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Guest Editorial

Dear Reasoners,

It is with the greatest pleasure that we present to you an interview with Patricia Blanchette, Professor of Philosophy and current occupant of the McMahon-Hank Chair of Philosophy at the University of Notre Dame. Patricia (Paddy) Blanchette's main contributions are in the fields of history and philosophy of logic and mathematics, history of analytic philosophy, and philosophy of language. She is one of the paragons of contemporary Frege scholarship. We talked to her about Notre Dame's venerable tradition in logic and philosophy of mathematics, the importance of studying history of math and logic in addition to the history of philosophy, and of course about her work on Frege and logicism.

In the interview, Patricia also addressed some of the pitfalls of neologicism, and gave us some insight into her editorial work for journals devoted to logic and philosophy of mathematics. We hope that you will enjoy the interview and find it stimulating. Many thanks to Paddy for her remarks which were, as always, both illuminating and inspiring.

Aleksandra Davidović
Saša Popović
University of Belgrade, Faculty of Philosophy

Features

Interview with Patricia Blanchette

Aleksandra Davidović and Saša Popović: We felt that we had to begin with acknowledging the specific situation we are finding ourselves in – we are presently in the midst of the coronavirus pandemic which is turning people's lives upside down all over the world. How is it affecting you and your work? Patricia Blanchette: It's affecting me in the usual ways. Teaching went online so I quickly learned how to do Zoom. I don't love teaching by Zoom because I like to have personal interaction with the students and I miss that very much, but it seems to me the only sensible thing to do given the virus. So it makes it more difficult to teach and less rewarding in some ways. Also a number of research trips have been cancelled, so a number of lectures that I had committed to giving have now been postponed. This is maybe bad and good – I always look forward to trips, to meeting people and giving lectures, but it has also

been a nice change to stay home and just do some work and be with my family. I can get my research done at home, it's just a little bit difficult because I find myself getting distracted by the coronavirus. On the other hand, I feel extremely fortunate and very sympathetic to all the people who are in a much worse situation. It's disruptive for me but not in the way it's disruptive for most people.

A&S: Can you tell us a bit about your background? What sparked your interest in philosophy in the first place and was it an easy or a difficult decision for you to pursue it? Have you always been interested in philosophy of logic and philosophy of mathematics or were there some competing interests when you started studying philosophy?

PB: I did my undergraduate degree in philosophy. It was my third major. I changed my mind a lot, and I think this is a good, healthy thing; people should show up to university with a very open mind and study what they love. I was a political science major for quite a while, after having been a mathematics major, which didn't last very long, and then I took a logic class and I loved it and thought it was really interesting. It was basically an introduction to set theory and I liked it very much. Then I took some history of philosophy and that was my passion at first, but I kept taking some logic classes and some philosophy of logic classes and philosophy of language, and that's really what I fell in love with. It wasn't difficult for me to pursue it. At the time when I chose to go to graduate school I didn't realise how bad the job market might be and I also didn't think that I was committing to a life as an academic. I just thought that I loved doing philosophy but that if that didn't work I would do something else.

I would do political philosophy if I thought I could make a contribution. I find the topics fantastically interesting, and I think it's probably the most important part of philosophy. But it's not a field that I felt that I had new or original things to say in, so it's not my research area. I kind of wish I were better at it.

A&S: Your colleague Jeff Speaks recently said that "Notre Dame has been one of the best places in the world to study philosophy of mathematics for decades". Could you tell us why this is the case? What is specific about the curriculum and the way you work with your students at Notre Dame?

PB: Probably the most important thing is that we have a long history of taking logic very seriously. Ages ago Bolesław Sobociński was a faculty member here and he made the *Notre Dame Journal of Formal Logic* a very serious journal. Ever since he was here the philosophy and mathematics departments have thought of logic as an important part of what we do, and there's been a continuing presence amongst the faculty members and the graduate students of people who take the history and philosophy of mathematics and logic very seriously. A very important person from the time that I was here was my colleague Mic Detlefsen, who was then running the *Notre Dame Journal of Formal Logic*. He and our colleagues in the mathematics department started a joint PhD programme in logic and foundations of mathematics. So the fact that we have the joint math and philosophy PhD programme and that we have faculty members in the mathematics and philosophy departments who like each other, talk to each other, run joint workshops and advise students together makes Notre Dame a really interesting and quite unusual place to study the philosophy of mathematics. Most importantly, students can get mathematics training from people who value philosophy and vice versa, and we all care very much about the history of logic and mathematics.

