WTMC SERIES ON TEACHING & LEARNING STS

EPISTEMIC CORRUPTION

Summer School

2021(3)

WTMC

Netherlands Graduate Research School
of Science, Technology and Modern Culture

WTMC Series on Teaching and Learning STS

Publication of the Netherlands Graduate Research School
of Science, Technology and Modern Culture (WTMC)

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Available at https://www.wtmc.eu/wtmc-series/

ISSN: 2666-2892
DOI: https:/doi.org/ 10.3990/4.2666-2892.2021.03

Contents

Maps

Instead of a map of how to get to Soeterbeeck, we provide a map of how to get to our chosen platform and an introduction of our guide for this journey… We will be using Zoom in connection with the collaborative workspace Mural (www.mural.co) and an (informal) meeting platform (probably Gathertown). Each day has a different Zoom link. You find all links at several places in the program below. What can you expect? During most of the day we will make use of Zoom, sometimes we'll also start Mural to give you the chance to make collaborative notes and prepare questions for the presenters, or to simply exchange ideas and thoughts among each other.

We have also planned a short initial information session to start us off on Wednesday, 18 August, from 15:00 to 16:00. That way, we will be able to introduce you to the summer school, check any technical issues and ensure that we are all ready to go when we start the lectures and activities.

Practical notes

To do before the Summer School

Allow about two weeks for preparation of this Summer School. The compulsory literature consists of roughly 40-50 pages per lecture plus the core reading. At 8 pages per hour, this takes about 65 hours. We expect you to spend about 15 more hours to prepare the exercises, and read part of the recommended literature as you wish. This amounts to 80 hours in all, which is the standard amount of preparation time for a Summer School. In preparation, proceed as follows:

1. Read the detailed programme and pay special attention to the activities and exercises (**writing 2 abstracts**, etc) so that you know in advance what you need to prepare and think about.
2. Read all literature before you arrive. There is no time to read during the Summer School. Make notes about what you don't understand, questions you would like to ask, things you want to discuss.
3. Check the programme to see if you are a discussant for one of the PhD presentations. Look at the guidelines for presenters, discussants and all others at the end of this document!
4. All mentioned time-slots are expressed in **Central European Summer Time (CEST)**, for conversation to your location and time zone please use websites such as: https://www.timeanddate.com
5. Please don't forget to attend the **welcome meeting 18 of August, 15.00 CEST**, prior to the start of the Summer School!

Attendance and cancellation

- *The Summer School will be a mediated, largely synchronous event.* In this context, attendance means being logged on with your camera on, as much as bandwidth allows. In order to prevent connection problems, we recommend to use a wired internet connection. Almost all modern routers allow for connections with a network cable. It also means participating in the asynchronous activities that we have included in the programme in order to limit screen fatigue.
- In order to receive credit for attending the Summer School, *you are required to be present throughout the entire event*. Only calamities are grounds to depart from this rule. If this creates problems, then please contact the coordinators beforehand and as soon as possible.
- On *Wednesday evening* there will be a social activity (we expect that this will be a pubquiz!)
- If, for any reason, you are unable to attend the Summer School, please let Elize Schiweck (e.schiweck@utwente.nl) know **as soon as you can**. We may be able to offer your place to someone on the waiting list if we know soon enough. If notice of cancellation is received more than 10 working days prior to the start of the Summer School, you will receive a refund for all of the fees, minus €250 to cover the costs of administration and course materials. In the case of cancellations received less than 10 working days before the start of the Summer School, fees and any other costs that have been incurred by WTMC will not be refunded.

Programme

0.1: 18-08, 15:00 – 16:00: Intro to the Summer school (ask any question, getting to know each other, intro to technicalities), ZOOM LINK

Time	Monday 23-08 ⇨ ZOOM LINK	Tuesday 24-08 ⇨ ZOOM LINK	Wednesday 25-08 ⇨ ZOOM LINK	Thursday 26-08 ⇨ ZOOM LINK	Friday 27-08 ⇨ ZOOM LINK
	Setting the stage	**Fraud and its Kin**	**Hegemonies**	**Epistemic Technologies**	**Normative Implications for Science and STS**
10.00-11.15	1.0 Welcome 1.1 Lecture Sergio Sismondo *Why Epistemic Corruption?*	2.1 Lecture Buhm Soon Park *Scientific fraud in historical context*	From 10.30-11.15 3.1 WTMC PhD business meeting	4.1 Lecture Marie-Andrée Jacob *Epistemic compromises in the study of retractions*	5.1 Lecture Sergio Sismondo *Thoughts on the Normative and Non-normative*
11.15-11.30	break	break		break	break
11.30-12.45/13:00	1.2 Exercise : abstract for scientific article Until 12.45	2.2 PhD Presentations 1 Until 13.00	3.2 PhD Presentations 2 Until 13.00	4.2 PhD Presentations 3 Until 13.00	5.2 Lecture Willem Halffman *Error and Indignation in science* Until 12.45
13.00-13.45	12.45-13.45 lunch	Shorter lunch	Shorter lunch	Shorter lunch	12.45-13.45 lunch
13.45-15.00	1.3 Lecture Daryn Lehoux *History and the Two-Way Problem of Epistemic Corruption*	2.3 Lecture Sergio Sismondo *Medical Ghostwriting?*	3.3 Lecture Sergio Sismondo *Big Pharma's Invisible Hands*	4.3 Lecture Sergio Sismondo *Corruption and Maintenance*	5.3 Exercise: abstract for website
15.00-15.30	break	break	3.4 Lecture Susan Greenhalgh *Why Coca-Cola Wants You to Exercise*	break	break
15.30-16.30	1.4 Core reading-small groups Small groups exercise	2.4 Skills training Publishing 1		4.4 Skills training Publishing 2 Your questions answered	5.4 Rounding off & farewells
16.30-16.45	Break	2.5 Podcast walk		4.5 Podcast walk	
16.45-17.15	1.4 Core reading Plenary discussion				
break					
19.30-21.00			3.5 19.30-21.00 pubquiz		

Introduction to the Summer School

Welcome to the Summer School. Together with our anchor teacher Sergio Sismondo, we will explore the theme of epistemic corruption. The exploration starts here, well before you arrive at the online event. This reader, together with some texts that you will have to collect yourself, provides the luggage for your journey. Travel well prepared!

