THE REASONER

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range of stances in which it is supposed to hold. But how can one describe a stance? If a stance can only be individuated in terms of the set of normative claims that it condones, then when relativised to stance those normative claims themselves appear tautologous.

This month also sees the launch of *Sic et Non*, an annual supplement to *The Reasoner* edited by Steffen Ducheyne. The new yearbook will print very short pieces (max 400 words) on the philosophy of science and epistemology. Please see the news section for further details.

Jon Williamson
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§1
EDITORIAL

Epistemic voluntarism seems to be flavour of the month, with a special issue of Episteme and a special issue of Synthese in the pipeline. Voluntarism—also known as epistemic relativism—questions the objectivity of basic normative claims about reasoning, e.g., the claim that if you believe *p* then you should not also believe its negation. According to a voluntarist, the truth of such a claim is relative to your own particular 'system' or 'tradition' or 'stance', which in turn is a matter of personal choice or historical accident. Should this kind of relativism trouble those who study reasoning? It makes things both easy and hard. It becomes easy to avoid having to comply with such a norm: one can just change one's stance to another that does not condone the norm. On the other hand it becomes hard to properly state a normative claim: one would also need to specify the

§2
FEATURES

Interview with Donald Gillies

Donald Gillies is Professor of Philosophy of Science and Mathematics in the Department of Science and Technology Studies at University College London.

Jon Williamson: Could you fill the readers in on your intellectual history—what you've worked on and why?

Donald Gillies: I first became interested in philosophy of mathematics through reading some popular works by Bertrand Russell who was a very well-known figure in the media at the time (late 1950s and early 1960s). I decided to follow in the footsteps of the master and studied 2 years of mathematics followed by 2 years of philosophy as an undergraduate at Cambridge. I then (in 1966) wanted to do a PhD in philosophy of mathematics. The most interesting recent work on the

subject which I had read was Imre Lakatos's Proofs and Refutations, and so I asked Imre Lakatos to take me on as a student which he did. When I arrived at LSE, Lakatos himself was writing a paper on the theory of confirmation/corroboration, in which he criticized the Bayesians—especially Carnap. Popper had just introduced his propensity theory of probability. So these were the areas on which I started working. I found them so interesting that most of my subsequent research has been on these topics, though I have done some things in general philosophy of mathematics and science as well.

JW: You're currently working on reasoning in medicine. Could you say a bit about this line of work?

DG: Like most philosophers of science I began by concentrating most of my attention on physics with the occasional glance at chemistry. About a decade ago, however, I decided to have a look at medicine, thinking that the study of medical examples might give a new perspective on philosophy of science. I found that this is indeed the case. The concept of causality is central to medicine, but is less important in physics. So the study of examples from medicine is very helpful for the difficult task of analysing causality. This task is also connected with important questions in probability and statistics, including Bayesian networks.

JW: To what extent do you think those studying reasoning and inference need to be aware of what is going on in other disciplines?

DG: It is essential in my view that those studying reasoning and inference should find out about a number of areas in which reasoning and inference are employed. These areas obviously include mathematics and science—both contemporary and historical, but they could also include the law and legal questions.

JW: In your view what are the most exciting and important research directions in the area of reasoning and inference? What topics would you recommend to graduate students starting out today?

DG: In the area of reasoning and inference there are quite a number of exciting and important research directions. The analysis of causal reasoning is one, and, as I have already indicated, I think that examples from medicine could prove very helpful here. Another direction which I think could be fruitful is the study of theory of confirmation/corroboration of scientific theories. This is a standard field in philosophy of science, but is still in a confused state and further progress could be made. These are a couple of areas which I would recommend to graduate students starting out today.

Why we shouldnt fault Lucas and Penrose for continuing to believe in the Gödelian argument against computationalism—II

One reason why Lucas and Penrose should not be faulted for continuing to believe in their well-known Gödelian arguments against computationalism lies in the lack of an adequate consensus on the term 'computation'.

For instance, Boolos, Burgess and Jeffrey (2003: Computability and Logic, 4th ed. CUP, p37) define a diagonal function, d, any value of which can be computed effectively, although there is no single algorithm that can effectively compute d.

Now, the straightforward way of expressing this phenomenon should be to say that there are well-defined real numbers that are instantiationally computable, but not algorithmically computable.

Yet, following Church and Turing, such functions are labeled as effectively uncomputable!

> According to Turings Thesis, since d is not Turing-computable, d cannot be effectively computable. Why not? After all, although no Turing machine computes the function d, we were able to compute at least its first few values, For since, as we have noted, $f_1 = f_1 = f_1 =$ the empty function we have $d(1) = d(2) = d(3) = 1$. And it may seem that we can actually compute d(n) for any positive integer n—if we dont run out of time. (ibid. 2003. p37)

The issue here seems to be that, when using language to express the abstract objects of our individual, and common, mental 'concept spaces', we use the word 'exists' loosely in three senses, without making explicit distinctions between them.

First, we may mean that an individually conceivable object exists, within a language L, if it lies within the range of the variables of L. The existence of such objects is necessarily derived from the grammar, and rules of construction, of the appropriate constant terms of the language—generally finitary in recursively defined languages—and can be termed as constructive in L by definition.

Second, we may mean that an individually conceivable object exists, under a formal interpretation of L in another formal language, say L', if it lies within the range of a variable of L under the interpretation.

Again, the existence of such an object in L' is necessarily derivable from the grammar, and rules of construction, of the appropriate constant terms of L', and can be termed as constructive in L' by definition.

Third, we may mean that an individually conceivable object exists, in an interpretation M of L, if it lies within

the range of an interpreted variable of *L*, where *M* is a Platonic interpretation of *L* in an individual's subjective mental conception (in Brouwer's sense).

Clearly, the debatable issue is the third case.

So the question is whether we can—and, if so, how we may—correspond the Platonically conceivable objects of various individual interpretations of *L*, say *M*, *M′*, *M″*, . . ., unambiguously to the mathematical objects that are definable as the constant terms of *L*.

If we can achieve this, we can then attempt to relate *L* to a common external world and try to communicate effectively about our individual mental concepts of the world that we accept as lying, by consensus, in a common, Platonic, 'concept-space'.

For mathematical languages, such a common 'concept-space' is implicitly accepted as the collection of individual intuitive, Platonically conceivable, perceptions—*M′*, *M″*, *M‴*, . . .—of the standard intuitive interpretation, say *M*, of Dedekind's axiomatic formulation of the Peano Postulates.

Reasonably, if we intend a language or a set of languages to be adequate, first, for the expression of the abstract concepts of collective individual consciousnesses, and, second, for the unambiguous and effective communication of those of such concepts that we can accept as lying within our common concept-space, then we need to give effective guidelines for determining the Platonically conceivable mathematical objects of an individual perception of *M* that we can agree upon, by common consensus, as corresponding to the constants (mathematical objects) definable within the language.

Now, in the case of mathematical languages in standard expositions of classical theory, this role is sought to be filled by the Church-Turing Thesis (CT). Its standard formulation postulates that every number-theoretic function (or relation, treated as a Boolean function) of *M*, which can intuitively be termed as effectively computable, is partial recursive / Turing-computable.

However, CT does not succeed in its objective completely.

Thus, even if we accept CT, we still cannot conclude that we have specified explicitly that the domain of *M* consists of only constructive mathematical objects that can be represented in the most basic of our formal mathematical languages, namely, first-order Peano Arithmetic (PA) and Recursive Arithmetic (RA).

The reason seems to be that CT is postulated as a strong identity, which, prima facie, goes beyond the minimum requirements for the correspondence between the Platonically conceivable mathematical objects of *M* and those of PA and RA.