A&S: You just mentioned Professor Detlefsen and we hoped it would not be too difficult for you to tell us something about his role at Notre Dame but also in the broader philosophical community. Most people know of him not only because of his many contributions (especially his extraordinary Hilbert scholarship) but also because his name immediately comes to mind as soon as one hears of Midwest PhilMath Workshop (MWPMW), PhilMath Intersem or Philosophy of Mathematics Association (PMA).

PB: Of course. His name is Michael but for his whole life Mic was his name. As you said he has been a really important influence in the philosophy of mathematics community. He was the prime mover of the Midwest PhilMath Workshop and he ran it for many years. I am going to find out this year how difficult it is to do it without him. I think that he also started the French Philosophy of Mathematics Workshop (FPMW). He spent several years jointly working at Notre Dame and at various institutes in Paris because he had a chaire d'excellence. At first he spoke no French at all but he taught himself a certain amount during his time in Paris. All the logicians I know in Paris say the same thing, that before Mic came, logic in Paris was much more disparate and that people began collaborating more during his time there because he really worked hard to bring people together. This is a nice example of what Mic does, he really likes to have people get to know each other, in part because he's just a good man but also because he thinks that's how the research works best and especially he thinks this is the best for young people. He always put lots of energy into his teaching and to bringing researchers together. His research was also very influential. I think that the way we read the impact of Gödel's incompleteness theorems on Hilbert's programme has been profoundly influenced by Mic's work, and whether you agree or disagree with his conception of Hilbert's finitism, his view of the project is really interesting and has to be taken seriously. He was also generally interested in taking seriously historical texts in their own right, and this has been an important influence on all of us.

A&S: Throughout your work we can find historical analyses which are still more or less atypical in contemporary philosophy of mathematics and philosophy of logic (even though this situation is changing nowadays). Would you tell us what sparked your interest in history of logic and mathematics and what do you think history can teach us when we do philosophy of mathematics and logic today?

PB: Good questions. My interest in history came about because I was working in philosophy of logic but also in philosophy of language and I thought I might write a dissertation in philosophy of language. But then I thought, if I really want to understand philosophy of language and better understand Frege—the man who is considered to be the father of contemporary philosophy of language but who actually cared about logic much more—then I should really read his work in math and logic. I did that and it seemed to me that this work was really interesting in its own right. At the time that I

wrote my dissertation [Logicism Reconsidered, Stanford University, 1990], I think it's fair to say that virtually everybody thought that logicism was dead because of Gödel's incompleteness theorems. I thought that this was not obviously true and so I thought I would write a dissertation on logicism. I actually naively thought that I would write a chapter on Frege, a chapter on Carnap, and a chapter on Russell – I am still writing the chapter on Frege. (laughs) So, to answer your question, I actually got interested in philosophy of logic because I was reading history of logic. Having read Frege I thought that I could not really understand him unless I read people around him and so that is what really gave some direction to my historical interests.

I wanted to understand the correspondence Frege had with various people, Hilbert in particular. This was of central importance because I believe that Frege and Hilbert had a fundamental and fascinating philosophical disagreement and I wanted to understand it. The situation is different today, but in the early 1990's most people simply dismissed Frege's work about independence proofs and consistency, and the general view was that Frege was just confused in his exchange with Hilbert. There were two ways in which Frege was dismissed, I think a bit too easily. Firstly, the viability of his logicist project was thought to be minimal. Secondly, the extent to which he had something important to say to Hilbert was not appreciated. So, the correspondence and the writings of both of those guys got me interested in trying to figure out what their backgrounds were and why they had these different approaches.

Independently of that, I thought if I wanted to know something about the philosophical issues in logic, then I should figure out what people intended when they came up with the various ways of thinking about logic. This meant I really needed to carefully read for example Frege, Peirce, Peano, Russell, Hilbert, and Gödel. That period—late 19^{th} and early 20^{th} century—in the history of math and logic seems to me to be fascinating because you have people coming from very different approaches ending up doing logic in some quite similar ways. These different historical strands coming from very different points of view have led to a kind of a mesh of different concepts that get formalised in what we think of now as modern logic, model theory, proof theory, set theory, etc. I have been interested in the origins of these concepts that were behind the work that lead to modern logic. Why? In order to figure out where the formalisation goes right and where it goes wrong in attempting to bring rigour to our pre-theoretic ideas (which I think is one of the things that logic does). The logicians in question certainly had really interesting philosophical ideas, so I think that this idea of mathematicians just blindly doing mathematics and philosophers coming along to save the day by trying to have philosophical conversations misses the really important philosophy that goes on when people are actually doing mathematics. Finally, I think you just cannot make any sense out of really any question if you don't know its history.

A&S: How much history would you say philosophy of mathematics and philosophy of logic can tolerate?

