HHU Summer School on Philosophical Engineering Final Report

(By Christian J. Feldbacher-Escamilla, Philosophy, HHU)

The HHU Summer School on Philosophical Engineering took place from August 25 until August 31, 2019 at Heinrich-Heine-University's *Haus der Universität*. Its main goal was to bridge the gap between the generality and specialisation of university eduction regarding formal topics. So, e.g., contemporary analytic philosophy makes heavy use of formal methods, but most of the time people engaged in such a formal endeavour are highly specialised and only rarely cover a broad range of formal topics. The summer school aimed at providing an introductory overview of the main methods applied in formal philosophy and philosophical engineering, which are logical, probabilistic, and game-theoretical devising, model building, as well as programming and simulating. For this purpose, several experts with high international reputation in these fields were invited to Heinrich-Heine-University to instruct participants in courses on the mentioned topics. The instructors were:

- Eckhart Arnold, head of the division Digital Humanities of the Bavarian Academy of Sciences and Humanities, with a methodological focus on simulation-based research and programming
- Elke Brendel, chairholder for logic and basic research at the University of Bonn, with a specialisation in the field of logical pluralism
- Filippo Ferrari, research fellow at the University of Bonn, with a focus on normativity of belief and reasoning
- Simon Huttegger, professor at the University of California, Irvine, with a research focus on game and decision theory, and the foundations of probability
- Corina Strößner, currently independent researcher, with an expertise in formal epistemology, formal semantics, and statistics.
- Leander Vignero, research assistant at KU Leuven, with a research focus on probability theory, Bayesianism, and rational speech act theory

In five sessions and *in toto* 42 working hours, the participants got an overview and a brief introduction to *logic*, *probability theory*, *game theory*, *computer simulations*, and *statistical programming*. The programme of the summer school was as depicted in the table on the next page. All sessions included lectures, briefing slots, exercise courses, and feedback rounds. Some instructors were not only present for their own session, but (assisted) also in other ones.

DAY 1, Sunday, August 25, 2019 Wilma Wunder, Martin-Luther-Platz 27, 40212 Düsseldorf	
16:00-17:30	Welcome & Introduction
17:30	Dinner

DAY 2, Monday, August 26, 2019, Haus der Universität	
09:00-12:00	Logical Devising (Elke Brendel & Filippo Ferrari)
12:00-13:30	Lunch
13:30-15:30	Logical Devising (Elke Brendel & Filippo Ferrari)
15:30-16:00	Coffee Break
16:00-18:00	Logical Devising (Elke Brendel & Filippo Ferrari)
18:30	Dinner

DAY 3, Tuesday, August 27, 2019, Haus der Universität	
09:00-12:00	Logical Devising (Elke Brendel & Filippo Ferrari)
12:00-13:30	Lunch
13:30-15:30	Probability Theory (Leander Vignero)
15:30-16:00	Coffee Break
16:00-18:00	Probability Theory (Leander Vignero)
18:30	Dinner

DAY 4, Wednesday, August 28, 2019, Haus der Universität	
09:00-12:00	Probability Theory (Leander Vignero)
12:00-13:30	Lunch
13:30-15:30	Introduction to Game Theory (Simon Huttegger)
15:30-16:00	Coffee Break
16:00-18:00	Introduction to Game Theory (Simon Huttegger)
18:30	Dinner

DAY 5, Thursday, August 29, 2019, Haus der Universität	
09:00-12:00	Introduction to Game Theory (Simon Huttegger)
12:00-13:30	Lunch
13:30-15:30	Introduction to Game Theory (Simon Huttegger)
15:30-16:00	Coffee Break
16:00-18:00	Introduction to Game Theory (Simon Huttegger)
18:30	Dinner

DAY 6, Friday, August 30, 2019, Haus der Universität	
09:00-12:00	Computer Simulations with Python (Eckhart Arnold)
12:00-13:30	Lunch
13:30-15:30	Computer Simulations with Python (Eckhart Arnold)
15:30-16:00	Coffee Break
16:00-18:00	Computer Simulations with Python (Eckhart Arnold)
18:30	Dinner

