THE REASONER

CONTENTS

of explanation, the relation between dispositions and causation, and the explication of (biological) functions.

In order to better understand the philosophical significance of grounding and its links with topics of general interest to the readers of *The Reasoner*, I am going to interview one by one the three project leaders, starting with the PI of the project, Fabrice Correia. Off we go.

LORENZO CASINI
Department of Philosophy, University of Geneva

EDITORIAL

I am delighted to be once again the guest editor of *The Reasoner*. This time the topic is an SNF Sinergia project, in which I am myself involved, called "Grounding – Metaphysics, Science and Logic", previously advertised in a report on *The Reasoner*, 2014, 8(9):101. The project started last year and will run for another two years. Three research groups are taking part in it. At the University of Hamburg, the group led by Benjamin Schnieder investigates the relations between the *metaphysical* notion of grounding on the one hand, and other notions of metaphysical priority (e.g., truthmaking), modality, essence and fundamentality on the other hand. At the University of Neuchâtel, the group led by Fabrice Correia studies the nature of *logical* grounding, as well as the logics of metaphysical, conceptual and causal kinds of grounding. At the University of Geneva, the group led by Marcel Weber, to I which I belong, focusses on *scientific* grounding, as related to the concept

FEATURES

Interview with the Grounding project leaders

LORENZO CASINI: My first interviewee is Fabrice Correia. Fabrice is professor of logic and contemporary philosophy at the Institute of Philosophy of the University of Neuchâtel, PI of the project and coordinator of the logic sub-project. Hi Fabrice.

FABRICE CORREIA: Hi Lorenzo.

LC: Since you are first in line, I will ask you to give to the readers of *The Reasoner* an informal introduction to the notion of grounding. What is 'grounding' and how does its study relate to other philosophical discussions?

FC: The concept of grounding, i.e., of one fact obtaining in virtue of some other fact or facts, is one of the many

tools philosophers from all philosophical disciplines have used throughout history to describe the phenomena they are interested in. Some links of ground are *causal* (the fact that the rock hit the window pane made it the case that the window pane broke), but others are not. Some non-causal links of ground are deemed *metaphysical* (Sam is in pain in virtue of the fact that his central nervous system is in such and such a state), others *conceptual* (this is coloured in virtue of the fact that this is red), and still other kinds of such links are sometimes distinguished. An important example for our project is provided by links of *logical* grounding (if p is true, then $p \lor q$ is true in virtue of the fact that p is true), which can be seen as belonging to the class of conceptual links.

Analytic philosophers have used both causal and non-causal notions of grounding since the very beginning of analytic philosophy, but it is only very recently that the proper study of the non-causal notions has started to be an important topic in the discipline. The reason why it took so long for analytic philosophers to seriously theorize about these notions is hard to explain. An hypothesis I find plausible is that people have realized that philosophical theorizing is significantly impoverished if we either try to do without these notions or work with deflationary (extensional or modal) conceptions of these notions. What is lost in deflationary accounts of grounding is the *explanatory character* of links of ground: when a fact is grounded in other facts, it is explained by them, and explanation cannot be captured in purely extensional or modal terms.

LC: What are the logical differences between metaphysical, conceptual and causal kinds of grounding? And why do we need different notions at all?

FC: The first question is difficult to answer without making fine distinctions and going into some details, but here are some thoughts. We may distinguish between the structural and the non-structural logical features of grounding (the same distinction is standardly made for logical consequence). The non-structural features are sensitive to the nature of the facts linked by the relation; not so for the structural features. It may be thought that all relations of grounding share their structural features, e.g. that all are irreflexive and transitive, while they diverge in their non-structural features. For instance, a plausible view is that absolutely all conjunctive facts are conceptually grounded in the corresponding conjoined facts while some conjunctive facts, in particular facts consisting in a fact conjoined with itself, are not metaphysically grounded in the same way.

As to the second question, I would say that there *are* different notions and that they all capture different but related phenomena which are of central philosophical interest. I take the case of grounding to be similar in this respect to the case of the modal notions of necessity and possibility, which arguably also come in different kinds: causal, metaphysical, conceptual, etc.

LC: The way you put things suggests that grounding is a genus of which causation is a species. This is a widely held view among those who study the notion of grounding. Yet, other people seem to have different intuitions, namely that grounding and causation are distinct, or even that the notion of grounding is reducible to that of causation. How can we make sense of such conflicting intuitions?

FC: Whether causation itself is a species of grounding is certainly a matter of debate: if grounding is a relation between facts and causation a relation between events or states, then causal grounding—if there is any such thing—must be distinguished from causation, even if they are tightly connected relations.