> We now define the notion, already discussed, of an effectively calculable function of positive integers by identifying it with the notion of a recursive function of positive integers. (Church 1936: An unsolvable problem of elementary number theory, Am. J. Math., Vol. 58, pp. 345–363)

> The theorem that all effectively calculable sequences are computable and its converse are proved below in outline (Turing 1936: On computable numbers, with an application to the Entscheidungsproblem, Proceedings of the London Mathematical Society, ser. 2. vol. 42 (1936–7), pp. 230–265).

This violation of the principle of Occam's Razor is highlighted if we note (e.g., Gödel 1931: On undecidable propositions of Principia Mathematica and related systems I, Theorem VII) that, classically, every recursive function (or relation) is not shown as identical to a unique arithmetical function (or relation), but only as instantiationally equivalent to an infinity of arithmetical functions (or relations).

Now, the standard form of CT only postulates algorithmically computable number-theoretic functions of *M* as effectively computable.

It overlooks the possibility that there may be number-theoretic functions and relations which are effectively computable / decidable instantiationally in a Tarskian sense, but not algorithmically.

Bhupinder Singh Anand
Mumbai

On Two Arguments about the Logical Status of 'Exists'

A classic post-Kantian argument for the claim that existence is not a genuine property of particulars goes roughly as follows.

AI: Argument from the Logical Status of 'Exists'

> 1: If existence is a genuine property of particulars, then the verb TO EXIST has first-level occurrences.
>
> 2: TO EXIST does not have first-level occurrences.
>
> 3: Existence is not a genuine property of particulars.

In the words of S.G. Williams (1995: 'Existence' in Jaegwon Kim and Ernest Sosa, *A Companion to Metaphysics*, Oxford, Blackwell), 145-50, 145), advocates of AI.2 'treat "exists" not as ... a *first*-level predicate, a predicate true of *individuals*, but as a *second*-level (or . . . an *n* + 1-level) predicate, a predicate of first-level (or *n*-level) concepts.' Let us consider two arguments against AI.2. Here is the first.

AII: Argument from Complex Predicates

> 1: If TO EXIST is never a first-level predicate, then no complex first-level predicate can have an occurrence of TO EXIST as a part.
>
> 2: Some complex first-level predicates do have an occurrence of TO EXIST as a part.
>
> 3: TO EXIST is sometimes a first-level predicate.

AII.2 is supposedly illustrated by modally and temporally modified singular existentials, such as 'This article might not have existed' and 'This article did not exist until 2007'.

The second argument against AI.2 is:

AIII: Argument by Analogy with TO DISAPPEAR

> 1: TO DISAPPEAR has first-level usages: 'Lord Lucan has disappeared'.
>
> 2: TO DISAPPEAR has second-level usages: 'Dodos have disappeared'.
>
> 3: The logical syntax of TO EXIST is analogous to that of TO DISAPPEAR.
>
> 4: TO DISAPPEAR has both first- and second-level usages.
>
> 5: TO EXIST has both first- and second-level usages.
>
> 6: TO EXIST is sometimes a first-level predicate.

The examples, which we will see to be flawed, are from Williams (1995: 147).

The claims I will defend are that (i) the above version of AIII fails; (ii) an amended version of AIII (AIV below) reduces to AII; (iii) AII begs the question against the proponent of AI.2; (iv) neither AII nor any version of AIII discussed here genuinely threatens AI.

Even setting aside its analogical status, AIII fails. AIII either requires that TO DISAPPEAR is semantically ambiguous or trades on semantically distinct analogical usages of that verb. In what follows, assume that Lord Lucan has gone missing, that we wish neither to assert nor to deny that he is alive, and that the dodo is extinct.

TO DISAPPEAR sometimes means TO GO MISSING and sometimes means TO DIE OUT/BECOME EXTINCT. On our assumptions, it is the first that applies to Lucan and the second that applies to dodos.

The important point is that (regardless of whether TO DISAPPEAR is semantically ambiguous or whether we merely have semantically distinct analogical usages of it over AIII.1 and AIII.2) we are not dealing with semantically the same verb over AIII.1 and AIII.2. AIII

does not, therefore, establish that semantically the same verb has both first- and second-level uses. AIII can be shorn of this flaw if we replace occurrences of TO DISAPPEAR with occurrences of TO PERISH, giving:

AIV: Argument by Analogy with TO PERISH

> 1: TO PERISH has first-level usages: 'Lord Lucan has perished'.
>
> 2: TO PERISH has second-level usages: 'Dodos have perished'.
>
> 3: The logical syntax of TO EXIST is analogous to that of TO PERISH.
>
> 4: TO PERISH has both first- and second-level usages.
>
> 5: TO EXIST has both first- and second-level usages.
>
> 6: TO EXIST is sometimes a first-level predicate.

In the sense, or usage, of TO PERISH at play in AIV.1, 'Lord Lucan has perished' means that Lord Lucan no longer exists. 'Dodos have perished' is quantificationally ambiguous. If we change the example to 'All dodos have perished and none are left' or to 'The dodo has perished' then we have a sentence that expresses that the species is extinct. In the latter case, we arguably have a first-level occurrence of TO PERISH, depending upon whether the species counts as a particular. 'The dodo has perished' might be interpreted as expressing the same claim that 'The dodo used to exist, but no longer does' expresses. The latter sentence, in turn, might be seen as one in which the logical syntax of the occurrence of TO EXIST differs from the occurrence in 'Dodos used to exist but now there are none', which is a second-level occurrence. On this view, the two most recently mentioned sentences exhibit syntactic diversity in respect of how TO EXIST is working, but are semantically equivalent. But the important point lies elsewhere: the examples in AIV.1 and AIV.2 are paraphrases of sentences employing complex predicates (such as 'no longer exists') in which usages of TO EXIST feature as parts. In respect of AIV.1, everything depends upon whether AII works. AIII failed, we tried to save it by turning it into AIV, but AIV is redundant: the action should be concentrated on the assessment of AII.2.

AII.2, however, begs the question against the proponent of AI.2. AII.2 can only be espoused if AII.3 is already presumed. Whether or not TO EXIST has first-level occurrences, AII is not a good argument for a positive answer. The proponent of AII adopts AII.1 on the back of a compositional approach to logical form. AII.1 has it that if a complex predicative expression is first-level, then so is any predicative expression the complex

predicative expression has as a proper part. Acceptance of such compositionality, however, ought to be turned against AII.2 by the proponent of AI. If, as the proponent of AI maintains, TO EXIST has no first-level occurrences, then no complex predicate (whether modally, temporally or otherwise qualified) that is built up from it can be a first-level predicate. Any such appearance must be dismissed, as with the case of simpler singular existentials, as involving sentences in which TO EXIST occurs in ways which mislead us about logical syntax.

The original version of AIII fails, our amended version reduces to AII and AII begs the question. So AI is left intact.

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Translating Kripke's Pierre

In a previous contribution to this gazette (*The Reasoner* 1(4) 2007: 8-9), I argued that a plausible solution to Kripke's puzzle about belief might consist in applying certain restrictions to the translation principle employed in the derivation of the puzzle. To motivate this suggestion I imagined a situation in which Pierre comes to know that the names 'Londres' and 'London' denote the same city, and reports his discovery thus: *"Incroyable! Après tout, Londres est London!"*. This, I remarked, would not be appropriately translated as *"Incredible! After all, London is London!"*, because the two identity statements have different cognitive content (one is *a posteriori*, the other *a priori*). This led me to conclude, admittedly quite sketchily, that "in cases like Pierre's— i.e. when the speaker is unaware of certain facts about translation between idiolects—our own translation of the speaker's utterances should be guided, and appropriately constrained [...] by a principle of charity which implies, among other things, that we should aim at preserving both the truth-value of the speaker's assertions, and their cognitive content" (2007: 8-9).

