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§1

EDITORIAL

This is the second time I have been invited to act as a Guest Editor and, as before, it is a great pleasure to be able to take part in Jon's enterprise of making reasoning a general

yet interdisciplinary field of inquiry. This editorial and the following interview with Professor Matthew Kramer are focused on the relation between reasoning as a general field of inquiry in philosophy and logic, and reasoning as it is used and theorised in legal scholarship and practice. This relation raises questions in both directions. One type of question arises as to whether and how legal theory and practice can benefit from the extensive and well-developed body of literature on reasoning that can be found in logic, philosophy of science, and statistics. The direction here is from disciplines external to the law to the law itself. A second type of question relates to the other direction, that is, if and how studying legal reasoning can contribute to a general science of reasoning.

I would like to focus on one issue, which seems particularly puzzling to me, and that is the place which logic and probability currently occupy (or perhaps, more precisely, hardly occupy) within legal training. Legal training may be the only type of professional training which does not include any mandatory course on logic or probability. While economists, engineers, doctors and others usually receive some formal training in reasoning (mainly probability), law students can complete their studies without having learnt the difference between various forms of arguments and without having been trained in how to make a basic calculation of probabilities. In most systems, law students need to take an introductory course which might include some element of legal reasoning, but it rarely includes training in formal logic and/or probability, and is more likely to cover topics which are more specific to law (e.g. the precedence system of *stare decisis*, the distinction between *ratio decidendi* and *obiter dictum*, and so on).

The lack of training in logic and/or probability might be seen as evidence for the need for an urgent reform in legal education. Not surprisingly, several scholars have suggested exactly that, both from within legal scholarship (e.g. Judge Richard Posner) and from outside it (e.g. Professor Philip Dawid). Yet such a reform is yet to be widely implemented and it is unclear whether or not there are grounds to be optimistic about the pace that this reform is taking.

Inertia in adapting legal training to such demands should not be dismissed merely as evidence for lawyers' incompetence, or even for their desire to keep their discipline obscure and incomprehensible to outsiders. While some suspicion is perhaps due, there is also a genuine challenge here, for both legal scholars and those who are interested in reasoning in general: that is, to explain why formal logic and probability are treated as almost irrelevant by a profession that earns its bread and butter from argument. After all, it is hard to think of a discipline in which argumentation is so central not only to its scholarship, but also to its day to day practice: advocates argue their case in front of the court, minority opinions argue with majority judges on how a specific case should be decided and why, students argue in exams why the law should be applied to the facts in a particular way, and so on. For better or worse, both law students and practitioners are noted for their instrumental thinking and they are able to adopt new techniques quickly once they find out that these techniques can help them become more successful, either as students or as practising lawyers. The fact that, to date, topics of logic and probability have failed to reach the syllabuses in many law faculties indicates that many lawyers



fail to see the benefit these areas of training can bring to their study, understanding, and practice of the law.

No doubt, some interesting and important attempts have been made by legal scholars and logicians to use formal logic or probability to analyse and understand both legal fact-finding and the way lawyers apply the law to the facts. Yet the fact that these fields are not central to legal education should make one wonder whether there are better ways to make these fields more accessible to lawyers and/or to make their study more rewarding for lawyers, both intellectually and practically. Instead of dismissing law as obscure or incomprehensible, and instead of ascribing to lawyers the fault in failing to use logic and probability within legal training, the persistent challenge seems to be to explain and identify how law students, practitioners, and scholars could benefit from studying the general fields of logic and probability and applying them to the law.

AMIT PUNDIK
Law, Tel Aviv

§2 FEATURES

Interview with Matthew Kramer

[Matthew H. Kramer](#) is Professor of Legal and Political Philosophy at Cambridge University; Fellow of Churchill College, Cambridge; and Director of the Cambridge Forum for Legal and Political Philosophy. He is the author of 13 books and the co-editor of 4 other books. His most recently published tome is *The ethics of capital punishment* (Oxford 2011).

Amit Pundik: How would you describe ‘legal reasoning’ to a non-legal audience?

Matthew Kramer: Legal reasoning is reasoning about the implications of duty-imposing, liberty-conferring, power-conferring, and immunity-conferring laws. It is multifarious. Sometimes it is straightforwardly deductive or arithmetical; for example, quite a bit of reasoning about tax laws is of this sort, as is some reasoning about the applicability of various statutes to sundry circumstances. Sometimes, especially in the common law, legal reasoning is highly analogical. Some legal reasoning is overtly moral, whereas other instances of legal reasoning are technical and esoteric. There are very few illuminating generalizations to be propounded, especially because the reasoning of lower-level courts differs in some significant ways from the reasoning of upper-level courts.

AP: Do you think that legal reasoning is a subfield of a more general field of reasoning or a field of its own?

MK: All or most of the multifarious aspects of legal reasoning can also be found in other domains. One of the most distinctive aspects of legal reasoning is the ferreting out of un-



derlying principles in the common law. When such an endeavor is carried out skilfully by a court (usually an appellate court), it can systematize an area of the law that had theretofore seemed nebulous.

AP: In what respects, if any, does legal reasoning differ from any other kind of reasoning?

MK: See my preceding answer. The materials of legal reasoning are distinctive, and the blending of diverse modes of reasoning is likewise distinctive. However, each mode of reasoning on its own can be found in plenty of other domains. (In common-law jurisdictions, the concerns that surround the overruling and distinguishing of precedents are peculiar to law. Though precedential reasoning is hardly confined to the jural domain, the considerations that bear on the operativeness of precedents in the law are unique.)

AP: When it comes to reasoning, do you think lawyers have something to learn from other disciplines, such as formal logic and statistics?

MK: Yes, an introductory course in formal logic and an introductory course in statistics (especially probability) would be invaluable for any lawyer. On the one hand, lawyers seldom if ever need the insights of formal logic beyond an introductory level; beyond that level, formal logic becomes quite arcanelly remote from the argumentative needs of jurists. (I say this as someone who took two courses in advanced logic and found them fascinating.) On the other hand, a good knowledge of the basics of logic and statistics is bound to enhance the sharpness of any lawyer's argumentation.

AP: Why are most law students not obliged to take a mandatory course in formal logic or in probability? Do you think the current situation is desirable?

MK: I don't know the answer to the first of these two questions. As should be apparent from my preceding answer, I believe that the current situation is undesirable. There have been a number of notorious abuses of statistics in adjudicative proceedings. Though some of those abuses are principally attributable to the ignorance of lay jurors, some of them are clearly attributable to the ignorance of lawyers and judges.

Braun defended

Zuzanna Gnatke (*The Reasoner* 5(5) pp. 72-73) raises two problems for the Unfilled Proposition View (UPV) of the direct reference theorist David Braun (1993: Empty names, *Noûs* 27: 449-469).

The first problem, according to Gnatke, is that, context-sensitivity aside, if two sentences express the same proposition, they are necessarily equivalent, expressing the same proposition at all worlds. But Gnatke claims that although

(1) Vulcan does not exist

and

(2) Ossian does not exist

do in fact express the same proposition according to UPV, namely the one represented in Braun's notation by

(3) $\langle \langle \{ \}, \text{exists} \rangle, \text{NEG} \rangle$

(1) and (2) express distinct propositions, and differ in truth value at worlds where only one of Vulcan and Ossian exist. For example, if Vulcan exists, (1) expresses (4), not (3)

(4) $\langle \langle \{ \text{Vulcan} \}, \text{exists} \rangle, \text{NEG} \rangle$

This argument assumes, however, that Vulcan could have existed, an assumption many reject. Of course ‘Vulcan’ could have had its reference fixed by description, referring to a planet satisfying the descriptive material associated with ‘Vulcan’, but Braun can maintain that this planet would not have been Vulcan. (See Kripke (1980: *Naming and Necessity* pp. 23-24, 156-158) on unicorns and Sherlock Holmes).