It is advisable that you first carefully study the whole programme, before embarking on the actual reading. This should help you get a sense of the themes and how they connect, and how specific texts fit in those themes. The compulsory reading material amounts to (the equivalent of) roughly 520 pages, which at 8 pages per hour would take you about 65 hours to study. Also, some assignments require preparation, others require you to think about what you want to learn. And finally, we will have a number of participant presentations. Be sure to check whether you are assigned the role of discussant for one of them.

For each of you, the ideas and concepts discussed during the Summer School will have different kinds of relevance. This depends on your research topic and method, the phase you are currently in, and your personal interest. The Summer School is not a "one size fits nobody" event, and getting the most out of it does require some work. Make sure that you have in mind what you would like to learn, and how that can be achieved. In general, it is good practice to prepare one or more written questions about the reading material for each session. This helps focus your attention during lectures, and it ensures that you have something to contribute to the discussion, especially if you are not that eager by nature to join discussions. Of course, going with the flow and welcoming things the way they happen to come to you, is also an important mode of learning. So here we go.

Epistemic corruption

Knowledge production is associated with particular values and standards (truth, objectivity, impartiality, etc), and failure to conform to these are often prominently condemned as corruption of the scientific endeavour. 'Corruption' is used in a number of different senses, always pejoratively. The term is typically connected to accusations that actions, practices or institutions have become rotten or infected, failing to meet particular ideals or failing to perfectly reproduce past standards. In this summer school, we will examine epistemic corruption as closely related to issues of social order, especially social order within knowledge-producing communities, but also social order in knowledge-consuming communities. As such, epistemic corruption is not necessarily bound up with the moral failings of individual actors: People tend to think of corruption in moral terms, and as a result would think of epistemic corruption as involving immoral influences on the production of compromised knowledge.

True to STS sensibilities, we will, unlike the vast majority of research on corruption in most disciplines, recognize that actors do not necessarily agree on what constitutes corruption or which practices are cases of it. Therefore, we will balance between actors' (emic or etic) and analysts' (etic) understandings of corruption – recognizing that they do not always explicitly use the term 'corruption' – and balance between normative and non-normative understandings. This

exploration of epistemic corruption will feed a reflection on how aspirations and failings of knowledge production are constituted.

On Monday, we will explore what 'epistemic corruption' means for STS.
On Tuesday, we zoom in on fraud and medical ghost-writing as two practices of 'epistemic corruption' which have and still shape scientific knowledge production.
On Wednesday, we ask ourselves how companies, in particular in the fields of food and drug production, shape scientific knowledge claims.
On Thursday, we discuss possible responses to fraught and other forms of 'epistemic corruption'.
On Friday, we reflect upon the implications which different ways of studying 'epistemic corruption' might have for the wider field of STS.

We hope you will enjoy preparing for this Summer School and look forward to meeting you (again) in a few weeks!

Anne and Andreas

Detailed overview

Monday: Setting the Stage

1.1 Lecture Why epistemic corruption? Sergio Sismondo

This week, we will examine 'epistemic corruption', the corruption of knowledge and knowledge practices. The term 'corruption' is typically connected to accusations that actions, practices or institutions have become rotten or infected, failing to meet particular ideals or failing to perfectly reproduce past standards.

Questions about epistemic corruption are closely related to issues of social order, especially social order within knowledge-producing communities, but also social order in knowledge-consuming communities. As such, epistemic corruption is not necessarily bound up with the moral failings of individual actors.

True to STS sensibilities, we will, unlike most research on corruption more generally, recognize that actors do not necessarily agree on what constitutes corruption or which practices are cases of it. Therefore, we will balance between actors' (emic or etic) and analysts' (etic) understandings of corruption – recognizing that they do not always explicitly use the term 'corruption' – and balance between normative and non-normative understandings.

Readings

Oreskes N. and Conway E.M. (2008). Challenging knowledge: How climate science became a victim of the Cold War. In Proctor RN and Schiebinger L (eds) *Agnotology: The Making and Unmaking of Ignorance*. Stanford: Stanford University Press.

Hilgartner S. (1990). The dominant view of popularization: Conceptual problems, political uses. *Social Studies of Science* 20(3): 519-539.

1.2 Lecture, History and the Two-Way Problem of Epistemic Corruption, Daryn Lehoux

There is a fundamental tension that inheres in all historical investigation: the historian, very much a product of their own temporal and cultural contexts, is tasked with recovering as rich a picture as possible of a distant and very different historical context without corrupting that historical context with any flotsam and jetsam of their own, modern, world view. The extent to which this is possible has been much debated, but the idea of avoiding what has been called 'presentism' has served as a kind of universal lodestar for the profession for most of the last century. I will argue that there are two problems of epistemic corruption that emerge from this: on the one hand there is the laudable attempt—but strict asymptotic impossibility—of avoiding the corruption of history by our own interests and classifications. On the other hand, there are pressing modern concerns whose histories we want to understand, even if historical actors did not have those same categories or concerns. When Aristotle's work on biological inheritance theory says that 'the birth of a female is the first order of monstrosity,' we see the naturalization of a set of Athenian cultural institutions that, from our modern perspective, caused a great deal of damage to a great number of individuals

and civilizations, up to and including our own day. Similarly, premodern ideas about the naturalization of race and racial character also introduced what we might call a kind of poison pill into the discourse of the historical sciences, corrupting the knowledge-stream through time, and insidiously reaching out from the history of biology into philosophy, culture, politics, religion, and more. But to call out these poison pills is to set aside explicit concerns about presentism in favour of focusing on the roots of some of our most deeply-seated, modern, social ills.