What I suggested is that there is a notion of causal grounding. This strikes me as obvious, since the locution "in virtue of" in claims of type "fact f obtained in virtue of fact g" can be—and indeed, is often—used in a causal sense. But this view does not appear to be shared by all philosophers working on grounding: a number of them explicitly deny that grounding can be causal. I am not sure why, but here is a tentative explanation: by "grounding", they mean metaphysical grounding; they take metaphysical grounding to induce metaphysically necessary connections (if f is grounded in g, then as a matter of metaphysical necessity, g obtains if f does); and they take it that causal links between facts do not induce such connections.

If this is the correct explanation, then there is no real conflict: my use of "grounding" is simply broader than these other philosophers' use. But interestingly, two general theses involved in the explanation have been subject to criticism: the thesis that metaphysical grounding induces metaphysically necessary connections, and the thesis that causal links between facts do not induce such connections. If the conjunction of these theses is rejected, then we lose an important argument for the view that metaphysical grounding cannot be causal. Here we have a real debate.

LC: What are the anticipated results of your sub-project and how do they matter to a wider audience?

FC: The sub-project deals with the theory of logical grounding and the logic of the various other kinds of grounding ties. As far as logic is concerned, we need for grounding what we now have for the modalities: proof theories and semantic studies that adequately capture the phenomenon and which are flexible enough to fit with a wide range of different specific conceptions of the notions studied. The endeavour is huge, and the hope is that the sub-project will make substantial contributions to it. What we have done up to now is very promising.

The anticipated impact of the general endeavour on philosophical theorizing understood broadly is of the sort that is commonly expected from the logical study of notions which are used by philosophers: first, the notions studied should gain in clarity, and second, reasoning using these notions should gain in rigour.

LC: Thank you Fabrice! My second interviewee is Benjamin Schnieder, professor of theoretical philosophy at the University of Hamburg, and coordinator of the metaphysics sub-project. Hi Benjamin.

Benjamin Schnieder: Hi!

LC: What can you tell us about the idea and the expected results of your sub-project?

BS: Different debates in metaphysics are centered on notions and phenomena which are intimately related, while the particular connections between them are still ill-understood: the debates about truthmaking, non-causal priority, supervenience, constitution, essence, non-causal explanation, ontological dependence, and grounding are cases in question. In our sub-project we examine how grounding is related to such notions; in particular, we are interested in exploring the possibility of using grounding as a theoretical ingredient in conceptions of other metaphysical notions.

LC: Can you tell us more about the possible connection between research on grounding and research on those metaphysical notions? Perhaps you can start with supervenience and the job you expect the notion of grounding to do in relation to it.

BS: If one reads early papers in the debate about supervenience, it appears that what at least some authors had in mind when using the term of the art 'supervenience' was to talk about a sort of priority that underlying features have over supervening features. However, the well-known modal accounts of supervenience quickly became the standard in the debate, and unfortunately modal notions of supervenience did not live up to the original goal of making a somewhat vaguely and intuitively grasped notion of priority more explicit. For, the modal accounts do not yield notions of priority, since they allow for reciprocal instances. But any relation that can properly be called a priority relation must be asymmetrical. More recently, it has been argued that we can get closer to what was the original goal of introducing the notion of supervenience if we base definitions of supervenience on the notion of grounding.

LC: What about the other notions that are the topic of your project?

BS: We can observe similar developments in debates about other core metaphysical notions, such as truthmaking or ontological dependence. Early on in the debates, proposals were made about how to define those notions in modal terms. But it soon turned out that such definitions fail to capture certain aspects of the notions we wanted to define, namely aspects that are concerned with priority. Or, as Fabrice pointed out before, explanatory aspects of those notions.

LC: Is there a connection between the considerations about priority and those about explanation then?

BS: There is indeed a position in the philosophical debate about explanation that assumes such a connection: According to explanatory realism, why-explanations track relations of priority. The explanatory power of such explanations rests, at least in part, in the fact that they are based on underlying relations of priority.

LC: Fabrice already mentioned that the explanatory character of ground is not captured in modal terms. If the modal accounts of the notions you're interested in fail to capture certain aspects of the notions that we are indeed interested in, how did they become so dominant in the first place?

BS: What made the modal accounts of, for instance, supervenience so attractive was that they safely rested on the already well-developed philosophy of modality, in particular on the well-developed modal logic. In fact, the development of modal logic played the crucial role in overcoming the skepticism concerning modality that spread under Quine's influence. It is all the more important that an investigation of the notion of metaphysical grounding is accompanied by the development of safe and strong logical systems of the logic of ground. The respectability of the idea of grounding will, and should, stand and fall with the success of devising a workable logic of ground.

LC: More generally, in what way do you think the research on grounding will move philosophy forward?