Gnatek would do better to use something like the following sentences to avoid this problem:

(5) Braun does not exist

(6) Gnatek does not exist

If names are *obstinately* rigid, so that they denote the same thing in every possible world, whether or not it exists, then there are no unfilled propositions concerning contingent non-existents: (5) and (6) will express the distinct propositions

(7) $\langle \langle \{ \text{Braun} \}, \text{exists} \rangle, \text{NEG} \rangle$

and

(8) $\langle \langle \{ \text{Gnatek} \}, \text{exists} \rangle, \text{NEG} \rangle$

in all worlds. So the problem lapses, if names are obstinately rigid.

But what if names are *persistently* rigid, denoting the same object at any world at which it exists, but nothing otherwise? Well assuming

(9) All a name contributes to a proposition is its referent, if any

(5) and (6) will express the same proposition at worlds where neither Braun nor Gnatek exist, but distinct, non-equivalent propositions at worlds where only one of Braun or Gnatek exist. This would give Gnatek a pair of sentences which *possibly* express the same proposition, but are not necessarily equivalent, which is not quite what she claimed, but is good enough.

It seems as if Braun does want to accept (9) (“A proper name has no semantic function other than referring to an individual” (Braun 1993:449)). But it is consistent with direct reference, as least understood as the thesis that names are entirely non-descriptional (Salmon 2005: *Reference and Essence*, second edition, Prometheus Books: Amherst, New York, pp. 22–23) that names contribute extra-referential features to propositions. On this picture, which denies (9), it does not follow that (5) and (6) express the same proposition at worlds at which neither Gnatek nor Braun exist. So even if names are persistently rigid, a theory of direct reference escapes Gnatek’s objection, if it rejects (9).

Those, like Braun, however, who accept (9), are committed to the obstinate rigidity of names. But that it is not an implausible position, indeed it seems that we do use names to talk about individuals even in discourse about counterfactual circumstances in which they do not exist. And neither does obstinacy rob UPV of interest, since the names of necessary nonexistents, such as Vulcan, are empty, and so there is still work for UPV to do.

Gnatek illustrates the second alleged problem for UPV with the following pair

(10) Holmes is a fictional character

(11) Vulcan is a fictional character

Intuitively (10) is true and (11) false. But Gnatek thinks that (10) and (11) contain empty names, and so UPV is committed to them having the same truth value, since UPV endorses a negative free logic: sentences with a subject-predicate logical form are true iff the subject term refers to something which satisfies the predicate, and false otherwise.

What Gnatek needs to cause trouble for a negative free logic, however, is a pair of sentences which (i) differ in truth-value, (ii) contain empty names, and (iii) express the same atomic proposition (a negative free logic allows non-atomic sentences containing empty to differ in truth-value). But Braun could reasonably reply that she has only supplied (i). Regarding (ii), it is not clear that on the true reading of (10) ‘Holmes’ is an empty name (see Braun 2005). If ‘Holmes’ denotes the fictional character Holmes, and ‘Vulcan’ does not denote a fictional character, then we have a straightforward explanation of why (10) is true but (11) false. On the other hand, if there is a true reading of (10) where ‘Holmes’ is empty, then, plausibly, (10) does not express an atomic proposition. On such a reading, ‘fictional’ does not contribute to the complex predicate ‘is a fictional character’, but rather is a hyperintensional sentential operator. If so (10) and (11) will plausibly express different propositions and so can differ in truth-value.

Gnatek might respond to this last claim, that if ‘Holmes’ and ‘Vulcan’ are empty, and we accept (9) as Braun does, then the proposition within the scope of the fiction operator in (10) is the proposition within the scope of the fiction operator in (11). But then how can the propositions (10) and (11) differ and hence differ in truth-value? This objection, however, ignores the distinction between the proposition expressed by a sentence, its assertoric content, and what contribution a sentence makes to complex sentences of which it is a part, its ingredient sense. If we distinguish the two, then sentences which express the same proposition can embed within the same operator to produce distinct propositions. I cannot provide the details of such an operator account here, but Gnatek has not shown that the defender of UPV cannot provide one, or even that they need to.

Of course, my rejection of Gnatek’s objections does not constitute an endorsement of UPV.

LEE WALTERS
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On an Allegedly Essential Feature of Criteria for the Demarcation of Science

While some consider criteria for the demarcation of science from non-science an important topic of research, others doubt that such a demarcation criterion is possible at all (for the former view, see Hansson 2008: [Science and pseudo-science](#)). A number of proponents of the latter view endorse and rely on an influential article by Laudan (1983: The demise of the demarcation problem, in Cohen (ed.): *Physics, Philosophy and Psychoanalysis*, Kluwer, 111-127); examples are Monton (2009: *Seeking God in Science*, Broadview Press, 49) and Leiter (2010: [The demarcation problem in jurisprudence: a new case for skepticism](#), 6ff). According to Monton, Laudan's article "is standardly considered one of the most important essays in philosophy of science in the 20th century", and according to Leiter, it is such a strong critique that any "purported defense of the demarcation problem" is a reason for concern (Monton 2009a: [Pennock's offensive tone](#); Leiter 2010a: Special issue of *Synthese* on 'evolution and its rivals'). I will argue that the article relies on a non-sequitur and actually suggests the opposite of its purported conclusion.

Laudan places five demands on a criterion for the demarcation of science. First, it would be "a grave drawback for any demarcation criterion" if it did not respect the paradigmatic cases of science and non-science (1983:117f). Second, a philosophically significant demarcation criterion should "identify the *epistemic* or *methodological* features which mark off scientific beliefs from unscientific ones" (1983:118). Third, it should have "sufficient precision that we can tell whether various activities and beliefs whose status we are investigating do or do not satisfy it" (1983:118). Fourth, it should specify "a set of individually necessary and jointly sufficient conditions" for something to be scientific (1983:118). Finally, because of the far-reaching practical implications of any demarcation criterion, it should be supported by arguments that are "especially compelling" (1983:120).

Laudan (1983:120–124) argues that none of the demarcation criteria suggested in the 20th century is a "necessary and sufficient condition for something to count as 'science', at least not as that term is customarily used", that is, the criteria fail to fulfill either his first or fourth demand. The same holds, he argues, for criteria suggested before the 20th century (while those based on the notion of scientific methodology also fail to fulfil his third demand) (1983:§2). This is the main result of Laudan's paper. Because of the "epistemic heterogeneity of the activities and beliefs customarily regarded as scientific", Laudan (1983:124) further suggests that his second demand can never be satisfied.