Recognition of something like this tension has very recently moved historians of science— and almost exclusively historians of science—to argue that their subjects of study are to a certain extent immune to the problems of presentism, since what they study consists at least partly of immutable phenomena: the phenomena of nature. Biological inheritance, the calcination of metals, and the movement of Mercury, work in fundamentally the same ways now as they did in 100 BCE, or so the argument goes. I will argue that such a move is insufficient to stave off all of the problems of corruption that historians of science want to keep at bay, and yet at the same time, that may not be a bad thing.

Readings

Loison, Laurent. 2016. 'Forms of Presentism in the History of Science. Rethinking the Project of Historical Epistemology'. *Studies in History and Philosophy of Science Part A* 60 (December): 29–37. https://doi.org/10.1016/j.shpsa.2016.09.002.

McCoskey, Denise Eileen. 2012. *Race: Antiquity and Its Legacy*. 1st edition. Oxford ; New York: Oxford University Press.

Robinson, C. A. 1939. 'Race Mixture among the Greeks before Alexander. Aubrey Diller'. *Classical Philology* 34 (2): 184–86. https://doi.org/10.1086/362245.

1.3 Exercise: Abstract for Scientific Article

This exercise will help develop your writing abilities. In order to prepare this session, please bring an abstract of a chapter or paper you are currently working on to the summer school. Please do not reuse abstracts of a paper/chapter that you have already submitted to a journal or a publisher. This session is really meant to discuss abstracts of work in progress, either evolving papers and or dissertation chapters. **When composing your abstract please keep a word limit of 250-300 words in mind**. This exercise will consist of two parts: during the first part, you will get the opportunity (in small groups) to comment on abstracts which fellow-PhDs have written. During the second part of the session, we will collect the outcome of your discussions and enrich it with our experiences. There is no need to send us your abstract beforehand. The only important thing is to have your abstract ready when the summer school starts.

1.4 Core reading-small groups: The Mangle of Practice (A. Pickering)

In this session, we will have a closer look at the book *The Mangle of Practice* (2010) by Andrew Pickering. We will read the first chapter only. The discussion will proceed first in small groups and

then later in a larger setting. Please come prepared to share your insights and questions about the text. Here some questions to orient your reading. You may decide to use them in the small group discussions or focus on your own questions.

1. One of the aims of this book is to address the dilemma of agency in sociology of science and STS, and to propose an alternative to giving humans too much agency, to giving them too little, or to ignoring the role of non-humans. Two metaphors are prominent in putting forth an alternative view that considers both the intersection of human and non-human agency, and what can emerge from their interactions: the 'dance of agency' and the 'mangle'. How are these metaphors useful? How do they contrast with other metaphors to characterize agency that you have encountered?
2. Pickering claims that he will show how "scientific knowledge is objective, relative, and historical, all at once". What kind of project is this? If you consider that the 'science wars' were raging in the 90s, how does this statement position Pickering's work?
3. Pickering is an advocate of "achieving a *real-time* understanding of scientific practice" (14). To what extent is such a perspective on scientific practice with a distinct temporal focus beneficial to te study of 'epistemic corruption'?
4. Post-humanism is one of the labels that Pickering happily embraces. How does this position relate to the topics of (moral) responsibility, authenticity and accountability that we will explore in the summer school?

Readings

Pickering, Andrew. 1995. *The Mangle of Practice: Time, Agency, and Science*. 1 edition. Chicago: University of Chicago Press. Chapter 1 ONLY (34 pages).

Gieryn, Tom. 1996. 'The Mangle of Practice: Time, Agency, and Science. Andrew Pickering'. *American Journal of Sociology* 102 (2): 599–601. https://doi.org/10.1086/230963.

1.5 Core Reading Plenary

In this session, each group will get the chance to share the highlights of their discussion. We will also explore how the core reading relates to the topics of the summer school.

Tuesday: Fraud and Its Kin

2.1 Lecture Scientific fraud in historical context, Buhm Soon Park

What is fraud in science? How does it differ from error? These questions are not simply about the identification of individual wrongdoings – e.g., plagiarism, falsification, and fabrication – but about the practice *and* at times the production of cultural norms within an institution, a community, or a society. This lecture explores the sociotechnical construction of scientific fraud in historical context. Examining the controversial cases of Galilei Galileo, Louis Pasteur, Gregor Mendel, Robert Millikan, and David Baltimore, we discuss how historical actors' category of fraud may not

always coincide with historians' category and how to do about this temporality of fraud. We also look into the contemporary fraud cases in stem-cell research that took place in Korea and Japan. These cases will illuminate not only the interplay between science, politics, and national pride but also the issues of replication, authorship, and responsibility.

Readings

Buhm Soon Park, "Making matters of fraud: Sociomaterial technology in the case of Hwang and Schatten," *History of Science*, 2020, 48(4): 393-416 https://doi.org/10.1177/0073275320921687

Sheila Jasanoff, "Not proven: Truth by exhaustion in the Baltimore case," *Isis*, 1999, 90: 781–3

Dana Goodyear, "The stress test: Rivalries, intrigue, and fraud in the world of stem-cell research, " *New Yorker* (Feb. 21, 2016) https://www.newyorker.com/magazine/2016/02/29/the-stem-cell-scandal

2.2 PhD Presentations 1

1. Presenter: Annemarie Horn, respondent: Georgiana Kotsou
2. Presenter: Chiara Carboni, respondent: Mike Grijseels
3. Presenter: Isak Engdahl, respondent: Florian Helfrich

Important: See the guidelines for presentations at the end of this document.

2.3 Lecture, Medical ghostwriting, Sergio Sismondo

Over the past twenty years, there has been an increasing recognition that a significant number of articles in medical journals are ghostwritten, and that often their listed authors have had little to do with the research or analysis behind, or the writing of, these articles. This is, of course, something of a scandal. Authors who put their names on ghostwritten articles are clearly doing something unethical, and as a group have been castigated.

