At the end of November, 2018, the APA awarded me a $5,000 grant to support a research workshop on the titular topic and a public lecture showcasing some of the innovative ways in which philosophers are applying formal methods to societally relevant problems. My last report, from September 30, 2020, covered those events, which occurred on September 19-21, 2019. This report includes confirmation of spending allocations and final assessment of the supported activities’ impact.

Activities

Workshop

After the workshop, Liam Bright published on November 10, 2019 a blog entry, “Just a Humble Philosopher,” reflecting on the interactions between the formal methods encountered in learning philosophy and the common phenomenon of math anxiety. Prior to publication, I had given Liam some comments on a draft of the entry. In the “Assessment of Impact” section below I discuss the post’s measured impact.

The success of the workshop led me, in consultation with the interests of the workshop participants, to propose to edit a topical collection at the journal Synthese on “Metaphilosophy of Formal Methods.” Four of those participants (among others) agreed to submit an abstract for inclusion in the topical collection proposal. That proposal has been approved; Appendix 1 records the call for papers as it has appeared on PhilEvents and various e-mail newsletters. I am currently in consultation with Bright about another possible blog entry related to the topical collection CFP.

Funding Allocation

This section describes the funding from the grant charged for various expenses, noting any differences with the anticipated allocations described in the previous report.

<table>
<thead>
<tr>
<th>Project Expense</th>
<th>Amount Allocated</th>
<th>Amount Charged</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight for Cailin O’Connor</td>
<td>508.00</td>
<td>508.00</td>
<td>Round-trip from Orange County, CA</td>
</tr>
<tr>
<td>Flight for Liam Kofi Bright</td>
<td>1009.73</td>
<td>1018.73</td>
<td>Round-trip from London, England</td>
</tr>
<tr>
<td>Flight for Helen De Cruz</td>
<td>261.05</td>
<td>261.05</td>
<td>Round-trip from St Louis, MO</td>
</tr>
<tr>
<td>Hotel for Cailin O’Connor</td>
<td>670.80</td>
<td>669.84</td>
<td>9/18-9/21</td>
</tr>
<tr>
<td>Hotel for Liam Kofi Bright</td>
<td>503.11</td>
<td>502.38</td>
<td>9/19-9/21</td>
</tr>
<tr>
<td>Hotel for Helen De Cruz</td>
<td>47.31</td>
<td>39.94</td>
<td>From $335.38 total, 9/19-9/20</td>
</tr>
<tr>
<td>Public Lecture Auditorium Rental</td>
<td>700.00</td>
<td>700.00</td>
<td>Two hours, including atrium for reception, and room set-up</td>
</tr>
<tr>
<td>Public Lecture A/V Recording</td>
<td>710.00</td>
<td>860.00</td>
<td>A/V technician recording to produce HD video file</td>
</tr>
<tr>
<td>Workshop Room Rental</td>
<td>390.00</td>
<td>340.00</td>
<td>From $535.00 total</td>
</tr>
<tr>
<td>Workshop printing</td>
<td>100.00</td>
<td>0.00</td>
<td>From $157.24 total, for workshop programs and name badges</td>
</tr>
</tbody>
</table>
The differences between the amounts allocated and charged for hotel costs and Bright’s airline tickets arose from minor differences in taxes actually levied. Higher costs for the public lecture A/V recording were offset by a lower amount drawn for the workshop room rental, bringing the costs incurred much closer to the estimates for these costs in the original proposal. The workshop printing costs were not charged because the printing office had not finishing processing their invoice by the time the APA sponsored project account had to be closed. This resulted in a $100.06 refund to the APA. (The 6 cents are from differences in the hotel and flight costs just mentioned.)

Assessment of Impact

Public Lecture

After O’Connor’s public lecture, we sent out by email a Google Forms anonymous survey to those who registered for the event and collected responses for three weeks. We received 9 responses (cf. the 70 who attended). Among those who responded, the overwhelming majority:

- found the information presented at the event to be “helpful” or “very helpful” (4 or 5 on a 1-5 Likert scale);
- changed their opinions about philosophy “positively” or “very positively” (4 or 5 on a 1-5 Likert scale); and
- were “satisfied” or “very satisfied” with the event overall (4 or 5 on a 1-5 Likert scale).

