The Reasoner

Volume 5, Number 7
July 2011

www.thereasoner.org
ISSN 1757-0522

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§1 Editorial

I recently attended the bi-annual conference of the Society for Philosophy of Technology at the University of North Texas. One thing that strikes me about philosophy of technology is, more than the variety of approaches it encompasses, the constant reflexion on its

own subject matter (i.e., on what technology is and consequently on what philosophy of technology is), on its actors (i.e., philosophers, sociologists, technologists, ...), and on the arenas in which it operates (i.e., academia, technology labs, public opinion, ...).

Going back home—home being both Europe and philosophy of science—I thought that this activity of reflecting on who we are and what we do needs to be encouraged. I therefore try to take a step in this direction each time I have the chance to do an interview. This time I sent my questions to Stathis Psillos, a remarkable philosopher of science based in Athens. You will see how Stathis sees his own research within the philosophical panorama; you will also hear his views about academia in the middle of economic crisis and in the middle of a process that tends to commercialise everying, including philosophy.

I am coming to believe that reflecting on who we are and what we do—namely, on what kind of academic we want to be—is at least as important as publishing good pieces of research in good venues (be they journals, volumes, or *The Reasoner*). The reason, I think, is quite simple (in theory but not in practice, alas). We cannot make an impact without an idea of what that impact is and of what the impact's target is.

I hope you will find Stathis' words inspiring and thoughtful. I did.

Federica Russo
Philosophy, Kent

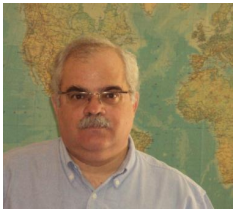
§2
Features

Interview with Stathis Psillos

Stathis Psillos is Professor of Philosophy of Science and Metaphysics at the University of Athens. He is amongst the founders of EPSA—the European Philosophy of Science Association—and a leading philopher of science.

Federica Russo: Thanks for accepting to be this month's interviewee. You are certainly well-known to philosophers of science, but *The Reasoner* has a much wider audience. Would you like to briefly present your research profile to our readers?

Stathis Psillos: Thank you for your kind invitation. I am a philosopher of science, practising what is nowadays called General philosophy of science. The way I see it, this characterisation is meant to make a statement; to take a stand: there is this thing called *science-in-general* and there are important philosophical issues that crop up in our attempt to understand this general cognitive activity that transcends the bounds—and I would say underpin—the various individual sciences. General philosophy of science is defined by an intellectual tradition which aimed to develop a co-



herent philosophical view of science, *qua* a part of culture, with distinctive epistemic features and relation to reality. It operates within the broad two-dimensional framework that ancient Greek philosophy—and in particular, Aristotle—bequeathed to posterity; a framework whose contours are shaped by the epistemology of science and the metaphysics of science. Hence, I take it that the constitutive quests of General philosophy of science are the features and methods that make scientific knowledge distinctive and the deeper structure of reality required or suggested by a coherent (and perhaps unified) scientific image of the world. It's difficult to locate yourself within this framework without knowing some individual science, but the challenge is precisely to try to have a philosophical view about science-in-general.

For various reasons that have to do with my own intellectual development, I entered philosophy of science with a philosophical agenda: to defend a realist conception of science. This kind of endeavour has taken up most of my research time. Its highest point so far (and perhaps for good) is my book *Scientific Realism: How Science Tracks Truth*, which appeared in 1999. In it, my main aim was to develop the explanationist defence of realism—roughly the line that a) the reasons that entitle scientists to take some of their theories as (approximately) true are explanatory; and b) that the very claim that some theories are (approximately) true is itself the best explanation of the various empirical and predictive successes that these theories enjoy. Issues such as these led me to try to tackle head-on the famous historical challenge to scientific realism, aka pessimistic induction. My study of the history of science was not with the eyes of a professional historian of science, but I still think that it is *philosophical perspectives* that determine the norms of relevance in the use of the history of science within philosophy of science. In this sense, I am a Duhemian: I take history to play an important role within philosophy of science in warning off both dogmatism and scepticism. My subsequent work on scientific realism (some of which is collected in my *Knowing the Structure of Nature: Essays on Realism and Explanation*, 2009) was meant to tackle three issues that I thought were very important for a coherent realist approach to science: metaphysics, truth and mathematics. The latter is a topic I have been thinking about recently. I am trying to defend an anti-nominalist version of scientific realism, mostly because I think that nominalism is an impoverished approach to science and reality. On the role of truth in scientific realism I am still wavering. I have defended the correspondence theory of truth and have argued that scientific realism is not properly defensible if truth is taken to be broadly epistemic. But I have not yet come up with a settled view on the issue of whether a thin—deflationary—conception of truth is enough for scientific realism. The research issue that has preoccupied me considerably in the last ten years is the metaphysics of scientific realism. Here I go against the realist tide and adopt a broadly Humean conception of reality, which denies necessary connections and regularity-enforcers (such as powers) and takes it that laws of nature are those regularities that play an essential role in a unified theoretical scheme of the world (a version of the Mill-Ramsey-Lewis view). I call my approach Scientific realism with a Humean face'. I am not yet entirely sure it is fully coherent, but this is an issue that I will have to face sooner or later.

FR: You started your career in the UK (MSc, PhD, and a postdoctoral position) and then you moved back to Greece. What brought you to the UK in the first place? And

what brought you back to Greece afterwards? The UK and Greece must be very different working (and social) environments, I believe. What do you think Greek academics should learn from the Brits, and vice-versa?

SP: Back in 1989, there were no Master Programmes in Greece and when it came to the philosophy of science, there was a then very young PhD programme in the National Technical University of Athens run by a visionary group of scientists who had a sustained interest in philosophy of science. I was associated with this group but I was lucky enough to get a state scholarship to study contemporary philosophy abroad. The UK—and London in particular—was an obvious choice back then. I was offered a place by the then Dept of History and Philosophy of Science at King's College London and attended the University of London MSc in History and Philosophy of Science and Mathematics (run jointly by various London Colleges). The London philosophy of science community was very much in transition back then. When David Papineau joined the King's HPS dept in 1990, he admitted me as his PhD student and this was a great window of opportunity for me. David's eye for the broader philosophical issues was a revelation to me. At the same time, I had had the opportunity to live through the transition of the LSE from the Lakatosian tradition (which I still value) to the post-Lakatosian one. John Worrall had just published his seminal paper on structural realism and this gave me a lot of food for thought. David and John created a dipole which very much shaped the way I do philosophy of science. But a key influence for me was the work of Richard Boyd and his insistence that the defense of realism (and of the objectivity of science) has had a political dimension as well: human emancipation.

I spent almost 9 years in the extremely stimulating and innovative London intellectual environment; at King's for my dissertation on scientific realism and at the LSE with a British Academy Postdoctoral fellowship. If I have managed to achieve anything in my intellectual life, it is mostly due to these years in London. But in the end, I was never good enough to be offered a job in London (or the UK for that matter) and when I was thinking about my future after the BA fellowship, I was approached by the then newly established dept of Philosophy and History of Science in the University of Athens with an offer to join it. Personal circumstances back then, including the fact that I had still to do my military service (I was a draft-dodger for three years, unable to visit my family in Greece), led me to accept this offer and go back home. This is not something I regret (at least not most of the time).

There is no doubt that there was (and still is) a huge difference between academic departments in Greece and the UK. When, as a junior member of staff, I asked a secretary of the dept in Athens to prepare a flyer for a talk that Wes Salmon would give to the dept, she forcefully explained to me that this was not her job. When, later on, I was trying to persuade a senior Library officer of the University of Athens that we need to subscribe to the JStor, he was looking at me with amazement. When I have academic visitors from abroad, I still have to do all the arrangements for their hospitality. But one can look (back) at all this with a smile. The serious difference is in the research culture. I am focusing on the humanities and especially on philosophy. Things have changed in the research culture in philosophy in Greece, but with a slower pace than I had hoped. There is a younger generation of philosophers—colleagues with solid philosophical training mostly, but not exclusively in the UK and a generation of home-grown

PhDs—who take seriously the issue of publication in refereed international journals. But there is still a lot of resistance to the idea that the practice and appraisal of philosophy in Greece should be governed by the same standards and criteria as in virtually the rest of the world. A case has still to be made for the point that publishing in established journals is (among other obvious things) an antidote to nepotism and favouritism.

Given this, it might sound ironic that I also think that an advantage of the Greek academic environment is that you do not perish (even) if you do not publish! There is more tolerance and less pressure to 'produce'. This means that there is more time to let ideas mature. The recent 'impact-factor' onslaught in the UK is, to my mind, the logical conclusion of not building enough resistance as a community earlier on towards the uncontrolled entrance of the market forces and market standards in academia. So although we still have a lot of hard work to do in Greece to raise the standards of academic research in philosophy, this (hopefully) can be done in a way that resists treating philosophy as yet another product on the supermarket shelves whose value is governed by the law of supply and demand. The balance is delicate; there might not be, in the end, enough momentum to change for good the prevailing research culture in philosophy in Greece. But in the endeavour to resist the commercialisation of philosophy, we are in the same boat with all or most other professional philosophers in the world—at least I hope so.

FR: I am interested in learning about the academic situation in various countries, so this is a question that I often ask to my interviewees. What is being an academic in Greece these days? How did the economic crisis affect Greek academia?

SP: These are extraordinary days! The western world has started to come out of a very deep economic crisis, which will leave big scars on social institutions, the universities included. Greece is in a terrible mess and no end of the crisis is in sight. The story is complex and interesting, but my own view—or the bottom line of it—is that in Greece we live through a massive attack on the welfare state as this was built and developed after the collapse of the military junta in 1974. The standards of living of the majority of the population—which, admittedly, rose over the last two decades but mostly due to really hard work—are being squeezed; unemployment is rising beyond control (especially among the youth) and at the same time (despite, or because of, the crazy austerity programmes) the economy has gone into a deep depression. There will be philosophical lessons to be drawn from what has now been happening in Greece, I am sure. The universities suffer no less. The budget has been slashed to the extent that there is a serious chance that there won't be enough money to see the year through; there are about 800 young academics (and some talented philosophers among them) that have been elected to junior university posts but are not being appointed by the state; there is a lot of to-ing and fro-ing concerning the promotion and the tenure cases of many university teachers; there will be huge reductions to the temporary staff that the universities employ to do teaching; the government is about to impose a massive reform of the structure of higher education, which might lead to mergers of universities and the closing down of departments as well as to the appointment of unelected governors to run the universities; most of the research funds (including EU funded projects) are frozen. There is a real danger that the Greek universities will be devalued and that a whole academic generation—and one with better education and research profile as a rule—will

be lost for good. This is the setting (not to mention the cutbacks of about 15% of our annual salary with more to come) within which we are invited to do our academic job, to 'intensify' our research output and to create centres of excellence. Apart from any political action anyone sees fit, I believe that the Greek academics (and philosophers in particular) who have contributed to the advancement and the rising international standing of the Greek universities have an intellectual obligation to fight against this assault, by example and intellectual mobilization.

