



Contested Expertise: Trust in Science and Technology

9th Gewina Meeting of Historians of Science
in the Low Countries

hosted by Andreas Weber, Abel Streefland, Fokko Jan
Dijksterhuis, Tim Overkempe, Marijn Prakke

Woudschoten Conference Center, Zeist, 17-18 June 2022

Gewina Belgisch-Nederlands genootschap
voor wetenschaps- en universiteitsgeschiedenis
Société Belgo-Néerlandaise pour l'histoire des
sciences et des universités



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Welcome

Welcome to the conference!

If there is anything that the Covid-19 pandemic has shown, it is that social trust in science and technology is not self-evident. Expert claims about the severity of the disease and the dynamics of infection are met with scepticisms and sometimes outright dismissal. This distrust is a sign of a broader development since the late twentieth century, in which expert knowledge seems to be losing ground in society. Knowledge institutions, such as universities, expert agencies and other professional mediators are under pressure as part of a more general sentiment to question foundations of 'modern' Western science and technology. At the same time, the humanities and social sciences face crises of trust in the form of the decolonization debate and the replication crisis. An overall crisis of trust in scientific knowledge (broadly conceived!) looms large. However, trust in these institutions and their knowledge practices has never been natural. Modern knowledge institutions rose to prominence in the early modern period and did so at the expense of other institutions such as guilds, churches, and the republic of letters. Scientific knowledge acquired social and cultural status at the expense of artisanal knowledge; disciplinary experts marginalized the polymath scholar. Trust had to be gained, and it has had to be continually maintained. The current crisis puts new pressure on the status of science and technology and the question what the response will be.

We want to thank you for your enthusiastic response to the call for papers and look forward to your presentations. A special thanks is due to our volunteer conference assistants and to our sponsors – the Descartes Centre at Utrecht University, GEWINA – Belgian-Dutch Society for the History of Science and University, Huygens Institute, the Vossius Centre for the History of Humanities and Science at the University of Amsterdam, Brill Publishers and Brepols Publishers without whom organizing this conference would have been much more complicated, both financially and practically.

The organizing committee,

Andreas Weber, Abel Streefland, Fokko Jan Dijksterhuis, Tim Overkempe, Marijn Prakke

Practical Information

Questions about registration, the program, or other organizational issues:
contestedexpertise@gmail.com

Registration

Please register [here](#).

Please note that the conference fee includes conference participation, coffee, tea, and lunch on both days, and the conference dinner on Friday. Hotel rooms must be booked separately and directly with [Woudschoten conference centre](#) by using the following code: **Gewina2022**. Use this code or mention that you are part of the conference to get a reduced rate. Contact details below.

Conference costs

Gewina student members: € 100

Gewina regular members: € 130

Non-member students: € 130

Non-member regular: € 180

Reduced conference fee (for those without a permanent contract and/or project subsidy): € 100

Book Table

During the conference, a table will be available to showcase your recent publications. Bring a copy of your book or journal article, clearly marked to make sure it will not be mistaken for a freebie!

Venue

Woudschoten Conferentiecentrum

Woudenbergseweg 54

3707 HX Zeist

Tel. 0031 (0)343 - 492 492

www.woudschoten.nl



Directions

By public transportation: the nearest NS station is Driebergen-Zeist. From Driebergen Zeist station bus line 381 of Syntus brings you to Woudschoten Hotel & Conference Center (direct, without transfer). For bus times please refer to 9292.nl. Use as destination Bushalte Woudschoten. It is about 5 minutes walk from the bus stop to the entrance.

Cycling: from Utrecht city or station is highly recommended for those who like such things. It will take you 45-60 minutes. From Amersfoort as well it is a very nice bike ride, also ca. 45-60 minutes.

By car: You can follow the signs to the KNVB headquarters which are next to the venue, or follow these instructions:

A28 from Utrecht direction Amersfoort/Zwolle

- On the A28 exit 3 Zeist-Oost/Den Dolder
- 1st traffic light straight on, in the direction of Zeist
- Next traffic light turn left towards Woudenberg, keep following the long road • At the end of this road, turn left towards Woudenberg,
- Take the second exit on the roundabout

A28 from Zwolle/Amersfoort direction Utrecht

- On the A28 exit 3 Zeist/Den Dolder
- At the end of the exit, turn right, in the direction of Zeist
- Next traffic light turn right
- Next traffic light turn left towards Woudenberg, keep following the long road • At the end of this road, turn left towards Woudenberg,
- Take the second exit on the roundabout

A12 from Utrecht and Arnhem

- On the A12 take exit 20 Zeist/Driebergen
- At the end of the exit continue in the direction of Zeist
- In Zeist, follow the signs to Woudenberg, for about 3 kilometres • On your right you will see Hotel Oud London
- Take the second exit on the roundabout

Short program

Friday, 17 June 2022

8:45 – 9:15	Arrival, registration, coffee
9:15 – 9:30	Opening by conference organizers
9:30 – 11:00	Session 1
	1A: Trust and distrust in science and religion
	1B: Trust and distrust in science and medicine
	1C: Collaboration, trust, and new economic realities
11:00 – 11:15	Coffee, tea
11:15 – 12:45	Session 2
	2A: Knowing rivers in the eighteenth century Dutch Republic
	2B: Contested knowledge: natural history as case
	2C: Science, digital technologies and the museum
12:45 – 14:00	Lunch
14:00 – 16:00	Session 3
	3A: New global infrastructures in meteorology as technologies of trust, 1848-1914
	3B: History of medicine (1)
	3C: History of medicine (2)
16:00 – 16:30	Tea, Coffee
16:30 – 17:45	Keynote Erik van der Vleuten, introduced by Abel Streefland
17:45 – 18:00	Huygens-Descartes Thesis Award Ceremony
18:15 – 19:15	Drinks
19:15 – 21:15	Dinner
Ca. 21:00 – 22:30	<i>Tussentijd</i> , demonstration session by Susanna Bloem

