The Reasoner

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Guest Editorial

Salutations, reasoners. I'm delighted to be guest editor for this issue, featuring an interview with the man, the myth, the legend, Kenny Easwaran. Kenny is a newly-minted Professor of Philosophy at Texas A&M University. He was previously Assistant Professor at the University of Southern California, and more previously a postdoc at the Australian National University, and yet more previously he earned a PhD from the Group in Logic and the Methodology of Science at UC Berkeley.

Kenny's worked on just about every subject under *The Reasoner's* purview, but his specialties are epistemology (both formal and original-flavor), logic and philosophy of mathematics. He accumulated a somewhat frightening number of accolades soon after finishing his PhD, including having papers chosen in two consecutive years for *The Philosopher's Annual* "ten best philosophy articles of the year"

list. (Those were "Decision Theory without Representation Theorems" in 2014, published in *Philosophers' Imprint*, and "Dr. Truthlove or: How I Learned to Stop Worrying and Love Bayesian Probabilities" in 2015, published in *Noûs*.) Anyone interested in the social epistemology of math should know Kenny's work too: his "Probabilistic Proofs and Transferability" (*Philosophia Mathematica*, 2009) and "Rebutting and Undercutting in Mathematics" (*Philosophical Perspectives*, 2015) are classics and personal favorites.

Kenny and I first crossed paths at a conference in Paris while I was a grad student. He joined my dissertation committee a little after that. Fortunately, Kenny is an easy person to keep in touch with: just go to any random philosophy conference and there's a 63% chance he's there. As you'll see from our interview, he's a terribly interesting person and a credit to the profession. I'm happy to offer you his opinions on fractal music, Zoom conferences, being a good referee, teaching in math and philosophy, the rationalist community and its relationship to academia, decision-theoretic pluralism, and the city of Manhattan, Kansas.

William D'Alessandro
Munich Center for Mathematical Philosophy, LMU Munich

Features

Interview with Kenny Easwaran

William D'Alessandro: Let's start with an easy one: your name. I've witnessed lots of confusion about how to pronounce 'Easwaran'. How do you say it? What range of pronunciations

are you willing to tolerate?

Kenny Easwaran: I mainly say "EES-warren". The name itself is a Sanskrit word that, in Hindu religious contexts, is often transcribed as "ishvara", and is most used as an epithet of Shiva, but Wikipedia tells me that some polytheistic Hindus that are devoted to one of the deities use this term as an epithet for that deity, and monotheistic Hindus that see all the deities as aspects of one supreme being use the term as an epithet for that. Most Indian languages have three separate consonants in the space where English just has "s" and "sh", and the second phoneme of the name is that middle one. They also mostly only have one consonant in the space where English has "w" and "v", and the third phoneme is that middle one. I unfortunately have never learned any Tamil (my father's family language) or Sanskrit, so I've never learned a more natural pronunciation of the name, and am happy with any approximation that isn't overly hesitant.

WD: You studied philosophy, math and music as an undergrad at Stanford before joining the Logic and Methodology of Science PhD program at Berkeley. What role does music play in your life these days? Are you a musician yourself?

KE: In undergrad, I was playing violin and piano, and doing some music theory and composition, including some electronic sound generation. My last major project like that I eventually put on YouTube. Unfortunately, some time in grad school, I lost time for that, and my musical activities were mainly limited to regular attendance at the opera and symphony in San Francisco and then Los Angeles, and then even that is much less common since I moved to Texas.

WD: You're a conference guy—you've talked in the past about how much you enjoy and rely on professional meetings as opportunities to stay connected with the field. How have you dealt with a year of canceled or Zoomified conferences? If in-person meetings are a rarer commodity going forward, what should we do to make the best of it?