Anticipating tomorrow's session, we can see ghostwriting as part of larger structures corrupting medicine. The pharmaceutical industry produces an abundance of information and knowledge. To gain the largest scientific impact and market value from research, drug companies produce suites of articles, typically to be authored by independent medical researchers. Pharmaceutical company statisticians, reviewers from a diverse array of company departments, medical writers, and publication planners are only rarely acknowledged in journal publications, and company scientists only sometimes acknowledged. The public knowledge that results from this *ghost-managed* research and publication is a marketing tool, providing bases for continuing medical education, buttressing sales pitches, and contributing to medical common sense and further research.

Readings

Gøtzsche PC, Kassirer JP, Woolley KL et al. (2009). What should be done to tackle ghostwriting in the medical literature (*PLoS Medicine* debate). *PLoS Medicine* 6(2): e1000023. https://doi.org/10.1371/journal.pmed.1000023

Sismondo S (2018) Ghosts in the machine: Publication planning 101. In: *Ghost-Managed Medicine: Big Pharma's Invisible Hands*, Ch. 3 (pp. 64-90). Mattering Press. Available at: https://www.matteringpress.org/books/ghost-managed-medicine

2.4 Skills training Publishing 1, Sergio Sismondo

In this session, our anchor teacher who has extensive editorial experience will share some of his insights and advice on publishing.

2.5 Podcast walk

Get moving! Go for a walk with a podcast of your choice (we will suggest one at the start of the summer school).

Wednesday: Hegemonies

3.1 Business meeting WTMC PhDs

During this meeting, all participants who are currently registered as WTMC PhDs are invited to discuss issues specific to this group, such as representation in the Board of WTMC and in the Education Committee.

3.2. PhD Presentations 2

1. Presenter: Joyce Hoek, respondent: Maja Urbanczyk
2. Presenter: Lea Beiermann, respondent: Mariia Denisova
3. Presenter: Yingying Han, respondent: Lea Lösch

3.3 Lecture, Big Pharma's invisible hands, Sergio Sismondo

Pharmaceutical companies employ a variety of strategies to establish influence and even hegemony over domains of medical knowledge: marketing products via medical research and education. I survey some approaches to shaping terrains on which claims are produced, distributed and consumed, and thus show how medical knowledge and knowledge systems are corrupted. For

example, the doctors and researchers with whom companies engage most closely are generally termed key opinion leaders (KOLs). In addition to authoring manuscripts, KOLs serve companies in a number of roles, but most prominent is as speakers – at professional meetings, in after-dinner similar settings arranged by sales representatives, and in continuing medical education courses, which doctors must take to keep their licenses. Research, education, and marketing, then, are often fused.

Although the ghost-management of knowledge is probably best-developed in the pharmaceutical industry, we can find elements and analogues of it in other industries, such as the food, tobacco and chemical industries.

Readings

Penders B and Nelis AP (2011) Credibility engineering in the food industry: Linking science, regulation, and marketing in a corporate context. *Science in Context* 24(4): 487-515.

Proctor RN (2006) "Everyone knew but no one had proof": Tobacco industry use of medical history expertise in US courts, 1990-2002. *Tobacco Control* 15(Suppl IV): 117-125.

Sismondo S (2018) Power and knowledge in drug marketing. In: *Ghost-Managed Medicine: Big Pharma's Invisible Hands*, Ch. 1 (pp. 7-30 only). Mattering Press. Available at: https://www.matteringpress.org/books/ghost-managed-medicine

3.4 Lecture, Why Coca-Cola Wants You to Exercise: The Social Organization and Effects of Epistemic Corruption in Nutritional Science, Susan Greenhalgh

A growing body of work has uncovered big pharma's vast schemes to corrupt medical science. Until recently, parallel efforts by big food have remained invisible. In 2015 Coca-Cola got caught funding scientists to blame obesity on inactivity, not poor diets. The public health community responded with moral condemnation. STS sees epistemic corruption as a product not of moral failing, but of humanly designed institutions and practices shot through with competing moralities. In this lecture, I draw on long-term research on the processed food industry's efforts to create an industry-friendly science of nutrition, physical exercise, and chronic illness. We analyze the workings of the industry's highly secretive, global "scientific nonprofit," teasing out the institutional dynamics and knowledge practices by which a corporate science of nutrition is simultaneously normalized – made to appear like standard science -- and invisibilized, so that its success in shaping obesity policy around the world goes unnoticed. We end with a discussion of the methodological challenges that face STS scholars wishing to pursue research on the shadowy, high-stakes, hyper-sensitive worlds of corporate science.

Readings
Readings (to be read in this order, if possible):

O'Connor, Anahad. 2015. Coca-Cola Funds Scientists Who Shift Blame for Obesity Away from Bad Diets. New York Times, August 15.

https://well.blogs.nytimes.com/2015/08/09/coca-cola-funds-scientists-who-shift-blame-for-obesity-away-from-bad-diets/

Nestle, Marion. 2018. The Unusual Complexity of Nutrition Research. In Unsavory Truth: How Food Companies Skew the Science of What We Eat. New York: Basic, pp. 29-43.

Greenhalgh, Susan. 2021. Inside ILSI: How Coca-Cola, Working through Its Scientific Nonprofit, Created a Global Science of Exercise for Obesity and Got It Embedded in Chinese Policy (1995–2015). Journal of Health Politics, Policy and Law 46 (2): 235–276. https://doi.org/10.1215/03616878-8802174

3.5 Pub Quiz

This event is an opportunity to have some fun together and to enjoy some informal banter. It will be organized by De Toeter. More information will be sent by email.