PB: I don't think that everybody absolutely has to do enormous amounts of history. But I do think that knowing history is important in the ways that I just discussed. How much history can philosophy of logic and math stand you ask? As much as they can get! (everyone laughs) The more history the better, and not just history of mathematics of course, history of philosophy as well.

A&S: Your latest book (*Frege's Conception of Logic*, OUP, 2012) as well as the majority of your papers have become representative contributions to the study of the works of Frege. While Frege might seem as a natural enough choice for someone who works in history and philosophy of mathematics and logic and foundations of analytic philosophy, could you tell us how and why you began to work on Frege in the first place? What draws you personally to Frege?

PB: I'd say there are two reasons. First, there are the historical reasons that I already spoke about. I wanted to understand what was going on when people started to use, e.g. quantifiers. So, Frege seemed like a natural choice. Of course, I could have started with Peano or with Peirce but I found Frege's approach both easy to follow and more philosophically focused – I wanted to read Frege because he really is the most influential when it comes to some of the philosophical questions that one asks about the use of the new quantified logic. What continues to attract me to Frege is that I find his general views, even when they turn out in the end to be false, to be really compelling, sensible, and well thought out. He is a really interesting author to read because his views are clear enough that you can tell what would falsify them. I think we learn an enormous amount by trying to sympathetically understand the motivation behind both his logicist project and his general views about logic, and then getting very, very clear about which of those views we have seen to be false and why. I think it is very rare in philosophy that you really get progress in the sense of having a view that you thought of being a sensible one, worth pursuing, and then you discover that it's false. I think that being careful about what you can learn about the developments during Frege's lifetime (like Russell's paradox) and the developments afterwards (like the incompleteness theorems), and being careful about what those results tell us about the viability of Frege's own programme can teach us an enormous amount. It really is a certain sympathy between my way of thinking about language and logic and Frege's—I like his approach very much and it strikes me as sensible—and then there is the clarity with which he pursued it which allows us to really see what worked and what didn't and to make some headway on questions that he cared about. I don't think Frege is the only author that one should read with interests like mine, and I keep thinking maybe I'll be done with him and move on, but on the other hand I end up finding more and more things that I think are worth saying and some parts of the tradition of Frege scholarship that I think are badly mistaken and worth correcting so I keep working on him and one day I will finish and move on (laughs).

A&S: Today we are witnessing a renaissance of logicism, a lot of work has been done on abstraction principles, Hume's principle in particular. How would you explain this in light of the fact that the original logicist project of reducing mathematics to logic came to be seen as a failure following various paradoxes? What is there left for us to learn from Frege and what are the prospects of neo-logicism or neo-Fregeanism?

PB: I think that neo-logicism as it's called is a radically different programme from anything that Frege would have recognised. I find the term neo-Fregeanism quite misleading. I don't think that the neo-logicist project is very like the logicist project at all, and this is something I have argued for in various ways. The bottom line is that the neo-logicist project rests on the idea that Hume's principle can be the fundamental axiom, and the claim that this is something that follows in Frege's footsteps rests on the claim that Frege was too hasty in his rejection of

Hume's principle as a fundamental principle. And why was he too hasty, on this line of thought? Well, because there was this so-called Caesar problem that Frege thought couldn't be solved, yet now we know how to solve it. That is a line of thought I am deeply suspicious of. I don't think there was anything that one could call a Caesar problem in Frege's *Grundlagen*. I think that in light of Russell's paradox Frege came to realise that the fundamental abstraction principle he relied on, namely the principle governing extensions or value-ranges [Basic Law V] was not viable, and I think that he then, for good reason, gave up on the idea of using abstraction principles, and I don't think Hume's principle would have been acceptable to him in the kind of setting it is used in neo-logicism. This is not a criticism of neo-logicism, it is merely a criticism of the claim that neo-logicism is carrying out an essentially Fregean project. As far as the prospects of Fregean logicism go, I think the prospects are not that great. One might think that what we learned from the incompleteness theorems is not just that mathematics, even arithmetic, is very much more unmanageable than one thought, but so too is logic perhaps. This seems a possibility to me and if that's possible then nothing Gödel has shown us falsifies the fundamental claim of logicism, but it does undermine the way Frege thought to demonstrate the truth of that claim, namely by giving an axiomatic treatment of logic from which one hoped to deduce axioms that would suffice for arithmetic. Maybe this simply means that there is no good way to demonstrate the truth of logicism, I don't know. Does it falsify logicism? Well, not yet, but it is difficult to see how to get Frege's claim that arithmetic is really about objects—which seems to me the only thing one could say—to come together with the view that arithmetic is logic, if you reject the idea that logic gives us objects. This is where the neo-logicist hopes to come to the rescue by saying that logic can give us objects via Hume's principle, but I think that is not the way for Frege to go. It does seem to me like a very steep uphill battle for someone who is a fan of Frege's to explain how it could be the case that one gets even just number theory out of logic. I don't think that this is necessarily impossible, but I also don't see a way forward.