KE: I've attended a bunch of online events, with varying degrees of success. Probably the best part has been scheduling recurring one-on-one Zoom calls with friends I've wanted to spend more time with, that live in different parts of the world, and having monthly Zoom get-togethers with some of my high school friends who are scattered. I've been impressed with what some of the grad students at Texas A&M have been doing—it started as a biweekly reading group, and then started inviting speakers to give work-in-progress talks, and then has gradually accumulated a few regular visitors that have no affiliation with our university and is developing a bit of a community. I think it's hard to make things work well online when the group gets too big, unless you have smaller sub-groups that chat regularly. There's a lot that we miss when we can't be in the same room as each other, but there are many new opportunities we should all try to take advantage of to develop global networks of people that share our interests, or our ways of thinking, or that productively challenge us.

WD: *The British Journal for the Philosophy of Science* named you its inaugural Referee of the Year in 2019. That's awesome! What's distinctive about your approach to refereeing? What do you think the average philosopher could do to elevate their referee game?

KE: Thanks! The main distinctive thing is that I do a lot of refereeing—I think this is a way that I am best able to serve the community, more than various administrative roles or my own research. But the main thing I'm trying to do is figure out how the author can make their paper more useful for a wider audience. My most common suggestions tend to involve making sure the first couple paragraphs show why not just people who agree with your views should read the paper, but what your opponents might find interesting about it as well. Think about what you're doing when you scan the literature for arguments relevant to your point, and how you can make your paper catch the eye of someone doing that.

As a referee, I think it's also important to think about how to identify papers that will be useful to the field, and how to make marginal cases more useful. Being right or wrong about the substance isn't so important—it's about whether the paper has an interesting or important idea that people will care about discussing, and that won't cause more obfuscation than illumination. I take notes all the way through reading the paper, mentioning both typos and thoughts I'm having along the way. I usually give all of these to the author, and try to be clear about which are issues they have to address, and which (usually most) should be taken as idiosyncratic responses of one possible reader, that they should be aware of when deciding how to make this paper most helpful to many readers.

WD: In a post on your old blog, you described your views on the ontology of mathematics as a contest between some version of fictionalist nominalism and some version of neo-Pythagoreanism, combined with occasional confusion about what exactly the question is supposed to be. (I happen to share this combination of sympathies.) How if at all have your views evolved in recent years?

KE: I think that aspect of my views hasn't changed too much. I think the biggest development in my views here is that I've developed a renewed interest in programs like Field's nominalist program, but instead of thinking of it as saying something important about whether or not mathematical objects have their own existence, I take the importance to be in showing that the areas where mathematics is applied have their own existence that doesn't depend on the mathematics in any way. This is how I'm thinking about the foundations of Bayesianism and decision theory, and in a new project also consequentialist ethics. I think we often get caught up in doing the calculations, and forget to say what it is that makes the calculations relevant—whether or not giving that explanation tells us that we should or shouldn't believe in the mathematical entities themselves seems like a question I'm not as interested in as giving the explanation itself.

WD: Would you mind saying more about the new consequentialism project?

KE: In the earlier paper, I show that if one assumes that there is a numerical scale for value, and a numerical scale for probability, and if one assumes that one option is better than another when it yields a more valuable outcome in every state of the world than the other, and if one assumes that two options are equally good when they differ only in states of the same probability, and by equal values in opposite directions, then one can conclude that out of two options with well-defined expected values, the one with a higher expected value is better. The formula involved in the calculation of expected value is a reliable

way of telling which of two options is better, but the explanation of why it is better is more intrinsic.

In the new project, I also add rules for saying two options are equally good when there are counterbalancing trade-offs for different people. It gets the consequence that in a finite population, an option is better when the sum of the values for the individuals is higher, but again, it is the goodness for the individuals that makes it better, not this sum itself (as we can see, because the model makes coherent claims about infinite populations, where there is no such thing as the sum). I certainly don't claim to have addressed any substantive ethical objections to consequentialism, but I avoid objections that are based on reading too much into the mathematics.

WD: As someone who's often taken (and occasionally taught) both math and philosophy classes at the same time, I've always been struck by the big differences between the two disciplines' approaches to teaching. You've seen and done lots of both too. Do you think philosophy instructors can learn anything from math teaching, or is our field right to eschew the chalk-and-talk approach?