In his recent reply to my paper (*The Reasoner* 1(5) 2007: 4-5), Professor Goldstein finds fault with this 'desperate solution', though it seems to me that some of what he says in fact agrees with it. Thus, concerning my example of Pierre's discovery of the identity between Londres and London, Prof. Goldstein argues that "pretty clearly, Pierre's French utterance, properly transcribed, is quotational, viz. "Après tout, <ce que j'appelais> 'Londres' est London", which would translate unproblematically, since the material within the quotation marks would remain untouched" (Goldstein 2007: 4). So far, our verdict seems to be essentially the same: the name 'Londres' is not to be translated as 'London' inside this identity statement. Our disagreement appears to concern the motive behind this exception to the standard rule of translation. According to Prof. Goldstein, Pierre's utterance contains a hidden quotation, and it is this that blocks the standard translation, not certain facts about Pierre's ignorance or the cognitive content of his utterance.

However, I remain unconvinced. First of all, it is not difficult to imagine similar quotational contexts in which we would normally have no qualms about translating 'Londres' as 'London'. Take for instance the following statement in French: *"La ville qu'aujourd'hui nous appelons 'Londres' est située sur le site d'un campement Romain ancien, appelé 'Londinium'."* Its translation in English is: *"The city that we nowadays call 'London' is situated on the site of an ancient Roman settlement called 'Londinium'."* Here, too, the context in which 'Londres' appears is purely quotational, yet this doesn't seem to preclude us from giving the name its standard English translation.

That quotation is not the culprit can be determinately established by thinking of slight variations to my initial example, in which the translation of 'Londres' as 'London' is equally implausible despite there being no hidden quotational context involved. Perhaps the reason why my initial example is likely to raise suspicions of quotationality is that it contains an identity statement ("Londres = London"). As Frege notes in the opening paragraph of his *Sinn und Bedeutung*, "what one wishes to express with "a = b" seems to be that the signs or names 'a' and 'b' name the same thing; and in that case we would be dealing with those signs: a relation between them would be asserted." Considerations like these motivate the idea that identity is more properly construed as a relation holding between the names of objects than between the objects themselves. And it is this idea that lends plausibility to Prof. Goldstein's suggestion concerning quotation. But there are other ways of expressing Pierre's discovery, which appear to avoid this problem. Here's one of them: *"Je viens de découvrir qu'on peut être simultanément à Londres et à London"*, which—again, on pain of having Pierre foolishly rejoicing in the discovery of a trivial a priori truth—should be translated without replacing 'London' for 'Londres', viz. *"I've just found out that one can be at the same time in Londres and in London."* This is clearly a statement about objects, not names. One can insist, of course, that there is a hidden quotation at play in this context as well, which might be unpacked (following Prof. Goldstein's suggestion) as "...we can be at the same time in <what I call> 'Londres' and London". But the suggestion would be artificial, since virtually all our statements are subject to this kind of paraphrase ("I like <what I call> 'icecream'.", or "The sky is <what I call> 'blue'."). This would lead to the absurd conclusion that all our statements are in fact quotational.

As if in anticipation of this line of argument, Prof. Goldstein writes: "If you want to insist that the utterance is non-quotational, then you would have to de-

cide how to translate both the 'Londres' and the 'London'. A good rendering would be "After all, London is Londres"." (Goldstein 2007: 4). This sounds very odd to me. No reason is given why the English translation of a French sentence containing a proper name in its English version should replace that name with its French version. After all, if the French all started to use only original English names in their French utterances (out of courtesy to the English, say), that would not mean, I suppose, that the English had to translate their utterances by using the French equivalents in exchange (e.g. "London est jolie" $=_{Trans}$ "Londres is pretty")!

My solution, I think, fares better in this respect, as it provides an explanation of why translation should be homophonic in such cases (viz., to preserve cognitive content). To recap, my solution is this: translation is not just a matter of replacing words *salva veritate*—it is about substituting *salva significatione*. In particular, the cognitive content of a speaker's utterance must be taken into account when translating that utterance. When this addition is made to Kripke's translation principle, the puzzle about belief is no longer a puzzle.

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On the Curry-Lob Paradox

On first sight the Curry-Lob Paradox is the most striking of all the semantic paradoxes. Haskel Curry (1942 : 'The Inconsistency of Certain Formal Logics', *Journal of Symbolic Logic*, 7, pp 115-117) showed how a self-referring sentence in a logic without negation engenders paradox. Thirteen years later H.B. Lob (1955: 'Solutions of a problem of Leon Henkin', *Journal of Symbolic Logic*, 20, pp 115-118) in a very different context, produced a simpler formulation of the same paradox. Curry-Lob show that if S is defined as 'If S is true then p', where p is any sentence, then every sentence is true. The demonstration of the paradox that I here present is, with minor variations, that of Michael Clark (2003: 'Curry's Paradox', *Paradoxes from A to Z*, Routledge, pp 36-7).

Let S be the sentence: 'If S is true then p'.

*1: S is true   assumption

*2: S 1, T-schema (consequence of S being true)

*3: If S is true then p 2, definition

*4: p 3,1, Modus Ponens (affirming the antecedent)

5: If S is true then p 1-4, Conditional Proof (from 1 we get 4)

6: S 5, definition

7: S is true   6, T-schema

8: p 5,7, Modus Ponens

We thus have a proof of p, given S, where p is any sentence whatsoever. Or, equally, we have a proof for every sentence whatsoever given our definition. But then surely something is wrong with our definition of S. And we see right off what it is. We need not appeal to solutions which disallow self reference. S says of itself that, if true it is inconsistent. For S says of itself that, if true so is any sentence. But then by starting off with the definition we are starting off with the assumption that S being a conditional cannot be true unless it is false. Or what amounts to the same, S has to be false.[1]

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§3
NEWS

Announcement and Call for Papers: New Journal in the Philosophy of Science and Epistemology

"Sic et non", an international e-yearbook for recent arguments in the philosophy of science and epistemology, will be published as an annual supplement to *The Reasoner*.

SCOPE OF THE JOURNAL

This scholarly and peer-reviewed yearbook (published online, in line with its attempt to speed up discussion in the philosophy of science and offered as an annual supplement to *The Reasoner*) sets out to collect either rebuttals, i.e. to point out *non sequiturs*, or *arguments for a positive thesis* in the philosophy of science and epistemology (preferably not older than 3 years). If suitable, some of the papers that were previously published in *The Reasoner* will appear again in *Sic et Non*. The *argumentationes* should be relevant to recent debates and reflect original research. Authors should criticize or argue for one sole argument which typically cannot materialize as full papers. Submissions should be self-contained and not published previously. The author whose argument has been rebutted is subsequently invited to respond. At that time the discussion is considered as closed to allow for a broad myriad of discussions. The aim is to promote small steps in the general improvement of the philosophy of science and epistemology.

Once accepted by our referees, papers will be immediately put on the journal's website—a keyword and

number will be attributed, who corresponds to the final e-book, as to allow easy reference. Once a year, a pdf-file will be made available online on the website of *The Reasoner* containing all papers. Papers will have (1) an individual number and (2) a code referring to its keyword (*à la* PHILSCI). The aim is to speed up discussion amongst philosophers. Young scholars as well as established academics are encouraged to submit. Hopefully this will evolve to the kind of journal that you will read from front to cover.

Availability

The yearbook will be available online without any charge. Authors submitting a manuscript consent to this open access policy (copyrights remain with the authors, however). The first volume will appear in December 2008 / January 2009.

For Authors

Send all editorial correspondence to the founding editor:

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Submissions are sent by e-mail to the Editor. Submissions must be prepared for blind review and contain: on the front matter the author's name/affiliation plus the anonymized text (no longer than 400 words). Footnotes are discouraged. The review procedure takes about 4 weeks (no reports will be provided, as these would in most cases be as long or even longer than the submission).