FR: You have been the first president of the European Philosophy of Science Association. How did you like it? Do you think there is a 'European' way of doing philosophy of science, as opposed to . . . ?

SP: The creation of the EPSA was a lot of hard work and would not have happened if it were not for the vision and contribution of Bengt Hansson, Stephan Hartmann, Mauro Dorato and Mauricio Suárez. I was deeply honoured to have been its first president. It was an experience that I enjoyed quite a lot, though it was not always plain sailing. Still, the EPSA has now an official journal which has already produced the first two issues and an important biennial international conference. As you know, the third EPSA conference will be hosted by the University of Athens from the 5th to the 8th of October 2011. The response to the call for papers was great—almost 400 contributions, of which about 180 have been accepted for presentation in the conference. I wish we had space to accommodate more parallel sessions, since I am sure a lot of good papers and symposia proposals had to be rejected in the end. EPSA is now firmly on the philosophical map. It is there to build bridges and to promote collaboration and exchange of ideas among philosophers of science in Europe and the rest of the world. In a sense, EPSA is yet another professional philosophical association, where the adjective "European" marks the place of its headquarters and the location of the conference. I'd like to think however that there is a legitimate task to look for a European perspective in doing philosophy of science. This is *not* to imply an opposition to supposedly non-European perspectives. Rather, I take it to bring into focus the need to revive, refresh and perhaps integrate the various traditions within philosophy of science in Europe: the currently dominant analytic tradition, with the perspective of historical epistemology, the various formal approaches to conceptual analysis that were mostly developed in the northern and eastern Europe, the various tendencies to see science as a social and perhaps political phenomenon. Working in a country that is considered to be in the 'research periphery' of Europe, I take it that EPSA should create a space for the advancement of capacities and the building of intellectual abilities of all those philosophers of science who—for reasons that we need to discuss at some point or other—do not have the opportunity to be and work in elite institutions and places. There is plenty of quality in European philosophy of science—what is sometimes lacked is opportunity.

FR: In philosophy of science, you made a notable contribution to the debates on laws, explanation, causation, and, recently, mechanisms too. Do you consider your achievements just 'conceptual' or are there consequences for scientific practice?

SP: I am not sure how philosophy of science can have consequences for scientific practice. There might be unintended consequences, but the idea that philosophy of science should aim or try to advise scientists how to practise science does not appeal to me. I study science philosophically because I value science and try to understand its

epistemological and metaphysical presuppositions/implications. But I do it because I want to have a coherent philosophical view about science *simpliciter* and not because I hope that this view has consequences for scientific practice. There is no philosophically neutral approach to science. There is no philosophically detached description of 'the' scientific practice. Even when scientists themselves describe their practice, they do it from a philosophical point of view (occasionally spontaneous and perhaps confused or even incoherent). However, I do not believe that philosophy of science—at least the way I would like to practice it—is just 'conceptual' analysis. I do not look for definitions. Concepts are immersed in practices (which, occasionally, are predicated on a network of concepts) and in history; concepts *have* a history and a repertoire of applications which constrain the way we philosophers ought to think about them.

The recent mechanistic revival in philosophy of science is a good example. I am a critic of this revival not because I think that the concept of mechanism has no content. Rather, the opposite is the case: it has too rich a content to be taken for granted *philosophically*. It is true that scientists—especially in biology, cognitive sciences etc.—look for and identify mechanisms. What then is the philosophical task vis-à-vis this practice? I say: use philosophical tools to study it. I take it there are two major tendencies currently. The one that I do not prefer amounts to a sophisticated commentary on the practice of looking for and identifying mechanisms. The one I am friendlier with aims at explicating the metaphysical and epistemological role that mechanisms are supposed to play in the scientists' give-and-take with the world. I start my own critique of mechanism (in the paper you accepted in the recent OUP volume on causation that you edited with Jon [Williamson] and Phyllis [Illari]) by noting that there are at least two general ideas of mechanism and that neither of them (but for different reasons) can lead us to draw interesting metaphysical conclusions from the recent mechanistic craze. Where do I get these two concepts? From history, of course. But reconstructed history—hence, what I call 'conceptual history'. The mechanistic conception of mechanism (associated with the mechanical philosophy and a conception of mechanics as the foundation of science) is kind of too easily satisfiable to be useful (this is what I call Poincaré's problem). The other conception—a non-mechanical conception of mechanism—associates mechanisms with the task of explaining the behaviour of a whole in virtue of the behaviour of the parts plus structural constraints. But this conception requires a prior understanding/identification of the whole and its function and this implies that anything that can be this whole and perform this function is an appropriate mechanism (this is what I call Hegel's problem).

The case of laws of nature is different. Here we have a rich philosophical concept which is at the very core of the metaphysics of nature. It turns out that it is extremely difficult, if possible at all, to have a coherent view about laws of nature without thinking of the relevant concept as part of a network of concepts such as causation and counterfactuals. Hence, the problem of laws of nature is a distinctively philosophical problem and it remains interesting and important even if it makes no difference to scientific practice. In this case, it is like having one equation with three unknowns and there is no way forward but to try to create the two missing equations; that is, to rely on intuitions and established usage (history and practice!) so that we get at least a partial hold on the concepts involved. I take a broadly Millian approach to laws, but this means that I need

a story about counterfactuals, and all I can offer at the moment is based on (arguably vague) intuitions about modal force.

Causation makes things more complicated, because I think that if we take the history, usage and overall role of the concept seriously, we are entitled to draw the conclusion that perhaps it is an accident that the very same concept is supposed to cover the cases in which we think there is a productive relation between cause and effect and the cases in which we think there is a relation a robust dependence of the effect on the cause. Hence, causal pluralism seems quite appropriate. To cut a long story short, I think nothing of what I have ever said will be useful to a practising scientist—except by accident. But this does not mean that it is of no value to a practising scientist. I view philosophy as the laboratory of theoretical abstraction: philosophy supplies the abstract form and history, science, practise (in other words, the activities that engage the world directly) provide the matter. Philosophical abstraction without (scientific, historical, practical) concretisation is empty; (scientific, historical, practical) concretisation without philosophical abstraction is blind.

FR: In the light of the big changes that the academic world is facing, what do you think is the (new) role of philosophers? Is there an 'impact' we can really make on society? If so, what does it amount to?

SP: I went into philosophy because I wanted to change the world and I did not know how (else) to do it. After twenty five or so years of philosophical endeavours, I still do not know how to change the world. But I do know a lot more! I know that philosophy is an enterprise conducive to human intellectual and moral flourishing. It sets free human reason and puts it to the service of truth (and virtue). It is this conception of philosophy that I identify with. Philosophy is not about solving problems—though problem-solving is very welcome. Philosophy is about freeing the human mind from ideological fetters; it is about having a view about how it is best to go about having a view of the world; it is the cement that holds together (and makes possible in the first place) a solid and coherent image of the world. And that's why philosophy and science are intimately connected, even though they are independent enterprises.

Philosophy does not always make itself visible; it goes unnoticed in the 'large scheme of things'. But its broader significance is made evident in periods of crisis, or major conceptual shifts (like the one in the beginning of the twentieth century) where the (scientific and social) image of the world has to be re-built. This is not something decision-makers, who are keen to save money, improve resource-management and protect the interests of the 'stakeholders', are able to see. This, ultimately emancipatory, function of philosophy has rendered it an invaluable part of an intellectual heritage that swept the centuries and shaped the ways universities have worked and flourished. Perhaps, this conception of the role of philosophy and, by implication, of the humanities in our intellectual endeavours, is a happy accident that we (collectively) owe to our Greek forebears. Perhaps, if the university education was designed (or invented) from scratch fifty or twenty years ago by the contemporary politicians, their advisors and their funding bodies, philosophy would be no part of what is required for a balanced and rounded education. In the super-market conception of the universities that tends to preoccupy the minds of the so-called 'economic rationalists', there would be no need for philosophy to be on the shelves for sale; else, it would be simply on offer in a discounted price in

the past-their-best-before-date products.

The fact is, however, that philosophy is a precious part of our intellectual culture and we should try to preserve it and cultivate its fruits. But we should see it and defend it as such: as a part of our intellectual culture; of our collective heritage and self-esteem; of the tremendous achievements of human reason; of our collective insurance against authoritarianism and conceptual vacua. If philosophy goes into the supermarket, it will become obsolete. But it won't go into the supermarket, if the argument is won—and this has to be a philosophical argument—that not everything has an exchange value; not everything is a commodity.

There is a tendency, in various countries including mine, to view the role of philosophers as public intellectuals. This attitude is fostered by some philosophers too! They couldn't be more wrong! The opinion of a philosopher about X—where X is something he/she is not an expert about—is of no more value than the opinion of anyone else about X. A public intellectual with an opinion about everything is nothing more than a well-informed journalist—there is nothing wrong with this, except that it is not philosophy! But there is the other extreme too: the full professional detachment, where philosophers do not volunteer their view on X unless they are asked—and they are rarely asked! I am a modest interventionist and I think philosophy should be more present in the public domain without being corrupted by the limelight and the marketplace. This is not to encourage loose thinking. Rather, it is to try to set some higher intellectual standards in the public sphere.

There are important areas in science policy, risk analysis, the public understanding of science, the role of religion in education and in society, the management of disagreement and consensus formation, as well as ethical and political issues in science and the science education in general on which philosophers of science can have an important impact. But it should never be forgotten that whatever impact philosophy of science has on these and other issues, it is the product of the fact that philosophy of science (and philosophy in general) was left alone by society (and we thank society for this!) to develop its own themes, approaches and strategies. The intellectual and institutional autonomy of philosophy is a prerequisite for its playing—via a slow and occasionally unnoticed process of maturation—a broader beneficial role in society. It might sound cheeky to appeal to the etymology of "philosophy": the love of wisdom. Wisdom, if it is ever achieved, requires and takes time. But we all know from experience that once it is available, it makes a difference!

Truth and Success: Reply to Held

In a recent paper (Truth Does Not Explain Predictive Success, *Analysis* 71, 232-234), Carsten Held attempts to offer a new take on the traditional issue of scientific realism versus antirealism.

Held begins by reminding us of the (allegedly) high number of predictively successful theories that were at some point in the history of science abandoned and replaced by other theories, and are therefore regarded as false now. This pessimistic induction threatens scientific realism, as it seems to sever the link between predictive success and truth [from now on, the qualifiers 'predictively', 'predictive' and 'scientific' will be

dropped]. Next, Held indicates the most common realist reaction to this: to insist that all past successful theories got at least *something* right about the world, so being at least *partly true* in spite of their *overall falsity* (this can be understood here as the claim that at least some, but not all, the statements contained in those theories described reality as it objectively is—no need to deal with the thorny issues surrounding truthlikeness). This, Held thinks, means that

> the debate on scientific realism hinges on whether there really exists an entirely false theory [i.e., a theory such that none of its statements describes reality as it objectively is] making true predictions (232).