KE: Some of the differences seem to me more essential than others. One big difference is that mathematicians are more likely to work visually, while philosophers are more likely to work linguistically. That makes the use of the board often valuable in different ways in math, that might not be easily transferred to philosophy. But there are of course a range of ways math gets taught. I've had some professors that write out theorems and proofs on the board as if it were on paper, which really isn't any good, while others use it for more diagrams and pictures, with just some significant definitions and statements as text. Some classes are taught in a more "inquiry-based" manner, where it's just a series of problems and exercises for the students to work through and teach themselves the subject, which I think is a useful approach when it can be done. (I've been developing a series of notes like this for ZFC set theory.)

One thing that I was thinking about yesterday in conversation with an undergrad was about the possibility of undergraduate research opportunities. In the sciences, these are often easy to design, because a faculty research project can often use more hands in the lab, with the undergraduate educational experience being a natural byproduct. But mathematicians also tend to do a good job of designing undergraduate research opportunities for their students, despite not having labor-intensive work. Philosophers very rarely provide such opportunities, and I think we should try to understand better how mathematicians are able to do it effectively, since I suspect there are relevant similarities.

WD: OK, I should ask something about reasoning before my mic gets cut off. In recent work, you've advocated for viewing alternative decision theories less as competing accounts of a single notion of rationality, and more as complementary accounts reflecting different possible intervention points in the decision process. I like this idea! What sort of reception has it gotten so far?

KE: Oddly, although that article has been available on the *Synthese* website since mid-2019, the journal also still says it is forthcoming. I think this is because it's in a special issue that grew out of a conference at Cambridge several years ago, and there are all sorts of reasons that special issues get held up before they can officially make it into print. In any case, I had the basic idea several years earlier (and discussed it on Julia Galef's podcast back in 2015), but I think it's still too early to say what the reception has been. The Cambridge conference

involved a bunch of philosophers who work on decision theory, but also several researchers from the Centre for the Study of Existential Risk, and the Machine Intelligence Research Institute, discussing a related set of issues about the implications of being able to predict one's own behavior for decision making. The people at MIRI are interested in the decision theory that an artificial intelligence that has the ability to inspect and modify its own source code would choose to self-implement. For cases like the Newcomb problem, where being the sort of agent that would predictably choose one box means that one would get rewarded, they say that such an artificial intelligence would choose one box (if its reasoning on start-up hadn't already led it to do that, it would have modified itself to be that sort of agent). However, for cases like the "medical Newcomb problems", where the correlation between one choice and a good outcome is mediated by genetics, or something else prior to the exercise of agency, there's no reason such an agent would make that choice. My idea was that where classical causal decision theory investigates the results of intervening at the last possible moment (and thus tells us to take the bonus box as well), this decision theory investigates the results of intervening as early as possible (and tells us to be the kind of person that would just take one box). My thought is that neither of these is "right"—they are just evaluating the rationality of different possible types of choice, and what is interesting about human beings is that we have (fallible) abilities to make each kind of choice (even if both kinds of decision are usually just left up to our habits and aren't subject to full self-control). I've been told that similar ideas have been proposed in ethics, under the heading of "global consequentialism", but I'm still learning more.

WD: Speaking of MIRI, the agenda and personnel there overlap with those of the larger "rationalist" community—some of whose stars include writers like Scott Alexander and Eliezer Yudkowsky, and who are broadly interested in how to think and decide well. In spite of the apparent shared interests, my sense is that these folks don't interact much with academic epistemologists, philosophers of science and decision theorists. But you seem to be an exception! (Julia Galef, whom you mentioned, is another one: her podcast co-host was the philosopher Massimo Pigliucci.) Do you have any thoughts about the relationship between these two communities of aspiring reasoners—either what it is or what it should be?

KE: I think there is growing interaction among these communities. This "rationalist" world also encompasses the Effective Altruism movement, many of whose leaders are academic philosophers (Peter Singer) or have PhDs in philosophy (Will MacAskill, Toby Ord). Within the AI safety end of things, there are fewer trained philosophers, but they spend a lot of time looking at the literature on the Newcomb problem, and other similar problem cases from Derek Parfit. In addition to myself, several other philosophers have interacted with them, including a paper co-authored by philosopher Ben Levinstein and MIRI director Nate Soares. There is also an excellent paper, "Logical Induction", that several of these researchers have written, which I think represents one of the best advances on the problem of logical omniscience for Bayesianism in several decades, though I don't know that it has been published by an academic journal.