Saturday, 18 June 2022

8:45 – 9:00	Registration, coffee
9:00 – 11:00	Session 4
	4A: Global histories of knowledge
	4B: Public trust in science: opportunities and challenges
	4C: Replication studies in the humanities
11:00 – 11:15	Coffee, tea
11:15 – 12:30	Keynote Sietske Fransen, introduced by Fokko Jan Dijksterhuis
12:30 – 13:30	Lunch
13:30 – 14:30	The great master-thesis show
14:30 – 16:00	Session 5
	5A: Round table: Trust in science and the responsibility of the humanities
	5B: Round table: Patient files – how to move forward? (N.B.: session will be <i>in Dutch!</i>)
	5C: Trust in research and the university
16:15 – 16:30	Coffee, tea
16:30 – 18:00	6: Round table: How to be relevant? On history of science, technology and medicine that matters
	Closing comments

Detailed program

Friday 17 June

8:45-9:15 Arrival & Registration

9:15 Welcome

9:30-11:00 Session 1

Session 1A: Trust and distrust in science and religion

- Doug Anderson: *The early civic career of Anthony van Leeuwenhoek – The case of Sijmon Bourbon (1667-1670)*
- Cornelis J. Schilt: *Contested wisdom: how Hermes dodged a bullet and lived happily ever after*
- tbd
- Chair: Fokko Jan Dijksterhuis

Session 1B: Trust and distrust in science and medicine

- Chloé Conickx: *Reliable or deceptive medicine? Negotiating reliability in the mesmerism debate of 1784*
- Valentine Delrue: *From Astrology to atmospheric tides meteorology: disciplinary identity-building in the works of Guiseppe Toaldo, Louis Cotte, and Jean-Baptiste de Lamarck (1770-1810)*
- Noortje Jacobs and Bert Theunissen: *It's Groundhog Day! Historical reflections on the deadlock in Alzheimer research*
- Chair: tbd

Session 1C: Collaboration, trust, and new economic realities

- Frans van Lunteren: *Nineteenth century international collaboration and the problem of mutual trust: Johan Jacob Baeyer and the Europäische Gradmessung*
- Hein Brookhuis, *New markets and new expertise: the Belgian Nuclear Research Center and the growth of nuclear medicine in Belgium (1990-2020)*
- Tom Kayzel: *Science for an open future: distrust of expertise in the 1970s*
- Chair: tbd

11:00-11:15 Coffee, tea

11:15-12:45 Session 2

Session 2A: Knowing rivers in the eighteenth century Dutch Republic

- Jip van Besouw: *What did expertise to eighteenth-century river management?*
- Mathijs Boom: *Who can tell the river's history? Eighteenth century debates over the Rhine's past*
- Maarten Kleinhans: *Taking the measure of a river: an instrument based on fluid mechanics, expert knowledge and embodied understanding*
- Chair: tbd

Session 2B: Contested knowledge: natural history as case

- Robbert J. Striekwold: *No net improvement: the Society for the Promotion of Dutch Ichthyology's failed attempts at influencing Dutch fisheries*
- Johannes Müller: *Trust and credibility in European zoology around 1800*
- Pieter van Wingerden: *Rival Views of Natural History: the Natuurkundige Commissie and the Colonial Museum in Batavia*
- Chair: Andreas Weber

Session 2C: Science, digital technologies and the museum

- Huib Zuidervaat, *An exceptional planetarium from the 18th century Austrian Netherlands restored*
- Gerhard Wiesenfeldt, *Demonic technologies: understanding human approaches to digital systems*
- Christel Schollaardt and Ad Maas: *Biographies in Boerhaave*
- Chair: tbd

12:45-14:00 lunch

14:00-15:30 Session 3

Session 3A: New global infrastructures in meteorology as technologies of trust, 1848-1914

- Elske de Waal: *Fitzroy's forecasts: the making of a controversy*
- David Baneke: *Familiar uncertainty: how we learned to trust weather forecasts*
- Robert-Jan Wille: *German weather balloons, European aerology and third dimension, 1890-1914*
- Chair: tbd

Session 3B: History of medicine (1)

- Jolien Gijbels, *Gaining expert status: obstetric technologies and priority claims in the medical press (Belgium, ca. 1850)*
- Lisa van der Heyden: *Providence history of fetuses (Amsterdam, 1860-1930)*

- Hieke Huistra, *"The husband, for whom she shall endures all this", or: How husbands have supported their childbearing wives for much longer than we give them credits for*
- Chair: tbd

Session 3C: History of medicine (2)

- Kaat Wils: *Medical experts, professional disputes, and public opinion in court cases on the use of hypnosis around 1900*
- Martijn van Meer: *Challenging tuberculosis: building a consensus on environmental causes during the Dutch interwar years*
- Franco Capozzi: *An insult to science and justice. Distrust in forensic psychiatric expertise in liberal and fascist Italy (1910-1930)*
- Chair: tbd

16:00-16:30 Tea & coffee

16:30-17:45 Keynote Erik van Vleuten, *Trust in technologies, engineers—and historians*, introduced by Abel Streefland

17:45-18:00 Huygens-Descartes Thesis Award Ceremony

18:15-19:15 Drinks & Posters

19:15-21:00 Dinner

Ca. 21:00-22:30 *Tussentijd*, demonstration session by Susanna Bloem

Saturday 18 June

9:15 – 9:30 registration, coffee

9:30-11:00 Session 4

Session 4A: Global histories of knowledge

- Rens Bod: *How diverse is the history of the humanities, and why is it critical for the history of knowledge?*
- Sandra Manickam: *Quack medicine in Malaya, 1897-1940*
- Fenneke Sysling: *Human subject research in the Netherlands East Indies*
- Chair: Robert-Jan Wille

Session 4B: Public trust in science: opportunities and challenges

- Anne-Floor Scholvinck, N. van den Broek-Honingh, J. Elahi: *Public trust in science – contemporary mechanisms and conditions*
- Evangelia Chordaki, S. Alexakis, S. Araposthathis, M. Patiniotis, *Making uncertainty matter: expertise and boundary work during the COVID-19 outbreak in Greece*
- Frank Miedema, *Public trust in science and scientists: pragmatism revisited*
- Chair: tbd

Session 4C: Replication studies in the humanities

- Hans van Eyghen, *tbd*
- Matthijs Sweekhorst, *tbd*
- Pim Huijnen, *tbd*
- Chair: Marieke Hendriksen

11:00-11:15 coffee, tea

11:15 – 12:30 Keynote Sietske Fransen, *Contested Observations: Seventeenth-Century Microscopy and the Challenge to See the Same*, introduced by Fokko Jan Dijksterhuis

12:30-13:30 Lunch

13:30-14:30 The great master-thesis show

HPS Master's students present their research topic with the dynamic pecha kucha-format – 20 slides in 6 minutes and 40 seconds.