BS: Scientific research generally aims not only at aggregating a vast heap of knowledge, but at devising structured theories whose elements are sorted into more or less fundamental and derivative ones. Such theories should mirror prevalent structures to be found in mind-independent reality. So in order to understand what a good scientific theory can be, we should investigate what sort of priority can hold between the facts in the world. This is, as I understand it, the goal of our project: for, grounding is the most general priority relation that bestows the totality of facts with an order of comparative fundamentality.

LC: Thank you Benjamin! My third and last interviewee is Marcel Weber. Marcel is chair of philosophy of science at the University of Geneva. Hi Marcel.

Marcel Weber: Hi!

LC: You have a background as a molecular biologist and have carried out research on epistemological and methodological issues in biology and the sciences. From your perspective, what is interesting about grounding, and how do you think philosophy of science can benefit from research on grounding carried out by logicians and metaphysicians?

MW: You often hear philosophers of science talk about what is grounded in what. For example, biological or mental properties are said to be grounded in the physical properties on which they supervene. Or to give another example, we are told that laws of nature are grounded in the essential properties of things. I used to think that this was just loose talk, i.e., a metaphorical expression for some very strong relation of dependence. Furthermore, I used to be skeptical as to whether much more could

be said about this dependence relation. If physicalists are right, then there simply cannot be mental properties without physical realizers and that is that. There is not much more than can be said about this relation of ontological dependence. But learning about recent metaphysical and logical work on grounding convinced me that there is more that can be said about it and I am optimistic that some of it is of interest to the philosophy of science.

LC: Grounding explains, it is often said, insofar as it is a relation of ontological dependence. Do you think this is a kind of explanation distinct from scientific explanation? Or is there an overlap between the two?

MW: There might be an overlap. Some scientific explanations do not limit themselves to simply citing relations of causal dependence. For example, if the currently dominant accounts of mechanistic explanation are correct, then such explanations appeal to constitutive relations between mechanisms and their parts as well as between mechanisms and the phenomena that they explain. To give an example, the activities of opening and closing of ion channels in a neuronal membrane and the mechanism of action potential propagation do not bear a causal but a constitutive relation to each other, although the channels also stand in causal relations in virtue of which they belong to the mechanism. So mechanistic explanation appears to have causal as well as non-causal aspects. Of course, this is all controversial and some people deny the non-causal aspects of mechanistic explanation (or take them to belong to their causal aspects). I am hoping that general considerations about non-causal explanation could help to clarify these issues.

LC: How do you think philosophers of science can influence the views and agenda of logicians and metaphysicians, by whom grounding has been so far studied?

MW: That's a tall order! Scientific explanation has been an enormously active area of research in recent decades. I am hoping that metaphysicians will eventually respond to some of the positions and arguments developed in this rich tradition, for example, the unificationist, causal-mechanical, pragmatic and kairetic accounts of explanation. Some of these accounts are themselves influenced by work in formal logic, in particular the pragmatic account which is based on erotetic logic.

LC: The accounts you mention are notoriously different from one another. There is an important debate nowadays on whether explanation is an ontic or an epistemic matter. What role do you think the research on grounding can play in this debate?

MW: In my view, the ontic conception of explanation in its simplest form (where explanations are basically identified with objects, e.g., the clouds that cause the rain are an explanation) always seemed absurd. There have been attempts to develop more sophisticated and more defensible versions of the ontic conception, for example, by saying that explanations are ontic because what makes a statement explanatory (as opposed to merely descriptive) is something in the world and not something epistemic. By contrast, according to the traditional conception of explanation, the deductive nomological account, what makes a statement explanatory is the fact that it contains law-like generalizations and deductively entails the explanandum. This is widely considered to be an epistemic conception of explanation. But I am not sure I really see the contrast here to the modified ontic view. Because one could also say that what makes a generalization law-like is something in the world, some nomic necessity (unless one takes a radically antirealist view of nomic necessity). So it seems to me that the ontic conception is either too ontic, as it were, basically considering "explanation" and "cause" to be synonymous, or not ontic enough such that it collapses into the traditional epistemic view. I am hoping that the metaphysicians working on grounding could help to clear away the confusions that surround the ontic conception.

LC: Can you give us an example of a scientific explanation you plan to investigate in the project?

MW: I've always been intrigued by functional explanations in biology. I am particularly curious as to what grounds biological functions. For instance, what grounds the fact that the heart is essentially a blood pump and not a generator for thumping noises? A traditional answer would say that this fact is grounded in evolutionary history, another one that it is grounded in the effect that the heart has on the survival of an organism. In any case, the grounds for functional truths must be very complex and I am hoping that a general account of grounding might be helpful to better understand them.