Narrative responses and histograms of the data are reported in Appendix 2.

Workshop

There are two items to report on the impact of the workshop: survey results from the workshop participants and measures of engagement with Liam Bright’s blog post reflection, described above.

After the workshop, we sent out by email a Google Forms anonymous survey to those who registered for the event and collected responses for three weeks. We received 7 responses (cf. the 35 who registered). Among those who responded, the overwhelming majority:

- found the information presented at the event to be “helpful” or “very helpful” (4 or 5 on a 1-5 Likert scale);
- changed their opinions about philosophy “positively” or “very positively” (4 or 5 on a 1-5 Likert scale); and
- were “satisfied” or “very satisfied” with the event overall (4 or 5 on a 1-5 Likert scale).

Narrative responses and histograms of the data are reported in Appendix 3.

In the first 24 hours after Liam Bright posted his November 10, 2019 blog entry, it received 1,100 views, rising to 1,824 in the first week. In addition, the post was linked on the news aggregator Daily Nous on November 11 and we referenced in a Twitter thread by Carnegie Mellon logician Adam Bjorndahl on November 10, as well as in a response blog post by Melbourne logician Greg Restall on November 14.

Appendix 1: Call for Papers: Synthese Topical Collection: Metaphilosophy of Formal Methods

Guest Editor: Samuel C. Fletcher (University of Minnesota, Twin Cities)
**Topical Collection Description:** With which methods must a competent contemporary philosopher be familiar? Argumentation, analysis, and creative synthesis have always been in the philosopher's toolkit, but there is a rising confluence with formal methods more traditionally associated with the sciences. While "logic" has been essentially synonymous with "formal methods" in philosophy for many decades, increasingly philosophers are using mathematics not traditionally associated with logic, such as probability and decision theory, statistics, and even experimental design and computer simulation. The present topical collection investigates the changing status and role of mathematics and other formal methods in philosophical methodology: Why use them? What is their function? What is their prevalence, provenance, and history? In what contexts are they (in)effective or (un)successful and why? How do these methods connect philosophy with other disciplines?

Appropriate topics for submission include, among others, any bearing on the following descriptive, historical, and normative questions:

- Which formal and mathematical methods are becoming central in philosophical research? Do the types of methods vary by subdiscipline?
- How did formal and mathematical methods enter into and become accepted within analytic and related philosophical research in the twentieth century? How has this development compared with their use and acceptance in other philosophical traditions?
- Are there some subdisciplines of philosophy in which mathematical methods are not yet or will not be apt, and why? What, if anything, do they have in common?
- What implications does the increasing use of mathematical methods in at least some subdisciplines of philosophy have for philosophical naturalism and the connections between philosophy and the sciences?
- How does the use of distinctly mathematical methods relate to the role of distinctly formal logical methods that have heretofore been so prominent in analytic philosophy in the twentieth century?

For further information, please contact the guest editor, Samuel C. Fletcher (University of Minnesota, Twin Cities): scfletch@umn.edu.

The deadline for submissions is 19 March, 2021.

Papers in a Topical Collection are not assigned to a special issue of the journal but published in the first available issue of Synthese. The papers are then collected and prominently displayed together on Synthese's website. Papers in a Topical Collection undergo the same review process as any other submission to Synthese. Submissions can be made at [www.editorialmanager.com/synt](http://www.editorialmanager.com/synt). To be considered for inclusion in the Topical Collection, please select "T.C. Metaphilosophy of Formal Methods" from the drop-down list when asked to "Select Article Type".

**Appendix 2: O’Connor Public Lecture Survey Results**

We recorded nine responses to the survey, which asked three narrative questions and four Likert-scale questions. Those questions and the responses follow.

What was the highlight of the event?

- Getting my book signed
- Getting the book after she spoke
- How engaging and fun the speaker was
- Very compelling speaker
- Book signing
- The lecture

What aspect of the event could have been improved?

- Slower introduction of the speaker
- More chocolate with the catering
- There was too much food

Is there anything else you’d like to share about the event?