Chair: David Baneke

13:30 – 15:00 Session 5

Session 5A: Round table: Trust in science and the responsibility of the humanities

Chair and round table organizer: Luca Forgiarini

Panelists: Lukas Verburgt, Frank Huisman, Kaat Wils, Rens Bod, Marieke Hendriksen

Session 5B: Round table: Patient files – how to move forward ? (session in Dutch)

Chair and round table organizer: Timo Bolt

Panelists: Eileen van der Burgh, Ralf Futselaar, Eveline Buchheim, Timo Bolt

Session 5C: Trust in research and the university

- Jelmer Heeren, *“Objective but Not Neutral”: Reijer Hooykaas on Science and Worldview*
- Floris van Berckel Smit: *Understanding the rise of New Public Management in Dutch Universities*
- Mette Bruinsma, *Considering disciplinary tradition, independence, trust and support in student-supervisor relationships: the undergraduate geography dissertation as a rite of passage (1954-2014)*
- Chair: tbd

15:00-15:15 Coffee, tea

15:15-16:45: Session 6

Round table: How to be relevant? On history of science, technology and medicine that matters

Chair and round table organizer: Geert Somsen

Panelists: Floor Haalboom, Jeroen Oomen, Larissa Schulte Nordholt, Geert Somsen

16:45 – 17:00 Conference wrap-up

ABSTRACTS

Keynote lecture (1): Erik van der Vleuten

Trust in technologies, engineers, knowledges—and historians

This keynote takes the Conference questions on ‘contested trust’ as an opportunity to revisit the history of technology and engineering in the past two centuries. It offers some musings on such diverse issues as (1) how historical proponents time and again trusted technologies (and notably technologies of connection) to forge more affluent, peaceful, and free societies—and while doing so became complicit in building an impressive record of contradictory evidence; (2) how the engineering profession itself sought, gained, lost, and tried to rebuild societal and political trust by engaging with societal and ‘sustainability’ challenges; (3) how the production of scientific knowledges, notably those addressing ‘societal challenges’ and ‘sustainability challenges’, faced some disconcerting trust issues of its own; and (4) how historiographical work is not at all exempt from such trust issues.

Biography:

Erik van der Vleuten has served as Professor and Chair of History of Technology at Eindhoven University of Technology, and as scientific director of the Foundation for the History of Technology SHT, since 2015. He gained his Ph.D. at the History of Science, Technology and Medicine (currently: Science Studies) program at Aarhus University. He is a co-founding member and past Chair of the pan-European history of technology research community *Tensions of Europe*, and has initiated that communities umbrella research program on Technology & Societal Challenges ca. 1800-2050. Books include *Engineering the Future, Understanding the Past: A Social History of Technology* (2017, with Oldenziel and Davids) and *Europe's Infrastructure Transition: Economy, War, Nature* (2016, with Högselius and Kaijser). His most recent special journal issue on *Historicizing entanglements: Science, technology and socio-ecological change in the postcolonial Anthropocene* (with de Hoop, Shridhar, and da Silva) is due in June 2022.

Keynote lecture (2): Sietske Fransen

Contested Observations: Seventeenth-Century Microscopy and the Challenge to See the Same

In the second half of the seventeenth century microscopes became a hype as the new technology that increased human vision into the microworld. However, there were no standards as to how to make the instruments or even how to describe and report on the power of magnification. Nor was there a visual tradition on which the microscopists could rely to communicate about the previously unknown. So how were adepts of the microscope able to compare their observations? At the Royal Society in London, Robert Hooke would prepare microscopic experiments and subsequently present the entire experiment in front of the other Fellows. The group's observation then confirmed (or contested) the earlier observations made by Hooke. Correspondents within England and from continental Europe had to convince the Fellows in a different way and they would send their descriptions, drawings and printed images, as well as the actual specimens under observation. Slowly a trust was built up in the microscopes as well as the observations as described by the microscopists, but this didn't go without fierce debates.

Biography:

Sietske Fransen is Max Planck Research Group Leader of the group Visualizing Science in Media Revolutions at the Bibliotheca Hertziana – Max Planck Institute for Art History. She is also co-investigator of the NWO-funded project Visualizing the Unknown, on the visual culture of microscopy, led by Eric Jorink and hosted by the Huygens Institute in collaboration with Rijksmuseum Boerhaave and the Hertziana. She studied Biology and Taal- en Cultuurstudies/Medieval Studies at Utrecht University and did her Masters and PhD at the Warburg Institute in London. She has been a postdoc at the Max Planck Institute for History of Science in Berlin and at CRASSH at the University of Cambridge. She has published widely on translation and languages in early modern science and medicine, as well as on the making and use of images in early modern scientific communication. Her latest publication is a co-edited book (with Tara Alberts and Elaine Leong), *Translating Medicine across Premodern Worlds*, coming out as Osiris 37 this summer.

Posters

Tracing the relationship between doctors and the public through medical media scandals

Chiara Lacroix

Medical scandals in the media can undermine trust in medical practitioners and institutions. An event is deemed scandalous when legal, professional, or social expectations are broken. I aim to use medical media scandals to show the evolution of social expectations about the role of medical practitioners, and to draw out the changing conditions under which trust between patients and doctors can be eroded. I will analyse and compare medical scandals in twentieth-century Italian and Dutch newspapers, by searching digital newspaper repositories for articles that used the term 'scandal' and involved medical practitioners. On my poster, I will build a timeline showing how the content of scandals changed through time. For example, until the 1960s, scandals often involved practitioners who lacked qualifications or dispensed fraudulent cures. Later, the emphasis shifted to malpractice and misbehaviour within professional medicine. This change suggests tighter regulation of the profession, but also points out that, for newspaper readers, professional status did not protect from unprofessional behaviour anymore. Finally, I will show how scandals differed between Italy and the Netherlands, due to unique cultural and medical systems. Overall, my poster will show how scandals can be used for tracing the historical relationship between medical practitioners and the public.

Six posters related to the SciFair project: **Science at the Fair: Performing Knowledge and Technology in Western Europe, 1850-1914**, coordinated by Prof. Nele Wynants.