Thursday: Epistemic Technologies

4.1 Lecture, Epistemic compromises in the study of retractions, Marie-Andrée Jacob

In this presentation we explore the study of retractions and other reparations to 'epistemic corruption' in scientific research. The research integrity literature is fraught with discussion of what constitutes 'research misconduct,' but this presentation moves the spotlight on the work of those tasked to detect and correct it. I will discuss what a socio-legal history of retractions might look like, focusing on problems of comparison, anachronism, and analogy. Such socio-legal history offers a layered, differentiated approach to the governance of research, but it is also inevitably compromised from the start, and we will examine why. I will explore how retraction can be an object of study but also a tool to better understand adulteration, repair, and integrity. In turn, I hope to interrogate compromise in two ways: to expand our understanding of 'epistemic corruption,' and to show how the negotiation of compromise is an epistemic dividend, not an anomaly in the study of legal and other forms of expert knowledge.

Readings

Ivan Oransky, 'Retraction Watch: What We've Learned and How Metrics Play a Role', in Mario Biagioli and Alexandra Lippman, eds *Gaming the Metrics: Misconduct and Manipulation in Academic Research*, The MIT Press, 2020, 141-146.

Ann Laura Stoler, Colonial Archives and the arts of governance (2002) 2 *Archival Science* 87–109.

M-A Jacob, 'Under repair: a publication ethics and research record in the making' (2019) 49:1 *Social Studies of Science* 77–101

4.2 PhD Presentations 3

1. Presenter: Jing Wang, respondent: Denise Petzold
2. Presenter: Michiel Bron, respondent: Joyce Hoek
3. Presenter: Aamina Teladia, respondent: Tessa Roedema

4.3 Lecture, Policing, maintenance and repair, Sergio Sismondo

Ordinary corruption is met by efforts at prevention and policing. In this presentation, I ask about the ways and extents to which there are analogous activities in epistemic contexts.

It is generally assumed that there is are enormous incentives for corruption in economic, political and similar domains. It seems that, while the incentives in the sciences and other epistemic realms may be smaller, there also is an assumption that corruption is or could be common – even a game of broken telephone shows that information is extremely vulnerable to corruption. For that reason, there is abundant, mostly informal, policing of epistemic practices and products. We also can find maintenance and repair around the corruption of information, flows of knowledge, and knowledge practices.

In policing, maintenance and repair we can see articulations of lines between the acceptable and the corrupt. We also can see articulations of appropriate and inappropriate responses. The readings and this lecture explore these in the context of current social and other media.

Readings

Paris B and Donovan J (2019). Deepfakes and cheap fakes: The manipulation of audio and visual evidence. *Data & Society*. Available at: https://datasociety.net/wp-content/uploads/2019/09/DS_Deepfakes_Cheap_FakesFinal-1-1.pdf (only up to page 23.)

Gillespie T (2018) Moderation is the commodity. *Techdirt*, Feb. 6. Available at: https://www.techdirt.com/articles/20180206/09403839164/moderation-is-commodity.shtml

Marres N (2018) Why we can't have our facts back. *Engaging Science, Technology, and Society* 4 (2018), 423-443.

4.4 Skills training Publishing 2, Sergio Sismondo.

During this session Sergio Sismondo will answer your questions which you have with respect to publishing in academic journals.

4.5 Podcast walk

Get moving! Go for a walk with a podcast of your choice (we will suggest one at the start of the summer school).

Friday: Normative Implications for Science and STS

5.1 Lecture, Thoughts on the normative and non-normative, Sergio Sismondo

We have seen both normative and non-normative approaches to the study of epistemic corruption. Some of the readings and lectures have described instances of corruption, and others have described narratives of corruption. The former have embodied a range of kinds of normative stances, stances may be more or less compatible with STS's standard methodological and theoretical approaches. Such contrasts should have set the stage for a robust discussion of the value of the 'epistemic corruption' concept in STS.

Reading

Bloor D (1978) Polyhedra and the Abominations of Leviticus. *The British Journal for the History of Science* 11(3): 245-266.

5.2 Lecture, Error and indignation in science: Epistemic activists and us, Willem Halffman

When social studies of science pointed out how social processes affect the contents of scientific knowledge, many scientists perceived this as a delegitimising accusation. In the scientific ethos, there is a strong belief that conflict, power, culture, or organisational concerns are epiphenomenal to science: they constitute the dirt that will inevitably be transcended by correct scientific knowledge. In this view, sociologists of scientific knowledge were relativist muckrakers, soiling the academic nest, unjustly putting gossip and human frailty centre stage where the wonders of science should be.

Meanwhile, a new generation of critical scientists have stood up to question the epistemic practices in their research fields. Critical of blatant error, failure to correct such error, or shocked by thwarted epistemic ideals such as reproducibility, these 'epistemic activists' have gone to great lengths to demonstrate systematic shortcomings in their epistemic cultures. Sometimes at great personal cost, they are undertaking a networked effort to clean up and radically improve research practices, scientific communication, and reinvigorate research values. Clearly, for these activists, the social structures of science matter very much for the contents of knowledge, although in an all but relativist stance: correct knowledge is failing to transcend dirty practice, prompting a need for radical reform.

I will argue that the epistemic activists are an interesting and challenging companion for science studies in several ways. Their concern for wide-spread failure of error correction or the failures in the research publication system, should concern us as fellow researchers. Inversely, science studies offer a wealth of knowledge about epistemic cultures and their organisation that can help achieve some of the improvements the epistemic activists are trying to achieve (of which I will offer some examples from our own research). At the same time, science studies need to remain a critical partner in this effort, such as by pointing out some of the dangers in the recipes and expectations wielded by the reformers. These include puritan tendencies to enforce textbook idealisations of research, over-stretched reliance on regulatory fixes leading to bureaucratisation, or methodological fundamentalism that endangers the epistemic diversity of the sciences. Such a critical partnership puts 'us' neither 'in' nor 'out', but prompts a critical dialogue that may also question our own practices of accountability, communication, methodological transparency, or even error correction.