LC: That sounds like an interesting investigation of grounding in philosophy of science. Thanks for the interview, Marcel!

On appeals to intuition: a reply to Muñoz-Suárez

In "Intuition Mongering" (2012, *The Reasoner* 6 (11):169–170), I argue by analogy with Appeals to Authority (*AA*) that the following is a necessary, but not a sufficient, condition for the strength of Appeals to Intuition (*AI*) made by professional philosophers:

> **PAI** When philosophers appeal to intuitions, there must be an agreement among the relevant philosophers concerning the intuition in question; otherwise, the appeal to intuition is weak.

That is, an *AI* that fails to meet **PAI** is weak, in the sense that 'it seems to S that p' doesn't make p more likely to be true or probable, where S is a philosopher and other philosophers don't share S's seeming that p.

Muñoz-Suárez (2014, "Should We Entitle Strong Appeals to Intuition?," *The Reasoner* 8 (7):77–78) objects to the analogy between *AA* and *AI* by pointing out an alleged dissimilarity: the epistemic subject is relevant to the strength of *AA*s (e.g., she must be a genuine expert on the subject matter) but not so for the strength of *AI*s; as far as *AI*s are concerned, it doesn't

matter who the intuiter is. Muñoz-Suárez (2014: 78) "suspect[s] that the strength of an *AI* relies on the intuitiveness of the proposition involved in its antecedent—i.e., '*p*' in 'it seems that *p*'—rather than on some social fact like agreement either among experts or among laymen."

Accordingly, my argument is about the *AI*s of philosophers in particular, whereas Muñoz-Suárez's objection is supposed to apply to *AI*s in general. Be that as it may, the question is whether Muñoz-Suárez is right about the following:

> (**1**) Unlike *AA*s, facts about the subject are irrelevant to the evaluation of the strength of *AI*s.
> (**2**) Unlike *AA*s, facts about the community (e.g., agreement/disagreement) are irrelevant to the evaluation of the strength of *AI*s.

Of course, if *AA* and *AI* shared all properties in common, they wouldn't be analogous; they would be identical. So there must be at least one property that they don't share (that is the nature of analogies). But I don't think that *AA* and *AI* are dissimilar in the ways that Muñoz-Suárez alleges.

Regarding (**1**), whether they are beliefs, inclinations, or experiences, seemings, as in 'it seems to *S* that *p*', or appearances, as in 'it appears to *S* that *p*', are mental states (Tucker 2013: "Introduction," *Seemings and Justification*, ed., C. Tucker, NY: OUP, 3). A mental state must be the mental state of some subject, which is why the subject is relevant to the strength of *AI*s. That the subject is a focus of epistemic evaluation is an insight that is at the core of virtue epistemology (e.g., Greco 2003: "Knowledge as Credit for True Belief," *Intellectual Virtue*, eds., M. DePaul and L. Zagzebski, NY: OUP, 111–134) and virtue argumentation theory (e.g., Aberdein 2014: "In Defence of Virtue," *Informal Logic* 34 (1):77–93).

Indeed, some defenders of *AI* in philosophy have argued that some intuiters are better than others. More precisely, critics of experimental philosophy have argued that philosophers are expert intuiters. These critics want to argue that it does matter who the intuiter is; more precisely, they claim that professional philosophers ("experts") are better intuiters than non-philosophers ("novices").

Regarding (**2**), the evidential role of intuitions is often defended by analogy with perception. Just as one is prima facie justified in believing that *p* when it seems *visually* to one that *p*, it is argued, one is prima facie justified in believing that *p* when it seems *intellectually* to one that *p* (Tucker 2013: 1–2). If this is correct, however, then there would be cases of *misintuition*, just as there are cases of *misperception*. How can one tell when one is having a veridical perception or a misperception? One way to tell is to ask other people. If I'm the only one who sees a pink elephant, it's likely that I'm hallucinating. Similarly, if I'm the only one to whom it seems that *p*, it's likely that I'm misintuiting.

That the community is a focus of epistemic evaluation is again an insight that is at the core of virtue epistemology and argumentation theory. In argumentation theory, agreement is taken to be epistemically significant for the evaluation of *AA*s. For example, according to Walton (2014: "On a Razor's Edge", *Argument and Computation* 5 (2-3):139–159), one of the "critical questions" that need to be addressed when evaluating the strength of *AA*s is the "consistency question," i.e., whether what expert E asserts is consistent with what other experts assert. In the epistemology of disagreement, disagreement is taken to

be epistemically significant insofar as it demands some belief-revision (or at least reasons why belief-revision is not warranted) on the part of an epistemic subject (Christensen and Lackey 2013: "Introduction," The *Epistemology of Disagreement*, eds., D. Christensen and J. Lackey, NY: OUP, 1–3). Accordingly, social facts, such as whether others agree or not, are relevant to the evaluation of the strength of *AI*s.