This community does not fit nicely into established academic disciplines, and even operates largely outside of academia. But I think they, and some of us, have been getting better at learn-

ing how to interact productively across these lines. I'm not sure whether they are having more or less success at interacting with other relevant academic disciplines like computer science, psychology, and economics. But I hope that with their continued development, we get more interesting thought about these issues, and also learn more about the advantages and disadvantages of the academic vs. para-academic form of organization.

WD: When you're not writing about philosophy or refereeing everyone else's writing about philosophy, you have lots of thoughts about city infrastructure, transportation and other aspects of urban planning (including a 2019 article about rationality as applied to cities). What are your favorite and least favorite cities in the world?

KE: One way the pandemic has been very strange for me is the way it has both cut me off from visiting many cities, and also drastically changed the ways in which cities function. In that paper, I describe a city as a collection of people that, by virtue of the fact of being located geographically close enough to each other, have many shared interests—in particular, although the people in a city are extremely diverse and have very different fundamental values and goals in life, they all need to get around town to achieve those goals, and the effectiveness of their ability to get around is at least partly constituted by the behavior of everyone else in getting around, including social norms like standing on one side of escalators to let people walk, or allowing left-turners to run a red light at the end of a cycle (as in Los Angeles) or the beginning (as in Pittsburgh). What I didn't imagine when writing that paper was that I would live through several months where I barely interacted with that transportation infrastructure—everything from dinner with friends to classes to board game night to philosophy conferences would take place inside my own home, through a computer.

This is all just to say, I don't know what almost any city is like these days. I know from reading the news and talking to friends online that this change has happened extremely differently in different cities—in Australia, many things have returned to nearly the Before Times, while I have friends in New York that spent many months without setting foot outside their apartment. I have basically only seen College Station and Austin in this new state, and not any of the ways that other cities have transformed - though Austin has been an interesting place to be, full of many people (like myself) that have relocated here temporarily. Of course, some are here to get away from crowded places back home, while others like me are here precisely because it gives me the opportunity to see many neighbors in the apartment building walking their dogs, while I can get great takeout. But even within a city, this change in our behavior has been extremely different for different people, with only the small minority of people whose behavior has changed least being highly visible in public.

As a final dodge of your question, I'll say that for any category of thing that I love, I find it impossible to pick a favorite. Probably Los Angeles was my favorite place to live, with its combination of weather, multiculturalism, and at the time I was living there, the rapid growth of bicycle and transit infrastructure. But I constantly find myself thinking back to several memorable places I went in the last few months before travel stopped—particularly Singapore, Nashville, and Manhattan, Kansas.

WD: I'm pretty sure nobody has ever named those three cities in the same sentence before. Why the Garden City, Music City and the Little Apple in particular?

KE: Singapore is a city I've thought about a lot from the perspective of governance—it's at best a quasi-democratic society, with powerful technocratic rule. In some ways this has been great—it has brought millions of people from developing economies the benefits of living in a modern developed economy; it is one of the few growing developed-world cities with relatively affordable housing; it is every bit the paradise for delicious and affordable food that people say (for the rest of my life I will always remember that masala dosa from the hawker stand at the Harbourfront MRT station). But in many other ways, it strikes an American as a kind of Disney/Vegas sterile glitz, even ignoring the harms of the authoritarian governance itself. I was very excited about transportation policy there, because I had heard they had a strict limit on automobiles on the island—but in practice, the pedestrian realm is only slightly better than that of New York or London, and the restrictions on automobiles seem intended more to benefit the few that have automobiles than to benefit the many pedestrians (though the transit system has grown quite effective).

Nashville is a city that is undergoing a major boom like Austin, and I was excited to see what that means. Whole neighborhoods full of many thousands of residents have been constructed on former industrial land in The Gulch, near downtown. There is more new construction per capita than any other North American city, and even more than Austin, there is a booming bachelorette party industry, which has the interesting result that many public spaces that would be dominated by loud, drunk men in other cities are instead dominated by loud, drunk women. It's the first place I got to spend several days using pay-per-minute electric scooters as my main mode of transportation.