Spectacular Bodies: Performing Anatomy, Medicine and Anthropology

Gitte Samoy

Spectacular Science: Performing Science and Technology at the Fair in North-Western Europe

Tim Overkempe

Itinerant Show Businesses Networks

Eva Andersen

Performances of the Otherworldly: Supernatural Science at the Fair in North-Western Europe

Hannah Welslau

Projecting the Other: Colonial Representations and Missionary Propaganda in Belgian Magic Lantern Culture

Anse de Weerd

Blackface Burlesques: Racialized Subjection in Popular Performance Culture of the Low Countries, 1770-1840

Sarah J. Adams

SciFair will conduct pioneering research on the role itinerant show people played in the transmission and popularization of science, technology and visual culture at North-Western European fairgrounds between 1850 and 1914. At a time when modern communication media were not yet in place and only a minority of the population could read, large groups of people were actually dependent on travelling performances and displays for information: in so-called anatomical cabinets, zoological and anthropological museums and scientific theatres, show people demonstrated 'wonders of nature' and spectacular scientific developments.

The project advances the hypothesis that the fair in this period was not merely a local folk tradition, but a hub for international exchange in which itinerant entertainment played a pivotal and modernizing role in the circulation and popularization of science amongst people across the social spectrum, relying on efficient international networks.

In order to test this hypothesis, the project will bring together a multilingual and multidisciplinary team of researchers that will combine methodologies from theatre and performance studies with perspectives from history of science, media studies and digital humanities to analyze practices of science performance across national boundaries and map transnational networks of North-Western European fairground theatres. SciFair will not only study explicit didactic discourses but also analyze how implicit knowledge and social values of health, gender, nation, class or race were challenged or reinforced. By analyzing the fair as a performative event, the project will contribute to our understanding of the social and cultural role of the fair in the circulation of knowledge, media and visual culture.

Tussentijd

Susanna Bloem

Art is a valuable means to communicate knowledge. In this session I would like to demonstrate the value of music in historical research with a discussion of two pieces I composed: "Open" and "Vast", which will be live performed. My research focusses on phenomenological and anthropological investigations of time, time-experiences and

health by the psychiatrists Binswanger, Minkowski, Straus and Von Gebsattel done between 1928 and 1939. Music, by way of these compositions, offers a close-to-common-experience of these psychiatric ideas such that even children between eight and twelve year old are able to engage in and contribute to my research. With the help of five wonderful musicians I will demonstrate how investigator, stakeholders and historical actors can be connected in a concrete situation in which all participants can learn. This way we can revive the past and put old, but very relevant, knowledge to use in a hitherto unprecedented way. I will argue that this type of public engagement is key to enhancing trust in science and provides humanities scholars with a new opportunity to reenact (the making of) the stories they tell about science.

About Susanna Bloem:

I am interested in efforts undertaken by scientists to keep their science humane. I investigate ideas about time that attempted to do this in collaboration with (medical) historians Timo Bolt (Erasmus MC), Hieke Huistra and Bert Theunissen (Descartes Centre), and I translate these time-experiences into music, together with 'componiste des vaderlands' Calliope Tsoupaki (Royal Conservatory of The Hague).

Session 1A: Trust and distrust in seventeenth century science

The early civic career of Antony van Leeuwenhoek: the case of Sijmon Bourbon [1667-1670]

Doug Anderson

In the years before Dutch microscopist Antony van Leeuwenhoek became famous, he learned to grind tiny lenses and make his unique devices to hold them. He also grew in confidence by taking on increasingly responsible positions in Delft's city administration. Of special interest is the case of Sijmon Bourbon. From 1667-1670, Leeuwenhoek was the curator of Bourbon's assets and, after his death in the East Indies, of his estate. Archival documents in his own hand show Leeuwenhoek to be a thorough, meticulous problem solver, attributes that would serve him well in the long civic and scientific career that he was just beginning.

Contested wisdom: how Hermes dodged a bullet and lived happily ever after

Cornelis J. Schilt

In 1614, renowned philologist and theologian Isaac Casaubon 'decisively' debunked the antiquity of the Hermetic Corpus that had come down from the Renaissance. Rediscovered and translated into Latin by Marsilio Ficino, the writings ascribed to Hermes Trismegistus enjoyed massive popularity for its presaging of doctrinal concepts such as the Trinity. Hermes had purportedly lived during the time of the patriarchs and had received his knowledge directly from them. Renaissance scholars like Ficino, Agostino Steuco and Francesco Patrizi suggested that Hermes' writings and others such as the Chaldean Oracles attributed to the legendary Zoroaster, the Orphic Hymns, and the Sibylline Oracles, contained factual truths about God, mankind, and the cosmos. As such, they were mined not only for their theological content, but also for the natural philosophical materials hidden behind their often obscure vocabulary. Yet Casaubon's exposure of the Hermetic writings as early Christian forgeries put the final nail in the coffin of their reliability and use – or did it? Remarkably, the Corpus Hermeticum and other ancient wisdom texts remained popular throughout the seventeenth century, including with natural philosophers like Francis Bacon, Pierre Gassendi, and Isaac Newton. In this paper I will demonstrate what other factors were at stake in philosophers' decision-making about the validity of these texts, and the truths contained therein.

[TBD]

Session 1B: Trust and distrust in eighteenth century science

Reliable or deceptive medicine? Negotiating reliability in the mesmerism debate of 1784

Chloé Conickx

Few controversies capture the high stakes of the Parisian battle for (medical) legitimacy and credibility like the mesmerism debate of 1784. Mesmerism, or animal magnetism, argued for the existence of an imponderable magnetic fluid that could heal diseases – a new therapy that received great curiosity as well as distrust. In 1784, two royal commissions investigated the reality and efficacy of magnetism; their destructive reports sparked an intense public debate between opponents and supporters of mesmerism.

This paper highlights the complex negotiation of legitimacy and reliability that lied at the heart of this debate. In particular, I argue that both institutional and mesmeric actors deployed specific strategies to undermine the reliability of the other and to legitimize one's own practices, and that this was determined by control over the concept of '(magnetic) sensations'. On the one hand, institutional commissioners re-defined animal magnetism as distinctively sensational, which allowed them to conceptualize the practice as deceptive. On the other hand, mesmeric supporters contested this reductionist caricature of magnetism and proposed several reliable experiences in which deception could be eliminated. The paper hence demonstrates that authority was not self-evidently institutional in the 18th century and highlights the complex dynamics that *made* legitimate knowledge.

