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EDITORIAL

I am very pleased to return as guest editor of *The Reasoner*. It slightly changes my duties as features' editor of our gazette and it allows me to share with our reasoners some thoughts that I believe are important to us (academic and non academic reasoners).

This month I want to talk about 'interdisciplinarity'. In this case, the best person to talk to is no doubt Robert Frodeman. Bob is in fact Director of the Center for the Study of Interdisciplinarity and one of the editors of The Oxford Handbook of Interdisciplinarity (R. Frodeman, J. Thompson, and C. Mitcham, eds, 2010: OUP).

Out of curiosity, I googled 'interdisciplinarity'. The first hit is, of course, the Wikipedia entry, where I read:

> Interdisciplinarity involves the combining of two or more academic fields into one single discipline. An interdisciplinary field crosses traditional boundaries between academic disciplines or schools of thought, as new needs and professions have emerged.

I went on reading . . . it looked all nice and clear, at least pretty much. But then I had a look at the Talk page. And there things got less clear. Going through the comments, suggestions, and discussions on changes, it emerged that the borders between 'interdisciplinarity', 'multidisciplinarity', 'transdisciplinarity', and 'crossdisciplinarity' are not so neat. You can read the definitions here, here, and here.

I must admit, I got confused. Consider my own research. I investigate causality (and related issues such as probability, evidence, and mechanisms) in the social, biomedical, and policy sciences. I used to think—and to claim—that my approach is interdisciplinary in that it aims to build bridges between philosophy and these sciences. In these sciences, there are methodological, epistemological, ontological issues that require philosophical investigation. Philosophical answers to such questions, in turn, will improve scientific practice and decision making. Good philosophy of science and technology must start from scientific practice in order to select the questions that have priority and relevance for science. I now wonder, is my research interdisciplinary (although I don't combine two disciplines into one), multidisciplinary (yet, there is some transfer of methodologies and cooperation), transdisciplinary (although I don't aim at creating a holistic approach), or crossdisciplinary (but I don't explain one discipline in terms of the other)?

Let me try a pragmatic approach. Suppose I want to submit a research project on, say, evidence and mechanisms in molecular epidemiology and public health, where would it fit? As an exercise, I tried to check the policy of some funding bodies in Europe. I started with those that I know best. My search is incomplete and if our reasoners have further information that may complement, correct, and in any way add to what follows, please send us a letter (letters are between 100 and 1000 words, to be emailed to features@thereasoner.org).

Consider the European Research Council. The 2012 Work Programme says (p. 8):

> Applications can be made in any field of research with particular emphasis on the frontiers of science, scholarship and engineering. In particular, proposals of an interdisciplinary nature which cross the boundaries be-

tween different fields of research, pioneering proposals addressing new and emerging fields of research or proposals introducing unconventional, innovative approaches and scientific inventions are encouraged.

If you search the whole document for 'interdisciplinary', there are three matches, but none explains what the ERC means. Still, we have the opportunity to submit an interdisciplinary research project (whatever it means) to the 'Interdisciplinary Panel'. However, we don't get much information about it. So in the end the question is whether it would be an advantage to send a project to such a panel, instead of sending to, say, the Humanities Panel hoping that referees will be sympathetic to the chosen topic and approach.

I also browsed the website of the AHRC (UK), the FNRS (French speaking Belgium), the NWO (the Netherlands), MICINN (Spain), and MIUR (Italy). I searched for 'interdisciplinary', but I didn't get much information about what it means. The FWO-Vlanderen has instead an interesting document that is meant to guide the researcher to understand whether or not their research suits the dedicated Interdisciplinary Panel. If I understand the document correctly, the border between disciplinary and interdisciplinary research is not in the way one, two, or more disciplines are combined or compared. Rather, the way of dealing with a given *research question* draws the border between disciplinarity and interdisciplinarity (nevertheless, questions of multidisciplinarity, crossdisciplinarity, and transdisciplinarity remain open). It is definitively a peculiar approach to interdisciplinary, worth examining.

Where does this leaves us? I suppose to make a good start we should ask the expert: it's now time to give the floor to our interviewee. Besides issues of interdisciplinarity, we also chatted about the role of philosophy in the times to come and about peer review.

I hope you will enjoy the interview with Bob. I certainly did.

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FEDERICA RUSSO
Center Leo Apostel, VUB &
Centre for Reasoning, Kent

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FEATURES

Interview with Robert Frodeman

Federica Russo: Thanks for accepting to be our interviewee for this month. Could you tell our readers a bit about your intellectual history, especially what brought you into philosophy and to interdisciplinarity issues more specifically?

Robert Frodeman: Two points stand out.

When I was 13 a friend gave me a copy of Thoreau's *Walden*. I loved the way Thoreau mixed genres—literature and philosophy, natural history and social commentary, all suffused by his distinctive voice. It was a shock, then, when I came to the university

and found that Thoreau was hardly taught (he fell between the cracks of the different disciplines). Moreover, I found that the subjects that I saw as flowing together were divided off from one another. This mystified me, and I wanted to understand how this came to be.

Second, at 19 I applied for a program called the *Grand Canyon Semester*. This was a 15 week long interdisciplinary exploration of the Colorado Plateau with 35 students and 5 professors. The program was wonderful—knowledge actually taken out into the world!—but it also raised a number of questions. In particular, I was struck by the absence of a philosophy class as part of the program. We had classes in a number of different disciplines—anthropology, ecology, political science, geology—and all were of great interest; but there was no organized, systematic reflection on how we were supposed to integrate these different bodies of knowledge, or relate this knowledge to practical problems out in the world. That is, there was no philosophical account of the inter- and transdisciplinarity themes of the program. This eventually became a problem in the nature of knowledge itself, a central theme in my work.

I was particularly struck by the idea that the Grand Canyon was simultaneously a scientific and philosophical event. I resolved to get degrees in philosophy and geology in order to give a complete experiential account of the Grand Canyon. This set my intellectual agenda for the next 20 years (eventually, a PhD in philosophy, and a MS in geology).