Editorial Board

Dynamics of Knowledge and Belief, 10 September 2007

Knowledge Representation is one of the major topics in AI. Its concerns are (logical) formalisms and reasoning, with the intention to explore and model the basics of intelligent behaviour. In recent years, intelligent agents in the contexts of open environments and multi agent systems have become the leading paradigm of the field. Consequently, modern KR methods have to deal not only with static scenarios, but also with dynamic modifications in knowledge and belief, due to uncertain or incomplete information, or to changes in the environment. Moreover, agents are often expected to learn from past experiences, or to interact with other agents, making use of their knowledge and adjusting their beliefs during argumentation.

The workshop *Dynamics of Knowledge and Belief* was held on September 10th, 2007, in Osnabrück, Germany, co-located with the 30th Annual German Conference on AI (KI-2007), and organized by the Special Interest Group on Knowledge Representation and Reasoning of the German Gesellschaft für Informatik (*GI-Fachgruppe Wissensrepräsentation und Schließen*). The particular focus of this workshop was on dynamic processes concerning any changes that an agent's state of knowledge and belief may undergo.

The presentations of the workshop were organized in three sessions dedicated to specific topics. The first session was made up of three presentations using quantitative methods for knowledge representation. With their joint work *From syntactical to semantical and expedient information—a survey*, Wilhelm Rödder and Elmar Reucher made a contribution to clarify the vague term "useful information" in economics and AI literature. In particular, they addressed issues like "value" and "price" of information, and presented a study on creditworthiness. Jens Fisseler and Imre Feher made use of knowledge discovery techniques to combine data from different sources. The basic idea of their presentation *A probabilistic approach to data fusion* was to generate a probabilistic rule base from each data set and to compute a joint distribution from the combined rule bases. The talk also presented a real world application with data from a telecommunication company. In his talk *On a conditional irrelevance relation for belief functions based on the operator of composition*, Radim Jirousek presented an approach on how to define conditional irrelevance for belief functions via composition properties. The new composition operator was compared to Dempster's rule of combination, and relations to semigraphoids were pointed out.

Belief revision was the topic of the second session. Haythem Ismail's talk *Reason maintenance and the Ramsey test* shed new light on an old problem in belief revision, namely the incompatibility of handling conditionals according to the Ramsey test within the AGM framework. He proposed a theory to deal with conditionals adequately in a reason maintenance system based on relevance logic. With *Subjective models and multi-agent static belief revision*, Guillaume Aucher aimed at generalising the famous AGM approach to multi-agent frameworks. He showed that his static be-

lief revision operator satisfies the AGM-properties, and proposed some new postulates which are specific to the multi-agent scenario. The joint work *What you should believe: Obligations and beliefs* of Guido Boella, Célia da Costa Pereira, Gabriella Pigozzi, Andrea Tettamanzi and Leendert van der Torre studied the interactions between obligations and beliefs when revising an agent's belief by new information. It was shown how obligations might help to choose between different possible options the agent has, thereby providing the logical grounds for modelling *conventional wisdom* agents.

In the session on ontologies and descripton logics, there were two presentations dealing with conflicting and evolving ontologies. The contribution *On the conservativity and stability of ontology-revision operators based on reinterpretation* by Özgür Özcep and Carola Eschenbach addressed the problem of resolving conflicts that are caused by agents using different ontologies in communication. The authors introduced ontology revision operators to establish consistency and encoded semantic mappings between ontologies as formulas on the object level. The focus of the joint work *Dynamic T-Box-handling in agent-agent-communication* by Moritz Goeb, Peter Reiss, Bernhard Schiemann and Ulf Schreiber was on agent-agent-communication where the contents of messages are expressed in description logics. The authors studied the process of merging ontologies that have been modified during communication.

The workshop proved to be very successful in attracting researchers from quite different areas of knowledge representation, thereby providing the grounds for lots of interesting discussions. Among the participants, there was strong support for organizing a follow-up workshop in 2008. The proceedings and more detailed information can be found at the workshop's website `http://www.fernuni-hagen.de/wbs/dynamics07`.

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Gabriele Kern-Isberner
Computer Science, Universität Dortmund

Normative Concepts, 21–22 September 2007

The Topic

Although concepts are at the heart of the philosophical endeavour, philosophers are far from agreement on what their ontological status is, how they are related to language, where they come from, whether they can be analysed, and so on. The series *Zurich Workshops on Concepts* run by the Chair for Theoretical Philosophy II (Prof. Dr. Hans-Johann Glock) at the University of Zurich addresses those and other questions regarding concepts in loose order. Whereas the first workshop had the relation between concepts and language as its main topic, the second workshop, on which this text reports, was devoted to normative concepts, and was organised by Dr. Reto Givel. The series is going to continue in 2008 with events on 'Concepts and Abilities' and 'Conceptual Analysis'.

The expression 'normative concepts' has several senses, of course. Due to the fact that concepts usually *require* a certain usage, there is perhaps something normative to almost every concept. The sense of 'normative concepts' as it occurs in the conference's title is narrower, though, and excludes all descriptive concepts such as VIOLIN, TALL, WATER, THREE, GREEN and SOCIETY. But it includes all ethical concepts such as GOOD, OUGHT and COURAGEOUS, and also certain non-ethical ones such as GOOD (as used in 'good knife'), UGLY, and YANK—to name just a few seemingly clear examples. It is quite clear that 'normative concepts' understood in this narrower way, embraces all but not only ethical concepts, but it is difficult to give a clear account of what holds them together. On the one hand, to characterise them as the non-descriptive concepts seems to provide little information. To take 'normative concepts' as an umbrella term of 'evaluative concepts' (e.g. WORSE, HERO) and 'prescriptive concepts' (e.g. OUGHT, ALLOWED) basically relocates the problem. On the other hand, to claim that they are peculiarly linked to motivation, that they express emotions, or that they refer to properties of a special kind already involves substantial and also contestable theories.

The Talks

At the beginning of the workshop Stephen Barker from the University of Nottingham laid out the most common non-cognitivist accounts of normative concepts: Classical expressivism denies that normative utterances can be assertions. Quasi-realism holds that normative utterances pretend to be assertions. Minimalism takes normative utterances only to be assertions on the surface level of syntax and practice. Dual-content theory, finally, takes normative utterances to convey both a non-value and a value component, respectively taking the role of the motorcycle and its sidecar. In his main talk, then, Barker developed a new kind of non-cognitivist theory that replaces the truth-apt and non-truth-apt mental states that are (or are not) expressed by normative assertions by *pre*-truth-apt mental states. His respondent was Miriam Baldwin from the University of Newcastle.

Next, Reto Givel from the University of Zurich examined three different accounts of derogatory concepts, which form an important sub-class of normative concepts. According to a first account, 'X is a Boche' shares its truth-conditions with 'X is a German', and

hence 'Boche' has a non-empty extension. According to a second account, 'X is a Boche' means something along the lines of 'X is despicable because X is German', and hence 'Boche' has a (necessarily) empty extension. And according to a third account, neither 'X is a Boche' nor 'It is not the case that X is a Boche' is true, and hence 'Boche' lacks extension (i.e. has not even an empty extension). Givel's respondent was Andreas Maier from Zurich University.

In the afternoon, David Kaplan presented parts of his yet unpublished paper 'The Meaning of Ouch and Oops', in which he examines expressives from a broader perspective than meta-ethicists commonly do. He distinguished expressives from descriptives; the former having an expressive mode of expression, the latter having a descriptive one. The two do not necessarily differ in their semantic content though. 'Ouch', for example, expresses the same semantic content as 'I am in pain', but does so in an expressive rather than a descriptive mode. And some expressives do not even express anything emotive or desire-like at all—contrary to what is frequently assumed within meta-ethical debates. 'Oops', for example, expresses that the agent just observed a minor mishap, as much as the descriptive 'I just observed a minor mishap' does. In addition to shedding new light on the functioning of expressives, Kaplan also suggested that semantical theory may have to take another form, taking into account terms with uses that do not seem to be derived from their meanings. For instance, in the case of 'goodbye', the use is far more easily pointed out than the meaning, if it has a meaning at all. Kaplan's respondent was Veli Mitova from Rhodes University in Grahamstown.