DAY 7, Saturday, August 31, 2019, Haus der Universität	
09:00-12:00	Computer Simulations with Python (Eckhart Arnold)
12:00-13:30	Lunch
13:30-16:00	Improvisation on Statistics with R (Corina Strößner)
16:00	Farewell

Course material was distributed in advance and continuously updated during the summer school via Dropbox. All information about the summer school was shared via the following website:

http://dclps.phil.hhu.de/engineering/

The website serves as a repository now.

Main Achievements

As suggested in the proposal, the summer school was advertised via several newsletters and poster shipment to partner institutions and philosophy hotspots (the poster is also available at the website). In order to acquire the attention of students of Heinrich-Heine-University, the event was also advertised in several lectures. We cooperated also with the HHU-led research group *Inductive Metaphysics* (DFG) in order to promote the event further and acquire further travel grants for student participants from abroad (particularly overseas).

By bringing together international experts in these fields, participants gained competencies in applying a broad range of formal methods in their field of interest (see also the feedback in the evaluation below). This was achieved particularly by help of professional instructions, exercises, interactive group work, and the discussion of results by the participants. Furthermore, participants were provided with opportunities to independently deepen their competencies in a particular topic of interest following completion of the course. Regarding the four main aims outlined in the proposal, the achievements are as follows:

- *Ad Connection to HHU's Curriculum:* Participants got attendance certificates; with this MA students accomplished the module *Kongressbesuch*. There will be also an online exam which allows participants to complete another module of their curriculum.
- *Ad International Experience:* Students of HHU gained international experience by international (particularly: Huttegger) top-class instruction; they had close exchange with international students, which in general increased the motivation for internationalisation (in the sense of aiming at academic activities abroad – see the feedback below).
- *Ad Additional Value for the HHU*: The summer school increased national and international visibility of HHU (see feedback below).
- *Ad Quality Assurance:* Local members of HHU's philosophy department assisted in online monitoring and instructing participants during group work.

We also want to note that the achieved workload for each participant was 42h in-class work, which amounts to the in-class work of two ordinary university courses.

Regrettably, the planned cooperation with *philGRAD* did not take place because all MA-participants were from the HHU and so the planned outline of the PhD programme of HHU's philosophy faculty would not have been relevant for the other participants.

Participation Statistics

In the proposal we put forward to aim at 35 participants with about 15 students from HHU and in toto 50% female participants. Although we achieved the first two goals, we did not accomplish the third one: There were 37% female participants. However, with respect to another parameter of diversity, namely participating countries, we were quite successful: institutions from more than 10 countries were represented (Austria, Canada, Croatia, Germany, India, Italy, Poland, Russia, South Africa, Sweden, UK; regarding citizenship there is even more diversity: 17 different countries).

Diversity:	Participants	Female	HHU Students	Affiliated to a German Institution
Absolute #:	35	13	13	24
Percentage	100%	39%	39%	68%