FR: Research-wise, this is the era of interdisciplinarity. But what does interdisciplinary mean, after all? Do you think that truly interdisciplinary projects are funded by various funding agencies or is it just a nice word not taken seriously enough? I was shocked some time ago when I heard a representative of public science agency saying that bio-informatics is not considered an interdisciplinary area any more!

RF: The term is over-used, and under-thought through. It's become a shibboleth.

I see the term as primarily announcing an absence, expressing our dissatisfaction with current (disciplinary) modes of knowledge production. It points to the need to reinvent both the theory and the institutional structures for knowledge production.

Unfortunately, the interdisciplinary project has gotten waylaid by discussions of methodology. It is as if, at a time when we have finally put to bed questions of whether there is a scientific method, we are now going to chase after the 'proper' interdisciplinary methodology. In part this is a reflection of the fact that many of the people concerned with interdisciplinarity have come from the social sciences and schools of education, where there is an obsession with method. But it's a distraction and a waste of time.

I see the core point of "interdisciplinarity" as being the creation of a new system of knowledge management for the 21st century, replacing the (disciplinary) system that was put in place at the end of the 19th century. A lot of the characteristics of this new system are already contained in discussions about Mode 2 knowledge—i.e., the increasing focus on context-driven, problem-focused research. But some of the more portentous implications of this are not often discussed.

For instance, if knowledge production in the future will largely be framed in terms of a conversation between knowledge producers and knowledge users, this implies that the infinite research project of modernity may be coming to an end. The users of knowledge, after all, are very busy people, and want from academics something that looks like an answer to their problems, rather than an infinite research project. This may be particularly true for the humanities, which I think were mistaken in ever becoming disciplined.

Of course, there are countervailing forces pushing for the creation of ever-new types of knowledge. Global capitalism enforces an imperative of constant innovation, and incessant technoscientific knowledge production is the engine for this. Nevertheless, I think we are approaching the end of the period where researchers in one or another discipline produce new knowledge willy-nilly.

As for bio-informatics, this is how it often works—interdisciplinary areas of research become disciplined, with their own standards, paradigms, conferences, and peer reviewed journals.

FR: I am interested in your views about the relations between environmental ethics, (philosophy of) technology, and philosophy of science. How do you think these disciplines ought to interact? Should they, in the first place?

RF: I have long argued that the two marginalized fields of environmental philosophy and the philosophy of technology should be seen as part of a common research project. We do damage of the natural world, and in some cases try to restore the natural world, through our use of technology.

Conversely, perhaps the core question within the philosophy of technology is whether there is any sense of nature or the natural left—or whether everything, including ourselves, is a 'standing reserve' to be manipulated however we like. You see this, for instance, in debates about geoengineering our way out of climate change. In fact, we have a book coming out on these questions next year with MIT, to be called something like *Environmental Ethics and the Question of Technology*.

There are also signs that the philosophy of science is finally moving beyond its internalist orientation, framing its questions increasingly in terms of technology and policy. Take for instance the recent creation of SPSP—the Society for the Philosophy of Science in Practice. I suspect that someday we will look with wonder at the fact that in the 20th century there were 25 philosophers of science for every philosopher of technology.

FR: These last years have been difficult ones world-wide. We all have a view about the consequences of the economic crisis on research and higher education. What is your own perception of what is going on? What is happening to philosophy and what should philosophers do to react to this situation?

RF: I see the current (and ongoing) financial crisis as a significant factor pushing us toward a post-disciplinary model of knowledge production. Knowledge institutions have been largely autonomous over the last 100 years; but today the pressures are increasingly toward accountability and the creation of an 'audit culture.' In England, of course, universities are looking at the REF, but this is a phenomenon that one sees in all advanced countries. In the US the process is developing differently because there are no national universities—universities are either private, or funded by individual states. But

this funding is coming to an end—in a number of states the state university system gets less than 10% of its budget from the state. And so the accountability moment is coming to US universities, too.

A lot of our thinking within our Center (the Center for the Study of Interdisciplinarity) is devoted to thinking about how philosophy can reposition itself within this new world order. We find it rather amazing that philosophers continue with arcane debates over e.g., the philosophy of language when there is such a pressing need for a philosophy of 21st century knowledge production.

FR: When we met in Denton last spring, I remember you mentioned several times the need for 'philosophical entrepreneurs'. I was (am!) literally intrigued by this idea. Could you explain to our readers what do you mean? What should a philosophical entrepreneur do in academia and/or outside?

RF: Adam Briggle and I have made this argument recently in the Chronicle of Higher Education. Philosophers need to become adept at working with scientists, engineers, and policy makers, drawing out the philosophical dimensions of the challenges they face. We call this 'field philosophy'. And since there is as of yet no clearly defined path for such field philosophy, it requires something of an entrepreneurial spirit to make it happen.

Field philosophy has two roles to play in addressing practical problems. First, it can provide an account of the generally philosophical (ethical, aesthetic, epistemological, ontological, metaphysical and theological) aspects of societal problems. Second, it can offer an overall narrative of the relations between the various disciplines (e.g., chemistry, geology, anthropology, public policy, economics) that offer insight into our problems. Such narratives can provide us with something that is sorely lacking today: a sense of the whole.

Field philosophy moves in a different direction than traditional applied philosophy. Whereas these approaches are top-down in orientation, beginning in theory and hoping to apply a theoretical construct to a problem, field philosophy is bottom-up, beginning with the needs of the audience and drawing out philosophical insights after the work is completed.

Practicing field philosophy also has epistemological consequences. For instance, it means to take seriously the temporal and financial constraints of our partners. Working with government or industry means that we must often seek to provide "good-enough" philosophizing—it often lacks some footnotes or a fully-thought through argument, but attempts to provide useful insights in a timely manner.

FR: Browsing the website of the Center for Interdisciplinarity, I found a page on the Philosophy of Peer Review. What kind of questions do you ask in this philosophical discipline? Is there also a normative dimension in this project, namely saying to public science agencies how peer review and evaluations in general ought to be done?

RF: Peer review is a fascinating pressure point within the system for the kinds of issues we are discussing here. Peer review is the governance mechanism of the academy, and the means for safeguarding academic autonomy. Today, however, peer review is being 'interdisciplined.'