The next day, Gerhard Ernst from the University of Munich argued that in looking for analogies for ethical concepts and judgements the traditional meta-ethical positions use the wrong object of comparison. Expressivists, for example, see the analogy in less complex expressive terms such as 'Boo' and 'Hooray'. Prescriptivists see the analogy in requests or commands. And naturalists see it in (other) empirical concepts. In contrast, Ernst suggests that scientific concepts are the best analogy for normative concepts. In advancing this claim he does not take ethical concepts to lack normativity. Rather, he argued that scientific concepts are as much normative as the normative concepts are. Ernst's respondent was Christian Seidel from the University of Munich.

The conference ended with Michael Ridge from the University of Edinburgh. He started his talk with a presentation of ecumenical expressivism. This position can be classified as a dual-content theory in the way Barker explained earlier on, because it takes normative assertions to convey both a value as well as a non-value component. By contrast to what Ridge calls 'ecumenical cognitivism', which is a dual-content theory as well, ecumenical expressivism takes the truth-value of normative assertions to be dependent on the value component too. In the main part of his talk, then, Ridge explained how an ideal adviser analysis of normative discourse can be built within the framework of ecumenical expressivism. Ridge's respondent was Luca Tummolini from the Institute of Cognitive Sciences and Technologies in Rome.

Reto Givel
Philosophy, University of Zurich

ICAPS 2007: Artificial Intelligence Planning and Learning, 22 September

Great strides have been made in automated Artificial Intelligence (AI) Planning in recent years, including very efficient planning techniques that use controlled search with domain-specific and/or domain-independent heuristics, constraint-satisfaction techniques for reasoning with time and resources, and model-checking based planning algorithms. One challenge for most of these planning systems is that they require a domain expert to provide some sort of 'planning knowledge to the system. In many realistic planning problems, however, such planning knowledge may not be completely available; this is partly because it is very hard to compile such knowledge due to the complexities in the domains, e.g., evacuation and rescue operations, and it is partly because there is no expert to provide it, e.g., space operations. In these complex domains, a planning system that can learn such knowledge to develop ways on how to operate in the world holds great promise to be successful.

The *Artificial Intelligence Planning and Learning (AIPL-07)* Workshop was held at the Brown University, Providence, RI, USA on September 22, 2007, in conjunction with the International Conference on Automated Planning and Scheduling (ICAPS-07). The workshop provided a discussion forum among prominent AI Planning and Machine Learning researchers and identified several challenges that lay ahead to planning and learning community. In this abstract, I will summarize these challenges as the following four research topics:

LEARNING PLAN KNOWLEDGE. The workshop identified two major learning opportunities for AI planning; namely, to learn planning domain models and to learn search-control knowledge. The former deals with the somewhat simplifying assumption that most AI planning algorithms have been based on; that is, the planner assumes a complete description of the underlying planning domain provided to it as input in some formal language. Due to the difficulty of generating such complete descriptions in realistic applications, it is hard to apply

most planners to real-world problems. Learning search-control knowledge for planning, — in particular, learning search-control knowledge in the form of *Hierarchical Task Networks (HTNs)* —, was a popular topic in the workshop. An HTN planner formulates a plan by decomposing tasks (i.e., symbolic representations of activities to be performed) into smaller and smaller subtasks until tasks are reached that can be performed directly. Although HTNs provide a powerful mechanism for search control in planning, they require an extensive domain expertise to formulate such knowledge, which is again not realistic in many applications. Several works presented at the workshop described how to learn such hierarchical and structural knowledge from successful solution plans to planning problems with the help some additional information such as simple domain and task ontologies.

TRANSFER OF LEARNED PLANNING KNOWLEDGE. The objective of transfer is transferring knowledge and skills learned from a wide variety of previous situations, called *source* problems, to the current, previously un-encountered problem(s), called the *target(s)* (where significant differences may exist between these problem types). This notion of planning-knowledge transfer has recently started to appeal AI planning and learning researchers and we had several works presented on this topic in the workshop. In general, different levels of knowledge transfer may occur between the inter-related source and target problems. In AI research, on the other hand, knowledge transfer is usually characterized in broad and detailed dimensions and in terms of the knowledge-acquisition and problem-solving capabilities of the learners. One of the conclusions of the workshop presentations was that transfer can be especially effective when such knowledge can be represented suitably structured, e.g., in a relational fashion as in reinforcement learning and/or in a hierarchical fashion as in HTNs.

PLAN UNDERSTANDING. Learning for plan understanding was a new challenge proposed by Pat Langley during his invited lecture in the workshop. Given a partially-observed sequence of states induced by the actions of some agent in the world and our learned knowledge of how to achieve goals in the same domain, the problem of learning plan understanding involves inferring the other agent's goals and the plans that it is pursuing to achieve. This problem has some background in learning opponent models and in learning/reasoning about behavior models of the agents, however it has not been investigated before for planning problems

and it is proposed as a challenge for AI planning and learning researchers as this task suggests new learning problems, methods and evaluation criteria.

LEARNING FOR PLANNING IN REAL WORLD. When we start to execute a plan generated by a planning algorithm, usually unexpected events happen during that execution that would derail the execution of the plan and make it fail. There has been a lot of research on planning with nondeterministic action models and planning with Markov Decision Processes (MDPs) in order to generate solution plans that are robust to such uncertainties. Most of these works, however, take an offline approach by producing a "policy," which specifies an action for each state that our agent could encounter during execution. However, many important planning applications require interleaving planning and executing actions before the entire plan or policy is completely generated. Examples include real-time strategy games, urban driving, and military operations, where the environment is dynamic and reactive and different agents pursue their own goals and interact with each other at the same time. On-line Reinforcement Learning is a particular and successful approach to learning robust plans (i.e., policies) that would address such uncertainties; however, the workshop discussed that there are still open problems in this direction, such as learning domain models and behavior models based on the information obtained via the agent's interactions with the world during execution.

In conclusion, the workshop brought together different ideas from researchers from different backgrounds, illustrated the different points of view in the community, and identified several challenges and future research opportunities for AI Planning and Learning. For more information on AIPL-07 and a complete list of accepted papers at the workshop, see `http://www.cs.umd.edu/users/ukuter/icaps07aipl`.

Ugur Kuter
Computer Science, University of Maryland &
Institute for Advanced Computer Studies, Maryland

ICAPS 2007: Planning and Games, 23 September

The two communities, planning and games, have co-existed for several decades, but have evolved with little interaction between them. While games programs have been engineered for efficiency from the early days, high-performance planners are a relatively recent development.

Both planning and games are important fields of research in the Artificial Intelligence community. A trend in the computer game community, exemplified in initiatives such as the General Game Playing Project and ORTS, has been on playing whole classes of games, and on increasing realism and complexity. This tests the limits of traditional game-tree search approaches. However, the planning community has a lot of experience in dealing with huge search spaces. Furthermore, such games also involve current topics of much current interest in planning, such as: time reasoning, resource management, imperfect information, cost-based planning, etc.

With thesee arguments in mind, the workshop Planning in Games was celebrated on September, 23, in Providence, Rhode Island, US, as an attempt to discuss the main links and differences between both communities. Among other interesting topics, the presentations mainly focused on:

- Representational issues: from PDDL to a Game Domain Description Language (called GDDL), exemplified in various domains, that shall allow automated systems to take part in the General Game Playing Competition. Also, ontologies and description logics have been fairly discussed as a mean for solving various representational problems.

- From heuristic search in real-time environments to search with uncertainty with belief states. As a matter of fact, many automated players have to solve different search problems of this sort.