Degrees:	MA	PhD	Postdocs	Other Field/ No Degree
Percentage	35%	35%	15%	15%

Evaluation

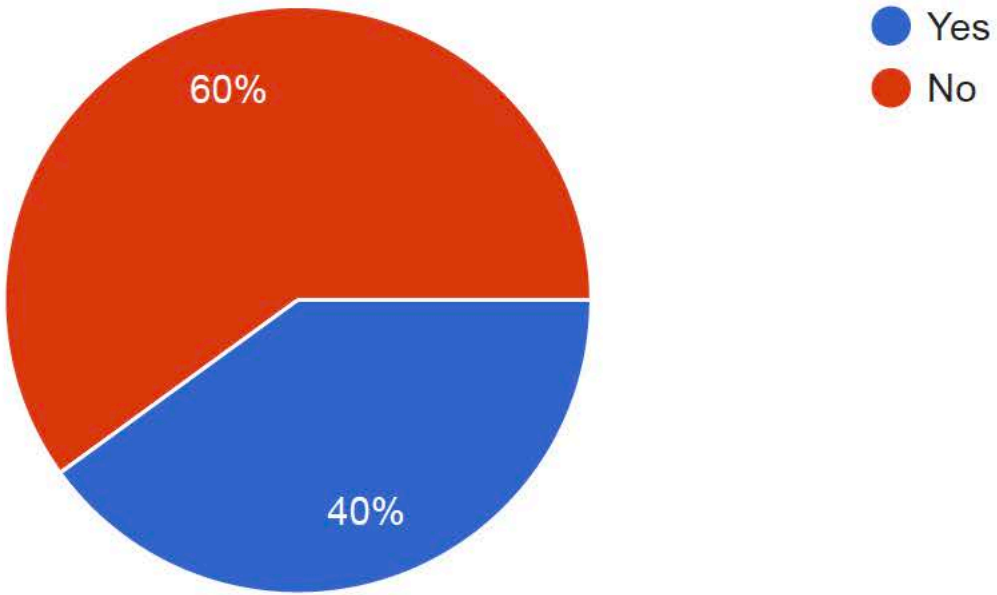
Directly after the summer school, participants and instructors were asked to evaluate the event. There was a lot of feedback and it was throughout positive, also with respect to international visibility of HHU. The result of the evaluation is attached below.

Attachments:

- Feedback/Participant's evaluation of the HHU Summer School

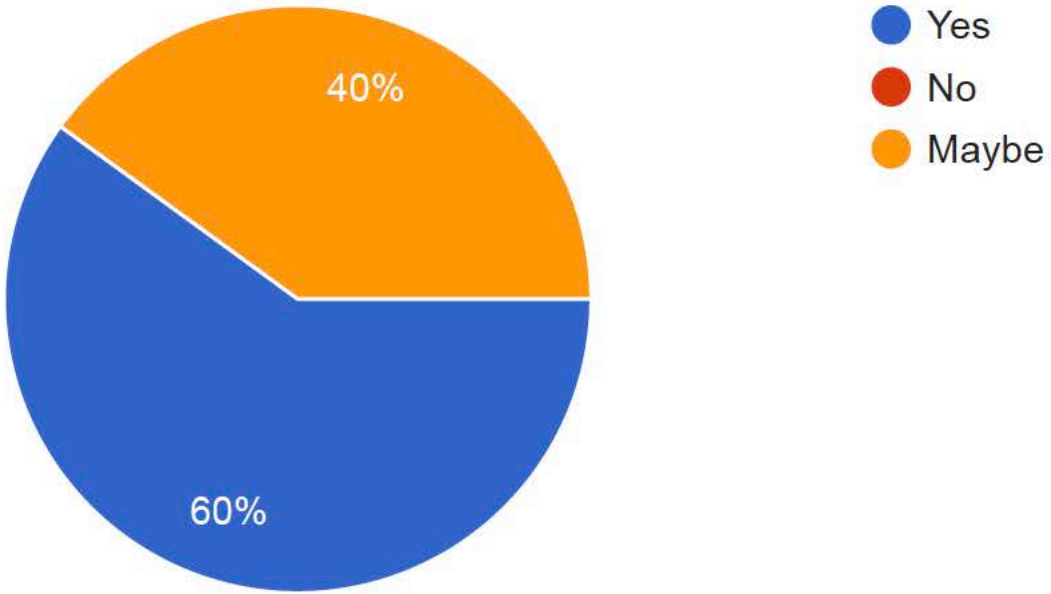
3.01 Have you heard about Heinrich-Heine-University (HHU) before?