On this basis, to avoid dealing with empirical questions, Held suggests considering the mere *possibility* of success in spite of full-blown falsity. Thus, he asks us to consider a hypothetical theory that is successful. He first points out that the inference from success to truth is non-deductive. This means that there is a logically possible world where the theory under consideration is entirely false. Since any further constraints one may postulate cannot in any case make it necessary that a successful theory is at least partly true in any given world, Held continues, the foregoing means that *any successful theory could be entirely false in the actual world*. Held concludes that realism is undermined, as for any successful theory there is nothing that grounds the belief that it is (at least partly) true.

Is Held's reasoning compelling? I think not.

First of all, Held makes *two* claims. He states (a) that (for scientific theories) 'truth does not explain predictive success' (the title of his paper); and (b) that "an explanation of any scientific theory's predictive success must be compatible with the assumption that this theory is false" (234). But (a) and (b) are only equivalent if the former is understood as the claim that a theory is true *if and only if it* is successful. If the notion of explanation is instead intended in a statistical sense (that is, as allowing for alternative explanations in particular cases), the denial of (a) is compatible with the acceptance of (b): for, truth might then be taken to explain success in the sense that *in most cases* the success of a theory is explained by that theory's (partial) truth—which is obviously compatible with the assumption, for any particular successful theory, that it is false.

The foregoing entails that, contrary to what Held claims, the debate does not hinge on the existence of a (possible or actual) successful theory which is entirely false. One such theory would not suffice for undermining realism unless one also showed that realists (are bound to) think that success and (partial) truth *invariably* entail one another.

However, the typical realist argument clearly aims at less than this (which should come as no surprise given that, as Held himself acknowledges, realists *readily admit* that the link between success and truth is non-deductive). What realists usually say is that their position provides the best—not the only—explanation for the success of science, and in all other cases the latter would appear *miraculous* (unpredictably, this is known as the 'no-miracle argument'). This means that the possibility that entirely false theories could be successful—although regarded as something with a very low probability of occurring—is allowed. As a matter of fact, provided that there is a sufficiently large set of theories, realists can even claim that it is very likely that such a theory exists (compare this with the second law of thermodynamics and Poincaré's recurrence theorem). And

the number of theories is certainly high enough if, as Held does, one also takes into account merely possible theories.

Held might be understood as aiming to show that this abduction is unwarranted. Indeed, if for any specific theory that is successful it is possible that it is entirely false, it is also possible that what really qualifies as a miracle is the opposite of what realists think. And given that we cannot observe that a successful theory is (partly) true, how can the realist resist this suggestion if not by *presupposing* what s/he has to demonstrate?

The most plausible answer to this is, to my mind, that the realist can (and should) start from the uncontroversial observation that truth and success are (almost) invariably connected at the level of our everyday experience, and then generalise. After all, if I, say, regularly manage to catch the bus in the morning more or less at the time I expect this to happen, and yet I have no idea what the bus' timetable looks like, everybody would agree that that is—if not a full-blown miracle—a remarkable coincidence. Indeed, were one to look at the actual timetables after asking successful bus-users about their beliefs concerning their favourite means of transportation, one would no doubt be able to see a remarkable correspondence (all this, of course, assumes the existence of timetables, which is not obvious). Why shouldn't all this also apply *mutatis mutandis* to our most sophisticated conjectures about the world, involving the unobservable? That no independent 'test' is available when the latter are concerned does not, it seems to me, affect in any way the relevant intuitions. If this continuity between common sense and science is acknowledged, though, realism becomes the 'default position'. (Notice, in this connection, that the pessimistic induction is normally presented as a reaction to the no-miracle argument).

In conclusion, I think neither Held's general methodology nor his specific claims are truly compelling or add anything to the extant debate.

Matteo Morganti
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Computational Ontology and Deontology

I would like to briefly discuss an interesting argument from the recent book of John Searle, *Making the Social World* (Oxford 2010), that tries to consider the construction of a society as an "engineering" problem and concludes that deontology works against the "computational" or "algorithmic" view of consciousness. Following the Kantian tradition, "deontology" is the term to define an ethical system that does not depend on subjective experience but on an irrefutable logic. According to Searle, deontology requires that the "artificial" system has to be able to create desire-independent or inclination-independent reasons for acting:

> Unless conscious agents recognize, for example, a reason for paying their restaurant bills, for not stealing the items in the museum, and for speaking the truth, restaurants, museums and statements will be out of business. (Searle 2010, p. 140).

Deontology is an aspect of human creativity through the performance of speech acts (Searle 2010, chap. 4). So, for example, the man who says "This is my property" or the woman who says "This is my husband", may be creating a state of affairs by Declaration. A person, who can get other people to accept this Declaration, will succeed in creating an institutional reality that did not exist prior to Declaration. We have two cases: first, by Declaration a certain person or object X counts as Y (status entity with a precise function) in C (context); second, We (or I) make it the case by Declaration that a certain status function Y (such as corporations or electronic money) exists in C (context). The deontic aspect of the use of language would distinguish therefore humans from robots. I'll sketch Searle's argument against the computational model (1) and I'll criticize Searle's reasons to warrant his criticism (2).

(1) Searle's argument starts from two imagined cases: the "society of robots" and the "society for robots" (Searle 2010, pp. 133-139). In the "society of robots", we could imagine a social community of robots, i.e., a set of "conscious" robots to which we give programs that will respond to stimulus inputs with the appropriate motor outputs. We could improve the systems by giving them language, namely a set of symbolic mechanisms for representing time and space so that they can communicate (volitions and beliefs) about times and places in different situations. It could be possible to give them mechanisms to perform various speech acts such as statements, orders, commands etc. Now a problem arises: in what sense could we say that robots are making statements, giving orders, or making and keeping promises? Let's suppose that robot A is programmed to make a promise as soon as it cognizes a future need on the part of robot B; namely A is in a certain program state that matches certain future states of B. The "matching" relation means that A sends a signal to B, which is systematically related to A's subsequent behavior. This kind of society lacks those voluntary actions typical of humans who undertake commitments entailed by speech acts. In the "society for robots", we could imagine a different institutional reality, namely one that does not allow us the types of free choices we currently have but is mechanical and algorithmic. The system will not work because people have no independent motivation for following the rules.

(2) My criticism aims to weaken Searle's position. As regards the "society of robots", it is agreeable that promise-making presupposes on the part of the promisor that (a) the promise is not a mechanical (unconscious) emission of words and (b) the keeping of the promise is not a mechanical (unconscious) operation. But the way in which Searle describes speech act of promise presents ambivalence. On the one side, the description of promise-making aims at excluding imperfection in speaking the language or physical impediments to communication such as deafness and also parasitic forms of communication such as telling jokes or acting in a play (*Speech Acts*, Cambridge, 1969). On the other side, the "society of robots" introduces an important requirement for promising, namely "free will" or a "sense of the gap" Searle describes as a sort of second-order system of volitions that gives rise to deontology or desire-independent reasons for action. What is the nature of the sense of the gap? In Searle's terms:

> [...] in addition to having beliefs and inclinations, it [the robot] must have a set of ways of appraising its beliefs and inclinations in light of its creation

of commitments (Searle 2010, p. 136).

Actually, the challenge for artificial intelligence is how to simulate real human communication, which is full of "irrational", surprising and creative aspects. As regards the "society for robots", we are invited to imagine a society that does not create motivations for acting; it is a society for people who mechanically follow social rules. This kind of functioning is clearly incompatible with humans who are supposed to make conscious choices and to have the sense of the gap. We can find ambivalence also in this case. It is plausible to recognize that social practices have a normative dimension i.e., adequate rules that we can change by the active participation in the creation of institutional reality. But, humans often simply follow them in a mechanical way. This thesis is reinforced by several arguments from contemporary theories of autonomy; in particular, the "substantive" ones criticize "procedural" theories such as the theory of Searle by focusing on the fundamental role of socialization for the development of personal autonomy (See Giovagnoli R., *Autonomy. A Matter of Content*, Florence 2007, chap. 3). For Searle, robots lack the possibility to break the rules as they do not have the "sense of the gap"; but these very rules are created by humans and for humans for not to be broken. A more "compatibilist" view ought to recognize that a well functioning artificial mind could easily follow the rules we give it and to help us to balance the real possibilities we have to change the actual institutional realities.

Raffaela Giovagnoli
Pontifical Lateran University

§3
News

Mathematical Logic in the Netherlands, 19–20 May

The workshop "Mathematical Logic in the Netherlands" was held in Groningen on May 19 and 20, 2011. MLNL 2011 was the third issue of a series of yearly meetings on Mathematical Logic (and related areas) in the Netherlands. Rather than a specialized conference, where advanced research results are reported, the aim is to get to know each other better and, by understanding the various branches of logic represented in the Netherlands, strengthen the community. Logicians from the Netherlands and other countries presented four invited talks and sixteen contributed talks on a wide range of topics, from set theory to type theory and from modal logic to philosophy of logic.

Apart from established researcher, the informal nature of this workshop attracted many masters and PhD students. The opening talk was aimed towards this group: invited speaker Henk Barendregt gave a historical review of how the notions of computability, solvability, and the omega-rule in lambda calculus were developed. He emphasized that these results were obtained accidentally while working on PhD research; his message to masters and PhD students: don't give up, even if you get stuck. Three contributed talks followed: Wim Veldman gave an equivalent to Brouwer's fan theorem in the basic

intuitionistic mathematics. He ended the talk stating that a second equivalent theorem was even more beautiful. Merlin Carl proposed an alternative to Jensen's approach to the fine structure of the constructible universe L, and showed that it can help simplify treatments of combinatorial principles on L. Yurii Khomskii gave an introduction to regularity and definability.

After lunch, invited speaker Jaap van Oosten outlined the connection between type theory and homotopy theory, by laying out how Martin-Löf's dependent type theory with proof terms can be interpreted with higher fundamental groupoids. Five contributed talks followed: Benno van den Berg presented an axiomatic system of non-standard arithmetic based on Heyting arithmetic, as well as an interpretation of it that enables the rewriting of a non-standard proof as a standard one. Sylvia Wenmackers discussed axioms for non-archimedean probability (NAP). Classical probability theory cannot represent a fair lottery on the natural numbers, because possible events might get probability zero. NAP solves this problem.