- Hierarchical Task Networks (HTNs) are currently known to be the most effective paradigm for actually solving planning tasks. Various works discussed the capabilities of HTNs for either solving the resource management problem or automatically creating scripts for managing NPCs—nonplayable characters.

In the final panel discussion, other invited speakers (Michael Buro, Stefan Edelkamp and Dana Nau) kindly promoted an interesting discussion around these questions along with the organizers of the event (Martin Mueller and Carlos Linares). Clearly, many questions are still open so that it is expected that an increasing number of scientific contributions will appear in the near future.

<div align="right">
Carlos Linares
Computer Science, Universidad Carlos III de Madrid
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Spring Bayes, 26–28 September

In September 2007, Bayesian Statisticians made their way to Coolangatta, Queensland for three days of Presentations, Workshops and just a little bit of beach action at the Spring Bayes Conference. Delegates from Taiwan, New Zealand, Perth, Melbourne, Sydney, Brisbane and numerous places in between all participated. Keynote speakers for the event were Adrian Barnett (University of Queensland), Cathy Chen (Feng Chia University, Taiwan) and Jean-Michel Marin (INRIA, France). It was wonderful to have such talented people sharing their research and we thank them very much.

The basic format for the event was oral presentations in the morning, workshops in the afternoon and poster presentations in the evening (accompanied by a tasty cold beverage). As conference numbers are kept small, each Keynote Speaker was able to give a workshop based on their work to roughly a third of all delegates. Topics discussed during the conference obviously centred on Bayesian Statistics but ranged from the highly theoretical, to applied areas such as finance, ecology and remote sensing. Delegates seemed pleased to have the three different modes for communication their research. Further, the hands-on' nature of the workshops was well received.

The next scheduled meeting for Bayesian Statisticians is the World Conference of the International Society for Bayesian Analysis on the 21–25 July, 2008 (ISBA 2008). The conference is to be held on the beautiful Hamilton Island and please refer to the website http://www.isba2008.sci.qut.edu.au/ for further information. We look forward to seeing you there.

<div align="right">
Kerrie Mengersen, Mark Griffin, Kate Lee, Chris Oldmeadow and Matt Falk
Spring Bayes Organising Committee
</div>

Models and Simulations 2, 11–13 October

The second conference on Models and Simulations was hosted by the University of Tilburg, The Netherlands, on 11–13 October, just after a workshop on idealizations in science which was held on October 10th. It was organized in collaboration by Cyrille Imbert, from the Institut d'Histoire et de Philosophie des Sciences et des Techniques (IHPST, CNRS, Paris), Roman Frigg from the Logos Research Group (Universitat de Barcelona) and Stephan Hartmann from the Tilburg Center for Logic and Philosophy of Science.

The first Models and Simulations conference, organized by the same people and supported by the Centre for Philosophy of Natural and Social Science of the London School of Economics and the IHPST, was held in Paris in June 2006.

The main motivation for that conference was to do justice to the increasing importance of computer simulations in scientific practice and theorizing. Although models have attracted attention from philosophers of science already in the 1960's, they have very recently

become to be regarded as the central unit of analysis for the philosophy of scientific theorizing and practice. The rise of computational science poses various questions concerning the relations between models and simulations as well as concerning their role in representation, explanation and experimentation. Some, like Paul Humphreys—who was a keynote speaker at last year's conference and who presented a new paper this time— think that the increasing role of computer simulations has deep implications for epistemology and the general methodology of scientific practice. Others argue that simulations have much less dramatic consequences for philosophy, in part because the usual tools of analysis that have been developed for modeling are applicable to them as well.

As compared to last year's conference, an emphasis was put on the general consequences of the role of simulations for the theoretical landscape of philosophy of science rather than on particular case studies: How are simulations and models related? How are both related to theories? Can we consider them as experiments? How are they used in explanation, prediction and representation?

Maybe because of that shift of emphasis from case studies to general theoretical approaches there were many papers exclusively focused on models or approaching the role of both models and simulations in explanation and representation without distinguishing them. The four plenary lectures are exemplary of that change in orientation. Margaret Morrison's lecture opened the conference by a reflection on the difference between models and theories as representational tools, arguing that theories have been too neglected since the shift of the philosophical interest to models. Ronald Giere presented an agent-based approach to models, and proposed a way to apply that analysis to simulations. Paul Teller proposed to draw much larger consequences of the use of models in science for our general outlook on the status of truth in the various epistemic enterprises of human agents. The final plenary lecture was given by Stathis Psillos, who defended a realist stance in the face of the—now very widely accepted—claim that virtually all models misrepresent the world in some way.

Those papers thus gave the general framework of analysis within which the new issue of simulations could be addressed. The so-called model-based approach to science can be considered, in many respects, as a new paradigm in philosophy of science. The problems posed by simulations are at the same time a way to question the well-groundedness of that paradigm and to try to see whether it can be extended to the new set of tools. One of the great advantages of the conference was that it could raise the interest of many people interested in the wider theme of modeling and at the same time give the occasion to people working on more technical issues to draw consequences of the use of com-

puter simulations for general topics in philosophy of science. The common background of most participants allowed the various speakers to presuppose some shared assumptions and knowledge to get into technical details and refined philosophical analysis.

The contributed papers, most of which of a remarkably high standard, ranged from traditional analysis of the role of models in representation and explanation to technical analysis of some special kinds of simulations (e.g., cellular automata and resampling methods), their relations to theories, to experience and to representation; others tried to compare the function of simulations with other kinds of scientific tools such as thought experiments—a topic to which three papers were dedicated. Whether computer simulations are a genuinely new kind of tool is a controversial issue, but I think that tackling classical questions from that perspective and trying to see whether the usual perspective on the role of modeling in science can apply to them is a good way to renew our stance towards our theoretical landscape and maybe, as Margaret Morrison's title suggested, to reconfigure it.

Julian Reiss
Philosophy, Erasmus University Rotterdam

Marion Vorms
IHPST & Universit Paris 1 Panthéon-Sorbonne

Reason, Intuition, Objects: The Epistemology and Ontology of Logic, 13 October

Traditionally, logic and mathematics have been considered exemplary cases of fields in which our knowledge is a priori. Consequently, questions about the epistemological status and ontological import of logical and mathematical truths have recurred throughout the history of philosophy. On October 13, 2007 Amanda Hicks and Andrew Spear, graduate students in the Philosophy Department of the University at Buffalo, hosted the conference "Reason, Intuition, Objects", which was devoted to these themes. This conference brought together graduate students conducting research in the philosophy of logic and mathematics. The papers presented questions related to the epistemology and ontology of logic and mathematics, thereby addressing questions of philosophical interest surrounding the a priori disciplines. There were six contributed talks by graduate students and a keynote address by Stewart Shapiro of Ohio State University.

Aaron Cotnoir (University of Connecticut) presented a framework within which to debate the various notions of modality that are used by philosophers and logicians in various domains of discourse. His talk presented a broad semantic framework capable of accommodating classical, paraconsistent, and paracomplete notions of

modality. Cotnoir clarified the specific points of disagreement amongst these modal notions in his discussion of restrictions that can be placed on truth relations and accessibility relations in the system he has developed.

Adopting a neo-Kantian conception of analyticity, Trent Dougherty (University of Rochester) defined self-evidence of a proposition for a subject as analyticity of that proposition for that subject. For Dougherty a proposition is analytic when the predicate-concept is already contained in the subject-concept, concepts themselves being understood as "mental file-folders" following John Perry. A proposition is self-evident for a subject when the information contained in the subject-concept can be seen to entail the information contained in the predicate concept. Dougherty maintains that recognition of this relationship is sufficient to give a subject evidence for belief in the proposition.