Take the case of the peer review of grant proposals at federal agencies (which forms the bulk of our work on peer review). Scientific proposals used to be evaluated on

disciplinary criteria—biologists reviewing biology proposals in terms of the potential outcomes for the field of biology. Now, however, for agencies such as Research Councils of the UK, the US National Science Foundation, and the European Commission's Framework Programmes, proposals are also evaluated in terms of the potential 'broader impacts' of the research. We consult with the US NSF and the EC on how to balance the contrasting demands for intellectual merit and broader societal relevance in research projects. It is a volatile mix: opening disciplinary knowledge production to considerations of broader societal impact means that scientists, and knowledge producers in general, now are held accountable by society.

A Particularist Defence of Scientific Realism? Reply to Morganti

According to the so-called ultimate argument for scientific realism, truth is the best explanation of a scientific theory's predictive success. There is, however, a simple objection to this idea. From the fact that every theory is underdetermined by its evidence, it can be shown straightforwardly that truth cannot explain a theory's success, at all (see my paper in *Analysis* 71 (2011), 232–34). The argument's starting point—underdetermination—is a truism but realists underrate its relevance. The argument from underdetermination (UD) effectively blocks the ultimate argument.

Matteo Morganti has taken a critical look at UD (Truth and Success: Reply to Held, *The Reasoner* 5.7) and portrays it as a formal sleight of hand without significance for the debate on scientific realism. He objects that UD makes the explanatory task unreasonably general and so requires too much from the realist. Indeed, UD must presuppose the explanatory task to be fully general and otherwise cuts no ice against the realist. However, this generality can be defended and so the argument stands as before.

The task in question is to explain the predictive success of an arbitrary successful theory. Since what explains an arbitrary fact of some kind explains every such fact the task is to explain every theory's success. Now, if one is presented with one single proposal for an explanation (e.g., truth) it is natural to assume it to be a proposal for every theory. This natural assumption—call it generalism—is indeed tacitly made by UD and it is what I take Morganti to dispute. To wit, 'truth might... be taken to explain success in the sense that *in most* cases the success of a theory is explained by that theory's (partial) truth—which is obviously compatible with the assumption, for any particular successful theory, that it is false.' (Morganti, 107; his italics.) Here, the realist is recommended to drop generalism and adopt particularism, i.e., to assume that not all theories' successes must be explained in the same way. But this is implausible for two independent reasons:

(1) In disciplines like ethics or epistemology, particularism is promoted by those who think that generalism cannot handle all the relevant cases and hence fails. These particularists can happily admit that a general approach would be better if only it were feasible—which is just what they dispute. In the present context, particularist *realism* is suggested because generalist *realism* is threatened by UD. This is a far cry from the claim that all generalist proposals fail. Indeed, the main antirealist offers for explaining theory success (van Fraassen's empirical adequacy, Fine's surrealism, Stanford's predictive similarity) are fully general. So when proposing that not all successes have to

be explained in the same way the realist is confronted with the obvious reply that they perhaps don't have to but they can. If generality is a value in an explanation and the realist cannot, for the multitude of explanations now suggested, point out other values outweighing this one, then antirealist proposals are preferable for their generality alone.

(2) Given a specific theory, how should we judge whether to explain its success from its truth or from other sources? There simply is no criterion to tell one group from the other. Every theory, due to general underdetermination, may be as successful as it is and yet be false. So any successful theory you can think of, even a presently accepted and marvellously successful one, may be false. And so the particularist strategy allows maintaining that any one of our most important theories for all its success is downright false whence its success must be explained from sources other than truth. It is hard to see why a position embracing this consequence should be called a variant of scientific realism. Moreover, Morganti claims that the majority of theories *can* have their success explained by their truth. But without a criterion to tell one type of theory from the other what grounds this claim? Given only general underdetermination and examples of theories whose success, by the particularist's own lights, can be explained from sources other than truth, there is nothing to justify that most theories are unlike these examples.

Morganti seems to advocate not a particularism, but instead a 'statistical generalism' as follows. Truth is *in most cases* the correct explanation of success, hence it is reasonable to assume for an arbitrary successful theory that it is true, whence its success is explainable from its truth—despite the principled possibility that it is false. This way to read Morganti makes what I took to be his *claim* into the *presupposition* that for most successful theories truth is the correct explanation. This entails that most successful theories are true—such that for M (the set of successful theories) and arbitrary $N \in M$ there is only a minute probability that N is false. Assume that the minute probability kicks in: N is false. Whence to explain its success? There are three possibilities: (1) Assume that N, unlike most elements of M, is unexplainably successful. (2) Explain from a factor other than truth shared by all elements of M (generalism). (3) Explain from a factor other than truth not shared by all elements of M (particularism). (1) is out of the question because N is arbitrary, so the realist would incoherently claim an arbitrary theory's success as unexplainable and the success of all theories as explainable (an obvious premise of the ultimate argument). Similarly, (2) is implausible because the realist must argue that, for the false N, the factor is sufficient to explain success, while for true theories the same factor, still sufficient, is outrivaled by truth—without being able to substantiate what truth adds to a sufficient explanation by means of the factor. So, (3) is the option to take and it is correct to represent Morganti as a particularist.

Now for the presupposition that for most successful theories truth is the correct explanation. I have argued against the claim above. Taken as a mere presupposition, we certainly have no reason to accept it. UD disputes that truth is the correct explanation of any theory's success. A counterargument, designed to refute UD, cannot very well *presuppose* that in most cases UD is false.

In sum, Morganti indeed objects to my presupposed generalism. Given generalism and underdetermination the argument remains untouched. Moreover, since denying generalism is implausible, it also retains its force. This does not imply, of course, that scientific realism stands refuted—a philosophical doctrine of such scope is hardly

knocked over by a single argument—but it implies that the ultimate argument for it does not hold water.

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The Impossibility of Lucky Agents: A response to Gerald K. Harrison's *Free Will and Lucky Decisions*

Gerald K. Harrison's argument (*The Reasoner* 1.3) that free will is compatible with indeterminism appears to rest on one groundless assumption and one arbitrary conditional claim. These lead Harrison to the mistaken idea of a "lucky agent", an agent whose supposed free will is at times paradoxically preserved despite his/her decisions being decided solely by chance.