Reading

Peterson, D., & Panofsky, A. (2020, August 4). Metascience as a scientific social movement. https://doi.org/10.31235/osf.io/4dsqa

Rekdal, O. B. (2014). Academic urban legends. *Social Studies of Science, 44*(4), 638-654. Doi 10.1177/0306312714535679

5.3 Exercise Abstract for website (for popular audience), NN

In this second session of the writing exercise, we will consider how an abstract or summary might need to be different if it is published on a website, for a less specialized audience. In order to prepare this session, please write a short text in which you explain a general audience the main points of paper or a dissertation chapter you have already finished. For this exercise it is perfectly fine to rely on finished work. When working on your text for a popular audience please keep a page limit of **1 page in mind**. This exercise will consist of two parts: during the first part, you will get the opportunity (in small groups) to comment on texts that fellow-PhDs have written. During the second part of the session, we will collect the outcome of your discussions. Moreover, you will receive additional feedback from a science journalist. There is no need to send us your text beforehand. The only important thing is to have your text ready when the summer school starts.

5.4 Closing and Farewells

We will end the week with a wrap-up of the main themes of the week, and consider how to take our learning forward.

Lecturers

Sergio Sismondo does research in Science and Technology Studies at intersections of philosophy and sociology of science. Recently he has been studying the nature and distribution of pharmaceutical research, seeing this as a project in the political economy of knowledge. In addition to many articles, he is the author of *Ghost-Managed Medicine: Big Pharma's Invisible Hands* (Mattering, 2018), *An Introduction to Science and Technology Studies* (2nd edition Wiley-Blackwell, 2010), and co-author with physicist Boris Castel of *The Art of Science* (Broadview, 2003). Sismondo is currently editor of the journal *Social Studies of Science*, one of the flagship journals in Science and Technology Studies.

Daryn Lehoux is Professor of Philosophy and Professor of Classics at Queen's University. He is the author of Creatures Born of Mud and Slime: The Wonder and Complexity of Spontaneous Generation (Johns Hopkins, 2017), What Did the Romans Know? An Inquiry into Science and Worldmaking (Chicago, 2012), and Astronomy, Weather, and Calendars in the Ancient World (Cambridge, 2007).

Buhm Soon Park is Professor in the Graduate School of Science and Technology Policy at KAIST (Korea Advanced Institute of Science and Technology) and Director of the Center for Anthropocene Studies. His specialty is in the history of twentieth-century science and policy in the US and in East Asia. He takes a historical and comparative approach to analyze the ways in which new scientific disciplines and technological systems emerge, grow, and change in society. He has numerous publications on the cases of quantum chemistry, synthetic biology, stem-cell research, and the US National Institutes of Health. He has coauthored a book on the history of basic science in Korea and has coedited a book on how Asian countries sought to fill the technology gap with the West. His recent research explores the Anthropocene concept as a tool to understand the geohistorical transformation of East Asian countries during the modernization processes. Professor Park received his PhD in the history of science from Johns Hopkins University (1999), and spent a year at the Harvard Kennedy School's STS Program as a senior visiting research fellow (2017). He is an elected Fellow of the Korean Academy of Science and Technology.

Susan Greenhalgh is John K. and Wilma C. Fairbank Research Professor of Chinese Society in the Anthropology Department of Harvard University. Her work deals with biopolitics and the intertanglings of state/market/science in the US and China. Author of Just One Child: Science and Policy in Deng's China and Fat-talk Nation: The Human Costs of America's War on Fat, co-author of Governing China's Population: From Leninist to Neoliberal Biopolitics, and co-editor most recently of Can Science and Technology Save China?, she is currently writing a book on the subjects of this lecture.

Marie-Andrée Jacob joined the University of Leeds in 2019 having previously worked at Keele University and before that at the Université du Québec à Montréal. Her socio-legal work is interdisciplinary, drawing on ethnographic and more recently archival methods. She is generally interested in activities that sit on the border between legality and illegality. Her book *Matching Organs with Donors: legality and kinship in transplants* was published in 2012 by the University of Pennsylvania Press in their Contemporary Ethnography series.

Building on this earlier work on on medical regulation and professional norms, her current research explores the category of research integrity in different settings, mainly in the documentation of research regulation and research conduct adjudication, but also during live interactions. As part of this project she has been conducting ethnographic observations in the Committee on Publication Ethics (COPE), an international charity assisting editors and publishers to handle allegations of research misconduct. She has extended her ethnographic methods to the study of documents, having turned her attention to the casework of the General Medical Council as well as Medical Research Council archives, going back to the mid-nineteenth century.

Willem Halffman is associate professor at the Institute for Science in Society at the science faculty of Radboud University. He lectures on science and public policy, and history, philosophy and ethics of science to natural scientists. He is also associate member of the Centre for Science, Knowledge and Policy (SKAPE) at Edinburgh University.

With a background in sociology, science and technology studies, and policy science, he has studied the long-term co-construction of science and policy in environmental regulatory regimes, relating the construction of expertise to constitutional features of decision-making processes. This research line, and a strong interest in teaching interpretive policy science and STS to natural scientists, culminated in the 2019 book *Environmental Expertise* (with Esther Turnhout and Willemijn Tuinstra).

A later research interest concerns institutional responses to research integrity (the EU Printeger project), misconduct and research error. This has resulted in close cooperation with natural scientists to investigate the extent and distribution of error, specifically in misidentified biomedical research materials. This work will continue in the ERC Synergy project NanoBubbles, studying the rise and persistence of hypes and error in nanobiology.

As an activist, he has been involved in the challenge of managerialism, precarity and economisation at universities, with the 'Academic Manifesto' (with Hans Radder) and the Dutch reform of universities movement (H.NU, and more recently WOinActie).

