, deadline 1 October.
PhD Position: in Logic and Theoretical Philosophy, working on "The Logical Structure of Correlated Information Change" project, ILLC, University of Amsterdam, deadline 8 October.
PhD Positions: in Statistics, Department of Statistical Sciences, University of Padova, Italy, deadline 8 October.
PhD Position: on the project "Knowledge Representation and Inference Based on Type-2 Fuzzy Sets and Systems," School of Computer Science, University of Nottingham, deadline 30 December.