In objection to Laudan, a number of proponents of demarcation criteria have contested his fourth demand without, however, addressing the argument that Laudan (1983:118f) provides in support of it (e.g., Thagard 1988: *Computational philosophy of science*, MIT Press, 159; Derksen 1993: The seven sins of pseudo-science, *Journal for General Philosophy of Science*, 24(1), 20; Mahner 2007: Demarcating science from nonscience, in Kuipers (ed.), *General Philosophy of Science—Focal Issues*, Elsevier, 521f; Pennock 2011: Can't philosophers tell the difference between science and religion? Demarcation revisited, *Synthese*, 178(2), 183). According to Laudan's fourth demand, a demarcation criterion must provide a set of conditions $\{\chi_i\}_{i \in I}$ for any x to be a

science (Sx) that are jointly sufficient, $\forall x[\bigwedge_{i \in I} \chi_i(x) \rightarrow Sx]$, and individually necessary, $\forall x \bigwedge_{i \in I} [Sx \rightarrow \chi_i(x)] \models \forall x[Sx \rightarrow \bigwedge_{i \in I} \chi_i(x)]$. This means that there is one necessary and sufficient condition, $\bigwedge_{i \in I} \chi_i(x)$. According to Laudan (1983:118), this demand is justified because “it seems unlikely” that “something less ambitious would do the job” of a demarcation criterion: With a criterion that provided only a necessary condition ψ , $\forall x[Sx \rightarrow \psi(x)]$, one could never determine that something *is* a science, and with a criterion that provided only a sufficient condition φ , $\forall x[\varphi(x) \rightarrow Sx]$, one could never determine that something *is not* a science (1983:118f). In other words:

Without conditions which are both necessary and sufficient, we are never in a position to say ‘*this* is scientific: but *that* is unscientific’. (Laudan:1983, 119)

But Laudan’s claim is false: To be able to say that a is scientific (Sa) while b is not ($\neg Sb$), all that is needed is one sufficient condition φ that is fulfilled by a , $\varphi(a)$, and one necessary condition ψ that is not fulfilled by b , $\neg\psi(b)$. That is, the criterion can provide a condition of the form $C \models \forall x[\varphi(x) \rightarrow Sx] \wedge \forall x[Sx \rightarrow \psi(x)]$, where, for C to be conservative, $\forall x[\varphi(x) \rightarrow \psi(x)]$ must be a logical truth (cf. Lutz 2010: Concept formation in ethical theories: Dealing with polar predicates, *Journal of Ethics & Social Philosophy*, §2). However, Laudan’s demand that the converse must also hold, so that $\forall x[\varphi(x) \leftrightarrow \psi(x)]$ (and $\forall x[\psi(x) \leftrightarrow \bigwedge_{i \in I} \chi_i(x)]$), is supererogatory. Hedging his claim with “it seems unlikely”, Laudan suggests that any condition logically weaker than a necessary and sufficient one is either only necessary or only sufficient. But, if C is conservative without fulfilling Laudan’s supererogatory demand, then C is weaker than any necessary and sufficient condition and still “does the job” of determining a but not b to be a science.

Without the demand for a single necessary and sufficient condition for scientific theories, Laudan’s argument actually suggests the opposite of what he intends to show. He states that, given his first demand, the criteria suggested in the 20th century are implausible as necessary and sufficient conditions, and that “in *most* cases, these are not even plausible as necessary conditions” (1983: 123, my emphasis). But this suggests that *some* criteria do provide plausible necessary conditions $\{\psi_i\}_{i \in J}$ that fulfill his first demand. Assuming that the criteria identify important epistemic or methodological features, the resulting necessary condition $\bigwedge_{i \in J} \psi_i$ also fulfills Laudan’s second demand. Furthermore, Laudan (1983:117f) states in connection with his first demand that “there is a large measure of agreement at this paradigmatic level” and in fact gives examples of paradigmatic sciences. Thus there is a sufficient condition for scientific theories after all, if only by enumeration of the paradigmatic sciences. If now these paradigmatic sciences have any epistemic or methodologically relevant feature ϑ in common, its conjunction with the necessary condition, $\vartheta \wedge \bigwedge_{i \in J} \psi_i$, fulfills Laudan’s first and second demand and logically entails the necessary condition.

Whether the resulting criterion with one necessary condition and a different sufficient condition fulfills Laudan’s third demand will depend on what is being investigated, but without the fourth demand, a rather weak criterion may already determine some cases and provide a starting point for stronger criteria. Finally, Laudan’s fifth

demand will have to be met, but it cuts both ways: Given the important practical implications, one should neither adopt nor dismiss a criterion for the demarcation of science based on arguments that are not especially compelling.

I thank Thomas Müller, J. Brian Pitts, Antje Rumberg, Alana Yu, and three anonymous referees for helpful comments.

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§3

NEWS

Rethinking Relations Between Science(s) and Philosophy, 6–7 June

The relation between sciences and philosophy was the subject of a postgraduate [conference](#) that took place at the University of Grenoble in France, on June 6th to 7th, 2011. The underlying worry animating the event was the problem of the autonomy of philosophy and of the epistemological status of scientific results which are used to solve problems that looked philosophical (but maybe weren't after all). The problems put forward were in a huge part a reaction to what we did in 2009 and in 2010, where we tried to “rethink”, respectively, normativity and facts.

One of the two keynote speakers, Jérôme Dokic (from Institut Nicod), was invited to share some methodological difficulties proper to cognitive sciences. The second one, Philippe Descamps from CERSES / CNRS, presented a number of abuses of pseudo-scientific language within the legal and moral sphere. The two-day conference included a number of papers devoted to natural sciences and to different aspects of humanities.

On a fundamental level, there was an opposition between those who defended the autonomy of philosophical activity (Pierre Fasula from Paris 1 Pantheon Sorbonne and Guillaume Decauwert from Grenoble), and those who, in a rather Quinean spirit, felt not only that philosophical questions are to be answered by science, but they also lose their specificity and have to comply with epistemology of science itself (Delphine Blitman from Institut Nicod and Denis Perrin from Grenoble, one of the invited commentators). Several presentations dealt with the way theory (and philosophical theory in particular) tries to find its place within the scientific practice, in the history of mathematics (Raphaël Sandoz from Geneva gave an interesting paper on that topic), in physics (in a presentation by Régis Catinaud from Geneva and Grenoble), and in psychology (Sarah Troubé from the University of Paris VII). Other questions were also raised, concerning applied ethics (Julien Blanc from Marseille, Nicolas Delon from Amiens, Florian Couturier and Eva Marazel from Grenoble) and the nature of philosophical inquiry (Marion Renaud from Nancy) and reasoning (Mathieu Vidal, Institut Nicod and Robin Lamarche-Perrin from Grenoble).

The main result of the conference is not a definitive view about relations between

sciences and philosophy, but rather a desire to do some further work on the notion of universality that seemed to underline many of the evoked problems. The exciting and fruitful discussions (with the participation of, among others, Denis Vernant) made it clear not only that the subject of the conference was rightly chosen, but also that the issues it concerns are far from being solved.

ANNA C. ZIELINSKA

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University of Grenoble 2

Logica, 20–24 June

The conference *Logica* 2011, held in Hejnice (Czech Republic) from 20th to 24th June 2011, was organized by the Department of Logic, Institute of Philosophy, Academy of Sciences of the Czech Republic. This year's symposium was the 25th event in the series of the annual *Logica* symposia. As usual, the contributions (4 invited plus 27 contributed talks) were devoted to various branches of logic. Invited speakers were Edwin Mares, Pavel Materna, Krister Segerberg and Gila Sher.

