

## **Finance & Philosophy: What to believe now? Applied epistemology, information markets, and networks**

**Type:** Blockseminar

**Number:** 50311

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**Participants:** P&E Bachelor, P&E Master, BA IWB, BA Economics, MA IWB, MA Economics

**Lecturers:** Marco Meyer, Carsten Jung

**Dates:** 12-14 January 2018

**Start-time:** 12 January, 12.00 s.t.

### **Overview Deadlines & ToDos**

**Deadline for [workshop sign up](#):** 20 November

*We have two parallel workshops on Saturday afternoon, details below*

**Deadline for applying to give a presentation:** 20 November

*There are three short presentations to be allocated, details below*

**Deadline for submitting reading questions:** 5 January

### **Seminar description**

In this seminar, we will use epistemology, the study of knowledge and justified belief, to investigate decision making in social, political and financial situations. Against the backdrop of debates about financial bubbles, fake news and populism, we investigate what we can know and what we are justified in believing. We approach applied epistemology through two lenses: epistemic virtues (individual), and social epistemology (social). And we will look at models of collective belief formation and information diffusion in markets and networks. This will include hands-on exercises, in which we run diffusion simulations.

We look at individual belief formation, discussing theories of epistemic virtues and contrasting them economic models of belief formation. Epistemic virtues are traits guiding the way we deal with information, form beliefs, and acquire knowledge. We will explore philosophical questions about the nature of epistemic virtue. And, turning to empirics, we will look at research that shows which epistemic virtues make individuals better forecasters, how they impact social media behaviour and people's ability to detect financial fraud.

We also look at belief formation in groups. Social epistemology starts from the insight that we all rely on others for almost everything we know. Groups face the challenge of how to best elicit and aggregate the information held by their individual members. While the 'wisdom of the crowds' can lead to better outcomes than individual deliberation, it can also lead the amplification of errors (for example, rumours), cascade effects (such as financial bubbles), and polarization. We discuss these effects using the network economics literature and we explore what virtues groups should have in order to overcome such group-level biases. We will look at

empirical case studies and simulations on price formation in financial markets, voting behaviour and online ratings.

## **Lecturers**

### *Marco Meyer*

Marco has a PhD in philosophy from the University of Cambridge and is currently reading for a PhD in economics at the University of Groningen. He received a Master's degree in philosophy from Oxford University, a BA degree in Philosophy & Economics from Bayreuth university, and a BA in European History from Bayreuth University. His research interests include financial ethics, applied epistemology and global justice. He has taught students at the universities of Oxford and Cambridge, and has given seminars on philosophy and economics.

### *Carsten Jung*

Carsten is an economist at the Bank of England's International Directorate. He currently works on policy issues concerning the global financial vulnerabilities and systemic risks from climate change. He holds a BA in Philosophy & Economics from Bayreuth, an MSc in Economics from Warwick University and an MSc in Economic Sociology from LSE. He was also a Carlo-Schmid intern at the International Monetary Fund.

## **Learning Goals**

- Understand the main approaches to do applied epistemology on an individual and social level.
- Understand the way intellectual virtues affect what people come to know and understand.
- Explore the characteristics that make people good epistemic agents and how to develop these characteristics.
- Reflect on how propaganda and fake news may endanger democratic decision making.
- Apply intellectual virtues to uncover financial fraud, escape conspiracy theories, and spot fake news, and overcome your prejudices.
- Understand the way network/social structure affects the spread of beliefs / information.
- Explore what data teaches us about how information spreads on social networks and in markets.
- Reflect on how institutions can help overcome (or amplify) the spread of misinformation.
- Apply the tools of network analysis to predict political opinion formation, spread of rumors and developments in financial markets.

## **Agenda**

### Friday: Introduction and Intellectual Virtues

12.00 (we start s.t.)	<b>Welcome</b> , Expectations, Intro to Seminar Topics Input: The Applied Epistemic Turn in Philosophy
13.00	<b>Applied Epistemology in Action:</b> <ol style="list-style-type: none"><li>1. Uncovering the Madoff Scandal</li><li>2. Why do people fall for Conspiracy Theories?</li><li>3. Political polarization: do democrats and republicans talk to each other?</li></ol> There will be a short student presentation on each of these three cases -- see details below.
14.30	<b>What is Applied Epistemology?</b> <ul style="list-style-type: none"><li>• Introduction to key philosophical issues and debates in applied and social epistemology</li></ul> Reading: Tony Coady: What to believe now – Introduction
16.00	<b>Epistemic Virtue and Epistemic Vice</b> <ul style="list-style-type: none"><li>• Theory in focus: Virtue Epistemology</li><li>• Empirical studies of what makes for successful epistemic agents</li></ul> Reading: Tetlock, Superforecasting, Chapters 1, 3, and 8-
18.00	<b>End</b>