Paula Henk proposed a new perspective on GL, modal logic of provability for Peano arithmetic, by introducing a new notion of interpretability that gives rise to a bisimulation between a finite Kripke model for GL and a model made from non-standard models of PA. Kohei Kishida gave three constraints on non-classical first-order logic such that one can interpret the classical part of these logics in a sound and complete way. Frank Roumen first introduced an automaton theoretical way to calculate the syntactic monoid of a language, after which he discussed a new algorithm to calculate the syntactic monoid using duality theory for residuated Boolean algebras.

After the last talk most participants left for their hotels or the fun fair in the center of town, but most Dutch guests stayed to discuss the future of the Onderzoekschool Logica. It was decided to continue the MLNL workshops and next year MLNL will be held in Amsterdam. Some suggestions were made to improve the website and to develop a uniform undergraduate course in logic. In the evening most people joined the conference dinner at Ni Hao, a Chinese restaurant.

The second day was opened by invited speaker Alessandra Palmigiano. She gave a tutorial on the Sahlqvist correspondence theory for modal logic and illustrated an algebraic approach to reformulating and extending it taking advantage of the duality between algebras and spaces. Three contributed talks followed: Johannes Marti showed conditions on relation liftings to provide a meaningful coalgebraic modal logic and an adequate notion of bisimilarity. Wouter Stekelenburg gave a universal property that determines the category of assemblies up to equivalence. Sam van Gool, in a joint work with Dion Coumans, showed a category-theoretic method of obtaining a free, Lindenbaum algebra of a given modal logic as the limit of a sequence of finitely generated free algebras.

Invited speaker Bas Spitters reviewed a research program of using constructive type theory as an actual programming language, and showed a recent development in its implementation with the Coq proof assistant, with application to real analysis. Two contributed speakers followed: Lorijn van Rooijen discussed generalized Kripke semantics for substructural logics, i.e., logics that do not satisfy commutativity, weakening and associativity. Jesse Alama discussed a virtue of formalization of mathematics by taking MIZAR Mathematical Library (MML) as an example; he showed how MML's large

database of dependence between axioms and theorems helps to refine proofs.

After a coffee break the conference ended with a philosophical session with Matteo Bianchetti, Tonny Hurkens and Paniel Reyes Cardenas.

Jort Bergfeld
Kohei Kishida
Philosophy, University of Groningen

Conditionals, Counterfactuals and Causes in Uncertain Environments, 19–22 May

The workshop focused on semantic modeling of uncertainty in conditional and counterfactual reasoning. Its aim was to bring together new and fruitful approaches to the logics, philosophy and psychology of indicative, counterfactual and causal conditionals. The workshop lasted for two and a half days and included 17 presenters and c. 45 participants. Slides and further information regarding the workshop can be found here.

May 20th. Angelo Gilio (Rome) opened the workshop with a presentation of joint work with Giuseppe Sanfilippo on probabilistic accounts of compounds of conditionals. Igor Douven (Groningen) presented conceptual arguments and empirical results regarding Adams' thesis and wide scope interpretation vs. narrow scope interpretation of probabilistic judgements. Niki Pfeifer (Munich) focused on human probabilistic reasoning. Niki described his new work regarding probabilistic reasoning with the paradoxes of the material implication, premise strengthening and the interaction of negations and conditionals. Gernot Kleiter (Salzburg) reported the results of experiments on indicative conditionals including children, adolescents and adults. A majority understood conditionals as conditional events, a minority as conjunctions, and practically none as material implications or as biconditionals. David Over (Durham) described new empirical results regarding conditional bets and reasoning with conditionals. David compared conditional bets with probabilistic interpretations of conditionals and interpretations in terms of multi-valued truth-tables, such as the de Finetti truth-table. Paul Thorn and Gerhard Schurz (Duesseldorf) described results of their computer simulation study of formal systems, which may be regarded as governing inferences among conditional assertions that express high conditional probabilities. Their work evaluated Hawthorne's system *O*, Adams' system *P* and Pearl's system *Z*.

May 21st. Jim Hawthorne (Oklahoma) presented a logical system which takes comparative evidential support strength as basic. Jim extends Koopman's comparative conditional probability relation approach to accommodate Popper functions. Matthias Unterhuber and Gerhard Schurz (Duesseldorf) showed that exception structures (e.g., 'Birds can fly', 'Penguins (which are birds) can fly', and 'Tweety is a penguin') cannot be described adequately by a single subjective probability function and presented experiments that indicate that also a frequency-based probability function is needed to account for human probabilistic reasoning. Christian Fermüller (Vienna) gave an overview of classical approaches to vagueness, described extensions of traditional fuzzy logics by intervals in line with Esteva et al. and presented a characterization result of the latter approach in terms of a payoff semantics of bets in Giles/Lorenzen games. Eva Rafetseder

and Josef Perner (Salzburg) investigated the relation between false-belief tasks and hypothetical and counterfactual thinking from a developmental perspective. For that purpose they used scenarios, in which correct answers to counterfactual questions and false belief questions differ. Dorothy Edgington (London) discussed whether judgements, such as 'If I do x, such and such will happen', should be treated in decision theory as conditional probabilities or as probabilities of counterfactual conditionals. She argued for the former, while insisting that only conditional probability judgements, which are based on causal considerations, are appropriate. Hannes Leitgeb (Munich) presented a subjective probabilistic semantics, which allows one to adopt the Lockean thesis (there is a probability value $r > .5$, such that an agent believes A given her subjective probability satisfies $P(A) \geq r$) while maintaining that the agent's set of beliefs is deductively closed.

May 22nd. David Makinson (London) outlined a qualitatively formulated, but probabilistically sound semantics for probabilistic inferences, which is more general than van Fraassen's account of probability functions, but characterizes all rules of Hawthorne's system Q. Wolfgang Spohn (Konstanz) gave an an epistemic account of ceteris paribus conditions based on ranking theory. Wolfgang's approach allows one to represent degrees of exceptionality and to represent exceptions from exceptions and so forth. Sarah Beck (Birmingham) presented a series of experiments on the relation of counterfactual emotions (regret, relief) and agency from a developmental perspective.

Acknowledgements. The workshop was organized as part of the ESF LogiCCC program in collaboration with the LogiCCC programs LoMoReVi and CFSC. It was financially supported by the LogiCCC EUROCORES program of the ESF (European Science Foundation) and DFG (German Research Association).

Matthias Unterhuber
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Normativity of Meaning: Sellarsian Perspectives, 24–27 May

Wilfrid Sellars is now—belatedly, but firmly—being recognized as one of the deepest and most outstanding philosophers of the twentieth century. Of key importance was his originality in giving pride of place to 'the normative'. In fact, he took everything that was not in the direct purview of natural science (everything, that is, which constitutes our 'manifest image' of the world in contrast to the 'scientific image') to be of a normative nature. Normativity, in his view, thus penetrates the whole of our specifically human affairs: it enables us to perceive ourselves not only as moving organisms, but as acting persons, pursuing our personal aims, deliberating, setting ourselves goals and being able to hold ourselves responsible for our actions. Normativity also lies at the heart of semantics: meaning ascriptions are, according to Sellars, essentially normative utterances. Sellars' approach to semantics has been further elaborated by his followers, notably Robert Brandom.

The conference *Normativy of Meaning: Sellarsian Perspectives*, held in Prague from 24th to 27th May 2011, organized by the Department of Logic, Institute of Philosophy, Academy of Sciences of the Czech Republic, aimed to bring together the legacy of Sell-

ars' ideas with other current philosophical discussions on the question of the normativity of meaning. The contributions (4 invited plus 29 contributed talks) did not focus solely on this exact issue; the papers presented addressed a broader spectrum of both Sellarsian and semantic topics.

Sellars' own views on the normativity of meaning and normativity in general were addressed by Jim O'Shea, Willem deVries (both of whom have recently authored books about Sellars' philosophy) as well as a couple of other speakers (including L. Shapiro, S. Levine, P. Olen and many others).

Bob Brandom gave a lecture about modal expressivism and modal realism. (According to modal expressivism, by using modal vocabulary one is endorsing subjunctive robustness of descriptive concepts; while modal realism is the claim that there are true modal statements which state objective facts, i.e. facts which are independent of concept-users.) Brandom defended the position that modal expressivism and modal realism are compatible.

The narrower topic of the normativity of meaning was picked up by e.g. Michael Williams (who rejected Horwich's construal of the use of language in terms of non-normative regularities), R. Kukla and M. Lance (arguing that the distinction between *thought* and *speech* and, more generally, between the 'internal' and the 'external', is pragmatic and normative), C. Gauker (whose claim was that statements about meaning are to be understood as proposals of how to employ words) and many others. Several papers (D. Lauer, P. Stowall etc.) also took explicit issue with recent criticism of the normative construals of meaning.

Jaroslav Peregrin
Philosophy, University of Hradec Králové

Kant on Method as a Demarcation of the Sciences, 30–31 May

General. Arnauld Pelletier (Hannover) opened the workshop by providing extensive support for a negative answer to the question of whether Kant's categories can be defined. At the same time it remains puzzling why Kant nevertheless wrote that it is easy to provide definitions. Regardless whether this can be solved it is crucial to recognize that the classification of definitions provided in the doctrine of methods does not allow one to define a concept in several ways. Each way of defining concepts is bound to a specific kind of concept. Gabrielle Gava (Pisa) investigated whether Kant's description of the procedure of the *first Critique* as following a synthetic method in opposition to the analytic method of the *Prolegomena to Any Future Metaphysics* indeed applies to the arguments Kant actually provides in the *first Critique*. Gava maintained that synthetic elements can be found in the deduction, whereas the arguments of the aesthetics proceed in an analytic manner. The discussion revealed that Kant's remarks should possibly be interpreted in a loose way only applying to the overall strategy and not to the structure of the details, such as the provided arguments.

Philosophy/Mathematics. Brigitta-Sophie von Wolff-Metternich (Heidelberg) explained Kant's demarcation of philosophy and mathematics and emphasized the often neglected notion of indirect synthetic judgments and its role in philosophy. Whereas

mathematics consists of direct a priori synthetic judgments on the basis of construction in pure intuition, philosophy is capable of indirect a priori synthetic judgments. Johan Blok (Groningen) provided an understanding of Kant's methodological opposition of philosophy and mathematics as a system of rational cognition developing a mereological perspective of Kant's philosophy of mathematics. If philosophy is only capable of subordinate structures and mathematics includes coordinative structures, this means that magnitude is not an object of philosophy in the same way as it is an object of mathematics. Job Zinkstok (Groningen) argued that the common notions of Euclid's *Elements*, of which Kant remarks that they are analytic, can be considered to constitute a special logic of mathematics. In the proof of the angle-sum theorem, Kant does not rely on logical identity, but on principles about whole-part relations as expressed by the common notions.