Aidan McGlynn (University of Texas at Austin) discussed the role of the conception of set in the development of axiomatic set theory. In particular, McGlynn explored the iterative and limitation of size conceptions as well as Boolos's hybrid limitation of iteration conception. He argued against accepting the limitation of iteration conception of set since, even in the best case, doing so is motivated only by pragmatic considerations. Instead, McGlynn argued that the axioms of set theory ought to reflect our pre-axiomatic conception of set without doing too much damage to that conception.

Amanda Hicks (University at Buffalo) discussed four motivations for accepting independence as an adequacy criterion for axiom sets. Hicks discussed three conceptions of axiom sets and argued that they do not provide sufficient motivation for regarding independence as an adequacy criterion. Hicks discussed a fourth conception of axioms as that which unifies the truths of a domain of inquiry as a potential motivation for including independence as an adequacy criterion but concluded that this conception needs clarification before it can be properly evaluated.

Dimitri Constant (Boston University) discussed the question of whether higher order variables representing concepts ought to be interpreted intensionally or extensionally. Constant's discussion tied this issue to the historical debate over whether functions ought to be conceived of as rule governed or whether the concept of function should include arbitrary functions. Constant emphasized that the latter interpretation leads to an ontological commitment to completed infinite sets of objects as well as a commitment to uncountably many concepts.

John Milanese (University at Albany, SUNY) discussed the problem of justifying the rules of proof in light of skepticism regarding deductive inference. Milanese showed that using the rules of proof to argue against the skeptic is question-begging and discussed the self-undermining nature of the skeptic's own skepticism. By using the rule modus ponens as a case study, Milanese discussed the skeptic's reliance on the rules of proof in order to even formulate a skeptical objection and considered, tentatively, the possibility that this might constitute a response to the skeptic about deductive inference.

In his keynote address, "We hold these truths to be self-evident: But what do we mean by that?" Stewart Shapiro discussed a particular notion of the self-evidence of axioms that had been espoused by Zermelo. On this view, an axiom is self-evident if it expresses a principle that has been tacitly, unreflectively, and indispensably used by mathematicians and logicians in the course of their investigations. Thus, the Zermelo conception of self-evidence is distinguished from mere obviousness and from accounts based on something like intellectual intuition. The principles to which mathematicians implicitly appeal may not be obvious, but they are self-evident insofar as they have been and can be used successfully without appeal to further justification. Axioms, according to the Zermelo conception of self-evidence, are then explicit expressions of principles that have historically been unreflectively employed.

This conference provided an opportunity for graduate students who are specializing in philosophy of logic to receive feedback on their current research. The overall discussion occasioned by the presentations lead to both more precise ways of formulating questions about how we know that the conceptual schemes employed in the a priori disciplines are accurate and how they might be revised when they are not.

Amanda Hicks
Philosophy, University at Buffalo

Andrew Spear
Philosophy, University at Buffalo

2007 Mitchell Prize

The International Society for Bayesian Analysis is pleased to announce the 2007 Mitchell Prize in recognition of an outstanding paper where a Bayesian analysis has been used to solve an important applied problem; it consists of a $1000 award and a commemorative plaque. Nominations are now being accepted. Deadline for submissions is 31 December 2007.

For details on how to submit a paper for the 2007 Mitchell Prize please visit: `http://www.stat.duke.edu/apps/MitchellPrize`

For descriptions of the Prize, please visit `http://www.bayesian.org/awards/MitchellPrize.html`

Dialectica Essay Prize

Dialectica invites submissions for its 2007 prize essay competition, the topic of which is 'Evidence'.

Evidence is probably the main epistemological relation. To name only a few topics of relevance: the nature of the kind of evidence essential to the elucidation of knowledge, belief and justifcation, the doctrine of evidentialism and related issues at the border of practical philosophy and epistemology, or the scope of Bayesian confirmation theory, are all major issues in connection to the notion of evidence, and also central to epistemology.

Essays should be submitted by 31 December 2007.

2007 DeGroot Prize

The International Society for Bayesian Analysis is pleased to announce the 2007 DeGroot Prize in recognition of a textbook or monograph concerned with fundamental issues of statistical inference, decision theory, and/or statistical applications, noticeable for its novelty, thoroughness, timeliness, and importance of its intellectual scope. The Prize consists of an award of $1500 and a commemorative plaque. Nominations are now being accepted. Deadline for submissions is 15 December 2007.

For details on how to submit a book and online submission for the 2007 DeGroot Prize, please visit `http://bayesian.org/apps/DeGrootPrize/`

For descriptions of the Prize, please visit `http://www.bayesian.org/awards/DeGrootPrize.html`

Calls for Papers

MATHEMATICS AND ARGUMENTATION: Special Issue of Foundations of Science, deadline 1 November 2007.

BAYESIAN NETWORK AND ITS APPLICATIONS: Special issue of Behaviormetrika, deadline 20 November 2007.

MACHINE LEARNING ALGORITHMS: Machine Learning Algorithms for Event Detection, Special Issue of Machine Learning Journal, deadline 28 November 2007.

SPATIAL STATISTICS: Special Issue of Computational Statistics and Data Analysis, deadline 30 November 2007.

INTRODUCING . . .

The Reasoner would like to publish very short introductions to key terms, people and texts in logic and reasoning. Selected pieces will also be published in a book "Key Terms in Logic" by Continuum. If you would like to contribute, please contact
TheReasoner@kent.ac.uk

EVOLUTIONARY INTELLIGENCE: Special Issue on Artificial Immune Systems, deadline 1 December 2007.

HYBRID LOGIC: Special Issue of the Journal of Logic, Language and Information, deadline 1 March 2008.

CONDITIONALS AND RANKING FUNCTIONS: Special issue of Erkenntnis, franz.huber@uni-konstanz.de, deadline 31 May 2008.

§4
EVENTS

ECSQARU'07: Ninth European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, Hammamet, Tunisia, 31 October–2 November 2007.

PHILOSOPHY OF INFORMATION AND LOGIC: University of Oxford, 3–4 November 2007.

NOVEMBERTAGUNG: 18th Novembertagung on the history, philosophy and didactics of mathematics, Bonn, Germany, 1–4 November, 2007.

INFINITY: International Conference on Infinity in Logic and Computation, University of Cape Town, South Africa, 3–5 November 2007.

CURVES: Modern challenges of curve modelling: inverse problems and qualitative constraints, Bristol, 7–9 November 2007.

AESTHETICS AND MATHEMATICS: University of Utrecht, 9–10 November 2007.

CONTEXT-DEPENDENCE: Context-Dependence, Perspective and Relativity in Language and Thought, Ecole Normale Supérieure, Paris, 9–11 November 2007.

URSW: 3rd Workshop on Uncertainty Reasoning for the Semantic Web, Busan, Korea, 12 November 2007.

EPSA07: 1st Conference of the European Philosophy of Science Association, Madrid, 15–17 November 2007.

LOGKCA-07: ILCLI International Workshop on Logic and Philosophy of Knowledge, Communication and Action, Donostia, 28–30 November 2007.

M4M5: Methods for Modalities 5, Cachan, France, 29–30 November 2007.

NORM CHANGE: Workshop on Formal Models of Norm Change, University of Luxembourg, 29–30 November 2007.

NIPS: Neural Information Processing Systems—Natural and Synthetic, Hyatt Regency Vancouver, 3–6 December 2007.

WORKSHOP: International Workshop on Applied Bayesian Statistics, EpiCentre, Massey University, Palmerston North, New Zealand, 10–14 December, 2007.

METAPHOR: Third International Symposium of Cognition, Logic and Communication, Riga, Latvia, 16–18 December 2007.

Symposium: Reflections on Type Theory, Lambda Calculus and the Mind, Celebrating Henk Barendregt's 60th birthday, Radboud University Nijmegen, The Netherlands, 17 December 2007.

ISAIM 2008: Tenth International Symposium on Artificial Intelligence and Mathematics, Fort Lauderdale, Florida, 2-4 January 2008.