First the mistaken assumption. In order to demonstrate the compatibility of free will with indeterminism, Harrison seizes on the idea of torn decisions—that is, scenarios of binomial choice in which there are no compelling reasons for acting one way rather than the other. In a manner similar to the dilemma of Buridan's Ass, in a torn decision each available choice is equally compelling. Taking this idea, Harrison explains that when an agent acts in a torn decision, because the situation is indeterminate the choice is actually achieved through luck and not deliberation. Yet, according to Harrison, even under such a circumstance the agent can still nevertheless be considered to have acted freely, despite luck underlying the choice.

But Harrison's mistake is to assume that torn decisions are real and can arise. In reality we might not have grounds for making such a claim, as the idea of torn decisions may not actually reflect what is physically possible. It is quite conceivable that there are "hidden variables", and what may appear as a torn decision may in fact already be fully determined, but in a manner in which it is not possible for a person to consciously know.

This objection is seen to arise from what is arguably a fundamental requirement of *free* will: conscious self-awareness that one is both acting and, more importantly, desiring to act. Whilst the exercise of will as a biological feature may not necessarily require conscious self-awareness, in order to exercise it *freely*, such as to be an authentic agent of causation that "can invent the law for himself" (Sartre, *Existentialism and Humanism*, 1948), it does seem reasonable to require that an individual be at minimum consciously self-aware, both of variables in the environment and of possessing the mental capacity to in fact invent their own decisions based on data available. Without an awareness that one is capable of intentionally desiring and willing decisions, it is difficult to see how freedom, and therefore freedom of will, can be either meaningful or real, and they instead reduce to empty concepts. It does not seem meaningless to speak of consciousness without freedom of will, but it does seem meaningless to speak of freedom of will without consciousness. In short, for an individual to be deemed capable of free will they must at minimum be capable of apprehending their power to be both sole inventor of, and responsible for, their choices.

If self-awareness is one requirement of free will, paradoxically this same property

poses a problem for the reality of torn decisions. This is because neuroscience has shown that self-aware beings, along with possessing thoughts of which they are aware and which correlate with measurable brain states, also possess brain states of which they are *unaware*, and which it is reasonable to suppose can analogously be correlated with "unconscious thoughts" (despite the fact that these cannot be reported by the subject). It also appears that "unconscious" brain states parallel deliberation at the conscious, thought-reporting level, with some research showing that they actually command over consciously reportable thought. (Libet et al: *Time of Conscious Intention to Act in Relation to Onset of Cerebral Activity (Readiness-Potential): The Unconscious Initiation of a Freely Voluntary Act*: Brain, 106, 623–642, 1983; Siong Soon et al: *Unconscious Determinants of Free Decisions in the Human Brain*: Nature Neuroscience 11, 543–545, 2008).

If that is the case, it follows that there is substantial doubt as to whether anyone can ever say they have *consciously* and therefore wilfully processed all contributing motivations in a decision. Consequently, they could not know which of such decisions, if any, might be completely theirs as an authentic agent. Indeed, on the evidence, the decisive processing appears to take place at an unconscious level, governed by variables beyond conscious apprehension. This implies that in an alleged torn decision, what is consciously perceived by the individual as being an equally weighted binomial choice may in actual fact consist of a situation in which one choice is conclusively more compelling than the other, yet impossible to judge by conscious deliberation alone. The choice may result from cultural beliefs or genetically determined evolutionary responses, of which the person is completely unaware. For example, even if we claim to understand why we like music (it can induce relaxed or excited states, endow participants with sexual attraction and therefore advantage, and so on), no one has yet demonstrated why we have preferences; that is, why we choose to listen to one composition rather than another. (Other than being nurtured that way, that it is less noisy, more pleasant and so on, reasons adequately explained in cultural and evolutionary terms).

Neuroscience provides sufficient data for doubting that persons are aware of the complete range of inner mental functions, which means there is considerable doubt as to whether there can be any decision scenarios that are entirely free of compelling motives so as to be deemed torn decisions.

The other questionable element in Harrison's argument is the arbitrary claim that it is "reasonable" to consider chance as "not toxic" to free will. In light of the brief discussion on the nature of free will above, the problem is that even if we allow that torn decisions are possible, and that their resolution is achieved via chance alone, there is nothing in this that can be identified with authentic agency. Though like will chance may bring about order and design, and perhaps also make "choices", at the root of chance lies only a chaotic ensemble of probabilistic causal forces devoid of purpose and intent; whereas will is unitary and directed (whether consciously or not). Chance is constituted in unintelligible random occurrence; will is ordered and purposeful, and, if it is to be considered free, both authentically intentional and, critically, wholly aware of this very intentionality. "Choosing" by chance sets reasons, motives, purposes, etc., aside, including and in particular the conscious introspection of these same rationales, yet all of which are necessary subjective considerations of agency. "Chanciness" means

exactly the negation of intentional, deliberative choice, and rather that something else, you-know-not-what, is author of decisions that you are then subject to.

Bluntly put, if chance decides the matter, will can have no part, and vice versa. On Harrison's argument then, even if indeterminism were possible (specifically torn decisions), the free will of agency is not compatible with it. And therefore the concept of an agent whose responses are purely *lucky* yet somehow remains an agent despite this, is logically incoherent and thus impossible.

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Habeeb Marouf
Parmenideum, Elea, Italy
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News

The Collective Dimension of Science, 8–10 December

The conference was held in Nancy (France), at the MSH Lorraine. It was supported by the MSH Lorraine, the Archives Henri Poincaré, and the IHPST (Paris). The goal of the conference was to discuss philosophical issues related to the collective aspects of science. While studies within social epistemology already investigate the social dimension of the production and validation of beliefs and knowledge, science is not their core object of study. This conference was devoted to examining to what extent a focus upon collective, computational and social aspects is needed to analyze scientific activity.