From astrology to atmospheric tides meteorology: Disciplinary identity-building in the works of Giuseppe Toaldo, Louis Cotte, and Jean-Baptiste de Lamarck (1770-1810)

Valentine Delrue

Over the course of the eighteenth century, a new atmospheric tides meteorology was established. Naturalists, priests and physicians, among others, stated that the moon not only generates tides in the sea but also in the atmosphere. This meant that it was possible to study recurrences in the weather due to lunar influences; celestial changes in living beings could then become predictable and manageable. Because of this, the critics of atmospheric tides meteorology compared it with astrology while its practitioners vehemently contrasted it with this "pseudo-science".

In this talk, I will trace the disciplinary self-image that atmospheric tides meteorologists constructed in relation to astrology. Drawing on treatises about lunar influences, histories of astronomy and astrology, and almanacs by Giuseppe Toaldo, Louis Cotte, and Jean-Baptiste de Lamarck, I will investigate how these Italian and French AT scientists strengthened their disciplinary identity. This might show the ambiguity in the self-fashioning of an official science which not only discredited other forms of knowledge but appropriated elements from it as well.

It's Groundhog Day! Historical reflections on the deadlock in Alzheimer research

Noortje Jacobs and Bert Theunissen

Scientific papers on Alzheimer's disease are riddled with references to canonical figures such as Galilei, Copernicus, Popper, and Kuhn. What does this reveal about contemporary Alzheimer research?

In this talk, we show that Alzheimer research for decades now has been stuck in a Groundhog-day scenario: a time loop of fruitless academic debate with no prospects for a cure. In this tug war, the frequent referencing of historical figures serves as boundary work: by invoking Galileo or Popper, Alzheimer researchers question both the scientific quality and integrity of opposing camps. Historians will not be surprised that such rhetoric is ineffective in resolving the deadlock.

We also explore if insights into the science system from the history of science might help to bring the discussion forward. As with other wicked diseases, the definition of Alzheimer's as a medical condition has created a funding-research industry that is 'too big to fail', despite the absence of clinical progress. Peer review may be effective within the blackbox of a dominant paradigm, it works against opening up the blackbox. A

fundamental discussion is required on both the definition of the disease and on funding. This cannot be left to scientists; it should be a public debate.

Session 1C: Collaboration, trust and new economic realities

Nineteenth century international collaboration and the problem of mutual trust: Johann Jacob Baeyer and the *Europäische Gradmessung*

Frans van Lunteren

Large scale International scientific collaboration got started in the nineteenth century with several major projects in the so-called Humboldtian sciences. One of these projects was the *Europäische Gradmessung*, the triangulation of a large part of Europe as a major contribution to the determination of the shape of the earth. Initiated and lead by Johann Jacob Baeyer, it required the cooperation of all major European states. Baeyer had climbed the ranks of the Prussian army and had eventually been appointed as head of the goniometric department of the General Staff in the rank of general. However, a conflict with the army made him give up this position at the army and work directly for the Prussian ministry. The international project was partly his attempt to regain control over Prussian triangulations. Gradually, other contributors to the international project were sucked into the conflict to such an extent that the continuation of the project came to be at risk.

New markets and new expertise: the Belgian Nuclear Research Center and the growth of nuclear medicine in Belgium (1990 – 2020)

Hein Brookhuis

This paper will address the role of nuclear medicine in the evolution of the Belgian Nuclear Research Center (SCK CEN). As an aspect of nuclear technology that has caused less public controversy, it provides new perspectives on the theme of nuclear expertise in society in recent decades (1990 – 2020). Scholarship on nuclear medicine has focused on the period of the 1940s and 1950s, and rightfully emphasized how the spread of nuclear technology during the Cold War had a major impact on the development of the industry, described by historian Hans-Jörg Rheinberger as “big science coming in small pieces.” However, the closedown of many research reactors during the 1990s and its consequences for nuclear medicine have remained largely understudied. Interestingly, the medical and industrial applications increasingly became a political justification for investments in the Belgian research reactor (BR2) from the 1990s onwards. Therefore, I will explore how the Belgian Nuclear Research Center redefined its activities and identity in relation to its infrastructure. I will do so by highlighting its renewed interaction with academic expertise, the global medical industry, and the public legitimization of nuclear technology by means of the history of their main research reactor and expanding expertise in nuclear medicine.

Science for an Open Future: Distrust of Expertise in the 1970s

Tom Kayzel

Although the distrust in science is nowadays mainly associated with right-wing movements, it was the end of the 1960s primarily left-wing social movements that contested scientific expertise. New left, second-wave feminism and student protesters argued that science and technology were not politically neutral but in service of state

control, “the military-industrial complex” or a suffocating system of instrumental rationality. One particular argument advanced by these political movements was that scientific expertise, especially in the guise of economic planning, was foreclosing the future. Economic growth, the welfare state and the Cold War stalemate, seemed to project only one particular and stagnant image of the future. Consequently, one of the aims of the new social movements was to open up the future again. Using the writings of the Dutch futurist movement from the 1970s as an example, I will analyse this argument in detail and look at the responses from Dutch scientific experts and policymakers. I will argue that in an attempt to reclaim their authority scientific experts and policymakers refurnished their techniques as tools for imagining open futures. In other words, the discredited technologies were transformed into technologies of trust. The legacy of the strategy is ambiguous. With the rise of neoliberal policies at the end of the 1970s, the future became indeed more open yet distrust remained manifest.

Session 2A: Knowing rivers in the eighteenth century Dutch Republic

Chair & session organizer: Matthijs Boom

What does it mean to know a river? To know the shape of a riverbed, the river’s past course, the volume of its flow? And to whom does it matter? In the deltaic landscape of the Dutch lowlands, expert knowledge of rivers was critical to protect people against inundations and to keep waterways navigable. This chaired session explores three related case studies in the history of Dutch water management, focusing on the experts who were instrumental in fashioning the ways in which rivers could be known over the course of the eighteenth century. From the ambitious surveys of Nicolaas Cruquius, through the antiquarian debates over the Rhine’s history, to the fluid mechanics of Christiaan Brunings, these papers explore the politics, the disciplinary divisions, and the instruments that determined knowledge of rivers in the eighteenth-century Dutch Republic.

What did expertise offer to eighteenth-century river management?