- It was great!
- Please have another soon

Numbered responses are displayed on individual charts below.

1. How helpful was the information presented at this event? (1 = very unhelpful 5 = very helpful)
2. How did this event change your opinions about philosophy? (1 = very negatively 5 = very positively)
3. How would you rate the catering? (1 = very bad 5 = very good)
4. Overall, how satisfied were you with the event? (1 = very dissatisfied 5 = very satisfied)
Appendix 3: Workshop Survey Results

We recorded seven responses to the survey, which asked five narrative questions and four Likert-scale questions. Those questions and the responses follow.

Has your opinion about formal methods in philosophy changed?

- My opinion going into the conference was that philosophy needs to expand its use of formal methods in both research and teaching. That opinion was confirmed and strengthened.
- I remain convinced formal methods are valuable to philosophy, and the presentations (including Josh Knobe’s) did not change what I thought were the current primary areas of application. However, I did find inspiration for a number of different ways that formal methods might be incorporated into graduate and undergraduate education. Helen de Cruz’s class was a revelation for me. Eric Steinhart’s suggestion that one could build an undergraduate philosophy curriculum around a sequence of models, as it is in the physicals science, was interesting. Cailin O’Connor’s suggestion that empirical methods might be “formal” was really thought-provoking because we normally don’t think of “fomality” as applying to non-linguistic objects. Finally, I thought the “Dutch plan” (no requirements) model of graduate education was interesting, though probably impractical given current institutional constraints.
- I am less in favor of the logic requirement; I think I now favor a disjunctive requirement that students learn some formal methods or other. (I’m not quite to the point of thinking we should do away with requirements altogether.)
- Yes
- I think I was always on the team this conference represented. Feel like I walked away energized to rep. diversity in formal grad education, though.

If your opinion about the use of formal methods in philosophy has changed, describe how.
• See above.
• Helen de Cruz's description of her experimental philosophy course made me think that being more hands-on and empirical would really benefit the students.
• The more holistic approach is intriguing.

What was the highlight of the event?

• The highlights were hearing about new philosophy programs that make wider use of formal methods, or programs and courses that are teaching new formal methods.
• In general, I thought the quality of talks was consistently good, even those talks that were delivered remotely. Though I was a bit unhappy that Branden decided not to say anything explicitly about his views on metaphilosophy (he has them!), his and Catarina's talks were really thought-provoking I thought, and both responded well to questions despite being far away. I was concerned that beginning with a remote talk from Josh Knobe might dampen the momentum of the event, but Josh is entertaining and clear even from far away.
• I'd say either Helen de Cruz's or Branden Fitelson's talk... they were engaging and enlightening in very different ways, and I loved being at a conference that had both.
• Lunch

What aspect of the event could have been improved?

• Two presenters didn't really address the conference theme. They just talked about their own research.
• It was an excellent event. In retrospect, I think the only thing that might have made the event better (and this could not have been anticipated) is to ask participants to submit policy proposals for either undergraduate or graduate training prior to the event and to have circulated those proposals online. Had we done that, we might have had a more structured and precise conversation on Daily Nous and/or other online forums. Many folks simply misunderstood or misread Liam's initial post.
• Can't think of anything; there should be more of these!
• We should have afternoon tea, strawberries and cream, scones, and assorted viennoiserie. (I kid)

Is there anything else you’d like to share about the event?

• This event is an outstanding example of exactly what the APA needs to do to address the challenges facing our profession. We need more events like this, and we need to put pressure on the APA to engage with the very real challenges facing its members.
• Hearty thanks to the organizers.
• Can't think of anything.
• I really enjoyed the presentations. I hope you do it again next year.
• I thought it went well! Don't have a ton of ideas - sorry!

The responses to the following questions are represented on a chart below:

1. How helpful was the information presented at this event? (1 = very unhelpful 5 = very helpful)
2. How did this event change your opinions about philosophy? (1 = very negatively 5 = very positively)

3. How would you rate the catering? (1 = very bad 5 = very good)

4. Overall, how satisfied were you with the event? (1 = very dissatisfied 5 = very satisfied)