Empirical Disciplines. Colin McQuillan (Tennessee) discussed the attempts by the pre-critical Kant to formulate an empirical alternative to the science of aesthetics proposed by Alexander Baumgarten. The critical Kant announced that he had discovered the a priori principles of the feeling of pleasure and displeasure, but denies that aesthetics can be a science. Yet the new critique of taste meets the conditions Kant set for a science in his pre-critical period. Thomas Sturm (Barcelona) employed the unity of science as an idea of reason to allow for a Kantian conception of science that also applies to the empirical disciplines, like psychology. He introduced a helpful distinction between external and internal systematization. An external systematization explains how several disciplines together form a complete system, whereas an internal systematisation explains how the content of a discipline forms a complete system. Kant's demarcation of psychology was also discussed by Katharina Kraus (Cambridge) by investigating Kant's two main arguments against the traditional conception of psychology: one methodological argument against the mathematisability of psychology and one metaphysical argument against a rational foundation of psychology.

Johan Blok
Philosophy, University of Groningen

Neuroscience and Pragmatism, 10 June

On June 10, 2011, the Capital Consortium for Neuroscience: Ethical, Legal, and Social Issues (CCNELSI) of the Center for Neurotechnology Studies at the Potomac Institute for Policy Studies hosted a conference event, "Neuroscience and Pragmatism: Productive Prospects", that was sponsored in part by the American Philosophical Association. The conference brought together philosophers and neuroscientists with the goal of establishing their unique perspectives on problems concerning embodiment, agency, intelligence, knowledge, socialization, and ethics.

The session opened with a presentation by Dr. William Casebeer (Defense Advanced Research Projects Agency), "What is Neuropragmatism? Some Principles and Why They Matter", Casebeer articulated how six pragmatic principles (e.g., that 'abduction comes naturally', and 'being social *is* being') normatively interact with the epistemology and content of neuroscience; providing insight into what it means to be evolved,

embodied, and adaptive organisms.

In his talk, "How Computational Neuroscience Revealed That Pragmatists Were Right", Prof. Teed Rockwell (Sonoma State) argued that much of Paul Churchland's neurophilosophical corpus provides empirical justification for classical pragmatism. As examples Rockwell offered: truth-error continuity, connectionist-theory, and holistic physicalism. According to Rockwell, contemporary dynamic field-centric neuroscience provides scientific substantiation for the pragmatist position.

Prof. Anthony Chemero (Franklin and Marshall University) delivered a lecture entitled "The End of the Debate Over Extended Cognitio", in which he opined that the purportedly empirical debate over whether it is possible for cognition to extend beyond the confines of the organism is misguided. Chemero held that tools are often part of extended cognition systems, and concluded that the debate over extended cognition truly rests upon understanding the word 'cognition', and what method of explanation we prioritize in a given context.

In his lecture, "Pragmatism, Cognitive Capacity, and Brain Function", Prof. Jay Schulkin (Georgetown University) connected the project of neuroscience with the values of pragmatism: coherence, purposive action, ecologically-stable predictability, self-corrective, and context-dependent judgment within the social milieu, and illustrated how these characteristics are embodied and evolve in response and relation to environmental and cultural factors.

In "Reconstruction in and of Neurophilosophy", Tibor Solymosi (Southern Illinois University) coined the term "neuropragmatism", and therein defined a method that harnesses neuroscientific facts as means for achieving larger pragmatic aims. This non-reductive *situational* reconstruction allows for movement beyond esoteric discussion (i.e. 'do we have free will?') toward more useful and relevant inquiry (i.e. 'how does and how could freedom work?').

In "Neurosociology and Some Confirmations of Chicago Pragmatism via Work on Mirror Neurons", Prof. David Franks (Virginia Commonwealth University) posed that neural systems sustain social and intentional interactions, as consistent with the pragmatic tradition. In support, Franks cited studies of mirror neurons, which while often taken out of context, tend to support—and thereby provide some empirical evidence for—active engagement with, and interpretation of others in a form of "neuropragmatism".

In "The Emergence of Morality and the Social Self", Prof. John Shook (Center for Inquiry) formulated a rigorous notion of morality that is embodied, situated, role-embedded, habitual, cooperative, and culturally objective. Shook offered a genealogy of the capacities, emotions, and social mechanisms present in social bonds within kinship groups from families up through empires, and concluded that neuroscience can offer a method and epistemology to fortify moral sensibility.

In "What *Neuro* Really Means: Obligations for Intellectual Honesty, Veracity, and Cosmopolitanism in Neuroethics", keynote speaker Prof. James Giordano (Center for Neurotechnology Studies, and University of Oxford) presented the 'neuro' prefix as representing an iterative discourse, free to incorporate new information. Giordano argued that neuroethics cannot be anachronistic or bound by dogma, but rather must acknowledge, and appreciate neuroscientific influence upon the human condition, and remain

epistemologically open and ethically cosmopolitan.

In sum, the conference succeeded in explicitly engaging contemporary neuroscience in conversation with the pragmatic tradition.

Nicholas Fitz
Center for Neurotechnology Studies,
Potomac Institute for Policy Studies

Science versus Democracy? 10 June

On the 10th of June, the Centre for Logic and Philosophy of Science (Ghent University, Belgium) organized a one-day workshop, 'Science versus Democracy?', on the relation(s) between Science and Democracy. In light of the commotion surrounding a recent action of the Field Liberation Movement against an experimental, genetically modified potato field in Wetteren (Belgium) and the sacking of an academic researcher because of her public support, one cannot but notice that this workshop addressing the interface between science and democracy couldn't come at a better time to clarify at least some of the misconceptions, which popped up in local media reports and academic reasoning. (Detailed information and an international petition to reinstate Barbara van Dyck can be found here).

The five speakers addressed 'hot' topics, such as the democratization of expertise, selective ignorance in science, the ideal of scientific consensus, the role of values in science, scientific integrity and objectivity in democracy.

In the first lecture, Kevin Elliott used recent agricultural research as a case study for exploring the range of factors that contribute to selective ignorance in science. These factors include not only obvious decisions to pursue some research topics rather than others but also more subtle choices about what metrics to employ, what research strategies to pursue, and even what language to use for describing phenomena.

By evaluating the Food and Drug Administrations ideal of an 'objective scientific review by independent, outside experts' in light of philosophical accounts, Julian Reiss concluded that it would be hard to maintain that current FDA drug approval practice is justified either epistemically or politically. As an alternative, Julian suggested a model, in which an independent jury makes decisions (or recommendations) after hearing evidence and testimony about the safety and medical benefit of a drug and where experts are to serve as witnesses rather than decision-makers.

In the afternoon, Jan de Winter defended his account of scientific integrity against those of Douglas and Steneck. Scientific integrity is the quality of possessing and steadfastly adhering to three moral principles, i.e., (1) research should not infringe human or animal rights, (2) scientific practices should be appropriate for producing non-misleading information and (3) the expected value of the research performed should be at least as high as the expected value of any alternative, non-performed research that could be performed with the same amount of resources and that is in accordance with the first two principles.

Drawing from his recent book 'Science in Democracy', Mark Brown argued that the familiar dichotomy between politics and science reinforces a similar dichotomy between

direct democracy and representative government. He developed an alternative perspective based on the mutual shaping of participation and representation in both science and politics. Political representation requires scientific expertise, and scientific institutions may become sites of political representation. Different institutional venues mediate different elements of democratic representation. If we are to understand democracy as an institutionally distributed process of collective representation, it becomes easier to see the politicization of science not as a threat to democracy but as an opportunity for it. Laszlo Kosolosky tried to cope with the tension between (1) establishing scientific consensus as it is imperative to solve certain controversies and (2) emerging questions concerning the ideal of scientific consensus in light of plurality and dissent. He elaborated on joint work with Jeroen van Bouwel, in which they argue to shift our focus from looking at consensus on the simple level, that is, as the result of alternative theories/models tested against one another eventually leading to some consensus outcome, to analyzing the meta-consensus that stipulates the procedure to be followed. The resulting account of consensus should be a social one, analogous with Longinos social account of objectivity.

Laszlo Kosolosky
Centre for Logic and Philosophy of Science, Ghent University

Calls for Papers

Cognitive and Neural Aspects in Robotics with Applications: special issue of the *Journal of Robotics*, deadline 1 July.
Modalities: Semantics & Epistemology: special issue of *Philosophia Scientiae*, deadline 1 July.
Philosophy of Information: book symposium published by *Etica&Politica* on 'Philosophy of Information' by Luciano Floridi, deadline 1 July.
Composition, Counterfactuals and Causation: special issue of *Humana.Mente*, deadline 30 July.
A Computational Foundation for the Study of Cognition: special issue of the *Journal of Cognitive Science* devoted to David Chalmers's 1993 paper, deadline 15 August.
Deontic Logic: special issue of *Journal of Logic and Computation*, deadline 1 September.
Extended Cognition and Epistemic Action: special issue of *Philosophical Exploration*, deadline 15 September.
20 Years of Argument-based Inference: special issue of the *Journal of Logic and Computation*, deadline 1 October.
AILACT Essay Prize: to the best paper on teaching/theory of informal logic, critical thinking, or argumentation theory, with publication on *Informal Logic*, deadline 31 October.
The Alan Turing Year: special issue of *Philosophia Scientiæ*, deadline 1 November.
Between Two Images. The Manifest and the Scientific Understanding of Man, 50 Years On: special issue of *Humana.Mente*, deadline 30 November.

Psychological Models of (Ir)rationality and Decision Making: special issue of *Synthese*, deadline 1 December.
Scope of Logic Theorems: special issue of *Logica Universalis*, deadline 24 December.
Structure of Scientific Revolutions: 50 Years On: special issue of *Topoi*, deadline 15 January.
Imprecision in Statistical Data Analysis: special issue of *Computational Statistics & Data Analysis*, deadline 30 January 2012.
Formal and Intentional Semantics: special issue of *The Monist*, deadline 30 April 2012.
The Aim of Belief: special issue of *Teorema*, deadline 15 September 2012.

§4
What's Hot in ...

...Logic and Rational Interaction

The recently founded Munich Center for Mathematical Philosophy provides an iTunes channel with videos of talks presented at the center. More than twenty talks are already available.

The Stanford Encyclopedia of Philosophy keeps growing. In June, among others, a new entry on future contingents by Peter Øhrstrøm and Per Hasle has been added. The entry takes Aristotle's classic sea battle example as a starting point and discusses numerous temporal logic approaches to treating the problems raised by future contingents.

In her recent paper "A Two-Level Perspective on Preference" in the Journal of Philosophical Logic, Fenrong Liu proposes a two-level modeling perspective on preferences, taking into account both intrinsic "betterness" and reason-based extrinsinic preference. And the article "Projective Unification in Modal Logic" by Wojciech Dzik and Piotr Wojtylak in the Logic Journal of the IGPL provides new results concerning the role of unifiers (substitutions that make formulas a theorem of a given logic) in modal logics extending S4.