15 responses



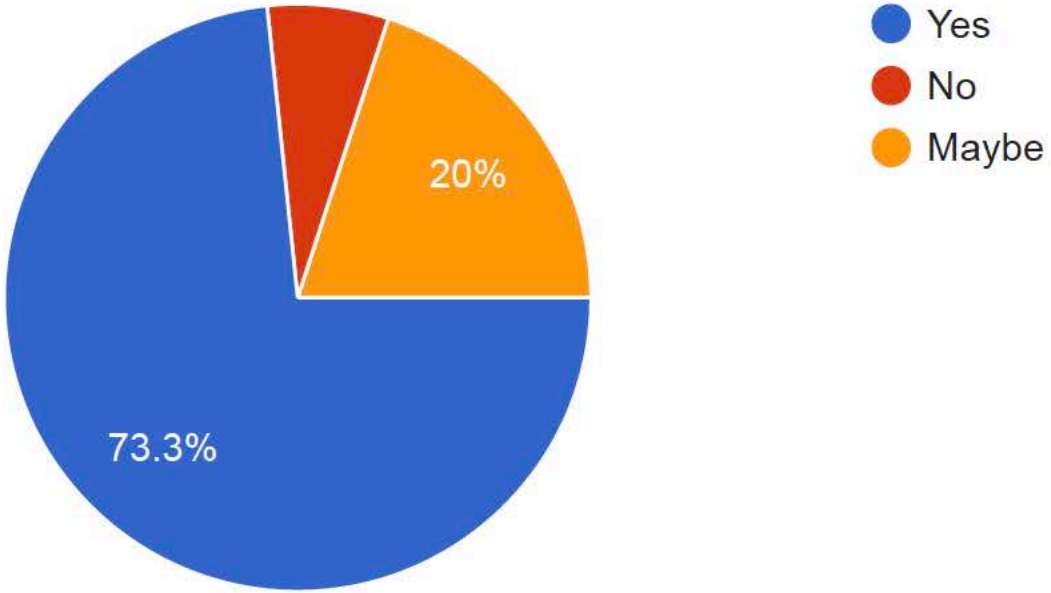
3.02 Did the summer school help you to assess the quality of HHU?

15 responses



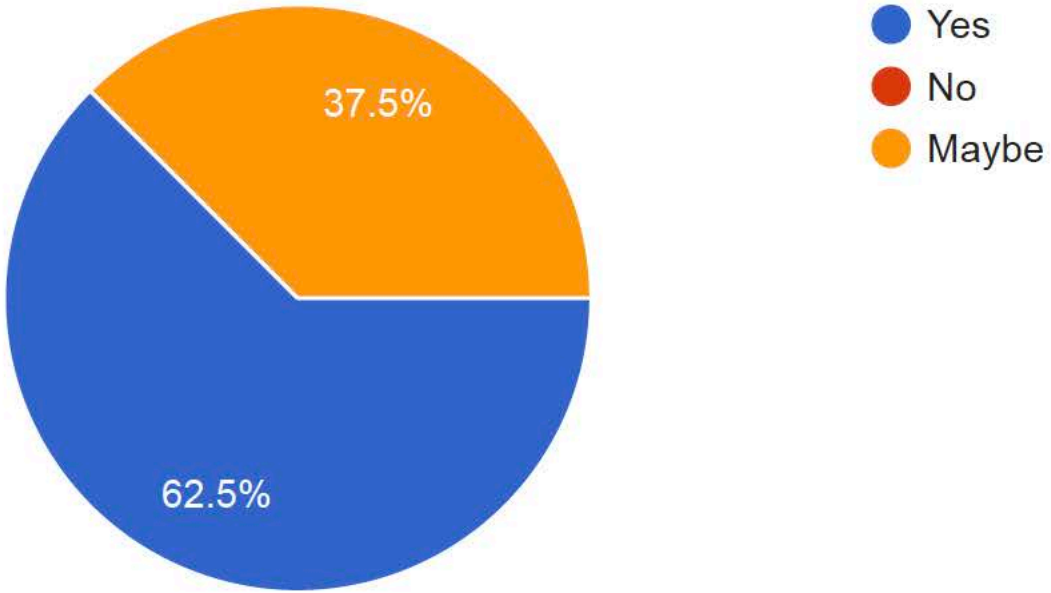
3.03 Do you think that the summer school increased international visibility of HHU?