Furthermore, I am also not sure that the neo-logicist thesis is very clear anymore because the boundary lines between what does and what doesn't count as logic are, I think, unclear. In other words, it's not clear that the thesis that number theory (or mathematics in general) is a part of logic is a clear thesis. I do think there are some really interesting theses in the ballpark having to do with what kind of existential assumptions one needs to make in order to get a decent picture of mathematics off the ground.

Part of the answer to your question then is this. I think that Frege's logicism is really, really interesting and we have still much to learn from it, as well as from its failure, but I don't think it's been as decisively falsified as most people would perhaps say. Neo-logicism doesn't seem to me to be a logicist project in a sense in which one might have wanted something to be a logicist project if one is motivated by Frege's questions. And, finally, it doesn't work for anything other than number theory, so that's also a problem. Nevertheless, I think that the neo-logicist project is really interesting, it might not be my thing, but it's certainly worthwhile. It has spawned a lot of interesting research on the strength of abstraction principles, and I think that's very cool. It's just not logicism, I think.

A&S: You were or still are a member of editorial boards of some very prestigious journals including *Bulletin of Symbolic Logic*, *Notre Dame Journal of Formal Logic*, and *Philosophia Mathematica*. Could you tell us something about your editorial responsibilities and do you feel that you are somehow shaping the future of the fields of logic, philosophy of mathematics and philosophy of logic through your editorial work?

PB: The reason I do the editorial work is that someone has to do it. You can't have a journal without referees, editors and people who do the stuff having to do with the websites – there's a lot of labour that needs to be done to keep journals running and it seems as if we can't really have a profession without having some form of publication. I feel the obligation sometimes to say yes when people ask me to do the editorial work. I don't actually enjoy it at all to be honest.

It is exciting sometimes to get a nice new paper, but a lot of the work of an editor is really boring. So I don't find editing fun but I do find it important and it is sometimes satisfying. The most satisfying part about it is the collaboration between editors, and between a referee and an editor and an author when you get a good paper and you can help an author improve it – then you can actually do some good. That part of editing is very rewarding but it is a very small part. I hope that I'm not shaping things too much. A journal ought to be willing to publish things that are within the scope of its subject area that the editors don't like very much because you don't want a journal to be shaping a field in a way that excludes good scholarship that happens not to be to the taste of the editorial board. I do hope that when I serve as an editor I accept and reject the same papers that another good editor would accept or reject even if she has different views than I do about what's the most fascinating to do. We ought to be able to look beyond most of our own idiosyncratic views of what's worth doing.

A&S: Finally, what are your ongoing and future projects? Is there maybe a new book coming up?

PB: I think maybe there is a second Frege book coming up. I've written a series of papers about the question of whether Frege's conception of abstraction principles is like neo-logicists', and this is closely connected to the question of whether there is the so-called Caesar problem in the *Grundlagen*, and this is closely connected to the issue of whether concepts and functions are total (the sharp boundaries condition). These three questions are closely tied, and I have an unorthodox view – that there is no Caesar problem, the sharp boundaries requirement has been universally misunderstood and abstraction principles are not part of Frege's corpus. I have a tentative plan to bring these issues together in a short monograph. That's one thing I think is in the future. Also, my primary interest has always been the general question of how ordinary concepts like consistency and independence, which I think are deeply rooted in our capacity to communicate and to think, connect to those same concepts used by logicians. So one of these days I'm going to write another series of papers on these issues, or perhaps a book. I also just finished a paper on Penelope Maddy's work, especially on the topic of realism. I am generally interested in the question of mathematical realism, and here I think that things have gone badly wrong when philosophers think that it's part of their job to say to mathematicians that they don't mean what they think they mean. I'm in favour of a very robust realism, the kind that Gödel is famous for.

A&S: Thank you so much professor Blanchette.