I found Manhattan interesting primarily for its physical geography—it's surprisingly quite hilly, as the area where the Kansas River cuts down out of the high uplifted plains of the west before getting to the lower floodplains of the Missouri and Mississippi River. But the most memorable part is primarily that I was there around February 20, 2020. As you note, I'm quite a conference guy, so I did go to several conferences in the next two weeks, but those were in Madison, Chicago, and Princeton, which are places that I have far more memories of that aren't shaped by the oddities of that moment in time.

WD: If you could change one thing about philosophy as a profession, what would it be?

KE: The thing I find myself thinking most about these days is the strange disconnect between the way we find our employment through a particular department in a particular college or university, and the way we live so much of our professional lives attached to a geographically dispersed body of researchers and friends. In this strange moment, when we are physically just as separated from the people whose office is just next door to our office as from people on the other side of the world, it often seems particularly arbitrary that some of us work under one set of policies and others under another set. Not that it would be better for all universities to be absorbed into one mega-institution with global policies or anything like that, but there would be something nice about each of us being able to set up our own cross-cutting groups of scholars that work together, with students from around the world.

Tonk and Scepticism

Arthur Prior (1960: "The Runabout Inference Ticket", Analysis, 21: 38-39) introduced his (in)famous connective "tonk" to highlight a number of issues including what constitutes a logical connective and what constitutes a justification of logical laws. But, in particular, "tonk" was taken to show the problematic nature of an inferentialist approach to impute the truth of logical laws to the meanings of logical vocabularies whose definitions are given in terms of some deducibility rules. More recently, however, it has been argued by Paul Boghossian (2001: "How Are Objective Epistemic Reasons Possible?", Philosophical Studies, 106: 1-40) that the problem of "tonk" goes beyond the problem of justifying deduction and can be easily extended to the larger issue of global epistemological scepticism: viz. how there could be objectively correct epistemic principles of any kind. Basically, so goes the argument, if deduction is in trouble for its justification, given the ineluctable involvement of deductive reasoning in any account of how we might know the correctness of any non-deductive epistemic principles, then there arises the spectre of global epistemological scepticism. To stave off global scepticism, Boghossian mounts a defense of deduction by arguing against the legitimacy of "tonk" type connectives as they apparently fail to be truth-preserving. The argument is buttressed by the semantic stipulation that there must be a semantic value for any logical constant which makes its corresponding inferential laws truth-preserving. In other words, "tonk" is not only not truth-preserving but also meaningless. However, given the deductive nature of the argument, Boghossian readily concedes the circularity of the reasoning but contends that the rule-circularity involved in the argumentation is of a virtuous than a vicious variety. The rest of this brief is, therefore, an outline of some critical concerns about Boghossian's contention. (I) If rule-circularity is permissible in the justification of deduction, why cannot the same latitude be shown towards inductive justification of induction? Indeed, there has been a renewed flurry of justifying induction à la Hans Reichenbach through meta-induction and optimality. (Schurz, G., 2019: Hume's Problem Solved: The Optimality of Meta-induction, Cambridge, MA: MIT Press) Thus, there appears to be no cause for global scepticism. (II) Notwithstanding the rule-circularity issue, in view of the existence of many competing and mutually exclusive deductive systems, one is left in dark as to how to choose between them. Boghossian's wherewithal to justify deduction is not sufficiently discriminatory to adjudicate among such competing deductive calculi. (III) In pursuit of his meaning-theoretic concerns, Boghossian appeals to the forgoing semantic stipulation to delegitimize "tonk" type connectives. Yet, what exactly is the status of such meaning stipulations? That is, would not an appeal to such constraints embroil one either in a vicious circle or in an infinite regress? This seems to be somewhat reminiscent of Lewis Carroll's (1895: "What the Tortoise Said to Achilles", Mind, 4: 278-280) famous dialogue between the tortoise and Achilles. (IV) Moreover, the imposition of the semantic stipulation on the construction of any logical framework seems to blur the boundaries between logicality and meaningfulness of connectives. It can be shown that there are perfectly decent logical connectives that