3rd IMS and ISBA meeting: The third joint international meeting of the IMS (Institute of Mathematical Statistics) and ISBA (International Society for Bayesian Analysis), Bormio, Italy, 9–11 January 2008.

Graduate Conference: 1st Cambridge Graduate Conference on the Philosophy of Logic and Mathematics, St. John's College, Cambridge, 19–20 January 2008.

FoIKS 2008: Foundations of Information and Knowledge Systems, Pisa, Italy, 11–15 February 2008.

Artificial General Intelligence: The First Conference on Artificial General Intelligence, Memphis, Tennessee, 1–3 March 2008.

Constraint-Sac2008: Track on Constraint Solving and Programming, at the 23rd Annual ACM Symposium on Applied Computing, Fortaleza, Brazil 16–20 March 2008.

Causation: 1500-2000: King's Manor, University of York, 25–27 March 2008.

UnClog'08: International Workshop on Interval / Probabilistic Uncertainty and Non-Classical Logics, Ishikawa, Japan, 25–28 March 2008.

RelMiCS10-AKA5: 10th International Conference on Relational Methods in Computer Science & 5th International Conference on Applications of Kleene Algebra, Frauenwörth, Germany, 7–11 April 2008.

Reduction and the Special Sciences: Tilburg Center for Logic and Philosophy of Science, 10–12 April 2008.

FLOPS 2008: Ninth International Symposium on Functional and Logic Programming, Ise, Japan, 14–16 April 2008.

Workshop: XVIII Inter-University Workshop on Philosophy and Cognitive Science, Madrid, luis.fernandez@filos.ucm.es, 22–24 April 2008.

SDM08: 8th Siam International Conference on Data Mining, Hyatt Regency Hotel, Atlanta, Georgia, USA, 24–26 April 2008.

SIG16: 3rd Biennial Meeting of the EARLI-Special Interest Group 16—Metacognition, Ioannina, Greece, 8–10 May 2008.

UR 2008: Special Track on Uncertain Reasoning, 21st International Florida Artificial Intelligence Research Society Conference (FLAIRS-21), Coconut Grove, Florida, 15–17 May 2008.

AI Planning and Scheduling: A Special Track at the 21st International FLAIRS Conference (FLAIRS 2008), Coconut Grove, Florida, 5–17 May 2008.

ISMIS'08: The Seventeenth International Symposium on Methodologies for Intelligent Systems, York University, Toronto, Canada, 20–23 May 2008.

COMMA'08: Second International Conference on Computational Models of Argument Toulouse, France, 28–30 May 2008.

Expressions of Analogy: Faculty of Social and Human Sciences, New University of Lisbon, 29–31 May 2008.

WCCI 2008: IEEE World Congress on Computational Intelligence, Hong Kong, 1–6 June 2008.

CSHPS: Canadian Society for History and Philosophy of Science, University of British Columbia, Vancouver, 3–5 June 2008.

CiE 2008: Computability in Europe 2008: Logic and Theory of Algorithms, University of Athens, Athens, 15–20 June 2008.

DM08: SIAM Conference on Discrete Mathematics, University of Vermont, Burlington, Vermont, 16–19 June 2008.

IEA-AIE 2008: 21st International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, Wroclaw, Poland, 18–20 June 2008.

HOPOS 2008: Seventh Congress of the International Society for the History of Philosophy of Science, Vancouver, Canada, 18–21 June 2008.

EPISTEME: Law and Evidence, Dartmouth College, 20–21 June 2008.

IPMU 2008: Information Processing and Management of Uncertainty in Knowledge-Based Systems, Malaga, Spain, 22–27 June 2008.

LOFT 2008: 8th Conference on Logic and the Foundations of Game and Decision Theory, 3–5 July 2008.

ISBA 2008: 9th World Meeting, International Society for Bayesian Analysis, Hamilton Island, Australia, 21–25 July 2008.

First Formal Epistemology Festival: Conditionals and Ranking Functions, Konstanz, 28–30 July 2008.

Conference: Language, Communication and Cognition, University of Brighton, 4–7 August 2008, Brighton, UK.

ESSLLI 2008: European Summer School in Logic, Language and Information, Freie und Hansestadt Hamburg, Germany, 5–15 August 2008.

IJCAR 2008: The 4th International Joint Conference on Automated Reasoning, 10–15 August 2008.

ICT 2008: The Sixth International Conference on Thinking, San Servolo, Venice, 21–23 August 2008.

10th Asian Logic Conference: Kobe University, Kobe, Japan, 1–6 September 2008.

Soft Methods for Probability and Statistics: 4th International Conference, Toulouse, France, 8–10 September 2008.

Valencia Meetings: Valencia / ISBA Ninth World Meeting on Bayesian Statistics, Spain, June 2010.

§5
Jobs

Evidence-based Paraconsistency: 2-year postdoc, Institute for Human and Machine Cognition, contact Choh Man Teng.

2-year Postdoc: Konstanz University, Germany. The Emmy Noether junior research group Formal Epistemology, two year postdoctoral research position in Philosophy, on the project 'Belief and Its Revision', deadline 1 November 2007.

Knowledge Representation and Reasoning: The Department of Electronic and Computer Engineering of the Technical University of Crete invites applications for a tenure-track faculty position at the rank of Assistant Professor, deadline 7 November 2007.

1 PhD and 1 Postdoc Position: Institute for Logic, Language and Computation, University of Amsterdam, project on Computational Social Choice, deadline 9 November 2007.

Assistant Professor TiLPS: Tilburg Centre for Logic and Philosophy of Science, Tilburg University, deadline 12 November 2007.

Three Assistant Professorships: The Department of Cognitive Science at the University of California San Diego, invites applications for three faculty positions at the Assistant Professor level (tenure-track), deadline November 15 2007.

Assistant Professor: Texas A&M University, College Station, TX. Assistant Professor, tenure-track, beginning Fall 2008, deadline 15 November 2007.

Lecturer or Senior Lecturer in Statistics: Department of Statistics, School of Computing and Mathematical Sciences, The University of Waikato, New Zealand, deadline 16 November 2007.

Arché: Philosophical Research Centre for Logic, Language, Metaphysics and Epistemology, 2 research fellows, deadline 29 November 2007.

Cambridge Statistics: Lecturer and postdoc, deadline 30 November 2007.

Tenure Track Position in Philosophy: Oglethorpe University, Atlanta, deadline 1 December 2007.

§6
Courses and Studentships

Courses

Discrete Choice Modelling: Centre for Transport Studies at Imperial College London, 28–30 November 2007.

MA in Reasoning
An interdisciplinary programme at the University of Kent, Canterbury, UK. Core modules on logical, causal, probabilistic, scientific and mathematical reasoning and further modules from Philosophy, Psychology, Computing, Statistics and Law.

Second Indian Winter School on Logic: IIT Kanpur, 14–26 January 2008.

Studentships

Two PhD Positions: The Faculty of Philosophy of the University of Groningen, the Netherlands, starting January 1, 2008. Applications should be sent by 1 November 2007 to T.A.F.Kuipers@rug.nl

Three PhD positions: Within the Swiss National Science Foundation Research Module Norms, epistemic, rational and social of the recently accepted pro*doc graduate programme in philosophy, the Philosophy Departments of the Universities of Geneva, Lausanne and Fribourg offer three PhD positions (respectively one per university), before November 31, 2007.

Logic and Philosophy of Science: 4 year PhD position or a 80%-funded 4 year post-doctoral research position, The Center for Logic and Philosophy of Science at the Vrije Universiteit Brussel, sonsmets@vub.ac.be, deadline 1 December 2007.

Arché Postgraduate Studentships: The Arché Research Centre at the University of St Andrews is offering up to six three-year PhD studentships for uptake from September 2008, deadline 1 February 2008.

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