Several papers were focused on necessity, possibility and possible worlds semantics: e.g., Edwin Mares provided a new semantics for C.I. Lewis's logic S2 based on the ontology of his 1923 paper "Facts, Systems, and the Unity of the World". Frode Bjørdal asked the question of what entities we need commit to in order to provide adequate semantics for modal logics. He postulated an alternative semantics based on the so called "evaluation frames" instead of possible worlds. Yue Chen and Ray Jennings created a Leibnizian notion of entailment between sentences A and B that requires the following: every minimal necessary condition for B is satisfied by a minimal necessary condition for A. In this framework sentences were represented by "clutters" (which are hypergraphs satisfying some particular additional conditions).

Relevant Logic was also often discussed during the conference as for example by Francesco Berto, Ondrej Majer and Igor Sedlár.

Pavel Materna presented a general overview of Transparent Intensional Logic (TIL) including its history and philosophical motivations. Some narrower applications of TIL were discussed by Jiří Raclavský (who developed solution to semantic paradoxes in the framework of TIL) and Bjørn Jespersen (who applied a theory of procedural semantics to the problem of propositional unity).

Among the other presentations we can mention some more philosophically oriented: E.g. Krister Segerberg spoke about the logic of metaphor. Gila Sher formulated a new holistic approach to the nature of truth and knowledge in logic and mathematics. She advocated that these disciplines require a new way of grounding in reality. Jaroslav Peregrin together with Vladimír Svoboda asked what we actually do when we do logical formalization. Their answer was based on Goodman's notion of reflective equilibrium. Sebastian Sequoiah-Grayson investigated the philosophical nature of Hume's principle on which Frege Arithmetic is based.

On the other hand, also some highly technical papers were presented: E.g. David Makinson presented a talk (co-authored by Lloyd Humberstone) on some new re-

sults concerning introduction and elimination rules of the following forms: set/set, set/formula and set/formula-or-empty. Vítězslav Švejdar showed how Urquhart's result (stating that for each n , the number of intuitionistically non-equivalent formulas built up from implication only is finite) can be obtained using Kripke models. Tomasz Połacik proved that classical propositional logic can be characterized as the unique intermediate logic whose every rule is archetypal (using the concept of archetypal rule introduced by L. Humberstone).

As usual, the authors of the papers will have the opportunity of publishing their contributions in the next volume of *The Logica Yearbook*.

VÍT PUNČOCHÁŘ

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Formal Social Epistemology, 24–26 June

This year's *Episteme* conference took place at Carnegie Mellon University in Pittsburgh, PA. The focus was on the intersection between formal and social epistemology. A special issue of *Episteme* devoted to this year's conference is due out, which will feature selected papers drawn from the presentations given. A link to the full list of papers given can be found [here](#). With just under thirty talks given, there is not enough space in this review to cover every presentation, nor to go into depth on those mentioned. Instead I will give a brief overview of one central theme of the conference.

The theme I want to cover is the use of methods of formal epistemology to study aspects of scientific practice. Conor Mayo-Wilson put forward the idea that a notion of “informational proximity” should be used to assess scientific testimony. It was argued that we should trust testimony from purported experts the closer they are to relevant expertise or to somebody with relevant expertise. Rogier De Langhe gave a talk on ‘Peer Disagreement under Multiple Epistemic Systems’. He argued that the best way to explain longstanding disagreements within science is often to take the disagreement to involve, at least to some extent, disagreement about ‘epistemic systems’. Roughly put, scientists can be thought of as disagreeing about which questions to ask, not to mention what the answers are. The persistence of these disagreements can then be modelled by representing the degree of trust agents have in the epistemic system(s) of those they disagree with. This thesis bore some resemblance to the central issue of Gerhard Schurz's presentation, which concerned the possibility of arbitrating between methodologies based on past performance. Randall Harp and Kareem Khalifa used game-theoretic analysis to address the question of why scientists pursue unification. They argued that scientists do so because theories which unify a broader range of areas enjoy the epistemic benefit of receiving confirmation from a wider pool of evidence.

Other talks of particular interest included the highly entertaining presentation of a new, geometric, method of proving Arrow's impossibility theorem. The talk was given by Hanti Lin and based on research conducted by Lin and Kevin Kelly. Professor Rohit Parikh's talk on game-theoretically modelling an agent who influences the outcome of games by controlling the information available to other players was highly suggestive

of future research. Patricia Rich's paper was another highlight, as illuminating links were forged between the AGM belief revision theory and the phenomenon of backwards induction.

Finally, as I am sure many of you are aware, Horacio Arló-Costa [passed away in July](#). He was the main organiser of this conference and ensured the admirably smooth running and great success of the event. Although I did not know him well, I would like to end this review by offering my condolences to the friends and family of Professor Arló-Costa.

LIAM BRIGHT
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A NOTE ON BEHALF OF EPISTEME

I am writing personally and also on behalf of the editorial team of *Episteme*. We are deeply saddened to learn that Horacio Arló-Costa has passed away. Horacio was a wonderful person, friend and colleague, and an outstanding scholar. We will miss him.

Just a few weeks ago, Horacio organized this year's Episteme Conference at Carnegie Mellon University, which was a great success, and he and I were in the process of co-editing a special conference issue of *Episteme*, on "Formal Social Epistemology". It has been a privilege working with him. We will now dedicate that special issue to the memory of Horacio. We wish to send our warmest thoughts and condolences to Horacio's family and friends.

CHRISTIAN LIST
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Evolution, Cooperation and Rationality, 27–29 June

This was the second international conference hosted by the Bristol's AHRC project of the same name. Although the first conference was more scientifically inclined and featured speakers from various disciplines, this time the focus was on Philosophy. Once again, talks were distributed around the two themes of the evolution of rationality and the related issue of the evolution of social behaviour, often with a focus on the links between economic and evolutionary theory.

The main topic was the evolution of rationality. Peter Godfrey-Smith (Philosophy, Harvard) examined recent game theoretic signalling models. He stressed that interactions come in grades from those of complete conflict to complete common interest and that, consequently, the degree to which information is stably transferred is graded. David Papineau (Philosophy, King's College London) highlighted five "transitions" of rationality on the evolutionary path to human reasoning, from the cognitive ability of representation to the general purpose "error avoidance" system of logical reasoning, including causal allocentricity. Jonathan Grose (Philosophy, Bristol) analysed the contrast between optimization models of decision making and approaches based on heuristics. He did so by drawing analogies with the earlier conflict over Adaptationism. Armin

Schulz, Bence Nanay, Tobias Starzak, Pete Trimmer, Konrad Talmont-Kaminski, Simon Powers and Bart Engelen spoke on related topics.

Some speakers focused on economic models of social behaviour itself. Elliott Sober (Philosophy, Wisconsin-Madison) presented game theoretic models of the stochastic nature of predator-prey interactions, arguing that they have been overlooked by biologists. Ken Binmore (Economics, UCL) defended an interpretation of behavioural economics results in terms of norm-following coordination in repeated games rather than by appeal to “social preferences”. Christine Clavier, Jan Willem Lindemans, Arnon Levy and Elina Santanatoglia discussed related themes, while Chiara Liscandra, David Frank, Javier Guillot & Pablo Abitbol and Hannes Rusch presented modelling and experimental results.