15 responses



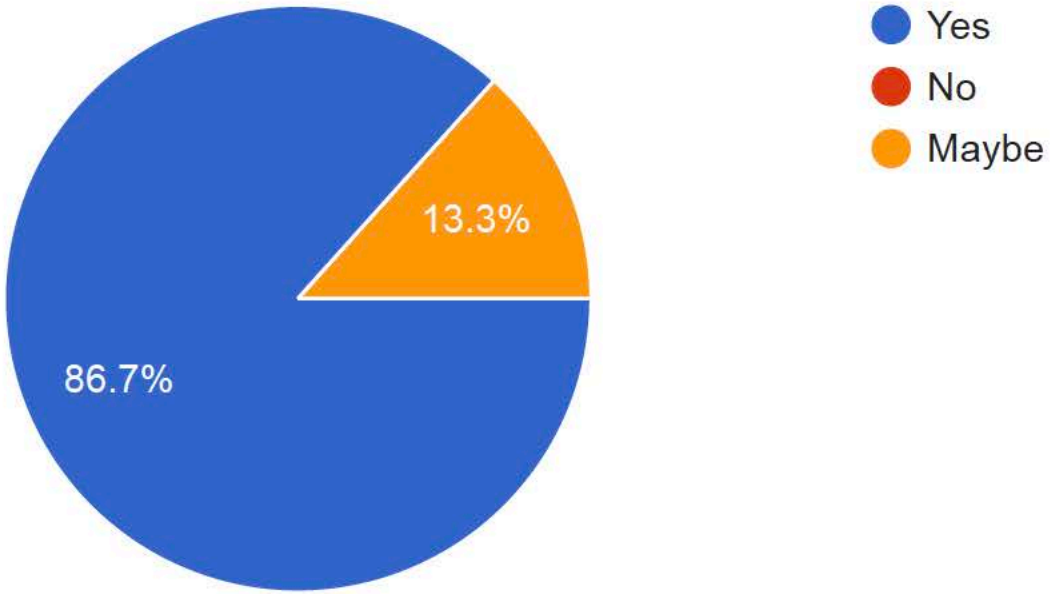
3.04 If you are from Germany: Did participating in the summer school motivate you to seriously think about performing international academic activities?