The Reasoner Speculates

The Gambler and the Academic

Gambler: I find my self in a bit of a hole. I've lost 1,000 units.
Academic: Well that's a shame. Stop gambling!
Gambler: On the contrary, I will keep gambling and dig myself out of this hole!
Academic: That's not how it works. Bets have a negative expected value. That means that you will simply fly off to negative infinity as you bet more and more.
Gambler: You clearly haven't spent much time around gamblers. Every gambler always gets out of the hole, unless they run out of money first.
Academic: You are an odd creature, O Gambler. What you say cannot be true.
Gambler: Record my loss as -1,000. I will bet 55% of (the absolute value of) my bankroll to win 50%, as that is how gambling works. You bet 110 to win 100, or multiples thereof. Thus my first bet will be to either lose 550 units or win 500 units. That brings my bankroll to -1550 or -500. I'll keep betting 55% of my bankroll to win 50%, and get out of debt.
Academic: You are a fool. You will lose ever more if you persist in your plan.
Gambler: Very well then. Let us imagine 1,000 gamblers in my position, each planning to undertake 1,000 bets. You believe that most gamblers will wind up with less than -1,000 units after 1,000 bets?
Academic: I do. Starting at -1,000 and losing means that most gamblers will wind up at less than -1,000.
Gambler: I have run the experiment! Every single one of the 1,000 gamblers ended up making over 99.9% of the 1,000 unit debt. Every single gambler got out of debt by making almost all of the 1,000 units, even though every single bet had a negative expected value.
Academic: That cannot be correct.
Gambler: It is. As yours is a common reaction, I will share Python code so you can run the experiment yourself. You, O Academic, for 350 years have focused on the long run average effects of a single, repeated bet. You have not paid much attention to path dependent sequences of bets. You also have not spent much time around gamblers, who bet more when they lose because they are rational and know, on some level, that it will get them out of debt.
Academic: I believe none of this.
Gambler: Very well. Let me leave you, O Academic, with two items. The first is a paper by Ole Peters (2019: The Ergodicity Problem in Economics, Nature Physics, 1216-1221). In it, he points out that sequences of positive expected value coin flips can have bad outcomes for almost everyone (see, in particular, Figure 2). A flip around 0 to the negative numbers gets you to good outcomes in negative expected value environments. The second item I will leave you with is the code that I promised you. It prints out the outcomes of each Gambler's 1,000 bets. Note that a move from -1,000 to 0 is a gain of 1,000 units. On almost every run every gambler gets out of debt, that is, the code prints "0" 1000 times.
Academic: I will study these, wise Gambler.
Gambler: Very well. A final thought. It is not hard to realize that if money can be made in a negative expected value environment by gamblers in debt, then money can be made in a negative expected value environment by anyone. Perhaps an enterprising person or two moves from the betting world to a setting where money can be sloshed around (in an intelligent, path dependent manner) with less vigorish.
Academic: I do not follow. Come to think of it, I am also having trouble seeing how your points, Gambler, differ from the paper cited above.
Gambler: If you do not see the difference between losing money (in a positive expected value environment) and gaining money (in a negative expected value environment), then I gain confidence that I am talking to a true Academic!

The following is Python code that simulates 1,000 Gamblers each running 1,000 Bets. Each bet either loses 55% (which is multiplying a negative number, the Bankroll, times 1.55) or wins 50% (which is multiplying the Bankroll times 0.5).

```
import random

Gamblers = 1000
Bets = 1000
Bankrolls = [ ]

for i in range(Gamblers):
    Bankroll = -1000
    for j in range(Bets):
        CoinToss = random.randint(0,1)
        if (CoinToss == 0):     # a loss
            Bankroll *= (1.55)
        elif (CoinToss == 1): # a win
            Bankroll *= (0.5)
    Bankrolls.append(int(Bankroll))

Bankrolls.sort()

print(Bankrolls)
```

Jeremy Gwiazda

News

Evidential Pluralism and the Social Sciences, University of Kent, 16–17 July

With the current emergency, "Evidential Pluralism and the Social Sciences" organized by Yafeng Shan and Jon Williamson at the University of Kent (Canterbury, UK) went online. Although the opportunity to approach Keynote Speakers and other participants in person was missed, this was a great opportunity to "meet" philosophers and discuss intriguing topics around scientific methodology, and its foundations. The conference was funded by the Aristotelian Society and the British Society for the Philosophy of Science; as stated by the title, its main aim was to explore evidential pluralism (EP) as one example of an account of epistemic diversity, and to investigate its role in the social sciences and in evidence-based social policy.

The opening talk was given by Julian Reiss (Linz), who discussed the SARS-CoV-2's deaths estimation. Particularly, his talk centered around the claim according to which official

statistics conflate casualties due to the virus and deaths occurring with the virus, which presumes a clear distinction between the two phenomena. Nevertheless, even if there are 'clear-cut cases' of both, he argued that such distinction is difficult to establish, even more in the complete absence of postmortem analysis. This is due to a corona-generated change in normative considerations on acceptability of preventive measures and disease risk, which led to disagreement in adopting certain anti-corona measures and in evaluating specific treatments as necessary and feasible.