Another theme was the conceptual links between economics and biology. Samir Okasha (Philosophy, Bristol) drew a tight analogy between veil of ignorance arguments in political philosophy and fair meiosis in biology. He argued that these arguments are actually more convincing in the biological realm. Kim Sterelny (Philosophy, Australian National University & Victoria University) talked on the subject of the evolution of the decoupling, in humans, of what they value (their utility) from what is evolutionarily good for them (fitness), which is due to the increasing scale of human societies. Cédric Paternotte (Philosophy, Bristol) used conceptual links between selection, optimality, and adaptation, to argue that only groups in which reproductive competition is repressed qualify as genuine (super)organisms, this being a fundamentally causal concept. Johannes Martens, Jonathan Birch and Alexandro Rosas Lopez tackled related themes.

Further information, including abstracts, can be found at the [conference web page](#).

JONATHAN GROSE
CÉDRIC PATERNOTTE

Department of Philosophy, University of Bristol

Models and Mechanisms in Cognitive Science, 29 June

Current research in the cognitive sciences relies on the use of modelling and the appeal to mechanisms. Models and mechanisms are associated with multiple epistemic values connected to explanation, prediction, manipulation and evidence. But what is the nature of mechanisms? Is there a single, homogeneous class of mechanistic explanations? What is the relationship between mechanisms and models? These were some of the issues explored at the *Models and Mechanisms in Cognitive Science Workshop* held in Edinburgh. The workshop—supported by the *Mind Association*—featured five talks from speakers with different backgrounds. Each talk was followed by a response from postgraduate students at the University of Edinburgh.

Stephan Hartmann (Tilburg Center for Logic & Philosophy of Science, University of Tilburg) started by presenting a paper based on joint work with Robert van Iersel (TiLPS). The paper raised the point that the ontic nature of mechanistic explanation commits mechanists to a potentially problematic realist position. Hartmann argued that if life-science phenomena can be adequately explained by “coherent mechanistic

stories” rather than mechanisms themselves, then “new mechanistic philosophers” can avoid the problems underlying scientific realism while making good sense of the explanatory practice in the life sciences.

Lena Köstner (Philosophy, Ruhr-University Bochum) took issue with another potentially problematic relationship of mechanistic explanation: that with the interventionist account of causation. Köstner focused on inter-level empirical research, and argued that the interventionist’s postulates of what counts as genuine causal relationships do not mesh with the non-causal constitution relation informing multi-level mechanistic explanation.

The third paper by Luigi Acerbi (Institute of Perception Action & Behaviour, University of Edinburgh) focussed on an increasingly popular modelling framework in cognitive science: the Bayesian framework. Having described this framework, Acerbi identified some useful constraints on modelling that stem from his own experimental and theoretical work on time perception and synchrony. He then argued that some Bayesian models can enable us to formulate and explore “non-trivial hypotheses about the world”.

Bayesian modelling was also discussed in the paper presented by Francesca Rossi (Philosophy, University of Edinburgh). Drawing on recent modelling work in computational cognitive neuroscience, including Feed-forward, Bayesian, Emulation, and Predictive-coding approaches, Rossi formed a working hypothesis about the nature of cognition. She suggested that as all these approaches make essential reference to anticipatory processes we have reason to believe that anticipation is at least a necessary component of cognition.

The workshop concluded with a talk by Mark Sprevak (Philosophy, University of Edinburgh). According to Sprevak, there is probably no general, robust criterion that allow us to pick out what is mechanistic explanation *simpliciter*. Motivated by this idea, Sprevak explored what computational mechanisms are, and in particular how to define the concept of computational implementation. Sprevak suggested that a system can only be said to implement a computation if it uses representations, and outlined how representations themselves could be identified.

The workshop covered a wide range of topics related to modelling and current mechanistic approaches to understanding the mind, and postgraduate commentators greatly contributed to the discussion sessions by raising important questions and focussing debate. The interdisciplinary audience clearly appreciated the dialogue across different research communities, so given this interest we hope that other similar workshops aiming at fostering fruitful dialogue between scientists and philosophers will become regular fixtures in Edinburgh and elsewhere in the UK.

MATTEO COLOMBO

LIZ IRVINE

Department of Philosophy, University of Edinburgh

British Society for the Philosophy of Science, 7–8 July

The annual conference of the British Society for the Philosophy of Science (BSPS) was hosted by the University of Sussex on July 7-8 this year. The conference, as usual, of-

ferred a “tasty menu” with engaging plenary talks and parallel sessions of contributed papers. Both cutting-edge issues in the special sciences and more classic topics in general philosophy of science were covered, demonstrating the diversity and current good state of health of the discipline.

The entrée plenary session provided a nice example of how philosophy of science can be relevant to problems of paramount practical importance. It featured two lectures by Roman Frigg (LSE) and by Wendy Parker (Ohio) on the role of modelling in climate forecasting.

Frigg started by quoting Francis Bacon to remind us that “Truth emerges more readily from error than from confusion”. Accordingly, his talk aimed to clear up some confusion surrounding climate change modelling. Frigg asked three questions: What do climate models tell us about the world? What is their aim? And what is at stake with what we can reasonably assert about climate change on the basis of climate models? He focused on the impact that chaos and non-linearities can have on a model’s forecasts and argued that “probabilities in the world can be very different from probabilities in a model”. Extreme care should therefore be taken when specific billion-dollar policies are formulated on the basis of climate models.

Sometimes different climate models agree. Various collections of different climate models, that is, produce results that indicate the truth of some predictive hypothesis. But what should we conclude when different climate models agree? Parker addressed this question. She argued that under certain circumstances robust predictive modelling results can take on special epistemic significance, but such circumstances probably do not hold in the context of present-day climate modelling.

A lecture by Peter Gärdenfors (Lund) concluded the first day. Gärdenfors argued for a rational reconstruction of scientific change in terms of vector spaces. The significance and importance of Gärdenfors’ project were scrutinised in a Q&A session prompted by a comment by Angelo Cei (Leeds). The discussion revealed a shared concern on whether Gärdenfors’ account has the resources to quantify the degree of change, hence distinguish ‘normal’ changes from—what Kuhn would call—‘revolutionary’ changes. Yet, developing in detail the framework on offer would make for an ambitious research programme.

As a rich dessert, the conference offered a plenary session on *Ceteris Paribus* clauses.

In a lively talk, Michael Strevens (NYU) analyzed various dimensions of what he called “Ceteris Paribus Magic”. He cashed out such magic in terms of “operation conditions”: the set of conditions required for the successful operation of a target mechanism. An interesting case-study on Cepheid Variable Stars illustrated the epistemic role of the operation conditions and their connection with causal explanation.

After Strevens, Gerhard Schurz (Düsseldorf) distinguished *Ceteris Paribus* from *Ceteris Rectis* Laws and discussed a number of problems underlying the testability and content of such laws. One of Schurz’s most original suggestions was that a condition of evolution-theoretic “normality” may be necessary to solve the problem of *Ceteris Rectis* Laws that hold true by accident.

Food for thought for every taste was on offer with the parallel sessions over the two days.

Scientific realism, causation and mechanisms and particular issues in the philosophy of physics were perhaps the most discussed topics. The average quality of the talks, most of which were given by young philosophers, was high.

If the annual conference is evidence of the state of the BSPS and of philosophy of science more generally, then there is reason to be cheerful. The Society, with the sterling work of its officers and committee, and all its members, looks to be thriving. With allies like this, we should expect exciting and fruitful times for the philosophy of science.

MATTEO COLOMBO

Department of Philosophy, University of Edinburgh

Calls for Papers

A COMPUTATIONAL FOUNDATION FOR THE STUDY OF COGNITION: special issue of the *Journal of Cognitive Science* devoted to David Chalmers's 1993 paper, deadline 15 August.