8 responses



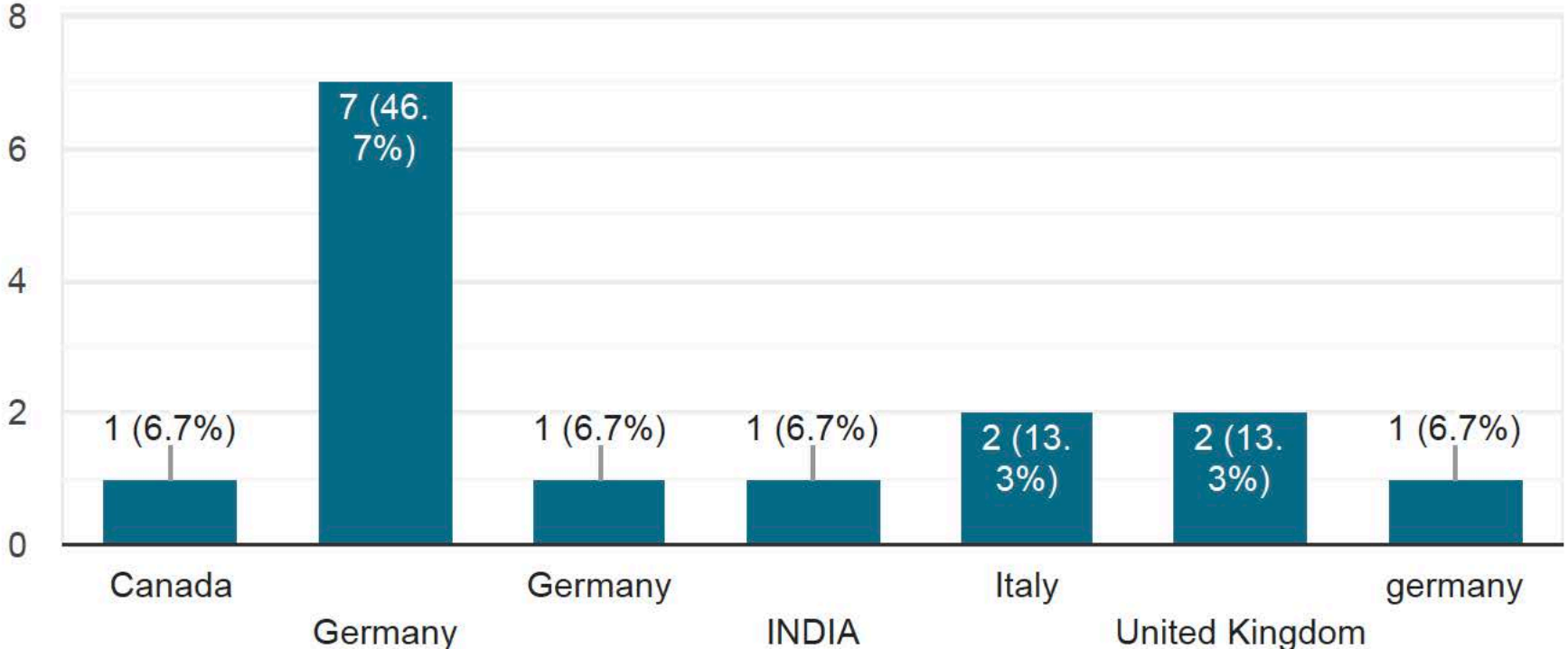
3.05 Would you recommend HHU summer schools to a friend or colleague?

15 responses



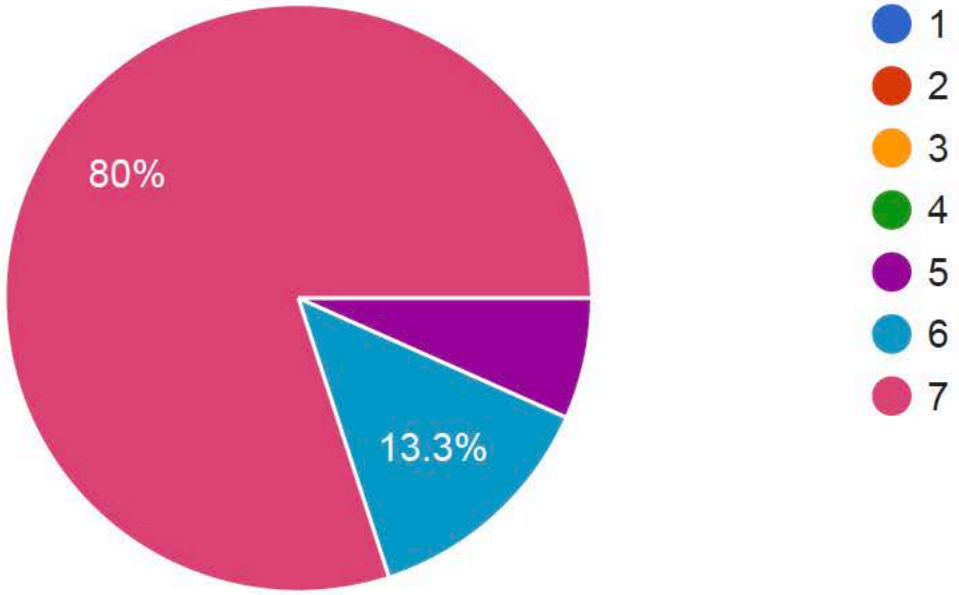
5.01 What is currently your country of residence?

15 responses



5.02 How many days did you participate?

15 responses



5.03 What is your gender?

15 responses