Contributions to LORIWEB on topics relevant to the area of Logic and Rational Interaction are most welcome. Please submit your news items (conference calls, reports on past conferences, new publications etc.) toRasmus Rendsvig, our web manager, or to the loriweb address.

Ben Rodenhäuser
Philosophy, Groningen

...Mind and Cognition

This is a new occasional feature brought to you by the Mind and Cognition group at the University of Edinburgh.

The topic of the nature of mechanisms and its connection to scientific practice is the theme of the fabulous Models and Mechanisms in Cognitive Science Workshop in

Edinburgh this month, organised by Liz Irvine and Matteo Colombo.

One of the biggest changes in philosophical work on Mind and Cognition over the past 30 years is the recognition of a distinction between law-like explanation and mechanistic explanation. Traditionally, all explanation was understood as subsumption under a general law (Hempel's DN-model of explanation being the most famous example). Law-based accounts of explanation promised to describe many areas of scientific practice, but notably failed to deliver a convincing account of psychology. Laws in psychology are rare, and those areas of psychology that do explain in terms of laws are generally not treated as norms that the rest of the discipline should follow.

Explanations in psychology often take another form: explanation in terms of a mechanism. Law-like explanations in science prompted a series of fruitful and long-standing foundational questions: 'What is a law of nature?', 'How do we discover the laws?', 'How do laws warrant our inductive inferences?'. Analogous questions arise for mechanistic explanation: 'What is a mechanism?', 'How do we discover the mechanisms?', 'How do mechanisms warrant our inductive inferences?'. However, unlike the case of laws, which have received the lion's share of the philosophical attention to date, we are only now beginning to get a grip on possible answers to the questions for mechanisms. Given the central place that mechanistic explanation has in scientific practice, answering these questions is urgent for anyone who wants to understand our best science's metaphysical and epistemic commitments, and the overarching picture of the world that it paints.

Machamer, Darden, and Craver helped to crystalise these concerns in their 2000 paper in Philosophy of Science, 'Thinking about mechanisms'. My take on how to approach the problem is rather different from theirs. I think that any non-trivial answer to questions about mechanisms should start by distinguishing between different kinds of mechanistic explanation. In my view, there is not a single thing—mechanistic explanation—but a variety of practices that are grouped, at most, by a family resemblance relation. The proper questions to pursue are those that ask individually about, say, causal, computational, micro-compositional, and structural, mechanistic explanation. A general account of what these forms of mechanistic explanation have in common will by necessity be rather thin indeed.

One of the most exciting kinds of mechanistic explanation to study is computational explanation. Cognitive science appears to rely heavily on this kind of mechanistic explanation: it offers theories that explain our cognitive capacities by positing computational mechanisms in the brain. What sorts of commitments does such an explanation involve? Are the facts responsible for a physical system's computational identity intrinsic (narrow), or do they spill outside the system to include elements in the environment (broad)? Is computational identity a matter of objective fact, or is it something that is only in the eye of the beholder? Despite a recent surge of interest, there is no consensus on the right answers to these questions. To my mind, the nature of computational mechanisms is at the cutting edge of research on the nature of mechanisms, and one of the areas likely to see most progress. The answers have wide ramifications: for whether the mind extends

into the environment, and for whether cognitive science can naturalise the mind.

Mark Sprevak
Philosophy, University of Edinburgh

. . . Mathematical Philosophy

It's a pleasure to have been asked by *The Reasoner* to contribute a column on recent research activity and hot' topics in mathematical philosophy. In this initial note, I shall try and report only the broad picture, at least from the perspective of MCMP, and no doubt many omissions!

In logic and philosophy of logic, two important areas are inferentialism, in the Dummett tradition, and truth, in the Tarski-Kripke tradition. Debates within inferentialism (harmony, normalization, etc.) are the focus of the work of several MCMP colleagues, Florian Steinberger, Ole Thomassen Hjortland and Julien Murzi. For truth, the core philosophical topics are the semantic paradoxes and deflationism, with Hartry Field's *Saving Truth from Paradox* (2008) and Volker Halbach's *Axiomatic Truth Theories* (2011) being major recent contributions to the technical literature. On the paradoxes, recent work by Field, Jc Beall, Graham Priest and Michael Glanzberg modifies or extends the non-classical (3-valued), or revision-theoretic or contextualist approaches of the 1970s (Kripke, Herzberger, Burge, Gupta). For deflationism, recent debates focus on expressive and proof-theoretic strength of axiomatic truth theories (Timothy Bays, Leon Horsten, Cezary Cieslinski, Martin Fischer, Richard Heck, Hannes Leitgeb, Philip Welch, Halbach, myself). Much of this work incorporates exciting but difficult technical material: axiomatic formulations, monotone operators and fixed-points, Herzberger sequences, proof-theoretic strength/speed-up, reflection principles, interpretability, primitive syntax, etc. Recent talks at MCMP, Oxford, Amsterdam, Paris and Barcelona by Field, Fischer, Glanzberg, Gupta, Halbach, Heck, Horsten, Leitgeb, Priest, Visser and Welch are squarely in this tradition; MCMP will host a major conference on axiomatic and semantic approaches to truth in March 2012.

In general philosophy of science, recent work on the classical issues (realism, representation, theories, empirical adequacy, constructive empiricism, ramsification, nominalization, theoretical reduction/elimination and so on) has gotten used to using more sophisticated logical methods (model theory, proof theory, higher-order and many-sorted logic) to tackle these problems: examples are important recent work by Peter Ainsworth, William Demopoulos and others, and by MCMP colleagues Holger Andreas, Norbert Gratzl and Leitgeb. MCMP will host a workshop on Carnap in July 2011, featuring Michael Friedman, and MCMP colleagues Steve Awodey and Paul Dicken. Debates about identity and indiscernibility in physics (Steven French, Decio Krause, James Ladyman, Simon Saunders, F.A. Muller *et al.*) have recently been related to work on the logic of indiscernibility (myself, Adam Caulton & Jeremy Butterfield). Here, structural realist views are an important background, whether Worrall-Zahar version or French-Ladyman version.

In philosophy of mathematics, hot topics include structuralism (Shapiro, Øystein Linnebo, Horsten, Leitgeb, John Burgess, Richard Pettigrew *et al.*), applicability &

indispensability (Mary Leng, Chris Pincock, Mark Colyvan), mathematical representation (Pincock), mathematical explanation (Alan Baker, Colyvan, Paolo Mancosu) and proof-complexity (a long neglected topic, but the focus of exciting recent seminars at Paris-Diderot this summer, organized by Mic Detlefsen and Andrei Rodin). There is interesting recent and forthcoming work on the instrumentalist version of nominalism (Mary Leng, Pettigrew), and mathematical representation and explanation in science (Baker, Pincock, Colyvan, Stathis Psillos *et al.*).

In formal epistemology, Bayesian methods, confirmation theory, epistemic logics, aggregation & collective agency in decision theory, belief revision theory and the foundations of probability are very active areas, with recent work by MCMP colleagues Olivier Roy, Vincenzo Crupi, Niki Pfeifer, Leitgeb and recent visitors, including Sonja Smets, Alexandru Baltag, David Eltin, Branden Fitelson, Pettigrew, Charles B. Cross and Richard Bradley.

Although I have focused mainly on MCMP-related events in this first survey, there are similar programmes of events at Amsterdam, Groningen, Paris, Carnegie Mellon, Konstanz, Oxford, Bristol and other places, each with varying research focuses and whose activities I hope to discuss further in future columns. And beyond the largely technical trends within mathematical philosophy, there are interesting developments linking empirical studies in cognitive science with debates about the foundations of logic and rationality (Dan Sperber, Stanislas Dehaene in Paris; Catarina Dutilh Novaes at Groningen, and others).

Jeff Ketland
Munich Center for Mathematical Philosophy

§5
Events

July

Perceiving Others' Minds: University of Manchester, 1 July.
AAHPSSS: Australasian Association for the History, Philosophy and Social Studies of Science, Christchurch, New Zealand, 1–3 July.
Rutgers-Arché Knowing How Workshop: University of St Andrews, 2–3 July.
Cognitio. Nonhuman Minds: Animal, Artificial or Other Minds: Montreal, Qc., Canada, 3–5 July.
GheMMS: Ghent Metaphysics, Methodology and Science, Department of Philosophy & Moral Sciences, Ghent University, 4–5 July.
Bayesian Capture-Recapture: Centre for Research into Ecological and Environmental Modelling (CREEM), University of St Andrews, 4–6 July.
ICMC: 2nd International Choice Modelling Conference, Leeds, UK, 4–6 July.
The Computational Turn: Past, Presents, Futures?: International Association for Computing and Philosophy, Aarhus University, 4–6 July.

ICALP: 38th International Colloquium on Automata, Languages and Programming, Zürich, Switzerland, 4–8 July.
Panhellenic Logic Symposium: Ioannina, Greece, 4–8 July.
TABLEAUX: Automated Reasoning with Analytic Tableaux and Related Methods, Bern, Switzerland, 4–8 July.
LGS7: 7th International Conference on "Logic, Games Theory and Social Choice", National School of Political Studies and Administration, Bucharest, Romania, 6–9 July.
ICLP: 27th International Conference on Logic Programming, Lexington, Kentucky, USA, 6–10 July.
Society for Philosophy and Psychology: Université du Québec à Montréal, Montreal, Canada, 6–10 July.
DGL: 5th Workshop in Decisions, Games & Logic, Maastricht University, The Netherlands, 7–9 July.
Advances in Computational Intelligence: Rohtak, Haryana, India, 9 July.
Epistemology, Embodied Cognition and Expertise: University of Hertfordshire, 9–11 July.
UK-CLC: 4th UK Cognitive Linguistics Conference, London, United Kingdom, 10–12 July.
Reasoning About Other Minds: Logical and Cognitive Perspectives: Groningen, the Netherlands, 11 July.
IWSM: 26th International Workshop on Statistical Modelling, Valencia, 11–15 July.
TARK: Theoretical Aspects of Rationality and Knowledge, Groningen, the Netherlands, 11–15 July.
Logic Colloquium: Barcelona, Catalonia, Spain, 11–16 July.
Australasian Applied Statistics Conference: Palm Cove, Tropical North Queensland, Australia, 12–15 July.
Nature versus Normativity? Joining Historical and Contemporary Perspectives on Intentionality and Knowledge: Humboldt University Berlin, 14–15 July.
UAI: 27th Conference on Uncertainty in Artificial Intelligence, Barcelona, Spain, 14–17 July.
CAV: 23rd International Conference on Computer Aided Verification, Cliff Lodge, Snowbird, Utah, 14–20 July.
Quantum Physics meets TARK: Theoretical Aspects of Rationality and Knowledge, Groningen, the Netherlands, 15 July.
Social and Cultural Cognition. An Interdisciplinary Investigation: International Workshop, Universität zu Köln, 15–16 July.
ACC: 3rd World Congress in Applied Computing, Computer Science, and Computer Engineering, Kota Kinabalu, Malaysia, 16–17 July.
WCT: Workshop on Computability Theory, Barcelona, Spain, 17 July.
ARCOE: Automated Reasoning about Context and Ontology Evolution, Barcelona, Spain, 17–18 July.
CLIMA: 12th International Workshop on Computational Logic in Multi-Agent Systems, Barcelona, Spain, 17–18 July.
SING: 7th Spain-Italy-Netherlands Meeting on Game Theory, Paris, 18–20 July.