can operate in the absence of such semantic constraints: that is, though such cases are unhelpful by obscuring the meaning of those connectives, the absence of the semantic stipulation neither engenders incoherence nor renders their rules incapable of defining the meaning of the connectives as logical. (Read, S., 2008: "Harmony and Modality", in Dialogues, Logics, and Other Strange Things, ed. C. DÈgremont et al., London: College Publications) (V) Furthermore, the converse of the preceding point about Boghossian's possibly unintended blurring of the boundaries between logicality and meaningfulness can be expressed in the form of the following question: why should the mere possession of semantic value be sufficient to figure in valid patterns of inference? A poignant example here is Frege's problematic principle, Basic Law V, involving the term ìextensionî that ultimately led to the discovery of Russell's Paradox. (VI) There have been attempts at exploring the possibility of contexts where the addition of tonk would not lead to absurdity and failure of truth-preservation. The attempts can be divided into two broad categories: syntactical as in R. Cook (2005: "What's Wrong with Tonk(?)", Journal of Philosophical Logic, 34: 217-226), Y. Maruyama (2016: ëPriorís Tonk, Notions of Logic, and Levels of Inconsistencyí, Synthese, 193: 3483-3495), D. Ripley (2015: "Anything Goes", Topoi, 34: 25-36) and P. Teijeiro (2020: "Not a Knot", Thought, 9: 14-24), or semantical as in Ripley (2015) and J. Warren (2015: "Talking with Tonkers", Philosophersí Imprint, 15 (24): 1-24). (VII) It seems that the grounds for the virtuous rule-circularity claim in Boghossianís argument include inter alia an espousal of non-crude externalism which presumably provides an opportunity to break out of the vicious circle of internalism that relies on a priori reasoning, self-knowledge, or reflection. The idea here seems to be that we can acquire a warrant for an inference despite its circularity since it is not required for us antecedently to possess a reflectively appreciable warrant for that inference rule. Thus, in line with externalism, the requirement to first reflectively acknowledge the truth-preserving nature of the inference to be warranted is obviated. Now, besides the considerable concerns surrounding externalism, the critical question to ask in the context of logic is: does an external warrant furnish a proper and apposite ground for justifying logical laws? Specifically, does not externalism deprive logic of its most cherished and cardinal characteristic, namely, necessity? (VIII) In contrast to Boghossian's method, another approach to solving the problem of justification for both deduction and induction has been to claim the need for a disambiguation in the concept of justification. It is contended that there are at least two senses of justification here: justification simpliciter (my term) and justification relative to a cognitive end, and the problem of justification of deduction and induction concerns the latter not the former which can be overcome inductively for deduction and deductively for induction. (Huber, F., 2017: "On the Justification of Deduction and Induction", European Journal for Philosophy of Science, 7: 507-534) Although the approach fails to appeal to justification purists, at least it is not more problematic than Boghossianís. (IX) Finally, Boghossian's rule-circular justification of deduction diverges drastically from the historical emergence and treatment of the issue. Specifically, it flies against the earliest extant attempt at such a justification by Aristotle in his Metaphysics ? Aristotle's method of elenchus (negative proof or proof by refutation) in his version of the justification of deduction brings the problematic nature of Boghossianís approach into further focus and light.

Majid Amini
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News

Calls for Papers

What's Hot in . . .

Science Policy

11th of February is the International Day of Women and Girls in Science. This was an occasion to cherish female researchers and the improvements towards equality, but also to remind ourselves that there is still a lot of work ahead of us. One important aspect that we should focus on is the fact that we are still witnessing discrimination against LGBTQ+ scientists. For instance, Cech and Waidzunas (2021, Science Advances 7, eabe0933) showed that LGBTQ+ scientists experience career limitations, mental health difficulties, and are more likely to leave natural sciences. Moreover, we should keep in mind that the distinction between genders is fluid and respect the personal choices in this matter. Apart from radical problems such as sexual harassment, there are many other reasons why female scientists might feel uncomfortable at their workplace. They report lower satisfaction with their jobs and face more obstacles when it comes to career advancements in academia. These differences in treatment go very deep. Studies even show that women on average get less physical office space than men (http://museum.mit.edu/150/71).