### Saturday: Social Epistemology and Workshops

09.00 (we start s.t.)	<b>Belief updating in a social setting</b> <ul style="list-style-type: none"><li>• Theory in focus: Bayesian Belief Updating</li><li>• Information cascades</li><li>• Bayesian social learning</li></ul> Reading: Easley & Kleinberg, ch. 16
11.15	<b>Information diffusion in networks</b> <ul style="list-style-type: none"><li>• Theory in focus: Network analysis</li><li>• Coordination problems in networks and the role of institutions</li></ul> Reading: Easley & Kleinberg, ch. 19 + Facebook post
12.45	<b>Lunch</b>
14.00	<b>Workshops</b> <ul style="list-style-type: none"><li>• WS 1: Empirical Epistemology: Intellectual Virtues and Persuasion</li></ul>

	<ul style="list-style-type: none"> <li>WS 2: Using network analysis tools to understand the spread of information (<i>signup required</i>)</li> </ul>
17.00	<b>Workshop presentations</b>
18.00	<b>End</b>
19.00	<b>Optional: Dinner at Oscar's</b>

### Sunday: Epistemology and Politics

09.00 (we start s.t.)	<b>Wisdom of the crowds?</b> <ul style="list-style-type: none"> <li>Theory in focus: Network analysis</li> <li>Which social (network) structures are better for achieving wisdom of the crowds?</li> <li>What is the role of 'influencers'?</li> </ul> <p>Reading: Becker et al (2017): Network dynamics of social influence in the wisdom of crowds OR Kittur and Kraut (2010): Harnessing the wisdom of crowds in Wikipedia: quality through coordination</p>
11.00	<b>Propaganda and democratic decision making</b> <ul style="list-style-type: none"> <li>Theory in focus: Epistemic underpinnings of democracy</li> <li>What is propaganda? How does it affect democratic decision making?</li> </ul> <p>Reading: Stanley, How Propaganda Works, "Introduction" (26 Pages) and "The ideology of elites: A case study", 21 pages</p>
12.00	<b>Lunch</b>
13.00	Governing algorithms: Revisit the cases from criminal justice, finance and autonomous cars
15.00	<b>Feedback</b>
16.00	<b>End</b>

### Workshops (Saturday afternoon)

On Saturday afternoon, we will split into two workshops exploring different key themes on applied epistemology. The readings for the workshops are in the dropbox folder in the “workshops” subfolder.

- A. ***Empirical Epistemology: Intellectual Virtues and Persuasion:*** In this workshop, we will do two separate yet related things. First, we will look at some of my own research on a questionnaire to measures intellectual virtue, the intellectual virtue scale. We will investigate the possibilities and challenges of measuring intellectual virtues, and whether the intellectual virtue scale can be shown to predict the quality of economic decisions. Second, we look at the attributes of discussants that make them persuasive participants in debates, and discuss whether these attributes could be captured in a similar measure.

Readings: (i) Intellectual Virtue and Financial Decision Making [to be shared in December] (ii) Read up on Change My View, an online forum dedicated to civil discussion. Read the [overview](#), [rules](#), and an online discussion on [whether to support Donald Trump](#) (no need to read everything, do read a couple of posts).

- B. ***Using network tools to analyse the spread of information:*** We will further explore how network analysis tools can be used to understand the spread of information. We will first look at a top-down method, that tries to explain the observed spread of memes on social ill networks with a simple model. And, secondly, we will look at a ‘bottom-up’ approach toward understanding information spread, which uses experimental methods on a large social network. We will also run some simple network simulations ourselves. Please bring your computer.

Readings: 1) Baskhy et al 2012 - The Role of Social Networks in Information Diffusion  
2) Ademic et al 2014 - Information\_evolution\_in\_social\_networks

**Please sign up for one of the workshops [here](#) (deadline: 20 Novembre 2017).**

### **Assessment**

*Attendance-only “Schein” (PE: 2 ECTS):* You need to (1) do the readings, (2) do the problem set, (3) participate actively in the seminar

*Essay “Schein” (PE: 6/8 ECTS):* You need to (1) do the readings, (2) do the problem set, (3) write an essay (4.000-5.000 words). If you give a presentation, this will feed into your grade as well.

### **General Readings & Reading Questions**

- All readings in this section are required readings. In addition, there are two required readings associated with your workshop of choice
- There will be very few presentations in the seminar, and there won't be presentations to recap readings

- Some of the readings are difficult. Rather than giving you watered-down readings, we want to encourage you to develop a reading skill that will become very handy in your academic life: extracting relevant information and arguments from very difficult texts. Always keep the respective reading question in mind while reading, and focus on getting an answer to that question out of the text. Do not despair if there are parts of the readings that you don't understand. Make a note and ask during the seminar.
- Deadline for Submission of Reading Questions: 5 January 2018
- Reading questions are to be submitted online [here](#).
- You can save the form as draft and continue later. Make sure you note down the URL displayed after you click on save as draft.
- Please answer each question in no more than 100 words

We have crafted reading questions to prepare you for the seminar and give us material to work with during the seminar. Consider answering the reading questions as part of the seminar designed to meet seminar goals, rather than a box-ticking exercise.

*1 - Coady - What to Believe Now - Introduction*

What is applied epistemology and what do you find most interesting about it?