About the coordinators

Anne Beaulieu is professor of Knowledge Infrastructures and director of the Data Research Centre at the University of Groningen. At Campus Fryslân, she works on creating knowledge infrastructures for sustainability and is responsible for the major Responsible Planet in the programme Global Responsibility and Leadership. She has co-edited the books *Virtual Knowledge: Experimenting in the Humanities and Social Sciences* and *Smart Grids from a Global Perspective*. She is the co-founder of the Groningen Energy Summer School for PhDs and acted as one of its scientific directors for 6 years. She is a member of the Board of Studium Generale Groningen and of the NIAS-Lorentz Advisory Board. Her book *A Critical Introduction to Data and Society* with Sabina Leonelli will appear in November 2021.

Andreas Weber is assistant professor of **Science, Technology and Culture** at the University of Twente. Andreas has a special interest in the history of natural history and chemistry in insular Southeast Asia and Europe. This includes research into how computational technologies can be used to increase access to and learn from biodiversity heritage collections gathered in former colonial areas. His research in the digital heritage domain also allows him to reflect upon how the growing use of computational technologies impacts research in the humanities, and, more generally, our understanding of culture and technology in society. Andreas holds a MA degree (2005) and a PhD (2012), both from Leiden University. In 2015-2016, Andreas was a John C. Haas fellow of the Science History Institute in Philadelphia. Most recent publications of Andreas include '*Natural History Collections and Empire*', in: *The Routledge Handbook of Science and Empire* (2021) and 'Material Sensibilities: Writing Paper and Chemistry in the Netherlands and beyond, ca. 1800', in: *The Paper Trade in Early Modern Europe* (2021).

Participants

No.	First name	Surname	University/Organisation	What is the topic of your research (5 lines)?
1	Michiel	Bron	Maastricht University	My research focusses on the involvement of oil actors with the development of nuclear energy, from 1945 to 1985. The leading question is how different incumbents of the oil regime interacted with the emerging nuclear technology in the context of questions about sustainability of fossil fuels in the long term.
2	Aamina	Teladia	University of Groningen	My research is focused on the key factors that drive a sustainable energy transition. The current factor of focus is the role of citizen participation in heat transitions in Groningen
3	Annemarie	Horn	Vrije Universiteit Amsterdam	I conduct action research into inter- and transdisciplinary collaboration and knowledge integration. We design and continuously evaluate master level courses in which students from diverse backgrounds collaborate to work on complex societal issues. I study how they develop and can be supported to develop competencies for inter- and transdisciplinarity. This includes epistemic awareness, reflectivity, and the ability to engage in dialogical communication.
4	Denise	Petzold	Maastricht University	With the help of STS and Museum Studies, I aim to understand how the heritage of classical music is made obdurate through and within different musical practices. Subsequently, I ask how this heritage can be 'opened up' in order for musical institutions to address the tension between the current drive for innovation in the classical music landscape and the conservation of its artistic heritage. My project is positioned in the Maastricht Centre for the Innovation of Classical Music (MCICM).
5	Lea	Beiermann	Maastricht University	Lea's PhD project investigates the history of microscopy in the mid- and late nineteenth century. It looks at how microscopists built and used information infrastructures to share their knowledge of microscopy.
6	André	Brasil	Leiden University	In order to contribute to the continuous evolution of assessment practices of the Brazilian System of Research and Graduate Education, my research combines Scientometrics and Public Policy in order to upgrade the current evaluation model adopted, valuing the country's strengths while acknowledging and addressing its weaknesses.
7	Yingying	Han	Institute for Science in Society (iSiS)	Validity and integrity in neuroscience
8	Jing	Wang	Radboud University	My research aims to understand how the notion of research quality is framed in different countries, and in the Chinese publication system in particular. Specifically, we explore different stakeholders' knowledge about journal quality, how do they classify the quality of journals into different levels, and how do they use 'journal quality' as a proxy used in research assessment and rewards.
9	Georgiana	Kotsou	Maastricht University	My research examines the forms and functions of the conference culture that emerged in the course of the 20th century. It follows a set of conferences to study their rituals: speeches, dinners, excursions, opening ceremonies, as well as the roles of spouses, students, and dress-codes. The focus is on chemistry as a 'typical', yet war-torn, discipline. In addition to the usual sources of conflict, including theoretical disputes and priority claims, chemistry was plagued by rifts over the balance of industrial and academic interests, and the passionately experienced national antagonisms.
10	Maja	Urbanczyk	NTNU	My research is about non-knowledge and ignorance in decision-making processes. I specifically look into software implementation processes, that concern big parts of society, such as the implementation of Corona contact tracing apps. Through understanding such processes, I want to contribute to provide epistemic justice.
11	Timo	Maas	PBL / Wageningen University & Research	My research studies how science-policy arrangements operate in practice. How do they try to ensure their effectiveness and legitimacy, and how might these be improved in order to address contemporary socio-ecological challenges? I investigate these questions using cases from my daily work at PBL Netherlands Environmental Assessment Agency.