Jip van Besouw

River flooding has threatened Holland’s cities throughout history but was particularly hazardous in the early eighteenth century due to increased peat cutting and canal digging. Traditional craft solutions no longer sufficed, and governments turned to new solutions. One was bringing together various types of expert knowledge. The advisory boards thus created—consisting of mathematicians and philosophers from Leiden University as well as expert craftsmen such as cartographers and surveyors—are direct precursors of the professional Dutch ‘Waterstaat’, the governmental body still in charge of river management. This tale of success suggests the initial advisory boards had something important to offer to the executive governments. Certainly, involving well-known professors provided standing and trust. However, contrary to narratives of the ineffectiveness of early modern ‘science’ in providing ‘technological benefits’, the historical developments suggest the advisory boards offered such actual technical benefits, too. I discuss one particular object with such benefits, a stunning depth contour map of the Merwede river by Nicolaas Cruquius. Particularly, I show how the map visualised the distribution of volumes over different arms of the river. This visualization, I argue, turned the map into a helpful tool for decision makers.

Who can tell the river's history? Eighteenth-century debates over the Rhine's past *Mathijs Boom*

By the eighteenth century, the course of many a Dutch river was increasingly shaped by extensive hydraulic engineering. Yet, people were aware that this had not always been the case. The rivers of the Dutch delta had a history of their own, even before the arrival of humans on the floodplains bordering the North Sea. A variety of experts and knowledgeable amateurs debated the changes shaping the delta, combining insights from various fields of knowledge. Among the writers involved in these discussions we find historians, antiquaries, surveyors, engineers, and natural philosophers. Drawing on different knowledge traditions, whether textual, material, or experimental, they sketched the contours of the rivers' past. Yet in the history of the delta, human and natural forces proved so entangled that it was difficult to judge which experts could best tell the river's history. This paper will chart the interactions of different eighteenth-century experts in their attempts to do so. How did they conceptualize the history of the delta? What was included in their stories and what wasn't? Which sources did they draw on and what did these sources reveal about the shift course of the land's waters?

Taking the measure of a river: an instrument based on fluid mechanics, expert knowledge and embodied understanding

Maarten Kleinhans

In 1789-1792, Christiaan Brunings (1736-1805) designed, calibrated and applied an instrument to measure the flow velocity in the river Rhine. Brunings' aim was to determine the division of the flow discharge between the river Waal and the Pannerdensch Kanaal, which was dug in 1707 as a bypass of the river Nederrijn that had gradually silted up. The data collection allowed him to manually integrate the flow velocities to total flow discharge. The measurements were important, because the division of the flow between these river branches determines navigability and flood risk in the entire delta. Little is known of Brunings' knowledge of fluid mechanics, but the principle and the design of the instrument and its use in data collection suggest that he had expert knowledge of the river, where he knew what relevant variables to measure, and technical 'embodied' understanding of hydrodynamics, as he knew how to measure the flow accurately. But open questions remain: how much theoretical knowledge and practical knowledge on drag and boundary layers was available at the time, and did Brunings have access to it? Where was Brunings situated between theoreticians on fluid mechanics and the practitioners involved in measuring and attempts at controlling the rivers?

Session 2B: Contested knowledge: natural history as case

No net improvement: the *Society for the Promotion of Dutch Ichthyology's* failed attempts at influencing Dutch fisheries

Robbert J Striekwold

In 1846, the Dutch naturalist and fish aficionado P. W. van den Ende founded the *Society for the Promotion of Dutch Ichthyology*. The *Society's* goal was explicitly utilitarian: to improve the efficiency and yield of Dutch fisheries. To this end, its members published a flurry of reports on particular fishing techniques and equipment that could be enhanced,

fisheries policies that could be streamlined, and so on. The need for such improvements was keenly felt at the time, for the once-proud Dutch fisheries were in a sorry state. However, the desire of the *Society* to function as a kind of liaison between fishers and policymakers was met with scepticism, if not outright indifference, by both sides. On the one hand, Dutch politician's appreciation for natural-historical knowledge was at an all-time low by the mid-19th century. On the other, fishermen tended to regard the knowledge of naturalists as of little practical value. In the end, the *Society* failed to overcome its perceived inutility, and it played no significant role in the debates during the 1850s that led to the new 1857 *Fisheries Law*. Reflecting on this failure may shed light on how scientific organizations may or may not gain influence in policymaking.

Trust and Credibility in European Zoology around 1800

Johannes Müller

Despite the rapid growth of zoological and botanical collections in the eighteenth century, much of what Europeans knew about the faunas and floras of other continents could not be inferred from conserved specimens. In order to understand the basic behavioral characteristics and physiological functions of dead organisms, European naturalists depended on reports and accounts from overseas. Such sources often had a narrative and anecdotal characters and their claims to credibility could seldom be checked. In this paper, I address mechanisms of evaluation that were invoked by German and British naturalists in order to make sense of dubious accounts whose credibility could not directly be checked. Such accounts and anecdotes often were often the very motivation of natural historical inquiry, for example the circulating reports on carnivorous plants, amphibious fish or electric eels. Using a intermedial approach, this paper focusses on an number of such anecdotes and traces their circulation across travel reports, news media, natural histories and reports in early scientific journals. Addressing the transfer of knowledge between different media, I discuss how trust was created in each specific medium and how claims to truth and credibility changed around 1800

Rival Views of Natural History: the Natuurkundige Commissie and the Colonial Museum in Batavia

Pieter van Wingerden

On August 27, 1837, Prince Henry visited a formal gathering of the Batavian Society of Arts and Sciences, where he listened to a speech by Pierre-Médard Diard (1794-1863) celebrating the recently founded Colonial Museum in Batavia. Diard was directing member of the Natuurkundige Commissie, a group of naturalists sent out to the Indies by the Dutch government to collect specimens for 's Rijks Museum voor Natuurlijke Historie in Leiden. Diard believed in natural history as a tool to improve agriculture and bring welfare and prosperity to society, while the director of the Leiden Museum, Coenraad Jacob Temminck (1778-1858) was only interested in expanding the collections of the Leiden Museum with taxonomic purposes in mind. I will draw out how these two diverging views of natural history led to conflict with the Colonial Museum at its centre. The Museum case reveals a tension that ran through the makeup of the Natuurkundige Commissie as a fault line that would occasionally surface in the form of conflict.