Some might think that Muñoz-Suárez doesn't have to defend (**1**) and (**2**) in order to undermine my argument for **PAI**. Instead, he merely has to show that the intuitiveness of *p* is *more relevant* to the strength of *AI*s than facts about the intuiter or the community. Even if Muñoz-Suárez did manage to show that, it wouldn't be enough to undermine my argument. For to say that *X* is *more relevant* than *Y* is to admit that *Y* is *relevant*, only less so. Hence, to say that facts about the intuiter or the community are less relevant than the intuitiveness (or insightfulness) of *p* is to say that such facts are relevant, only less so. But the claim that **PAI** is a *necessary*, but *not a sufficient*, condition for strong AIs is consistent with there being other relevant conditions that AIs must meet to be strong arguments. For his counterargument to succeed, then, Muñoz-Suárez must show that *AI*s aren't required to meet **PAI** to be strong arguments (cf., his (2*) on p.77). Since **PAI** is about agreement among philosophers, Muñoz-Suárez must show that agreement is *irrelevant* to the strength of *AI*s.

To sum up, if seemings are mental states, the subject is a proper focus of epistemic evaluation. If subjects can *misintuit*, in much the same way that subjects can *misperceive*, then the community is a proper focus of epistemic evaluation. If this is correct, then (**1**) and (**2**) are false; *AA* and *AI* aren't dissimilar in the ways that Muñoz-Suárez alleges, and thus my argument by analogy with *AA*s for **PAI** as a necessary condition for the strength of *AI*s still stands.

Moti Mizrahi
St. John's University

News

Statistical evidence in epistemology and the law, 12–13 December

The University of Glasgow hosted a workshop on statistical evidence in epistemology and the law on the 12th and 13th of December 2014. Presenters and participants included epistemologists, legal theorists and practising lawyers.

In 'Rethinking verdicts and outcomes in criminal trials: trip switch or speedometer?' Federico Picinali contrasted two kinds of criminal legal system: in *trip switch* systems, only two legal verdicts are permitted—namely 'guilty' and 'not guilty'—while *speedometer* systems allow for a number of more fine grained verdicts ranging from a near certainty of innocence to a near certainty of guilt. While there are very few historical examples of genuine speedometer systems, Picinali argued for their overall superiority. As Picinali pointed out, a significant—though not the only—drawback of trip switch systems is that the 'not guilty' verdict subsumes a range of very different evidential situations—from cases in which innocence is proved, to cases in which there is strong evidence for guilt that is judged to fall just short of the beyond reasonable doubt threshold. In contrast, the more nuanced verdicts permitted by speedometer systems have the potential to convey more accurate information

about the strength of the evidence presented. The presentation concluded by sketching a theory of punishment and of sanctions that would tally with a speedometer system.

It is often observed that courts are reluctant to base affirmative verdicts—that is, verdicts of guilt or liability—on evidence that is purely statistical in nature. One thing that is immediately puzzling about this practice is that statistical evidence would seem perfectly capable of meeting the standards of proof enshrined in legal doctrine. This is particularly clear in the case of the 'balance of probabilities' standard for civil trials. This standard is supposed to be met when the evidence presented makes a proposition more than 50% likely to be true and statistical evidence can clearly do this. In 'Statistical evidence and knowledge first' Michael Blome-Tillmann suggested a reinterpretation of the balance of probabilities standard that would serve to solve this puzzle. On Blome-Tillmanns proposal, we should demand not only that a proposition be more than 50% likely to be true, but that it be more than 50% likely to be *known*. This seemingly subtle shift will make an enormous difference when it comes to the treatment of statistical evidence, as much recent work in epistemology has converged on the view that statistical evidence cannot serve as a sufficient basis for knowledge.

In 'When does evidence suffice for conviction?' Martin Smith offered another approach to the same puzzle—one that exploits the notion of normic support. Roughly, a body of evidence normically supports a proposition P iff the truth of P, given the evidence, would require less explanation than its falsity. While many kinds of evidence—such as perceptual and testimonial evidence—are capable of providing normic support, statistical evidence in favour of a proposition will often leave its truth and falsity on an explanatory par. Smith proposed a normic support standard for civil and criminal trials as a way of making sense of actual legal practice.