WORLDCOMP: World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, Nevada, USA, 18–21 July.
ICIAM: 7th International Congress on Industrial and Applied Mathematics, Vancouver, British Columbia, Canada, 18–22 July.
IJCAI: 22nd International Joint Conference on Artificial Intelligence, Barcelona, Spain, 19–22 July.
CLMPS: 14th Congress of Logic, Methodology, and Philosophy of Science, Nancy, France, 19–26 July.
MJCAI: 3rd Malaysian Joint Conference on Artificial Intelligence, Kuala Lumpur, Malaysia, 20–22 July.
Levels and Causation in Neuroscience: Hanse-Wissenschaftskolleg, Delmenhorst, Germany, 21–22 July.
ICMSA: 7th IMT-GT International Conference on Mathematics, Statistics and its Applications, Bangkok, Thailand, 21–23 July.
IADIS: International Conference Intelligent Systems and Agents, Rome, Italy, 24–26 July.
ISIPTA: 7th International Symposium on Imprecise Probability: Theories and Applications, University of Innsbruck, Austria, 25–28 July.
ICCS: 19th International Conference on Conceptual Structures, Derby, England, UK, 25–29 July.
ICBO: International Conference on Biomedical Ontology, University at Buffalo, NY, 26–30 July.
Beyond the Possible: in Memoriam of Richard Sylvan: The University of Melbourne, 27–29 July.
IJCNN: International Joint Conference on Neural Networks, San Jose, California, 31 July–5 August.
CADE: 23nd International Conference on Automated Deduction, Wroclaw, Poland, 31 July–5 August.

August

The Classical Model of Science II: The Axiomatic Method, the Order of Concepts and the Hierarchy of Sciences from Leibniz to Tarski, Vrije Universiteit Amsterdam, The Netherlands, 2–5 August.
Set Theory and Higher-Order Logic: Foundational Issues and Mathematical Developments: Institute of Philosophy, London, 5–6 August.
ICFOCS: International Conference on Frontiers of Computer Science, Bangalore, Karnataka, India, 7–9 August.
AAAI: 25th Conference on Artificial Intelligence, San Francisco, California, 7–11 August.
Epistemic Autonomy: Humboldt-Universität zu Berlin, 8–10 August.
ECAL: European Conference on Artificial Life, Paris, France, 8–12 August.
Logical Constants: Ljubljana, Slovenia, 8–12 August.
Epistemic Inclusiveness and Trust: 3rd Copenhagen Conference in Epistemology, University of Copenhagen, 15–17 August.

Temporal Asymmetry: Monash University, 16–17 August.
ECAI: 19th European Conference on Artificial Intelligence, Lisbon, Portugal, 16–20 August.
Conventional Principles in Science: Department of Philosophy, University of Bristol, 18–19 August.
Chance & the Principal Principle: Monash University, 19–20 August.
YSI: Young Statisticians Meeting, Dublin, Ireland, 19–21 August.
ESIAT: 3rd International Conference on Environmental Science and Information Application Technology, Xi'an, China, 20–21 August.
ISI: 58th Congress of the International Statistical Institute, Dublin, Ireland, 21–26 August.
KDD: 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, San Diego, CA, 21–24 August.
FCT: 18th International Symposium on Fundamentals of Computer Theory, Oslo, Norway, 22–25 August.
Harvard-Australia Workshop on Language, Learning and Logic: MGSM Conference Centre, Macquarie University, 22–26 August.
Metaphysics, Modality and Mathematics. Themes from the work of Bob Hale: Philosophy Department, University of Sheffield, 23–24 August.
AiML: 8th International Conference on Advances in Modal Logic, Moscow, 24–27 August.
ICDL-EPIROB: IEEE Conference on Development and Learning, and Epigenetic Robotics, Frankfurt am Main, Germany, 24–27 August.
Philosophy of the Social Sciences: University of Copenhagen, 25–26 August.
Uncertainty Modeling in Knowledge Engineering and Decision Making: Istanbul, Turkey, 27–29 August.

September

BISP: 7th workshop in Bayesian Inference for Stochastic Processes, Getafe, Spain, 1–3 September.
ECAP: 7th European Conference in Analytic Philosophy, Milan, Italy, 1–6 September.
INEM: Conference of the International Network for Economic Method, Helsinki, Finland, 2–3 September.
Computer Modelling and Simulation: Brno, Czech Republic, 5–7 September.
DOMAINS: Swansea University, Wales, UK, 5–7 September.
ECML PKDD: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Athens, Greece, 5–9 September.
Varieties of Representation: Kazimierz Dolny, Poland, 5–9 September.
WPMSIIP: Workshop on Principles and Methods of Statistical Inference, University of Ljubljana, Slovenia, 5–10 September.
Perceptual Memory and Perceptual Imagination: University of Glasgow, 6–9 September.
SOPhiA: 2nd Salzburg Conference for Young Analytic Philosophy, Salzburg, Austria, 8–10 September.

PROGIC

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

CSL: 20th Annual Conference of the European Association for Computer Science Logic, Bergen, Norway, 12–15 September.
CP: 17th International Conference on Principles and Practice of Constraint Programming, Perugia, Italy, 12–16 September.
EANN/AIAI: Engineering Applications of Neural Networks and Artificial Intelligence Applications and Innovations, Corfu, Greece, 15–18 September.
PLM: Philosophy of Language and Mind, Stockholm University, 16–18 September.
EXPERIMENTAL PHILOSOPHY GROUP UK: University of Sheffield, 17–18 September.
ICSC: International Conference on Semantic Computing, Palo Alto, California, United States, 18–21 September.

CAEITS

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

FEDCSIS: Federated Conference on Computer Science and Information Systems, Szczecin, Poland, 19–21 September.
STATISTICAL COMPUTATIONAL & COMPLEX SYSTEMS: University of Padua, 19–21 September.
UNDERSTANDING OTHER MINDS. EMBODIED INTERACTION AND HIGHER-ORDER REASONING: Bochum, Germany, 20–21 September.
COMPUTER SIMULATIONS AND THE CHANGING FACE OF SCIENTIFIC EXPERIMENTATION: Stuttgart, Germany, 21–23 September.
SOCIAL ONTOLOGY: METAPHYSICAL AND EMPIRICAL PERSPECTIVES: Workshop of the European Network on Social Ontology (ENSO), Luiss Guido Carli, University, Rome, Italy, 21–23 September.
KANT AND THE EXACT SCIENCES: University of Notre Dame, 23–24 September.
MEANING IN CONTEXT: Logic and Cognitive Science Initiative (LACSI), North Carolina State University, 23–24 September.
AS: Applied Statistics, Ribno (Bled), Slovenia, 25–28 September.
MRC: 7th International Workshop on Modelling and Reasoning in Context, Karlsruhe, Germany, 26–27 September.
SYNASC: 13th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, Timisoara, Timis, Romania, 26–29 September.
LANGUAGE, LOGIC AND COMPUTATION: Kutaisi, Georgia, 26–30 September.
SEMANTICS & PHILOSOPHY IN EUROPE: Ruhr University Bochum, Germany, 26 September–1 October.
COPENHAGEN LUND WORKSHOP IN SOCIAL EPISTEMOLOGY: University of Copenhagen, Denmark, 27 September.
FORMAL EPISTEMOLOGY MEETS EXPERIMENTAL PHILOSOPHY: Tilburg Center for Logic and Philosophy of Science, 29–30 September.

October

PT-AI: Philosophy and Theory of Artificial Intelligence, Thessaloniki, Anatolia College/ACT, 3–4 October.
DKB: Dynamics of Knowledge and Belief, Workshop at KI-2011, Berlin, Germany, 4–7 October.
ALT: 22nd International Conference on Algorithmic Learning Theory, Aalto University, Espoo, Helsinki, Finland, 5–7 October.
DS: 14th International Conference on Discovery Science, Aalto University, Espoo, Finland, 5–7 October.
EPSA: 3rd Conference of the European Philosophy of Science Association, Athens, Greece, 5–8 October.
European Workshop on Experimental Philosophy: Eindhoven University of Technology, The Netherlands, 7 October.
EPIA: 15th Portuguese Conference in Artificial Intelligence, Lisbon, 10–13 October.
The Nature of Social Reality: University of Calabria, Arcavacata di Rende, Italy, 13–14 October.
TPrag: Theoretical Pragmatics, Berlin, Germany, 13–15 October.
Case Studies in Bayesian Statistics and Machine Learning: Carnegie Mellon University, Pittsburgh, PA, 14–15 October.
Alvin Goldman and Social Epistemology: Saint Louis University Philosophy Graduate Student Conference, 20–21 October.
PSX: 2nd International Workshop on the Philosophy of Scientific Experimentation, University of Konstanz, 21–22 October.
ADT: Algorithmic Decision Theory, DIMACS, Rutgers University, 26–28 October.
Epistemic Feelings and Metacognition: Ruhr-Universität Bochum, 28–29 October.
IUKM: International Symposium on Integrated Uncertainty in Knowledge Modelling and Decision Making, College of Computer Science and Technology, Zhejiang University, Hangzhou, China, 28–30 October.
The Epistemology of Logic: Arché Research Centre, St Andrews, 29–30 October.
IDA: 10th International Symposium on Intelligent Data Analysis, Porto, Portugal, 29–31 October.
SASA: South African Statistical Association Pretoria, South Africa, 31 October–4 November.

November

Philosophy of Medicine Roundtable: University of the Basque Country, Donostia-San Sebastian, Spain, 2–3 November.
Latin Meeting in Analytic Philosophy: Universidade de Lisboa, 2–4 November.
The Plurality of Numerical Methods in Computer Simulations and Their Philosophical Analysis: IHPST, University of Paris 1, 3–5 November.
CAS: Complex Adaptive Systems: Energy, Information, and Intelligence, Arlington, VA, 4–6 November.
Semantic Content: University of Barcelona, 4–6 November.