Session 2C: Science, digital technologies and the museum

An exceptional planetarium from the 18th-century Austrian Netherlands restored

Huib Zuidervaart

The view that the Earth was merely a planet, orbiting the much larger Sun, was first published by Nicolaus Copernicus in 1543. In doing so, he rejected Ptolemy's classical idea that the Earth was at the centre of the universe. Years later, in 1588, the Danish astronomer Tycho Brahe published his own model of the universe that showed aspects of both the Copernican and Ptolemy's model. These three worldviews coexisted well into the seventeenth century. Copernicanism did not make a definitive breakthrough until the early eighteenth century, especially after Isaac Newton's theory of gravitation successfully explained the celestial motions.

In the eighteenth century it became fashionable to imitate and demonstrate the Copernican celestial movements in astronomical clocks or planetariums. However, a planetarium in which different world views were depicted, rotating simultaneously and driven by a clockwork, has hardly been made. A rare attempt to do so – namely the construction of an astronomical clock with a Tychonic and a Copernican planetarium – was made in 1771 by Jean Paulus (1710-1781), a Jesuit priest from the Austrian Netherlands. This cleric worked as a watchmaker at the Brussels court of Prince Charles of Lorraine, governor-general of the Austrian Netherlands. Paulus's untimely death, however, prevented the completion of this exceptional astronomical gearwork. The mathematician Michel Ghiesbreght (1741-1827), who bought the incomplete instrument at auction in 1781, tried to complete it. He succeeded only after great difficulties. Later, the planetarium fell into disrepair and after all sorts of wanderings, the instrument ended up in the collection of planetarium Zuylenburgh, in Oud Zuilen, a few years ago.

The instrument is currently being restored to its former functionality by the skilled hands of ancient clocks restorer Piet de Ruiter, who, thanks to the original construction drawings preserved with the instrument, is able to reconstruct missing parts. Thanks to his efforts, a unique astronomical clock from the Southern Netherlandish will soon be able to function again, as it was originally intended.

In our presentation, a short history of the instrument will be presented and the recent – fairly far-reaching – restoration will be discussed; a restoration which lets functionality prevail over the principle formulated by the Dutch 'Oudheidkundige Bond' in 1917: 'Preservation takes precedence over renewal' ('Behouden gaat voor vernieuwen').

Demonic technologies: Understanding human approaches to digital systems

Gerhard Wiesenfeldt

This talk will discuss a new research project that combines early modern intellectual history with the anthropology of human computer interactions by analysing the way we engage with large digital systems through the framework of demonological thinking. The premise of the project is that in such engagements we act as if we were encountering demons, i.e. intelligent beings beyond our control with agency of their own. We can commission them for tasks we cannot do ourselves, but we are aware that these demons follow their own interests and may well turn against us. Such interactions are thus not built on relations of trust, but rather on volatile risk assessments about known benefits and partially unknown costs. The old tradition of associating technology with magic has frequently been reemphasised, e.g. in Arthur C. Clarke's dictum that "any sufficiently advanced technology is indistinguishable from magic". While such analysis is straightforward, as in interactions with technology we frequently use magical practices - we follow procedures that we believe will work but we don't know why - modern

interpretations tend to shy away from the earlier debate whether such magic has natural or demonic causes. Our approach argues that even though demonological thinking is delegitimised as irrational, it still informs our thinking when encountering technological systems beyond our control.

Biographies in Boerhaave

Christel Schollaardt en Ad Maas

How does a science museum like Rijksmuseum Boerhaave collect recent and actual scientific heritage? The (over)abundance of material, the 'difficulty' of many of the research set-ups in the modern sciences and the emergence of computer-technology and software all put heavy challenges to this area of collecting. To get to grips with this, the new collection strategy of Rijksmuseum Boerhaave focuses particularly on certain 'grand challenges', big social challenges, like the energy-transition or the prevention of pandemics, to which many scientific efforts nowadays are dedicated. The first part of our presentation will discuss this new collection strategy. Next we will elaborate on the method of object biography we are developing, which will help us to deal with 'recent' scientific artefacts in a meaningful manner.

Session 3A: New global infrastructures in meteorology as technologies of trust, 1848-1914

Chair & session organizer: Robert-Jan Wille

New global infrastructures in meteorology as technologies of trust, 1848-1914

This session focuses on the development of new global infrastructures in the history of meteorology, analyzing their role with the history of public and scientific trust in meteorology. In the early Victorian age, predicting the weather was seen as a relic of early modern superstition, comparable to astrology (K. Anderson, *Predicting the Weather*, 2005). From the 1840s, new global infrastructures such as the telegraph, weather ships, weather balloons and new government departments, and graphic tools like weather maps, made it possible for 'professional meteorologists' to engage with the uncertainties of the weather in a more structural way, and even start thinking about scientific weather 'forecasts'. They produced weather scenarios for the future, based on calculations and measurements. In other words: meteorology was reorganized into a 'physical science' of weather, atmosphere and the climate. This created a dilemma of trust: what was the status of weather forecasting? Was it possible to predict the future in a scientific way? By the early twentieth century, scientific weather forecasts had gained the public's trust. In this session we will analyze the new infrastructures of weather research and forecasting. We will look at the 'technologies of trust' that were created between the age of liberal reform and the First World War, focusing on three case studies: Victorian Britain, the Netherlands and Imperial Germany.

Fitzroy's forecasts: the making of a controversy

Elske de Waal

Robert Fitzroy is known in relation to two important episodes in the history of science: he was Darwin's captain on the Beagle, and he was the first to issue official weather forecasts in Britain. In both these cases, his contemporaries qualified his role as unfortunate. He was the overly religious critic of Darwin's evolutionary theory, and an

overzealous amateur who transgressed the boundaries of scientific meteorology by trying to predict the weather. Historians such as Katherine Anderson, while placing Fitzroy in his historical context, adopted this contemporary characterization of Fitzroy and his forecasts as clearly and unambiguously controversial. In (popular) public sources from the 1860s, however, the controversy appears conspicuous in its absence until 1865, the year Fitzroy died. It was only through a subsequent investigation into his work at the Meteorological Department, resulting in the *Galton Report*, that his work was reconstructed as having been scientifically inadequate from the start. This (lack of) controversy can be understood in terms of boundary work among the scientific community, concerning the amount of uncertainty that can be allowed in scientific meteorology. By doing so we can learn more about the social, political and scientific considerations that influence the public discussion of uncertainties.