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

EXTENDED COGNITION AND EPISTEMIC ACTION: special issue of *Philosophical Exploration*, deadline 15 September.

20 YEARS OF ARGUMENT-BASED INFERENCE: special issue of the *Journal of Logic and Computation*, deadline 1 October.

RE-THINKING CREATIVITY: special issue of *Tropos: Journal of Hermeneutics and Philosophical Criticism*, deadline 15 October.

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

THE ALAN TURING YEAR: special issue of *Philosophia Scientiae*, deadline 1 November.

BETWEEN TWO IMAGES. THE MANIFEST AND THE SCIENTIFIC UNDERSTANDING OF MAN, 50 YEARS ON: special issue of *Humana.Mente*, deadline 30 November.

PSYCHOLOGICAL MODELS OF (IR)RATIONALITY AND DECISION MAKING: special issue of *Synthese*, deadline 1 December.

SCOPE OF LOGIC THEOREMS: special issue of *Logica Universalis*, deadline 24 December.

STRUCTURE OF SCIENTIFIC REVOLUTIONS: 50 YEARS ON: special issue of *Topoi*, deadline 15 January.

IMPRECISION IN STATISTICAL DATA ANALYSIS: special issue of *Computational Statistics & Data Analysis*, deadline 30 January.

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

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

THE AIM OF BELIEF: special issue of *Teorema*, deadline 15 September 2012.

...Logic and Rational Interaction

The new podcast series started by the Munich Center for Mathematical Philosophy (MCMP) is rapidly expanding. Since early June, some 25 talks have been added to the collection. They reflect three workshops recently held at MCMP as well as the on-going colloquium on Mathematical Philosophy. The videos are available on [iTunes](#) and via a dedicated [RSS feed](#).

The videos are produced in a very professional fashion and highly recommended. They cover a broad range of topics of interest to readers of *The Reasoner*—prominent examples of talks recently added include Ed Zalta (Stanford) on possible worlds, Stephen Hartmann (Tilburg) on the emergence of descriptive norms, Branden Fitelson (Rutgers) on accuracy and coherence, Hannes Leitgeb (MCMP) on logic and brain science, among others.

LORIWEB invites everyone to submit news relevant for the Logic and Rational Interaction community, such as workshop announcements, reports about past events, or published papers. Please contact [Rasmus Rendsvig](#), our web manager, or write to the [loriweb address](#).

BEN RODENHÄUSER
Philosophy, Groningen

...Mind and Cognition

Perhaps unsurprisingly in an Edinburgh based column, David Hume is back for this third little piece in our series. This time the link to Hume exists because of his famous challenge to the great Cartesian dogma of self-transparency. Where Descartes expressed the powerful intuition that our selves are the one thing about which we have safe knowledge, Hume famously felt that he had no access to any such thing as a self. In this spirit, self blindness (albeit in a slightly different though related sense to the one intended by Hume) is the hot topic of this piece. Self blindness is a hot topic in the cognitive sciences in more than one area at the moment. Eric Schwitzgebel, for example, has recently doubted in a much-noticed essay entitled *The unreliability of naïve introspection* (2008) whether introspection could ever be a useful tool for the sciences of the mind. This is quite astonishing, given that for centuries introspection was not just any old tool but the king's road to the self. This philosophical scepticism about the ease with which we know our minds is almost daily strengthened by the amazing wealth of findings in social psychology, which seem to demonstrate that much of what we do is done without conscious knowledge of the motivations for doing it (see, e.g., the work by John Bargh for many striking examples, or take the IAT test at the [Project Implicit website](#)). One area in which these findings have been particularly fruitful for the production of new research is the area of conscious will. Are we really in charge of our own behaviour?

Do we even know the mental antecedents that cause bodily action or do we simply con-fabulate explanations afterwards? Around questions like these, there has grown a worry about the age old folk psychological intuition of conscious will. We term this worry the *zombie challenge* in the forthcoming volume *Decomposing the Will* edited by parts of the Edinburgh group. This book will add to a growing flurry of interest in the topic, which produced a number of edited collections in the last years (most recently e.g. by Baumeister et al. 2010, Sinnott-Armstrong et al. 2011) and which made conscious will scepticism one of the hottest topics discussed at the ASSC 15 in Kyoto in June. Before I finish, let me mention that here, as well as almost anywhere else, David Hume's thought is never far away. In the *Celebrating Connections* series organized by the University of Edinburgh in honour of Hume, we will explore Hume's real and imagined influence on one of the contemporary classics of conscious will scepticism, Daniel Wegners's "illusion of conscious will".

TILLMANN VIERKANT

Philosophy, University of Edinburgh

...Mathematical Philosophy

Instrumentalist nominalism: nominalism is the view that there are no numbers, sets, sequences of symbols, computer programs, languages, formal systems, symmetry groups, wavefunctions, manifolds, tensor fields, Hilbert spaces, etc., and is usually motivated by a sceptical argument: in order to *know* that there are exactly two continuous automorphisms of the complex field to itself, the mind must be in 'causal contact' with these, which is impossible. On the other hand, Quine and Putnam argued that our best scientific theories, being mathematicized, are *inconsistent* with nominalism and that the use of mathematics in such theories is indispensable in some sense. For example, the electromagnetic field is a function from spacetime to a vector space. How can we even formulate Maxwell's equations without appealing to the electromagnetic field, current densities, and so on? Standard responses have been to engage in nominalization programmes: either *eliminate* mathematicalalia or *reconstrue* them as nominalistically benign. The magnetic field might be eliminated and replaced by certain intrinsic spatio-temporal relations (Field) or perhaps reconstrued as a 'possible sentence token' (Chihara). But there are a number of difficulties with these programmes, connected to the awkwardness of the resulting reconstructions and the logical and metaphysical resources to which they appeal (for a survey, see Burgess & Rosen 1997, *A Subject with No Object*).

The last decade has seen the emergence of a more radical strategy responding to the indispensability arguments: *instrumentalism*. Contemporary instrumentalist nominalists would like to combine realism about science with anti-realism about mathematics, while insisting that there is no need to nominalize our best scientific theories. Given an explanatory and predictively successful scientific theory *T*, inconsistent with nominalism, the realist says, '*T is a good approximation to the truth*', while the instrumentalist says, '*the concrete things behave as if T*' (or '*T is nominalistically adequate*'), while maintaining that no intrinsic description of the concrete things need be given to re-

place/reconstrue T. So, compasses, computers and constellations behave *as if* there is an electromagnetic field, even though there isn't. The approach is conceptually similar to van Fraassen's constructive empiricism: replace 'empirically adequate' by 'nominalistically adequate' to get instrumentalist nominalism.