Much of the work on statistical evidence in the law presupposes that we can make a principled distinction between statistical evidence on the one hand and non-statistical evidence on the other. This distinction, however, has received little direct attention and, on reflection, it's not at all clear how it should be drawn. In 'What is statistical evidence?' Levi Spectre outlined two proposals as to what separates these two kinds of evidence. The first was based on the observation that paradigm cases of non-statistical evidence such as perception and testimony—are *factive* when successful. This feature seems not to be shared by paradigm cases of statistical evidence. The second proposal was based on the idea that whether one takes paradigm statistical evidence to confirm a hypothesis depends upon one's prior degree of belief in that hypothesis. This feature seems not to be shared by paradigm cases of non-statistical evidence, for which confirmation judgments and prior degrees of belief can be independent.

Much legal doctrine, including the characterisations of different legal standards of proof, helps itself to a notion of evidential probability—the idea that a given body of evidence will impose a well defined probability value on a proposition. One familiar way of interpreting evidential probability is in terms of credences. Timothy Williamson has recently criticised such interpretations, arguing that evidential probabilities cannot be understood in terms of the credences of either human agents or ideal agents. In 'Evidential support, beliefs and credences' Anna-Maria A. Eder argued—contra Williamson—that credence interpretations of evidential probability remain viable. She focussed on Williamson's argument against the

ideal-agent-credence interpretation, suggesting that the argument is unsound once the premises are clearly disambiguated. In addition, she outlined an alternative interpretation of evidential probabilities that appeals to rational credences, but not to ideal agents.

In 'Statistical evidence in mass harm cases' Andrew Higgins discussed the importance of statistical evidence in civil lawsuits brought against the manufacturers of products or substances that have caused mass harm. Even when there is an established connection between a product and a particular harm—such as that between cigarettes and lung cancer—it is very difficult to prove a direct causal link in an individual case. This makes a certain reliance on statistical evidence unavoidable. Higgins analysed how such evidence had been used and received in a number of pivotal mass harm cases.

PHILIP EBERT
University of Stirling
MARTIN SMITH
University of Glasgow

Evidence of mechanisms in evidence-based medicine, 8–9 January

This workshop was a meeting of the EBM+ consortium. This is a consortium of individuals interested in improving the way in which evidence-based medicine handles evidence of mechanisms, as the readers of *The Reasoner* may already be aware. The workshop included presentations from both consortium members and non-consortium members.

The workshop began with Andy Fugard (Psychology, UCL), who talked about psychological treatment mechanisms. He spoke about what can be learned about such mechanisms, once the idea that all data need to be interpreted is taken seriously. Then, Michael Wilde (Philosophy, Kent) talked about the epistemic theory of causality, which is a theory of causality according to which causal relations are analysed in terms of an agent's epistemic state. Veli-Pekka Parkkinen (Philosophy, Kent) then discussed comparative process-tracing as a means of determining a model's suitability for extrapolation, but argued that it relied upon unjustified modularity assumptions. Jon Williamson (Philosophy, Kent) concluded the first day with a discussion of the epistemological and metaphysical challenges posed by systems medicine, and argued that an epistemic theory of probability and causality can help to overcome these challenges.

On the second day, Phyllis Illari (STS, UCL) addressed John Dupré's recent objections to mechanistic accounts of biological systems and causality. She argued that addressing these objections provides some insight into how evidence of mechanisms should be characterised. Sarah Wieten (Philosophy, Durham) responded to some objections to the use of mechanistic reasoning in evidence-based medicine. Lastly, Brendan Clarke (STS, UCL) and Federica Russo (Philosophy, Amsterdam) argued for an alternative approach to studying causation in medicine. They argued that theorists should use all the resources of the philosophy of causality in order to study the diverse particular instances of medical causation, instead of proposing a single theory to account for all instances of causal reasoning in medicine.

The workshop was organised by Michael Wilde (Philosophy, Kent), and was funded by the Centre for Reasoning at the University of Kent. The slides and recordings of the talks are available here.

MICHAEL WILDE
Philosophy, Kent

Calls for Papers

THE REALIST TURN: special issue of *Methode - Analytic Perspectives*, deadline 15 March.

CAUSATION AND MENTAL CAUSATION: special issue of *Humana.Mente*, deadline 15 March.

WHAT'S HOT IN . . .

Uncertain Reasoning

The Dutch Book Argument provides a strong justification for measuring a(n idealised) rational agent's degrees of belief in uncertain prospects with probabilities. Key to the argument is a betting framework in which the representation of uncertainty by means of probability emerges from equating the agent's willingness to bet with the strength of their belief in the relevant events. The argument rests on a result which is in fact logical and is best seen by taking the point of view of a bookmaker for whom having probabilistic beliefs (in the appropriate betting game) is necessary and sufficient to avoid posting inconsistent betting odds. In this context an inconsistent book is one featuring odds which expose the bookmaker to the possibility of losing money for sure. Those who find this unconvincing often take issue with the fact that the betting framework required to run the Dutch Book Argument is hopelessly unrealistic. As a mathematical abstraction, the betting framework certainly has no pretence of being applicable in real life. Yet some eminent philosophers went so far as to question its meaning based on the fact that no real-world gambler (or bookie) will ever be so intellectually gifted and morally mean to force anyone into sure loss.