The conference featured five keynote lectures and around twenty-five anonymously selected papers. Collaborative work was the subject matter of two lectures on Thursday 8. Paul Thagard discussed whether the search for truth, the quest for a good explanation or the wish for power could explain the fact that the recent field of cognitive neuroscience involved much interdisciplinary work. Jesús Zamora Bonilla asked why scientists are better off co-authoring papers, instead of separately publishing their individual contributions. Adopting the view that scientific papers are arguments, he argued that the credit earned by scientists is not always linear in quality, and thus that they should co-author a bigger result and share its credit. On Friday 9, Philip Kitcher asked to what extent scientific dissent should be considered favorably. He argued that the answer should depend on the distinction between dissent which remains within the scientific community and dissent which is exposed to the general public (which could undermine the scientific community's authority). The epistemology of testimony in science was the topic of a lecture by John Greco. He claimed that the traditional question "how does testimony transmit knowledge?" was ill-posed, and argued that the right distinction was to be made between activities which *generate* knowledge and those which only *transmit* it. He claimed that testimony could belong to both categories. In a closing lecture on Saturday 10, John Woods emphasized how cognitive economics can highlight our epistemic situation: while we are efficient processors of information, who know a lot of things, cognition happens out of the sight of the man's eye. But this lack of transparency is not detrimental because it is cheaper overall to detect and correct errors by means of feedback mechanisms than to avoid them in the first place.

The selected papers tackled various questions in the social epistemology of science,

from the definition of what collective understanding is, to the study of the settlement of scientific controversies. The conference highlighted a growing methodological interest in answering questions in social epistemology by means of game-theoretic models. The problems considered here included (for instance): studying scientific strategies, for example how desirable are conservatism and diversity in research, and how they depend on the incentive system in science; how the diversity of skills among labs might explain scientific cooperation; how the structure, size and nature of scientific communities can be epistemically accounted for; or how the structure of scientific communication can speed up discoveries and dissemination of ideas.

Overall, the conference was a welcome venue to gather specialists from various fields such as philosophy of science, epistemology, social epistemology or the (cognitive) economics of scientific knowledge (it may be regretted that few or no participants from distributed cognition, sociology or formal studies of interaction participated in the conference). The vivid and fruitful discussions proved that this variety of approach is beneficial for the issues investigated. A sequel to this conference (CDS2?) may prove helpful in this perspective.

Proceedings of the conference are planned to appear in a special issue of an international journal or in a book. For more information about the event, please check here.

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THOMAS BOYER
MSH Lorraine,
Archives Henri Poincaré

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Mid-Atlantic Mathematical Logic Seminar, 13–15 January

As an early event in Alan Turing Year, the Mid-Atlantic Mathematical Logic Seminar (MAMLS) held a meeting dedicated to Turing, hosted by Florida Atlantic University at the Wyndham Hotel in Deerfield Beach, FL. The first scientific talk, by Damir Dzhafarov, was on applications of computability, and focused on randomness, reverse mathematics, and Muchnik degrees. This was followed by Robert Lubarsky, the conference organizer, speaking on a flavor of infinitary computation, infinite time Turing machines, which extend the amount of computation time a machine has into the transfinite.

The lecture by Gerald Sacks was on E-recursion theory, with emphasis on inadmissible E-closed sets. Andre Scedrov addressed security issues involved with collaboration, wherein you need to share information with collaborators but you do not completely trust them; in effect, what is often an outside intruder in most security considerations is in this model an insider. Pieter Hofstra gave a flexible framework for modeling different kinds of computation categorically. Martin Davis presented the early history of computability theory, with emphasis on the idea of a universal machine, and Bob Soare considered why Turing gets the credit he does as opposed to Church, making parallels with Michaelangelo and other Renaissance artists. Joel Hamkins described results in computable equivalence relations, a subject analogous to the better-known study of Borel equivalence relations. Russell Miller spoke about computable model theory, and Wesley Calvert, describing the problems caused by the undecidability of equality when modeling real number arithmetic with Turing machines, introduced BSS computability.

Anil Nerode concluded the conference with a discussion on hybrid nano- and macroscopic systems, his work on which has led to patents and industrial products, with a call to develop a logic for representing the PDEs that come up in this context.

The evening of 14 January saw a special session inspired by Turing's life. David Leavitt, one of Turing's biographers, centered his remarks on Turing's personality, more specifically his humility, honesty, and literal-mindedness, and the effect these had on his life. Robert Lubarsky aimed squarely at Turing's homosexuality, weaving together speculation on the reasons behind his suicide, gay history during and after Turing's lifetime, and his own experiences and struggles as a gay logician and a gay man coming to grips with a sometimes welcoming, sometimes hostile world.

ROBERT LUBARSKY
Department of Mathematical Sciences,
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Calls for Papers

INPUT & OUTPUT ANALYSIS FOR SIMULATION: special issue of the *Journal of Simulation*, deadline 1 March.

NON-CLASSICAL MODAL AND PREDICATE LOGICS: special issue of Logic Journal of IGPL, deadline 31 March.

GAME THEORETIC MODELS OF COMMUNICATION: special issue of *Erkenntnis*, deadline 31 March.

FORMAL AND INTENTIONAL SEMANTICS: special issue of *The Monist*, deadline 30 April.

THE MIND-BODY PROBLEM IN COGNITIVE NEUROSCIENCE: special issue of *Philosophia Scientiæ*, deadline 1 May.

INFORGS AND THE INFOSPHERE: THEMES FROM LUCIANO FLORIDI'S PHILOSOPHY OF ARTIFICIAL INTELLIGENCE: special issue of *The Journal of Experimental & Theoretical Artificial Intelligence*, deadline 1 July.

THE AIM OF BELIEF: special issue of *Teorema*, deadline 15 September.

WHAT'S HOT IN . . .

. . . Logic and Rational Interaction

CADILLAC is a newly founded, loose association of logicians, computer scientists, linguists and philosophers based in the greater Copenhagen area. The association provides an informal forum for topics surrounding social and formal epistemology, the dynamics of information, and the use of AI paradigms to capture aspects of cognition and interaction. Beyond that, the group has an interest in foundational themes from linguistics and philosophy. The association is mostly made up of students and researchers from universities in and around Copenhagen. The aim is to hold meetings, seminars and reading groups, and to disseminate information about meetings on relevant topics. Further information can be found on the CADILLAC website.