Instrumentalist nominalism was criticized by John Burgess ('Why I am Not a Nominalist', *Notre Dame J. Formal Logic* 1983) and further discussed in Burgess & Rosen 1997. Over the last decade or so, several authors have proposed similar views, occasionally called 'fictionalism', often incorporating ideas from the literature on the semantics and pragmatics of fictional discourse. Examples are Joseph Melia ('Weaseling Away the Indispensability Argument', *Mind* 2000), Gideon Rosen ('Nominalism, Naturalism, Epistemic Relativism', *Nous* 2001), Stephen Yablo ('Go Figure: A Path Through Fictionalism', *Midwest Studies in Philosophy* 2001), Mary Leng ('Revolutionary Fictionalism: A Call to Arms', *Philosophia Mathematica* 2005), and some recent work by Richard Pettigrew. Building on her previous work, Leng has recently published a monograph defending instrumentalism (*Mathematics and Reality*, OUP 2010), reviewed by Burgess in *Philosophia Mathematica* (Vol. 18, 2010) and by Chris Pincock in *Meta-science* (forthcoming). Criticisms of instrumentalism include recent articles by Stathis Psillos ('Scientific Realism: Between Platonism and Nominalism', *Philosophy of Science* 2010), Mark Colyvan ('There is No Easy Road Nominalism', *Mind* 2010) and myself ('Nominalistic Adequacy', *Proceedings of the Aristotelian Society* 2011). Whether viable or not, instrumentalist nominalism has become a major topic in contemporary philosophy of mathematics.

JEFF KETLAND

Munich Center for Mathematical Philosophy

§5

EVENTS

AUGUST

THE CLASSICAL MODEL OF SCIENCE II: The Axiomatic Method, the Order of Concepts and the Hierarchy of Sciences from Leibniz to Tarski, Vrije Universiteit Amsterdam, The Netherlands, 2–5 August.

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

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

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

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

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

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

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

TEMPORAL ASYMMETRY: Monash University, 16–17 August.

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

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

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

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

ESIAT: 3rd International Conference on Environmental Science and Information Application Technology, Xi'an, China, 20–21 August.

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

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

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

HARVARD-AUSTRALIA WORKSHOP ON LANGUAGE, LEARNING AND LOGIC: MGSM Conference Centre, Macquarie University, 22–26 August.

METAPHYSICS, MODALITY AND MATHEMATICS. THEMES FROM THE WORK OF BOB HALE: Philosophy Department, University of Sheffield, 23–24 August.

COMPLEXITY: THEORETICAL FOUNDATIONS & PRACTICAL IMPLICATIONS: Altonaer Stiftung für philosophische Grundlagenforschung, Hamburg, 24–26 August.

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

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

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

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

SEPTEMBER

HUMANOBS: From Constructionist to Constructivist Methodologies for building Artificial Intelligence, Reykjavik, Iceland, 1–2 September.

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

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

ARGUMENTATION IN POLITICAL DELIBERATION: Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, Portugal, 2 September.

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

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

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

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

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

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

PERCEPTUAL MEMORY AND PERCEPTUAL IMAGINATION: University of Glasgow, 6–9 September.

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

PROGIC

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

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

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

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

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

EXPERIMENTAL PHILOSOPHY GROUP UK: University of Sheffield, 17–18 September.

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

AXIOMATIC THEORIES OF TRUTH: New College, University of Oxford, UK, 19–20 September.

CAEItS

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

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

STATISTICAL COMPUTATIONAL & COMPLEX SYSTEMS: University of Padua, 19–21 September.

UNDERSTANDING OTHER MINDS. EMBODIED INTERACTION AND HIGHER-ORDER REASONING: Bochum, Germany, 20–21 September.

COMPUTER SIMULATIONS AND THE CHANGING FACE OF SCIENTIFIC EXPERIMENTATION: Stuttgart, Germany, 21–23 September.

SOCIAL ONTOLOGY: METAPHYSICAL AND EMPIRICAL PERSPECTIVES: Workshop of the European Network on Social Ontology (ENSO), Luiss Guido Carli, University, Rome, Italy, 21–23 September.

AIM AND NORMS: BELIEF: University of Southampton, 23 September.

KANT AND THE EXACT SCIENCES: University of Notre Dame, 23–24 September.

MEANING IN CONTEXT: Logic and Cognitive Science Initiative (LACSI), North Carolina State University, 23–24 September.

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

MRC: 7th International Workshop on Modelling and Reasoning in Context, Karlsruhe, Germany, 26–27 September.

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

LANGUAGE, LOGIC AND COMPUTATION: Kutaisi, Georgia, 26–30 September.

SEMANTICS & PHILOSOPHY IN EUROPE: Ruhr University Bochum, Germany, 26 September–1 October.

COPENHAGEN LUND WORKSHOP IN SOCIAL EPISTEMOLOGY: University of Copenhagen, Denmark, 27 September.

FORMAL EPISTEMOLOGY MEETS EXPERIMENTAL PHILOSOPHY: Tilburg Center for Logic and Philosophy of Science, 29–30 September.

OCTOBER

PT-AI: Philosophy and Theory of Artificial Intelligence, Thessaloniki, Anatolia College/ACT, 3–4 October.

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

NIT: Natural Information Technologies, Madrid, Spain, 4–7 October.

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

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

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

EUROPEAN WORKSHOP ON EXPERIMENTAL PHILOSOPHY: Eindhoven University of Technology, The Netherlands, 7 October.

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

THE NATURE OF SOCIAL REALITY: University of Calabria, Arcavacata di Rende, Italy, 13–14 October.

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

CASE STUDIES IN BAYESIAN STATISTICS AND MACHINE LEARNING: Carnegie Mellon University, Pittsburgh, PA, 14–15 October.

ALVIN GOLDMAN AND SOCIAL EPISTEMOLOGY: Saint Louis University Philosophy Graduate Student Conference, 20–21 October.

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

URSW: 7th International Workshop on Uncertainty Reasoning for the Semantic Web, Bonn, Germany, 23–27 October.

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

EPISTEMIC FEELINGS AND METACOGNITION: Ruhr-Universität Bochum, 28–29 October.

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

THE EPISTEMOLOGY OF LOGIC: Arché Research Centre, St Andrews, 29–30 October.

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

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

NOVEMBER

PHILOSOPHY OF MEDICINE ROUNDTABLE: University of the Basque Country, Donostia-San Sebastian, Spain, 2–3 November.

LATIN MEETING IN ANALYTIC PHILOSOPHY: Universidade de Lisboa, 2–4 November.

THE PLURALITY OF NUMERICAL METHODS IN COMPUTER SIMULATIONS AND THEIR PHILOSOPHICAL ANALYSIS: IHPST, University of Paris 1, 3–5 November.

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

SEMANTIC CONTENT: University of Barcelona, 4–6 November.

BIOLOGICALLY INSPIRED COGNITIVE ARCHITECTURES: Arlington, Virginia, 5–6 November.

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

HISTORY AND PHILOSOPHY OF COMPUTING: Celebrating the 75th anniversary of the famous 1936 Papers by A. Church, E.L. Post and A.M. Turing, Ghent University, Belgium, 7–10 November.

IDEAS OF OBJECTIVITY: Tübingen, 7–11 November.

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

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

EVOLUTION AND NORMS: CONCEPTS, MODELS, CHALLENGES: Bucharest, Romania, 11–12 November.

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

RISK AND RELIABILITY MODELLING OF ENERGY SYSTEMS: Senate Suite, Durham Castle, 24 November.

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

ICNI: International Conference on Networks and Information, Chengdu, China, 25–27 November.

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

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

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

DECEMBER

CT&IT: International Workshop on Computation Theory and Information Technology, Macau, China, 1–2 December.

LENLS: Logic and Engineering of Natural Language Semantics, Takamatsu-shi, Kagawa-ken, Japan, 1–2 December.

INDEFINITE EXTENSIBILITY AND LOGICAL PARADOXES: Arché Research Centre, St Andrews, 2–4 December.