Gender balance is not achieved by a simple numerical proportion. Even in a situation when the number of male and female researchers is equal, it is very important to check what is the dominant communication culture in a field or research group. In academic cultures that are designated as aggressive or masculine, female researchers will feel discouraged to express their opinions, and thus participate less with their ideas in the scientific discourse. This has negative consequences to the whole community as a diversity of opinions, approaches, and experiences enriches science.

The role of men in achieving a balanced and inclusive environment is very important. The positive example of Pierre Curie is an inspiration to us all. He supported Marie Curie's scientific success and even wrote a letter announcing that she deserves scientific credit when he was considered for a Nobel Prize (Pycior 1993, Social Studies of Science 23(2) 301-323). Men can always use their voices to promote women in society and act in supportive ways.

The COVID-19 crisis brought to light another aspect of inequality between female and male researchers: the traditional picture of females spending more time with children than males reflected itself in the scientific output of female scientists during the school and kindergarten lockdown (Gewin 2020, Nature 583, 867-869). More active participation of men in home duties, equal distribution of obligations, and time spent with children would help to overcome such scenarios in the future.

Inclusion is the dynamic adaptation of the dominant environment and its shift towards a balanced one. This means shifting the dominant culture in science to a more open, less authoritarian, and more tolerant one. In return, not only that the ideas of underprivileged scientists will be more prominent, but the community and work environment will be more pleasant for all genders. This should facilitate our transition to the desired gender-neutral workplaces.

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Evidence-Based Medicine

As its name suggests, Evidence-Based Medicine (EBM) is a medical methodology relying on evidence, where, traditionally, this evidence is a statistical correlation between a disease and its cause established through association studies like clinical or observational trials and confirmed through systematic review and meta-analysis e.g., Howick (2011: The Philosophy of Evidence-Based Medicine).

However, more recently, evidence of a mechanism linking the disease and its cause has been added to the EBM approach (e.g., on EBM+, Parkkinen, Wallmann, Wilde, Clarke, Illari, Kelly, Norrell, Russo, & Williamson. Evaluating Evidence of Mechanisms in Medicine: Principles and Procedure 2018, and Hauker-Howlett, & Wilde, "Reinforced Reasoning in Medicine", 2020, Journal of Evaluation in Clinical Practice 26: 458-464). How much useful is EBM+ with respect to the new SARS-CoV-2 pandemic? This question has attracted, and is still attracting, a lot of scholars and scientists from many diverse backgrounds. The internationally reputed Journal of Evaluation in Clinical Practice has very recently included a certain number of papers addressing this question. Among those papers, one can find the following multi-authored paper: Aronson, Hauker-Howlett, Ghiara, Kelly, & Williamson, "The Use of Mechanistic Reasoning in Assessing Coronavirus Interventions", Journal of Evaluation in Clinical Practice, forth. In this paper, the authors argue that, when assessing causal claims in the case of an infectious disease like COVID-19, it is insufficient to rely merely on association studies; clinicians must also rely on mechanistic reasoning. In a nutshell, COVID-19 is here used as an example for the fruitfulness of an EBM+ approach, which combines association and mechanistic studies.

The authors' main line of argumentation is as follows: (i) the reliance on association studies for assessing the effectiveness of causal interventions on the coronavirus disease is insufficient, for "[. . .] correlation is insufficient for causation: a correlation may be attributable to chance, bias, uncontrolled confounders, inappropriately controlled colliders, or relationships other than

causation" (p. 2); (ii) coupling association studies with mechanistic reasoning is beneficial to the research on COVID-19, for, "[. . .] if an established mechanism links [. . .] two variables, it may be possible to regard [. . .] biases as less plausible explanations of the observed association on COVID-19 outcomes" (p. 4).