Contributions to LORIWEB on topics relevant to the area of Logic and Rational Interaction are always welcome: please submit your news items to Rasmus Rendsvig, our web manager or to the loriweb address.

BEN RODENHÄUSER
Artificial Intelligence, Groningen

. . . Uncertain Reasoning

Two special issues of exceptional interest to the uncertain reasoning community have recently become available. *Handling uncertainty in science* collects the proceedings of a Discussion Meeting held at the Royal Society in March 2010. The meeting was organized by T.N. Palmer and P.J. Hardaker, who also edited the special issue, published in December 2011 as number 369 of the *Philosophical Transactions of the Royal Society A*. Virtually at the same time G. Wheeler announced on Choice & Inference that all the papers which will appear in the *Synthese Special Issue on Henry Kyburg* edited by him, had become available through Online First.

Taken jointly these special issues provide an incredibly wide perspective on the current situation in the foundations and the applications of uncertain reasoning. The two editorial lines, of course, differ. Palmer and Hardaker are meteorologists. This certainly accounts for their insistence on the two-fold nature of "handling uncertainty", namely the estimation of uncertainty and its communication to a heterogeneous range of stakeholders which spans from the general public to international policy makers. In response to this, the selection of papers provides perspectives from theoretical physics, biology, mathematics and social sciences. Wheeler, on the other hand, is a theoretician who fits squarely in the "third culture," just like his teacher Kyburg and H. Arló-Costa, who passed away during the production of the special issue. This certainly accounts for the impressive combination of logical, statistical, epistemological, computational and methodological perspectives on uncertain reasoning which characterises the special issue.

Reading both introductions and browsing the titles and abstracts of the contributions, I was immediately reminded of I. Hacking (1975: *The Emergence of Probability: A Philosophical Study of Early Ideas about Probability, Induction and Statistical Inference*, CUP). In Chapter 2, Hacking puts forward an intriguing thesis, which I read as saying that much of our difficulty with the very concept of uncertainty arises from the fact that we are using one word for two, distinct, concepts. With exceptions on both sides, the Royal Society and the Synthese special issues appear to be quite sharply focussed on two distinct concepts, physical and epistemic uncertainty, respectively. The proof of the pudding, however, must be in the reading. Or maybe in the listening, as the Royal Society made available (here) the recordings of the Discussion Meeting (in mp3), including some extras which have not been published as papers.

HYKEL HOSNI
Scuola Normale Superiore, Pisa

Events

WORKSHOP ON PHILOSOPHICAL AND FORMAL THEORIES OF TRUTH: Amsterdam, 23–25 March.

PRAGMATISM, LAW, AND LANGUAGE: University of Idaho, 23–25 March.

LABCII: Logical Approaches to Barriers in Complexity II, Newton Institute, Cambridge, UK, 26–30 March.

CIFEr: Computational Intelligence for Financial Engineering and Economics, New York, 29–30 March.

PHILOSOPHY OF RISK: Center for Philosophy of Science, University of Pittsburgh, 30–31 March.

DICE: 3rd Workshop on Developments in Implicit Complexity, Tallinn, Estonia, 31 March–1 April.

APRIL

YSM: Young Statisticians' Meeting, Cambridge, 2–3 April.

SBP: International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction, University of Maryland, 3–5 April.

MIND, METHOD AND MORALITY: Pittsburgh, 6–7 April.

CNCS: International Conference on Computer Networks and Communication Systems, Malaysia, 7–8 April.

EMCSR: European Meetings on Cybernetics and Systems Research, Vienna, 10–13 April.

TIME FOR CAUSALITY: Workshop on Causal Inference and Dynamic Decisions in Longitudinal Studies, Bristol, 10–13 April.

evoSTOC: Evolutionary Algorithms in Stochastic and Dynamic Environments, Malaga, Spain, 11-13 April.

PHDS IN LOGIC IV: Ghent, 12–13 April.

NORTHWESTERN/NOTRE DAME GRADUATE EPISTEMOLOGY CONFERENCE: Northwestern University, Evanston, IL, 13–14 April.

BMC2012: Workshop on Turing's Legacy in Mathematics and Computer Science, University of Kent, 16–19 April.

CONFRONTING INTRACTABILITY IN STATISTICAL INFERENCE: University of Bristol, 16–19 April.

COLLECTIVE INTELLIGENCE: MIT, Cambridge, MA, 18–20 April.

BEING FREE, DOING FREE: Freedom Between Theoretical and Practical Philosophy, University of Freiburg, Germany, 19–21 April.

GIRL: 1st Conference on Games, Interactive Rationality and Learning, Lund, 19–21 April.

PSYCHOLOGY, EMOTION, AND THE HUMAN SCIENCES: University of Windsor, Windsor, Ontario Canada, 20–21 April.

MAICS: 23rd Midwest Artificial Intelligence and Cognitive Science Conference, Ohio, 21–22 April.

AISTATS: 15th International Conference on Artificial Intelligence and Statistics, La Palma, Canary Islands, 21–23 April.

THE PROGRESS OF SCIENCE: Tilburg Center for Logic and Philosophy of Science, 25–27 April.

SDM: 12th SIAM International Conference on Data Mining, Anaheim, California, USA, 26–28 April.

MAY

SOPHA: Société de philosophie analytique, Paris, 4–6 May.

ICDDM: International Conference on Database and Data Mining, Chengdu, China, 5–6 May.

BELIEF FUNCTIONS: Compiégne, France, 9–11 May.

NATURALISM AND NORMATIVITY IN THE SOCIAL SCIENCES: University of Hradec Králové, Czech Republic, 10–12 May.

PHILOSOPHY AND COMPUTATION: Lund University, Sweden, 12–13 May.

CASI: 32nd Conference on Applied Statistics Ireland, 16–18 May.

GAMES, GAME THEORY AND GAME SEMANTICS: 8th International Symposium of Cognition, Logic and Communication, Riga, Latvia, 18–20 May.

LMP: 12th Annual Philosophy of Logic, Mathematics, and Physics Conference, University of Western Ontario, 20–21 May.