*2 - Tetlock - Superforecasting, Chapters 1, 3, and 8.*

What are the most important attributes of 'superforecasters'? How would you cluster these attributes?

*3 - Easley & Kleinberg, Networks, Crowds, and Markets: chapter 16.*

*Problem:* Following the model in the text, suppose that there is a new technology that individuals sequentially decide to adopt or reject. Let's suppose that anyone who adopts the new technology receives either a positive or a negative payoff from using the new technology. These payoffs are random and have the property that the average payoff is positive if the technology is good, and negative if the technology is bad. Anyone who decides to reject the new technology always receives a payoff of exactly zero. As in the model, each person receives a private signal about the technology and observes the actions of all who chose previously.

However, unlike the model used in Chapter 16, each person is also told the payoffs received by everyone who moved previously. (One interpretation of this is that a government agency collects information about individuals' experiences and distributes it for free as a public service.)

*Question:* Suppose that the new technology is actually 'Bad'. How does this new information about payoffs (the payoffs received by each of those who moved previously) affect the potential for an information cascade of choices to adopt the new technology to form and persist? And what happens if, as in the chapter, there is no knowledge about the decisions - only observed choice. (Explain in words, no calculations needed.)

*4 - Easley & Kleinberg, Networks, Crowds, and Markets: chapter 19.*

Give an example from your own experience that the model in ch. 19 could help explain. What is the 'network structure' in your example and how does it affect collective belief formation?

*5 - Facebook Exposure to Diverse Information on Facebook*

What is Facebook arguing with this post? (A few sentences are sufficient as an answer.)

*6 - Either Becker et al 2017 **\*\*or\*\*** Kittur & Kraut 2010*

Which lessons does this research teach us about wisdom of the crowds?

*7 - Stanley, How Propaganda Works, "Introduction" and "The ideology of elites: A case study"*

Give an example of propaganda in Stanley's sense of the word from European political discourse.

*8 - Rinehart - The Election of 2016 and the Filter Bubble Thesis in 2017*

- No reading question -

## **Presentations**

We have three student presentations, all in the session 'Applied Epistemology in Action'.

Readings are in the dropbox in the subfolder presentations. The three topics are:

1. Uncovering the Madoff Scandal (Case 1)
  - Explain what a Ponzi scheme is and what the Madoff scandal was all about
  - Explain who uncovered the Madoff scandal and which intellectual attributes they displayed
  - Stick to 10min
2. Why do people fall for Conspiracy Theories? (Case 2)
  - Define what a conspiracy theory is
  - Present some quantitative evidence on how widespread conspiracy theories are
  - Briefly explain some popular theories of why people fall for conspiracy theories and their shortcomings
  - Explain Cassam's favoured explanation of why people fall for conspiracy theories
  - Stick to 10min
3. Political polarization: do democrats and republicans talk to each other? (Case 3)
  - Using several of the charts in the Vice article, show how Trump and Clinton voters were (or weren't) polarised during the election. Explain what you find most striking in this article.
  - Then explain what the 'filter bubble' hypothesis is, based on this [short video](#). (If you want, you can also draw on [this](#) and [this](#).)
  - Please stick to 10 minutes

For good presentations, we give an essay grading bonus of one grade-step (e.g. from 1.7 to 1.3). Alternatively, presenters can get a discount on essay length. If you would like to do one of the presentations, please send an eMail to Marco [m.meyer@rug.nl](mailto:m.meyer@rug.nl) (deadline: 20 Novembre).

General guidelines for presentations:

- Stick to the presentation topic
- Stick to the time limit: 10 min
- A projector will be available
- Presentations should be in English, but don't be intimidated — we'll have an atmosphere which is quite tolerant of less than perfect English; what matters is that you can get your point across.

## Essays

*Topics:* We'll run a short session on possible seminar topics during the Blockseminar, and point out possible seminar topics during the seminar. You are encouraged to come up with your own topics.

### *General Guidelines*

- Between 4,000 and 5,000 words
- English or German
- Before you start writing, look at this essay writing guide:  
<http://www.phil.cam.ac.uk/curr-students/IA/curr-students/writing-skills/>
- Re-read and revise before submitting. Ask a friend to read your paper.
- We set a deadline for the essay with students individually to fit their needs.

### *General Structure*

- Define and answer a precise research question (check with us!), give a clear answer to the question which you state in the introduction (your thesis), and use your essay to defend that answer.
- Structure essay according to thesis: No paragraph and indeed no sentence that does not help investigating the thesis belongs in the essay.
- When developing an argument, state premises and conclusion clearly.
  - Make sure the argument is valid
  - Anticipate objections to your premises and discuss in the essay
- When using empirical data, explain and scrutinize it
  - Make sure the data is relevant to your argument and explain how that is
  - Indicate the source
  - Do not only report results, but also show awareness of the methodology used
- Summarize your argument in a brief conclusion

We encourage you to look for additional literature. You are not expected to read everything there is on your topic, however. In depth analysis and development of your own sustained argument matter much more. So, read a few things, but then start writing quickly.