12	Tessa	Roedema	Vrije Universiteit Amsterdam	My PhD thesis is part of the European RETHINK-project. In an action-oriented research, we aim for a transformation of the science communication ecosystem. We focus on the sensemaking processes of citizens on public dialogues on science and the role of science communicators herein.
13	Florian	Helfrich	University of Twente	Investigating the governance of socio-technical transformations, examining the implementation of blockchain-based platforms and infrastructures for energy markets and local communities. It will be analysed how the technical construction and implementation of such infrastructures develop with relation to interactions and social relations between energy providers, governing institutions and local communities.
14	Irene	Niet	TU/e	Governance of AI in the Dutch electricity system.
15	Joyce	Hoek	University of Groningen	Before a new medicine can be used by patients, it needs to be approved by a regulatory authority. They assess the clinical evidence and determine if the benefits of the drug outweigh its risks. I am studying how this decision-making works in practice through observations and interviews.
16	Lotje	Siffels	Radboud University	My PhD is part of the 'Digital Good'-project, which investigates the 'Googlization of health'. Consumer tech companies are increasingly getting involved in the health domain. This project aims to investigate the different conceptions of the common good that are at stake in these new partnerships and to provide a normative framework for these new collaborations. Through the method of pragmatic sociology, I hope to provide a map of Orders of Worth that are mobilized in this domain.
17	Isak	Engdahl	Lund University	I'll be part of a new project team starting in August that explores how new types of visual evidence are used in various situations (courtrooms, policing, excavation sites). My task is to perform an ethnography of engineering work and follow the ways in which they build and tune algorithms used for visualization systems. Is the 'ethical turn' in machine learning and artificial intelligence communities an implication of epistemic corruption?
18	Mariia	Denisova	Maastricht University	My research concerns the operation of private health care in Russia. I ask, how are these private health care spaces enabled in the uncertain environment of Russian health care and how do the specific organizational-epistemic characteristics of those private spaces relate to the provision of care. To answer these questions, I deploy STS and informality studies literature.
19	Anneke	Boersma	VU Amsterdam	My research will cover the topic of the dietary shift in regards to meat consumption. Currently I am working on the values and valuation practices within food movements.
20	Lea	Loesch	VU Amsterdam	My PhD research centres around innovating the inclusion of values and experience-based knowledge in vaccination guidelines by using automated text analysis methods. I explore how these AI-based methods may provide an innovative way to access citizens', patient's and health professionals' practical experiences and value judgements and to translate them into robust knowledge that can be integrated into the development of vaccination guidelines through participatory methods.
21	Chiara	Carboni	Erasmus University Rotterdam	My research focuses on the changes in professional practices afforded by digital healthcare technologies. I am currently conducting a case study on distributed seeing and invisible work in digital pathology practices.
22	Gijs	Steinmann	Erasmus School of Health Policy & Management	The implementation/development of value-based health care (VBHC) in the Netherlands. VBHC can be seen as a particular approach to quality improvement in health care. Nowadays, its uptake is remarkable, yet VBHC is not a clear-cut concept, but surrounded by ambiguity.
23	Lucas	Bechoux	University of Liège	In the context of my PhD research, I question the influence of the pharmaceutical industry on the medical research and training in Belgium. Interactions between physicians and industry can be a fertile ground for various influences that may lead to corruption. In medicine, influence and COI are systemic in a sector characterized by the scarcity of public resources on one hand and by a competition between economic actors on the other. Means of influence are varied: KOLs, shaping guideline, funding trials, etc.
24	Mike	Grijseels	Vrije Universiteit Amsterdam	My research is on inclusive technologies. I study how we can use technology to improve inclusion of people with disabilities in the workplace. I do this by following experimental pilots in a learning evaluation based on reflexive monitoring in action.

25	Margot	Kersing	Erasmus University	The use of (big) data in the local social domain, more specifically what responsibility practices frontline bureaucrats develop when they use data in their work.
26	Callum	Gunn	VU Amsterdam	Reflexive valuation of health technologies. Examines how reflexivity can be embedded within the knowledge infrastructures of institutional health technology valuation. Draws on an interventionist study of patient engagement in medicines development and health technology assessment (IMI-PARADIGM project).
27	Sarahanne	Field	University of Groningen	The sociology of open science
28	Junzhe	Lin	University of Groningen	My research examines the global circulation of the psychiatric phenomenon "neurasthenia" between China and the United States. From the perspective of STS, the study traces the development of neurasthenia from the "American disease" at the beginning of 20th century to a Chinese "culture-bound syndrome" by the end of the century. Through the case study, I intend to provide a historical, theoretical and critical study of translation between different knowledge systems.

PhD Presentation guidelines

For presenters

- Send the title & summary of your presentation to the discussant assigned to you at least 1 week before the summer school.
- Zoom allows you to share your screen and presentation.
- The duration of your presentation should be **15 minutes**. Then there is another **15 minutes** for the discussant and plenary discussion. We keep time very strictly.
- Try to make a sophisticated choice on what you want to present. One typical pitfall is wanting to give an overview of your whole PhD project, which leads to an unfocused and overloaded presentation. Rather select an interesting aspect of your research and discuss it in-depth.

For discussants

- Make sure you receive the title & summary of the presentation at least 1 week before the summer school. Contact the presenter if needed.
- Present your comments in **5 minutes** max.
- Mind that being a discussant is not about pointing out all the flaws in the presenter's argument, but about setting the stage for a constructive discussion. Offering critique is good, but also try to bring out what the potentials of the argument are for improvement, and to identify some questions for the speaker or the group as a whole.
- You may want to get in touch with the presenter to prepare some comments. Feedback should address the quality of the presentation itself (slides, clarity, focus) as well as its content.

All others

- Listen carefully and attentively to the presentation.
- Please fill in a **feedback form** for each presentation. They can be found at the end of the reader. They will be collected and given to the presenter.
- Join the discussion after the discussant has given their feedback.
- Chances are that there is not enough time to discuss all questions from the audience. Please write them down. Even without discussion, your questions might be very valuable for the presenter!

Feedback on Presentations

This time around, we will not be using paper forms to provide feedback but will use a digital form. More details to follow.

Points to consider when preparing feedback (you don't need to cover everything):

- Attractiveness of title and opening
- Usefulness of summary provided in the reader
- Clarity and significance of problem definition, research questions and aims (refinement of, addition to, clarification or rejection of an existing thesis)
- Use of theory and/or historiography (concepts, interpretations, etc.)
- Embeddedness in fields relevant to WTMC
- Clarity of structure
- Presentation of the method(s) employed
- Validity and reliability of the method(s) employed
- Accessibility of the research data to the audience
- Use of (intriguing and relevant) details and examples
- Clarity of argument
- Relation to the nature and level of expertise of audience
- Use of PowerPoint and other audio-visual resources
- Contact with audience and audibility of speech
- Clarity and significance of conclusions
- Response to questions and comments
- Time management