SLACRR: St. Louis Annual Conference on Reasons and Rationality, 20–22 May.

IPDPS: 26th IEEE International Parallel and Distributed Processing Symposium, Shanghai, China, 21–25 May.

JDS: 44th Journées de Statistique, Brussels, 21–25 May.

PHML: Philosophy, Mathematics, Linguistics: Aspects of Interaction, St. Petersburg, Russia, 22–25 May.

UR: Uncertain Reasoning, Special Track at FLAIRS-25, Marco Island, Florida, USA, 23–25 May.

SSHAP: Mind, Language and Cognition, McMaster University, Canada, 24–26 May.

PHILMILCOG: 10th Annual Graduate Conference on the Philosophy of Mind, Language and Cognitive Science, University of Western Ontario, 24–26 May.

THE AIMS OF INQUIRY AND COGNITION: Edinburgh Epistemology Research Group, University of Edinburgh, 25–26 May.

CSAE: IEEE International Conference on Computer Science and Automation Engineering, Zhangjiajie, China, 25–27 May.

ICKD: 2012 International Conference on Knowledge Discovery, Indonesia, 26–27 May.

AI2012: Canadian Conference on Artificial Intelligence, 28–30 May.

RTA: 23rd International Conference on Rewriting Techniques and Applications, Japan, 28 May–2 June.

FEW: 9th Annual Formal Epistemology Workshop, Munich, 29 May–1 June.

ICCC12: Third International Conference on Computational Creativity, Dublin, 30 May–1 June.

STOCHMOD: 4th meeting of the EURO Working Group on Stochastic Modeling, Ecole Centrale Paris, 30 May–1 June.

HUMAN COMPLEXITY: The University of North Carolina, Charlotte, 30 May–1 June.

CAMBRIDGE PRAGMATISM: a Research Workshop, Cambridge, UK, 31 May–1 June.

RUDOLF CARNAP LECTURES: Ruhr-Universität Bochum, 31 May–2 June.

JUNE

INCOMMENSURABILITY 50: Taipei, Taiwan, 1–3 June.
ADVANCES IN PHILOSOPHICAL LOGIC: Ruhr University Bochum, 3–5 June.
LAMAS: 5th Workshop on Logical Aspects of Multi-Agent Systems, Valencia, 4–5 June.
FEW: Formal Epistemology Week, Konstanz, 4–6 June.
AAMAS: 11th International Conference on Autonomous Agents and Multiagent Systems, Valencia, Spain, 4–8 June.
MFPS: 28th Conference on the Mathematical Foundations of Programming Semantics, University of Bath, 6–9 June.
MINDS, BODIES, AND PROBLEMS: Bilkent University, Ankara, 7–8 June.
EDINBURGH EPISTEMOLOGY GRADUATE CONFERENCE: University of Edinburgh, 8–9 June.
FOUNDATIONS OF LOGICAL CONSEQUENCE: University St Andrews, 8–10 June.
RATS: Recent Advances in Time Series Analysis Workshop, Cyprus, 9–12 June.
NORDSTAT: 24th Nordic Conference in Mathematical Statistics, Northern Sweden, 10–14 June.
MS5: Conference on Models and Simulations, Helsinki, 14–16 June.
CSAM: Classification Society Annual Meeting, Carnegie Mellon University, Pittsburgh, PA, 14–16 June.
BASIC KNOWLEDGE: Conference on the A Priori, Aberdeen, 16–17 June.
SAT: International Conference on Theory and Applications of Satisfiability Testing, Trento, Italy, 17–20 June.
LOFT: 10th Conference on Logic and the Foundations of Game and Decision Theory, Sevilla, Spain, 18–20 June.
DM: Discrete Mathematics, Dalhousie University, Halifax, Nova Scotia, Canada, 18–21 June.
LOGICA: Hejnice, northern Bohemia, 18–22 June.
CIE: Computability in Europe, University of Cambridge, Cambridge, 18–23 June.
SISSM: Scientific Meeting of the Italian Statistical Society, Rome, Italy, 20–22 June.
PHILOSOPHICAL INSIGHTS: Senate House, University of London, 21–23 June.
MBR12: Model-Based Reasoning in Science and Technology, Sestri Levante, Italy, 21–23 June.
SPP: Annual Meeting of the Society for Philosophy and Psychology, University of Colorado at Boulder, 21–24 June.
HOPOS: Halifax, Nova Scotia, Canada, 21–24 June.
CCA: 9th International Conference on Computability and Complexity in Analysis, Cambridge, UK, 24–27 June.
COLT: 25th Annual Conference on Learning Theory, Edinburgh, 25–27 June.
MPC: 11th International Conference on Mathematics of Program Construction, Madrid, Spain, 25–27 June.
ARTIFICIAL INTELLIGENCE AND SOFT COMPUTING: Naples, Italy, 25–27 June.
VANIM: Values and Norms in Modeling, Eindhoven, The Netherlands, 25–27 June.

LICS: 27th ACM/IEEE Symposium on Logic In Computer Science, Dubrovnik, Croatia, 25–28 June.

Square of Opposition: American University of Beirut, 26–29 June.

ICML: 29th International Conference on Machine Learning, University of Edinburgh, 26 June–1 July.

IJCAR: 6th International Joint Conference on Automated Reasoning, Manchester, UK, 26 June–1 July.

DGL12: Sixth Workshop in Decisions, Games & Logic, LMU Munich, 28–30 June.

EEN: European Epistemology Network Meeting, Universities of Bologna and Modena, Italy, 28–30 June.

Evolution and Function of Consciousness: Summer School in Cognitive Science 2012, Montreal, Canada, 30 June–9 July.

July

Uncertainty in Computer Models: Sheffield, UK, 2–4 July.

AISB/IACAP: Birmingham, UK, 2–6 July.

LASR: 31st Leeds Annual Statistical Research Workshop, University of Leeds, 3–5 July.

IIBM: 5th International Workshop on Intelligent Informatics in Biology and Medicine, Palermo, Italy, 4–6 July.

History and Philosophy of Programming: Ghent University, 5–6 July.