From this, one can raise, at a general level, two related challenges. First, by associating into a single methodological framework, namely EBM+, both association studies and mechanistic ones, it seems that EBM+ ultimately relies on two opposing – rather than complementary or merely compatible - theories of causation. Indeed, as a certain medical methodology, EBM+ is based on certain metaphysical presuppositions about causation: (i) the idea that we come to know a causal relationship in medicine through association studies very likely relies on an agency or counterfactual theory of causation, which analyzes causation in terms of manipulability (e.g. Pearl, Causality: Models, Reasoning, and Inference, 2009); (ii) the idea that we come to know a causal relationship through evidence of an underlying mechanism obviously relies on a metaphysical theory of causation as a mechanism relating a cause to its effect (e.g. Glennan, 1996, "Mechanisms and the Nature of Causation", Erkenntnis 44: 49-71).

Can we coherently reconcile presuppositions (i) and (ii) into a single methodological framework? Or, do we have to go along a strong pluralist way by arguing that presuppositions (i) and (ii) cannot be unified (even minimally)? What is clear, at least here, is that agency or counterfactual theories of causation and mechanistic ones have been historically developed as two competing and (seemingly) irreconcilable theories of causation, where the former focuses on possible worlds, while the latter on the actual world.

A second related challenge on EBM+, in all its generality, is that we may wonder whether mechanistic studies are eventually not sufficient by themselves to assess causal claims in medicine. Indeed, cannot we consider association studies as means to know of a mechanism, that it to say to get evidence about, actually, an underlying mechanism? In that sense, it is not the case that association studies are supplemented by mechanistic reasoning, but that mechanistic reasoning - under a very strong sense (Aronson et al. (forth.)), thus - is supplemented by association studies establishing through a statistical correlation between two variables, so to say, the boundaries of the mechanism in question. Furthermore, the suggestion that mechanistic reasoning is to be put primary would also solve the first challenge raised here, for EBM(+) would ultimately rely on a single metaphysical theory of causation.

Despite those challenges raised here, the EBM+ approach certainly has a bright future ahead. Evidence of it: wonderful forthcoming workshops at the University of Kent, namely "Analogical Reasoning in Philosophy and Science" on 28 May 2021 (Analogical Reasoning Workshop (Kent, 2021) (shanyafeng.com)), and "Alternative Approaches to Causation: Beyond Difference-making and Mechanism" on 28-29 June 2021" (Causation Conference (Kent, 2021) (shanyafeng.com)), as well as the online conference "Philosophy and Methodology of Medicine" at the Munich Center for Mathematical Philosophy (MCMP) on 1-3 June 2021 (Philosophy and Methodology of Medicine (1-3 June 2021) - Munich Center for Mathematical Philosophy (MCMP) - LMU Munich (uni-muenchen.de)); and a special issue of the European Journal of Analytic Philosophy on the philosophy of medicine with a submission deadline up to March 31st 2021 (2nd CfP: Philosophy of Medicine, special issue of EuJAP – European Journal of Analytic Philosophy (uniri.hr)), with topics like the standards of evidence in public health, causality and explanation in epidemiology, or epistemic risks in epidemiological research. What great opportunities to interrogate ourselves about the EBM(+) approach! Do not miss them!

FRANÇOIS PELLET
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EVENTS

MARCH

REPS: Reconsidering Empiricism in the Philosophy of Science, virtual, 31 March.

APRIL

SURe: Scientific Understanding and Representation, Netherlands, 15–17 April.

SEPTEMBER

PROGIC: Combining Probability and Logic, Munich, Germany, 1–3 September.

CSPS: Congress of the Society for the Philosophy of Science, University of Mons, Belgium, 8–10 September.

VoAS: The Varieties of Anti-Skepticism, Pamplona, Spain, 15–17 September.

ECSQARU: European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, Prague, 21–24 September.

COURSES AND PROGRAMMES

Courses

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.

LOGICS: Joint doctoral program on Logical Methods in Computer Science, TU Wien, TU Graz, and JKU Linz, Austria.

Jobs

POSTDOC: in Algorithmic Decision Making, Aarhus University, deadline 15 March.

PROFESSORSHIP: in Philosophical Psychology, University of Antwerp, deadline 29 March.