Afterwards, Shan and Williamson, talked about the relevance of evidence of mechanisms in assessing causal claims in the biomedical sciences. The recognition of such role is at the basis of EP and its effective application to the social sciences (e.g., the proposed revisions of evidence-based medicine, such as EBM+). They first showed the possibility to apply existing EBM methods to evidence-based policy (EBP) and then the ability of EP to provide an account of the evaluation of evidence in EBP, and to offer new foundations for mixed methods research. Moreover, they responded to objections raised against EP. Against Claveau's objection (2012) that evidence of correlation is not necessary for establishing causal claims in the social sciences, they responded that evidence of correlation should not be conflated with association studies. In response to Reiss' (2009) claim that there may be cases where evidence of correlation and evidence of mechanisms may not be jointly sufficient to establish causation, they instead emphasised that, notwithstanding the high burden of proof imposed by EP, there may nevertheless be false positives or negatives, as for any other methodology of causal inference (e.g., via statistical cancelation). They eventually underlined that they advance EP as a method for optimizing causal assessment, rather than as a theory of causality.

Rosa W. Runhardt (Leiden) presented a problem for the standard view of EP, namely, contexts where it leads to accept mutually contradictory methodologies. By taking the process tracing method as a paradigm, she showed two different theories of evidence: the 'interventionist view', and the 'systems view.' She argued that aggregating the evidence as advised by these opposite views of causal inference would lead to logically incoherent advices. However, instead of rejecting EP, she suggested a third way in opting for a pragmatic stance, by recognising that every individual causal analysis potentially benefits from different sources of evidence.

Taking into account the mechanistic evidence literature, Derek Beach (Aarhus) focused on adapting process-related evidence claims to the social sciences. He discussed how to move from causal process theory to "actual empirical material", i.e., to translate the theoretical language of entities and activities into a practical comprehensive framework, including considerations about evidence ambiguity and source trustworthiness. In particular, he highlighted two analytical steps: (1) the evidence-generating process (i.e. moving from theoretical entities and activities to propositions of mechanistic evidence); (2) the observational process (i.e., moving from evidence propositions to actual observations). Then, considering the social dimension of individuals, Beach emphasised the importance to capture social contexts of actions, in which participants' understandings and experiences are relevant evidence for how social processes play out in real-world cases.

Christopher Clarke (Rotterdam/Cambridge), focused his attention on methods for causal inference in the political sciences and in particular on process tracing, as a method which is increasingly taking hold. After analyzing uncontroversial and unhelpful criteria for defining process tracing, Clarke goes on to offer his own analysis, and particularly in distinguishing two main kinds of process tracing. While both share an emphasis on uncovering chains of causes and the description of the entities involved as well as the related well-understood activities ("concatenation"), they differ in their focus on establishing start-end vs. intermediate hypotheses. In both cases, homogeneity of the intermediate or start-end factors is required.

Roberto Fumagalli (London) focused on the definition and measurement of Wellbeing as well as related policy making purposes. He highlighted in this respect the implications of three competing positions, i.e., Theory-Based Approaches (TBAs); Evidence-Based Approaches (EBAs); Coherentist Approaches (CAs). In his opinion TBAs face key challenges from theoretical disagreements, limited measurability and construct pluralism. Analogously, EBAs and CAs, face their own limitations, from measurement divergences, normative uninformativeness and conceptual thickness and from underdetermination, disciplinary conflicts and theoretical collapse, respectively. He thus exposed a radically modified version of TBAs: Reformed Division of Labour (RDL), which surmounts all the major challenges faced by TBAs, while bypassing those encountered by EBAs and CAs.

Referring to a project related to reforms in ten child protection departments, Eileen Munro (London), dealt with causal processes in the elaborate dynamics of child protection systems. Considering that social systems are like mechanisms and therefore consist of causal processes, she analysed the organisational system's influences on the quality of direct work with families, and investigated epistemic matters raised by trying to learn the causal factors and the mechanisms whereby the desired change was achieved (or not), from whole system's change.

Donal Khosrowi (Durham) addressed the ceaseless debate regarding extrapolation of causal claims from a study population to another one. He argued that the simplification of extrapolation can be eased by merging quantitative and qualitative evidence, because the former provides effect sizes from a study population, while the latter can clarify similarities and differences between populations. He concluded by emphasizing that the very fact of integrating evidence delivers additional information on top of the data provided by the distinct lines of evidence.

Mariusz Maziarz (Krakow) talked about the implications of evidential and causal pluralism for policymaking. He argued that the use of observational data and the susceptibility of causal claims to the common-cause fallacy does not allow to claim that the intervention on causes leads to changes in effects, in accordance with the causal claim being used as evidence for policymaking, which may lead to spurious conclusions. However, he further claims, this does not imply that probabilistic evidence is not useless for policymaking since it can be used only if actions based on partial knowledge of causal structures do not interfere with the actual causal structure that produced the observed data. In general, a partial, even if accurate, knowledge of mechanisms or the use of causal claims supported by purely theoretical models ('mechanist's circle'), does not guarantee the achievement of the policymaking goals. Hence, he concludes, different types of causal claims can only be used for different types of policymaking activities.