CAV: 24th International Conference on Computer Aided Verification, Berkeley, 7–13 July.

ISSCSS: International Summer School in Cognitive Sciences and Semantics, Latvia, 8–18 July.

IPMU: 14th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, Catania, Italy, 9–13 July.

ICALP: 39th International Colloquium on Automata, Languages and Programming, University of Warwick, 9–13 July.

Foundations of Mathematics: University of Cambridge, 10–12 July.

DEON: 11th International Conference on Deontic Logic in Computer Science, University of Bergen, Norway, 16–18 July.

WorldComp: The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing, Nevada, USA, 16–19 July.

DMIN: 8th International Conference on Data Mining, Nevada, USA, 16–19 July.

SIPTAss: Society for Imprecise Probability: Theories and Applications Summer School, Pescara, Italy, 16–20 July.

Paradox and Logical Revision: LMU, Munich, 23–25 July.

FOIS: 7th International Conference on Formal Ontologies in Information Systems, Graz, Austria, 24–27 July.

August

NAFIPS: 31th North American Fuzzy Information Processing Society Annual Conference, Berkeley, 6–8 August.

ESSLLI: 24th European Summer School in Logic, Language and Information, Poland, 6–17 August.

KDD: 18th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Beijing, China, 12–16 August.

ITP: 3rd Conference on Interactive Theorem Proving, Princeton, NJ, 13–16 August.

UAI: Conference on Uncertainty in Artificial Intelligence, Catalina Island, USA, 15–17 August.

AIML: Advances in Modal Logic, Copenhagen, 22–25 August.

EASLLC: International Conference and the Second East-Asian School on Logic, Language and Computation, Chongqing, China, 25–31 August.

FLINS: 10th International FLINS Conference on Uncertainty Modeling in Knowledge Engineering and Decision Making, 26–29 August.

ECAI: 20th European Conference on Artificial Intelligence, Montpellier, France, 27–31 August.

COMPSTAT: 20th International Conference on Computational Statistics, Cyprus, 27–31 August.

Collective Intentionality: University of Manchester, 28–31 August.

CNL: Workshop on Controlled Natural Language, Zurich, 29–31 August.

Courses and Programmes

Courses

LI: Logic and Interactions, Winter School and Workshops, CIRM, Luminy, Marseille, France, 30 January–2 March.

ESSLLI: 24th European Summer School in Logic, Language and Information, Opole, Poland, 6–17 August.

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.

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 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.

MA IN REASONING

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

MSC IN COGNITIVE & DECISION SCIENCES: Psychology, University College London.

MSC IN COGNITIVE SCIENCE: University of Osnabrück, Germany.

MSC IN COGNITIVE PSYCHOLOGY/NEUROPSYCHOLOGY: School of Psychology, University of Kent.

MSC IN LOGIC: Institute for Logic, Language and Computation, University of Amsterdam.

MSC IN MATHEMATICAL LOGIC AND THE THEORY OF COMPUTATION: Mathematics, University of Manchester.

MSC IN MIND, LANGUAGE & EMBODIED COGNITION: School of Philosophy, Psychology and Language Sciences, University of Edinburgh.

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

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

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

PhD School: in Statistics, Padua University.

Jobs and Studentships

Jobs

Post-doc position: in Probabilistic Graphical Models, Intelligent Systems Laboratory at Rensselaer Polytechnic Institute, New York, until filled.

Post-doc positions: in all areas of speech and language processing at the Human Language Technology Center of Excellence at Johns Hopkins University, until filled.

Post-doc position: on the project "Explanatory Reasoning: Normative and Empirical Considerations," Tilburg Center for Logic and Philosophy of Science, until filled.

Professor: Department of Communication and Information Sciences, Tilburg Center for Cognition and Communication, deadline 1 February.

Post-doc position: in Advanced Bayesian Computation for Cross-Disciplinary Research, Warwick Systems Biology Centre, 3 February.

Assistant Professor: of Statistics, Department of Statistics, University of Warwick, deadline 13 February.

3-year Post-Doc
To work on the relationship between Bayesian epistemology and inductive logic. Philosophy, University of Kent, deadline 15 February

Post-Doc position: in the History and Philosophy of Science, University of Pittsburgh, deadline 15 February.

Research Associate: in Machine Learning, Department of Engineering, University of Cambridge, deadline 19 February.

Chair: in Statistics, University of Lancaster, deadline 24 February.

Professor: of Statistics, Queen Mary, University of London, deadline 25 February.

Fellowship: in Statistics, University of Edinburgh, deadline 29 February.

Postdoc position: in History and Philosophy of Science, University of Sydney, deadline 1 March.

Postdoc position: in History and Philosophy of Science, Technology and Medicine, Hebrew University of Jerusalem, deadline 5 March.

Lecturer: in Statistics, University of Lancaster, deadline 16 March.

Studentships

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

ONE DOCTORAL RESEARCHER POSITION OR ONE EARLY POSTDOCTORAL RESEARCHER: in uncertain reasoning in the intersection of philosophy, psychology and cognitive science, Munich Center for Mathematical Philosophy, LMU Munich, until filled.

PHD POSITION: in Bayesian Decision Theory, School of Computer Science and Statistics, Trinity College Dublin, until filled.

TWO PHD POSITIONS: in the project "Designing and Understanding Forensic Bayesian Networks with Arguments and Scenarios", Utrecht University / University of Groningen, to be filled asap.

PHD POSITIONS: in the Statistics & Probability group, Durham University, until filled.

PHD POSITIONS: in Statistical Methodology and its Application, University College London, until filled.

PHD POSITION: in Logic and Theoretical Philosophy at the Institute for Logic, Language and Computation at the University of Amsterdam, until filled.

PHD STUDENTSHIP

To work on the relationship between Bayesian epistemology and inductive logic. Philosophy, University of Kent, deadline 15 February

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PHD POSITIONS: at the Department of Computer Science of the University of Liverpool, UK, deadline 15 February.

PHD POSITIONS: in Quantitative Methods in Social Sciences & Health, University of Bristol, deadline 17 February.

University of Kent
CENTRE FOR REASONING
www.kent.ac.uk/reasoning