Biologically Inspired Cognitive Architectures: Arlington, Virginia, 5–6 November.
ICTAI: 23rd IEEE International Conference Tools with Artificial Intelligence, Boca Raton, Florida, USA, 7–9 November.
History and Philosophy of Computing: Celebrating the 75th anniversary of the famous 1936 Papers by A. Church, E.L. Post and A.M. Turing, Ghent University, Belgium, 7–10 November.
Ideas of Objectivity: Tübingen, 7–11 November.
SPR: ILCLI International Workshop on Semantics, Pragmatics, and Rhetoric, Donostia, 9–11 November.
M4M: 7th Methods for Modalities workshop, Osuna, Spain, 10–12 November.
Evolution and Norms: Concepts, Models, Challenges: Bucharest, Romania, 11–12 November.
ACML: 3rd Asian Conference on Machine Learning, Taoyuan, Taiwan, 13–15 November.
ATAI: 2nd Annual International Conference on Advances Topics in Artificial Intelligence, Singapore, 24–25 November.
MICAI: 10th Mexican International Conference on Artificial Intelligence, Puebla, Mexico, 26 November–4 December.
ICDeM: 1st International Conference on Decision Modeling, Kedah, Malaysia, 29 November–1 December.
Solomonoff Memorial Conference: Melbourne, Australia, 30 November–2 December.

December

CT&IT: International Workshop on Computation Theory and Information Technology, Macau, China, 1–2 December.
LENLS: Logic and Engineering of Natural Language Semantics, Takamatsu-shi, Kagawa-ken, Japan, 1–2 December.
Indefinite Extensibility and Logical Paradoxes: Arché Research Centre, St Andrews, 2–4 December.
NCMPL: International Conference on Non-classical Modal and Predicate Logics, Guangzhou (Canton), China, 5-9 December.
ACAL: 5th Australian Conference on Artificial Life, Perth, Murdoch, Australia, 6–8 December.
ICIRA: 4th International Conference on Intelligent Robotics and Applications, Aachen, Germany, 6–9 December.
MIWAI: 5th Multi-Disciplinary International Workshop on Artificial Intelligence, Hyderabad, Andhra Pradesh, India, 7–9 December.
The Collective Dimension of Science: Nancy, France, 8–10 December.
Copenhagen Lund Workshop in Social Epistemology: University of Lund, Sweden, 9 December.
ICACM: 1st International Conference on Advanced Computing Methodologies, Hyderabad, Andhra Pradesh, India, 9–10 December.
ICDM: 11th IEEE International Conference on Data Mining, Vancouver, Canada, 11–14 December.

IICAI: 5th Indian International Conference on Artificial Intelligence, Tumkur (near Bangalore), India, 14 December.
NIPS: 25th Annual Conference on Neural Information Processing Systems, Granada, Spain, 13–15 December.
AAL: Australasian Association of Logic, Wellington, New Zealand, 14–15 December.
Statistics and Scientific Method I: The Controversy About Hypothesis Testing: Universidad Nacional de Educación a Distancia (UNED), Madrid, 15–16 December.
ALC: Asian Logic Colloquium, Wellington, New Zealand, 15–20 December.
ICISME: International Conference on Information Management and Systems Engineering, Nanjing, China, 16–18 December.
Computing & Statistics: Senate House, University of London, UK, 17–19 December.
Amsterdam Colloquium: ILLC, Department of Philosophy, University of Amsterdam, 19–21 December.

§6
Courses and Programmes

Courses

Advanced Statistics and Data Mining: Technical University of Madrid, 4–15 July.
EASSS: 13th European Agent Systems Summer School, Girona, Catalonia, Spain, 11–15 July.
Social and Cultural Cognition. An Interdisciplinary Investigation: Summer, School, Universität zu Köln, 17–26 July.
David Lewis on Language and Mind: 3rd Graduate International Summer School in Cognitive Sciences and Semantics, University of Latvia, Riga, 18–21 July.
LxMLS: Lisbon Machine Learning Summer School, Instituto Superior Técnico (IST), Lisbon, Portugal, 20–25 July.
Experiments in Economics, Experiments in Philosophy: Summer school on Economics and Philosophy, San Sebastian, 27–29 July.
Interactivist Summer Institute: University of the Aegean, Syros, Greece, 29 July 29–1 August.
Set Theory and Higher-Order Logic: Foundational Issues and Mathematical Developments: Institute of Philosophy, London, 1–4 August.
ESSLLI: European Summer School in Logic, Language and Information, Ljubljana, Slovenia, 1–12 August.
Copenhagen Summer School in Phenomenology and Philosophy of Mind: Center for Subjectivity Research, University of Copenhagen, 8–12 August.
Network Dynamics: Groningen, the Netherlands, 29 August–6 September.
Analysis Methods for Cross-national Comparisons: Leuven, Belgium, 28 August–4 September.
MLSS France: Machine Learning Summer School, Bordeaux, France, 4–17 September.
Relying on Others. New Perspectives in Social Epistemology: University of Cologne, 7–10 September.

Concepts and Methods in Causal Inference: Torino, Italy, 19–21 September.
Operationalisation of Mental States: Tübingen, Germany, 26–29 September.
FSFLA: International Fall School in Formal Languages and Applications, Tarragona, Spain, 31 October–4 November.
SPR: ILCLI International Workshop on Semantics,Pragmatics, and Rhetoric, Institute for Logic, Cognition, Language, and Information, University of the Basque Country at Donostia, 9–11 November.

Programmes

APhil: MA/PhD in Analytic Philosophy, University of Barcelona.
Doctoral Programme in Philosophy: Language, Mind and Practice, Department of Philosophy, University of Zurich, Switzerland.
HPSM: MA in the History and Philosophy of Science and Medicine, Durham University.
Master Programme: Philosophy and Economics, Institute of Philosophy, University of Bayreuth.
Master Programme: Philosophy of Science, Technology and Society, Enschede, the Netherlands.
MA in Cognitive Science: School of Politics, International Studies and Philosophy, Queen's University Belfast.
MA in Logic and the Philosophy of Mathematics: Department of Philosophy, University of Bristol.
MA in Metaphysics, Language, and Mind: Department of Philosophy, University of Liverpool.
MA in Mind, Brain and Learning: Westminster Institute of Education, Oxford Brookes University.
MA in Philosophy: by research, Tilburg University.
MA in Philosophy of Biological and Cognitive Sciences: Department of Philosophy, University of Bristol.
MA in Rhetoric: School of Journalism, Media and Communication, University of Central Lancashire.
MA programmes: in Philosophy of Language and Linguistics, and Philosophy of Mind and Psychology, University of Birmingham.
MRes in Cognitive Science and Humanities: Language, Communication and Organization: Institute for Logic, Cognition, Language, and Information, University of the Basque Country, Donostia, San Sebastian.
MRes in Methods and Practices of Philosophical Research: Northern Institute of Philosophy, University of Aberdeen.
MSc in Applied Statistics and Datamining: School of Mathematics and Statistics, University of St Andrews.
MSc in Artificial Intelligence: Faculty of Engineering, University of Leeds.

MA in Reasoning

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

MSc in Cognitive & Decision Sciences: Psychology, University College London.
MSc in Cognitive Science: University of Osnabrück, Germany.
MSc in Cognitive Psychology/Neuropsychology: School of Psychology, University of Kent.
MSc in Logic: Institute for Logic, Language and Computation, University of Amsterdam.
MSc in Mathematical Logic and the Theory of Computation: Mathematics, University of Manchester.
MSc in Mind, Language & Embodied Cognition: School of Philosophy, Psychology and Language Sciences, University of Edinburgh.
MSc in Philosophy of Science, Technology and Society: University of Twente, The Netherlands.
MRes in Cognitive Science and Humanities: Language, Communication and Organization: Institute for Logic, Cognition, Language, and Information, University of the Basque Country (Donostia San Sebastian).
Open Mind: International School of Advanced Studies in Cognitive Sciences, University of Bucharest.
PhD School: in Statistics, Padua University.

§7
Jobs and Studentships

Jobs

Post-doc Fellowship: Center for Collective Intelligence, Sloan School of Management, until filled.
Post-doc position: in the area of developmental robotics and robot learning, INRIA, Bordeaux, until filled.
Two Post-doc positions: in Machine Learning, in the project "Composing Learning for Artificial Cognitive Systems", INRIA Lille, until filled.
Post-doc position: in Machine Learning, University of California, Irvine, until filled.
Three PhD Studentships: "Advanced Bayesian Computation for Cross-Disciplinary Research", Universities of Warwick, Kent, and Cambridge, deadline 5 July.
Post-doc Research Associate: Machine Learning Group, Department of Engineering, University of Cambridge, UK, deadline 10 July.
Three post-doc positions: "The Structures of Representation in Language, Science and Cognition", Department of Philosophy, Heinrich-Heine-University Duesseldorf, deadline 10 July.

1-4 month Senior or Junior Fellowship: in Philosophical Semantics, Ruhr University Bochum, deadline 10 July.
3-6 month Senior Fellowship: in Neurophilosophy, Ruhr University Bochum, deadline 10 July.
One-year Fellowships: Center for Mind, Brain and Cognitive Evolution, Ruhr-University of Bochum, deadline 10 July.
Research Associate: in Machine Learning, Department of Engineering, University of Cambridge, deadline 15 July.
Two-year Lectureship: in Statistics, Department of Mathematical Sciences, Durham University, deadline 17 July.
Three Lecturing Positions: in philosophy, La Trobe University, Melbourne, Australia, deadline 17 July.
Full Professorhip: in Machine Learning, with emphasis on application to autonomous systems interacting with humans, University of Amsterdam, deadline 1 August.
Visiting International Fellowship: in Social Research Methods, Department of Sociology, University of Surrey, Guildford, UK, deadline 30 September.
Professor: in Philosophy of Science, AOS: Philosophy of biology and environmental sciences, Université du Québec à Montréal, Montreal, Canada, deadline 14 November.
Eight 3-year Research Fellowships: within the project "The Turing Centenary Research Project: Mind, Mechanism and Mathematics", John Templeton Foundation, deadline 16 December.

Studentships

13 Doctoral Training Grants: School of Computing, Faculty of Engineering, University of Leeds, until filled.
PhD Scholarship: "Rating and ranking sports players and teams using Minimum Message Length", Clayton School of Information Technology, Monash University, to be filled asap.
PhD position: in the area of developmental robotics and robot learning, INRIA, Bordeaux, until filled.
PhD Studentship: "Hyper-heuristics for Grouping Problems", School of Computer Science, University of Nottingham, until filled.
PhD position: in a research project on the notion of chance and its connection to statistical method, Faculty of Philosophy, University of Groningen, deadline 1 July.
PhD Interdisciplinary Studentship: "Improving legal arguments using Bayesian methods and systems theory", School of Electronic Engineering and Computer Science, Queen Mary, University of London, deadline 8 July.
MSc Studentships: in Statistics, School of Mathematics, University of Manchester, deadline 15 July.
PhD position: in Theoretical Philosophy, Formal Epistemology Group, University of Konstanz, deadline 31 July.
BSPS Doctoral Scholarship: in Philosophy of Science, deadline 1 August.

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