The last talk was given by Baumberg Geiger (Canterbury), who explained how mixed methods help to avoid wishful thinking. Following Helen Longino's (1990: 216) focus on background assumptions as means by which values and ideology are incorporated into scientific enquiry, he argued that methodological diversity is necessary to make them evident and it is possible only through 'collisions' that call into question each individual method's findings. As a case in point he illustrated the causal effect of harsh vs. lenient social security policies on labor market outcomes, which show how mixed methods conceptually help to avoid wishful thinking. In this regard, he identified collisions between welfare conditionality, (quasi-)experiments (e.g., NAO study, SE RCTs) and cross-national research.

In the biomedical sciences, applying EP has proved useful and promising (e.g., EBM+ developed procedures for evaluating mechanistic studies together with clinical and epidemiological ones). In the social sciences and evidence-based social policy field, where diversity of evidence is the daily business, the EP contribution could be effective and essential. This has richly been discussed and demonstrated by the speaker's argumentations, which were deeply enlightening and put forth further questions inviting future research.

Maria Laura Ilardo
Marche Polytechnic University

Calls for Papers

400th anniversary of Bacon's *Novum Organum*: special issue of *Epistemology and Philosophy of Science*, deadline 15 September.
Foundations of Data Science: special issue of *Machine Learning*, deadline 30 September.
Evidential Diversity in the Social Sciences: special issue of *Synthese*, deadline 15 November.

What's Hot in . . .

Uncertain Reasoning

Dear fellow Reasoners,

may you read this column in less interesting times.

Figuring out 'how bad the pandemic currently is in a region' is a topic of significant current interest to uncertain reasoners all around the world. Many measures could be used, none is fully satisfactory: the number of positive tests per day (per capita) depends on how many tests are performed which varies according to region and weekday, the number of cases in an ICU depends on the number of free ICU beds (per capita), the number of reported deaths strongly depends on the widely varying rules regarding the (likely) cause of death on a death certificate, the difference to mortality rates of previous years fails to track our changes of behaviour causing a decrease in, e.g., traffic casualties.

What then could/should be the role of uncertain reasoners/philosophers of science during this pandemic? That's a relevant question to ponder. Jacob Stegenga has written a nice blog on this (BSPS Blog Link). Personally, I'm not expecting much. We are heavily incentivised to publish scholarly papers and/or books, which normally take – at least – several months to write. Then there's the reviewing process. I don't have to tell you that there is no such thing rapid reviewing in philosophy, many many weeks for getting the first round of reviewing are the norm. All in all, from the day we first put pen to paper to the day of first publication at least six months have passed. Now get into your time machine and read a newspaper from half a year ago. We did live in less interesting times back then.

Dear reader, do you have a something to say that is relevant right now and cannot wait? Why not submit it to *The Reasoner*? The editor of *The Reasoner* has repeatedly suggested many new exciting ways for publications Hosni(2017, Editorial, The Reasoner, 22-23) and Hosni(2017, Editorial, The Reasoner, 91). I'm sure he'd be interested in hearing from you.

In other news, the pandemic has not only caused a drop of student numbers leading to the termination of programs and the sacking of academics, it has also all but cancelled the conference season this Summer. Kind reviewers had just completed the reviewing of submitted abstracts to my conference, when things went pear-shaped. I decided to go ahead with the conference as planned – but hold it online. After advertising the conference through the usual channels, I received more than 50 registrations from academics around the world within one week.

There seems to be a real appetite for intellectual stimulation this Summer which is not being catered to. Have you also noted that skype/zoom calls with your collaborators tend to last longer these days? So, what does this mean to you? It means that you should dare to organise an online conference! There's unmet demand out there.

Stay safe out there.

Jürgen Landes
Munich Center for Mathematical Philosophy

Events

September

DMAH: Data Management and Analytics for Medicine and Healthcare, Tokyo, Japan, 4 September.

NMR: Workshop on Nonmonotonic Reasoning, Rhodes, Greece, 12–14 September.

PoKRR: Principles of Knowledge Representation and Reasoning, Rhodes, Greece, 12–18 September.

WUML: Workshop on Uncertainty in Machine Learning, Ghent, Belgium, 14–18 September.

VoAS: varieties of Anti-Skepticism, University of Navarra, Spain, 16–18 September.

N-CL: Non-Classical Logics, Poland, 26–28 September.