Chances are that those sceptics never heard of Barney Curley, whose autobiography is praised in the 2014 Christmas edition of The Economist. The story of this former Jesuit seminarist who made a fortune combining his skills as a horse trainer and professional bookmaker-fooler is indeed quite remarkable. With the help of a handful of friends, Curley, who is now 75, managed to set up a series of perfectly legal robberies which yielded several millions of pounds. In microeconomic terms, his lucrative idea was to concoct an informational asymmetry—which the rest of us would just call deception—between the bookies and his team. Curley's strategy was pretty much in the spirit of the market for second-hand cars. He would buy horses with proven ability, with a preference for those who had suffered injuries, and let them disappear for a while from the races (renaming them as unexcitingly as possible, with Low Key being the masterpiece of this genre). At some point he would put the horses back on the track, obtaining mediocre results. After more training, and at carefully selected venues, the odds for the Curley horses would be so unfavourable (in the region of 20:1) as to allow him the chance of the coup, which he would attempt by placing a large number of tiny bets on his horses. (Experts will note that this is reminiscent of one central condition in de Finetti's Dutch Book argument.) The choice of the venue was crucial, for example, in the success of the 1975 Bellewstown heist. Back then the track had only one phone, which Curley's men managed to keep busy until the start of the race. This was to prevent communication among the bookmakers who could have then adjusted the odds accordingly. Curley's final act—he says he has retired for good—took place on January 22nd 2014 and starred Low Key for which bookies (now in the digital, online era) were offering odds of 25:1.

Pace the sceptical philosopher, smart gamblers do exists, and as a matter of fact they don't even have to be morally mean. As the piece in The Economist points out, both friends and critics of Curley acknowledge his commitment for Direct Aid for Africa, a charity which he founded in 1996.

(Hat tip to Tommaso Flaminio.)

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Marie Curie Fellow,
CPNSS, London School of Economics
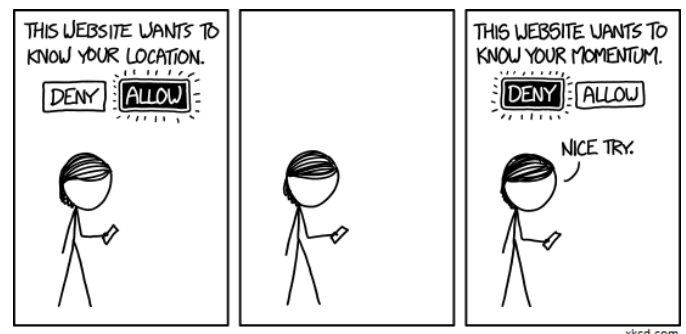
EVENTS

FEBRUARY

WIE: Workshop in Epistemology, KU Leuven, 6 February.
TFML: Theoretical Foundations of Machine Learning, Poland, 16–21 February.
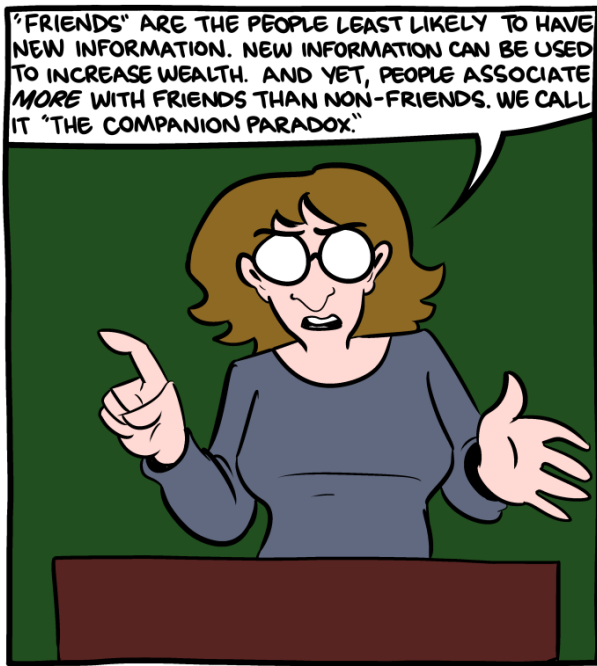BII: Beliefs, Impressions, and Ideas, Ghent, 23 February.
RACT: Reasoning, Argumentation & Critical Thinking Instruction, Lund, Sweden, 25–27 February.
CIM: Causation in the Mind, Ruhr-Universität Bochum, 26–28 February.