NCMPL: International Conference on Non-classical Modal and Predicate Logics, Guangzhou (Canton), China, 5–9 December.

ACAL: 5th Australian Conference on Artificial Life, Perth, Murdoch, Australia, 6–8 December.

ICIRA: 4th International Conference on Intelligent Robotics and Applications, Aachen, Germany, 6–9 December.

MIWAI: 5th Multi-Disciplinary International Workshop on Artificial Intelligence, Hyderabad, Andhra Pradesh, India, 7–9 December.

THE COLLECTIVE DIMENSION OF SCIENCE: Nancy, France, 8–10 December.

COPENHAGEN LUND WORKSHOP IN SOCIAL EPISTEMOLOGY: University of Lund, Sweden, 9 December.

ICACM: 1st International Conference on Advanced Computing Methodologies, Hyderabad, Andhra Pradesh, India, 9–10 December.

ICDM: 11th IEEE International Conference on Data Mining, Vancouver, Canada, 11–14 December.

IICAI: 5th Indian International Conference on Artificial Intelligence, Tumkur (near Bangalore), India, 14 December.

NIPS: 25th Annual Conference on Neural Information Processing Systems, Granada, Spain, 13–15 December.

AAL: Australasian Association of Logic, Wellington, New Zealand, 14–15 December.

STATISTICS AND SCIENTIFIC METHOD I: THE CONTROVERSY ABOUT HYPOTHESIS TESTING: Universidad Nacional de Educación a Distancia (UNED), Madrid, 15–16 December.

INTERNALISM VERSUS EXTERNALISM: Institute for Logic, Language and Computation, Department of Philosophy, Universiteit van Amsterdam, 16–17 December.

ALC: Asian Logic Colloquium, Wellington, New Zealand, 15–20 December.

ICISME: International Conference on Information Management and Systems Engineering, Nanjing, China, 16–18 December.

COMPUTING & STATISTICS: Senate House, University of London, UK, 17–19 December.

AMSTERDAM COLLOQUIUM: ILLC, Department of Philosophy, University of Amsterdam, 19–21 December.

§6

COURSES AND PROGRAMMES

Courses

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

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

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

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

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

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

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

CONCEPTS AND METHODS IN CAUSAL INFERENCE: Torino, Italy, 19–21 September.

OPERATIONALISATION OF MENTAL STATES: Tübingen, Germany, 26–29 September.

FSFLA: International Fall School in Formal Languages and Applications, Tarragona, Spain, 31 October–4 November.

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

Programmes

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

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

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

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

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 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.

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JOBS AND STUDENTSHIPS

Jobs

POST-DOC POSITIONS: in Robot Learning and Reinforcement Learning, Intelligent Autonomous Systems Group, Darmstadt University of Technology / Technische Universität Darmstadt, Germany, to be filled asap.

POST-DOC FELLOWSHIP: Center for Collective Intelligence, Sloan School of Management, until filled.

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

TWO POST-DOC POSITIONS: in Machine Learning, in the project “Composing Learning for Artificial Cognitive Systems”, INRIA Lille, until filled.

POST-DOC POSITION: in Machine Learning, University of California, Irvine, until filled.

FULL PROFESSORSHIP: in Machine Learning, with emphasis on application to autonomous systems interacting with humans, University of Amsterdam, deadline 1 August.

LECTURER/ASSOCIATE PROFESSOR: in Statistics, School of Mathematical Sciences, University of Nottingham, deadline 2 August.

DURHAM INTERNATIONAL FELLOWSHIPS FOR RESEARCH AND ENTERPRISE: Institute of Advanced Study, Durham University, deadline 10 August.

POST-DOC POSITION: in Structural and Computational Proof Theory, Computational Logic group of the Institute of Computer Science, University of Innsbruck, Austria, deadline 20 August.

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

FULL-TIME TENURED ACADEMIC POSITION: dedicated to teaching and research in analytic philosophy, Institute of Philosophy, K. U. Leuven, deadline 30 September.

CHAIR: in Theoretical Philosophy, Department of Philosophy, Uppsala University, deadline 3 October.

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

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

Studentships

PHD POSITIONS: in Robot Learning and Reinforcement Learning, Intelligent Autonomous Systems Group, Darmstadt University of Technology / Technische Universität Darmstadt, Germany, to be filled asap.

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

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

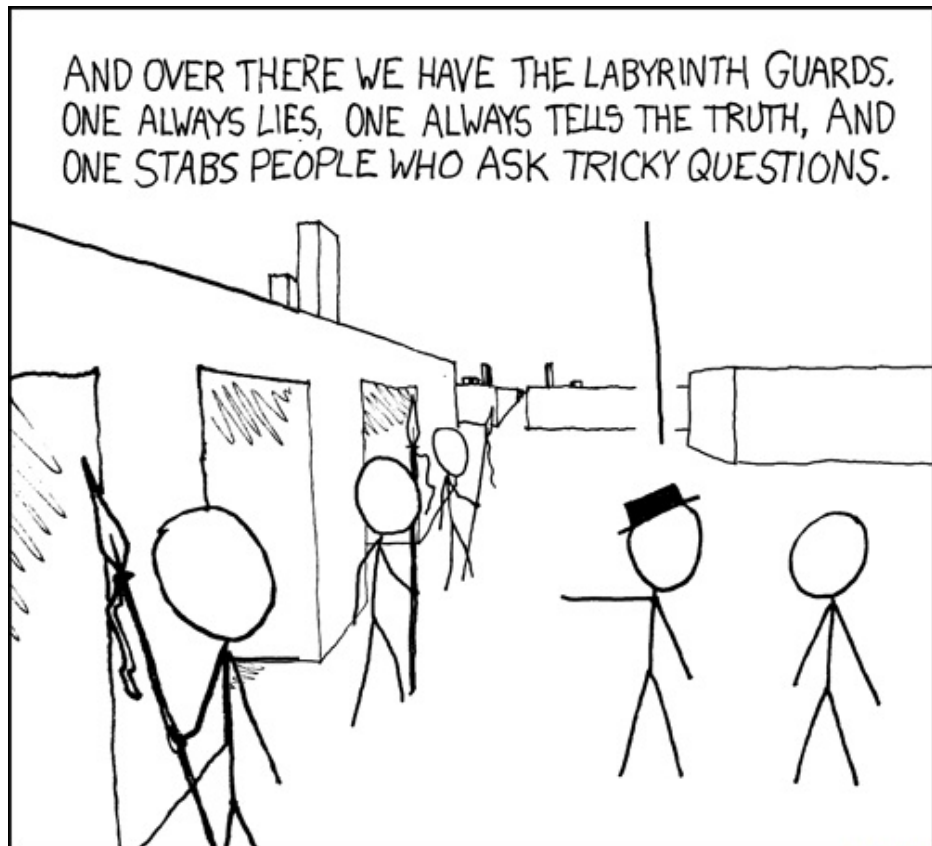
PHD POSITION: in the area of developmental robotics and robot learning, INRIA, Bordeaux, until filled.

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

BSPS DOCTORAL SCHOLARSHIP: in Philosophy of Science, deadline 1 August.

GRADUATE TEACHING ASSISTANTSHIP: in Philosophy or History and Philosophy of Science, Department of Philosophy, University of Leeds, deadline 9 August.

VISITING SCHOLARSHIPS: Northern Institute of Philosophy, University of Aberdeen, deadline 12 August.



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