October

ArgStrenght: Workshop on Argument Strength, Koblenz, Germany, 12–14 October.

Courses and Programmes

Courses

SSA: Summer School on Argumentation: Computational and Linguistic Perspectives on Argumentation, Warsaw, Poland, 6–10 September.

Programmes

MA in Reasoning, Analysis and Modelling: University of Milan, Italy.
APhil: MA/PhD in Analytic Philosophy, University of Barcelona.
Master Programme: MA in Pure and Applied Logic, University of Barcelona.
Doctoral Programme in Philosophy: Language, Mind and Practice, Department of Philosophy, University of Zurich, Switzerland.
Doctoral Programme in Philosophy: Department of Philosophy, University of Milan, Italy.
LogiCS: Joint doctoral program on Logical Methods in Computer Science, TU Wien, TU Graz, and JKU Linz, Austria.
HPSM: MA in the History and Philosophy of Science and Medicine, Durham University.
Master Programme: in Statistics, University College Dublin.
LoPhiSC: Master in Logic, Philosophy of Science and Epistemology, Pantheon-Sorbonne University (Paris 1) and Paris-Sorbonne University (Paris 4).
Master Programme: in Artificial Intelligence, Radboud University Nijmegen, the Netherlands.
Master Programme: Philosophy and Economics, Institute of Philosophy, University of Bayreuth.
MA in Cognitive Science: School of Politics, International Studies and Philosophy, Queen's University Belfast.
MA in Logic and the Philosophy of Mathematics: Department of Philosophy, University of Bristol.
MA Programmes: in Philosophy of Science, University of Leeds.
MA in Logic and Philosophy of Science: Faculty of Philosophy, Philosophy of Science and Study of Religion, LMU Munich.
MA in Logic and Theory of Science: Department of Logic of the Eotvos Lorand University, Budapest, Hungary.
MA in Metaphysics, Language, and Mind: Department of Philosophy, University of Liverpool.
MA in Mind, Brain and Learning: Westminster Institute of Education, Oxford Brookes University.
MA in Philosophy: by research, Tilburg University.
MA in Philosophy, Science and Society: TiLPS, Tilburg University.
MA in Philosophy of Biological and Cognitive Sciences: Department of Philosophy, University of Bristol.
MA in Rhetoric: School of Journalism, Media and Communication, University of Central Lancashire.
MA programmes: in Philosophy of Language and Linguistics, and Philosophy of Mind and Psychology, University of Birmingham.
MRes in Methods and Practices of Philosophical Research: Northern Institute of Philosophy, University of Aberdeen.
MSc in Applied Statistics: Department of Economics, Mathematics and Statistics, Birkbeck, University of London.
MSc in Applied Statistics and Datamining: School of Mathematics and Statistics, University of St Andrews.
MSc in Artificial Intelligence: Faculty of Engineering, University of Leeds.
MSc in Cognitive & Decision Sciences: Psychology, University College London.
MSc in Cognitive Systems: Language, Learning, and Reasoning, University of Potsdam.
MSc in Cognitive Science: University of Osnabrück, Germany.
MSc in Cognitive Psychology/Neuropsychology: School of Psychology, University of Kent.
MSc in Logic: Institute for Logic, Language and Computation, University of Amsterdam.
MSc in Mind, Language & Embodied Cognition: School of Philosophy, Psychology and Language Sciences, University of Edinburgh.
MSc in Philosophy of Science, Technology and Society: University of Twente, The Netherlands.
MRes in Cognitive Science and Humanities: Language, Communication and Organization: Institute for Logic, Cognition, Language, and Information, University of the Basque Country (Donostia San Sebastián).
Open Mind: International School of Advanced Studies in Cognitive Sciences, University of Bucharest.
Research Master in Philosophy and Economics: Erasmus University Rotterdam, The Netherlands.

Jobs and Studentships

Studentships

Doctoral Programme in Philosophy: Language, Mind and Practice, Department of Philosophy, University of Zurich, Switzerland.
PhD position: in Mind, Brain and Reasoning, University of Milan, deadline 14 September.
LogiCS: Joint doctoral program on Logical Methods in Computer Science, TU Wien, TU Graz, and JKU Linz, Austria.

Jobs

Postdoc: in Philosophy of Science/Causal Inference, Purdue University, open until filed.
Post doc: in (Meta-)Learning, Delft University of Technology, deadline 2 September.
Postdoc: in Logic, University of Milano, deadline 3 September.
Post doc: in Ethics of Science / Philosophy of Science, Leibniz University Hannover, deadline 30 September.
Lectureship/Professorship: in Statistics, Maynooth University, Ireland, deadline 17 May/30 September.