MARCH

AHR: Workshop on Behavior Coordination Between Animals, Humans, and Robots, Portland, Oregon, 2 March.
BICoB: 7th International Conference on Bioinformatics and Computational Biology, Honolulu, Hawaii, 9–11 March.

"FRIENDS" ARE THE PEOPLE LEAST LIKELY TO HAVE NEW INFORMATION. NEW INFORMATION CAN BE USED TO INCREASE WEALTH. AND YET, PEOPLE ASSOCIATE *MORE* WITH FRIENDS THAN NON-FRIENDS. WE CALL IT "THE COMPANION PARADOX."

In social science, "paradox" is jargon for "obvious to everyone else."

FON: Edinburgh Foundations of Normativity Workshop, University of Edinburgh, 13–14 March.

LI: Logic and Inference, Institute of Philosophy, London, 19–20 March.

TRiP: Pictures and Proofs, Columbia, South Carolina, 19–21 March.

KRR: Knowledge Representation and Reasoning, Stanford University, 23–25 March.

BMHEE: Bayesian Models for Health Economics Evaluation, Royal Statistical Society, London, 27 March.

SCS: SMART Cognitive Science: The Amsterdam Conference, Amsterdam, 25–28 March.

PI: Workshop on Philosophy of Information, University College London, 30–31 March.

APRIL

L & R: Congress on Logic and Religion, Brazil, 1–5 April.

CI: Causal Inference Meeting, University of Bristol, 15–17 April.

TPLP: Truth, Pluralism & Logical Pluralism, University of Connecticut, 17–19 April.

PROGIC: The 7th Workshop on Combining Probability and Logic, University of Kent, 22–24 April.

Courses and Programmes

Courses

AAAI: Texas, USA, 25–29 January.

Combining Probability and Logic: University of Kent, 20–21 April.

EPICENTER: Spring Course in Epistemic Game Theory, Maastricht University, 8–19 June.

EPICENTER: Mini-course on Games with Unawareness, Maastricht University, 22–23 June.

Programmes

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

Master Programme: MA in Pure and Applied Logic, University of Barcelona.

Doctoral Programme in Philosophy: Language, Mind and Practice, Department of Philosophy, University of Zurich, Switzerland.

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

Master Programme: in Statistics, University College Dublin.

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

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

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

MA in Cognitive Science: School of Politics, International Studies and Philosophy, Queen's University Belfast.

MA in Logic and the Philosophy of Mathematics: Department of Philosophy, University of Bristol.

MA Programmes: in Philosophy of Science, University of Leeds.

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

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

MA in Metaphysics, Language, and Mind: Department of Philosophy, University of Liverpool.

MA in Mind, Brain and Learning: Westminster Institute of Education, Oxford Brookes University.

MA in Philosophy: by research, Tilburg University.

MA in Philosophy, Science and Society: TiLPS, Tilburg University.

MA in Philosophy of Biological and Cognitive Sciences: Department of Philosophy, University of Bristol.

MA in Rhetoric: School of Journalism, Media and Communication, University of Central Lancashire.

MA programmes: in Philosophy of Language and Linguistics, and Philosophy of Mind and Psychology, University of Birmingham.

MRes in Methods and Practices of Philosophical Research: Northern Institute of Philosophy, University of Aberdeen.

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

MSc in Applied Statistics and Datamining: School of Mathematics and Statistics, University of St Andrews.

MSc in Artificial Intelligence: Faculty of Engineering, University of Leeds.

MA in Reasoning

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

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

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

MSc in Cognitive Science: University of Osnabrück, Germany.

MSc in Cognitive Psychology/Neuropsychology: School of Psychology, University of Kent.

MSc in Logic: Institute for Logic, Language and Computation, University of Amsterdam.

MSc in Mind, Language & Embodied Cognition: School of Philosophy, Psychology and Language Sciences, University of Edinburgh.

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

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

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

Jobs and Studentships

Jobs

Post doc fellowship: in knowledge first epistemology, KU Leuven, deadline 15 February.

Lecturer: in philosophy of psychology/mind, Kings College London, deadline 17 February.

Post doc: in conditionals and information transfer, University of Konstanz, deadline 22 February.

Three Assistant Professorships: in logic and philosophy of language, three years with the possibility of extension, MCMP, LMU Munich, deadline 28 February.

Post doc: in the Emergence of Relativism, University of Vienna, deadline 1 March.

Studentships

PhD position: in philosophy of science, Durham, deadline 23 February.

PhD position: in causal inference, University of Amsterdam, deadline 1 March.