Familiar uncertainty: how we learned to trust weather forecasts

David Baneke

In 1860, storm warning systems were introduced in various countries including the Netherlands. They were hailed as triumphs of science for the benefit of mankind. But it looks like the warnings had little effect in everyday practice at sea. In 1898, the Dutch weather office (KNMI) introduced a renewed storm warning service. It had a difficult start: it was initially distrusted by sailors, and it caused tensions within the KNMI, where scientific and practical criteria of 'trustworthiness' clashed. By the 1910s, the storm warnings had gained the trust of sailors, however, and by the 1930s they had become part of daily shipping routine. In this talk, I will analyze the history of the storm warning systems, and the infrastructures it relied upon. I will also analyze the relation between scientific confidence and public (dis)trust in storm forecasting. It is part of a research project on how we, as a society, have learned to deal with uncertainty in weather predictions.

German weather balloons, European aerology and the third dimension, 1890-1914

Robert-Jan Wille

From the 1870s onwards, daily weather maps became the central tools of meteorology, the science of weather and dynamical atmospheric conditions. These maps, produced by data collected globally through international telegraph networks, created a framework for mapping and guesstimating the routes of depressions and other weather phenomena. The biggest challenge for meteorologists was the *three-dimensionality* of the atmosphere. In 1902 French and German meteorologists 'discovered' the stratosphere, which made meteorology, like geology, a science of interacting layers that needed to be mapped vertically as well. In 1906 the concept 'aerology' was proposed by Wladimir Köppen for a new international program of vertically and horizontally mapping the atmosphere. Thanks to balloons, international campaigns and three-dimensional maps, meteorologists in Germany and Scandinavia (the Bergen School) realized that projecting weather scenarios might not be such an infeasible dream after all, although many Austrian meteorologists were still very skeptical.

Session 3B: History of medicine (1)

Gaining Expert Status: Obstetric Technology and Priority Claims in the Medical Press (Belgium, ca. 1850)

Jolien Gijbels

In the mid-19th century, medical disciplines as we know them today, did not exist. Developing specialist knowledge was not quite common, nor was it vital to achieve scientific success. A small number of physicians, however, succeeded in gaining expert status in a particular area. As I will argue, one of the most effective ways to become recognized as an expert around 1850, was to claim ownership over a technical innovation. The focus of this presentation is on Belgian negotiations over who received credit for the invention of obstetric instruments that were used to perform an embryotomy (this is the reduction of the volume of a foetus in order to facilitate its extraction through a narrowed pelvis). Technical discussions about this procedure in the medical press gave doctors opportunity to show off their know-how in obstetrics. As I will show, printed proof of practical experience was key to receive scientific recognition during such priority disputes. Expert status in the field of obstetrics was mostly reserved for Belgian physicians who succeeded in disseminating examples of their technical skills to a large medical public.

Provenance history of Fetuses (Amsterdam, 1860-1930)

Lisa van der Heyden

In recent years, new movements have emerged within medicine: *patient-centered medicine* and *integrative medicine* challenge the evidence based knowledge practices that have been institutionalized in medicine from the nineteenth century onwards. New sensitivities and research questions have emerged surrounding patients' voices past and present, both within medical and historical research. The material culture surrounding the history of medicine faces the same sensitivities, especially in respect to anatomical collections. We are forced to rethink and re-evaluate certain anatomical specimens in relation to the patients who provided them. In this paper I will present such a case, that of the museum Vrolik, located in Amsterdam, that holds an anatomical collection of human and animal remains, among them 840 specimens with congenital defects. Questions on where these fetuses came from, how they were collected and how these practices of collecting were regarded in society, inspired new research on the provenance of these specimens. In light of the sensitivities mentioned above, the main research question is not what was allowed (within institutionalized medicine and the nineteenth century religious and legal frameworks), but how it was perceived by the patients (in this case the mothers and fathers who lost their babies).

"The husband, for whom she endures all this", or: How husbands have supported their childbearing wives for much longer than we give them credits for

Hieke Huistra

We tend to think that husbands stayed out of the birthing room until the late twentieth century; recent historiography on the US and the UK seems to confirm this picture. In this talk, however, I show that the Dutch case does not fit this narrative. Through analyzing professional debates in medical journals, medical case notes, and egodocuments of new parents, I show that in the early twentieth-century Netherlands, at least part of the expectant fathers attended the birth of their children, and that their attendance was

usually accepted by both the general public and medical professionals. I argue that many medical professionals even valued husbands' presence during labour and birth because they could offer women something no-one else could: emotional support. Some doctors considered this so crucial that they used it as an argument against hospital birth. My findings may teach us something about birthing practices and marriage bonds, but also about the mutuality of the trust relationship between doctors and patients. Medical professionals did not consider themselves more qualified than laypersons in every respect; when supervising a birth, doctors and midwives relied on husbands, trusting them to do an essential part of the job.

Session 3C: History of medicine (2)

Medical experts, professional disputes and public opinion in court cases on the use of hypnosis around 1900

Kaat Wils

As of the mid 1880s, the popularity of hypnosis became an object of concern in many European countries. In Belgium, the public debate on the dangers and promises of hypnosis resulted in 1892 in a law which regulated its use. The law prohibited public demonstrations of hypnosis and limited the right to perform hypnosis on minors and mentally ill persons to medical doctors. In the public debate leading up to the final version of the law, the expert advice of the Academy of Medicine had played an important role. The Academy's expertise had however also been publicly contested by successful lay healers and by some academically trained practitioners of hypnosis. The latter predicted that the law would prove inapplicable. Based on an analysis of court files from around 1900, I will show that they were right: no consensus existed on what hypnosis was, how its use could be proven and how it could be distinguished from simulations of hypnosis. Court cases in which medical experts disagreed were widely commented upon in both the medical professional press and the daily press, and this may well have contributed to a loss of trust in the therapeutic power and the scientific credibility of hypnosis.

Challenging tuberculosis - building a consensus on environmental causes during the Dutch interwar years*

Martijn van der Meer

Analyses of the 'declining trust in science as a democratic institution' often overlook the significance of disagreement *within* the scientific community that result from consensus-building. The muddled process of arriving at a consensus that 'non-experts' can trust appears especially problematic when expertise is used to legitimise practical responses to social problems. This paper follows the changing conceptualisation of the aetiology of tuberculosis by Dutch sanitary reformers during the interwar years. For the first decades of the twentieth century, the cause of tuberculosis was still debated along the lines of a heredity-contagion dichotomy. Yet, as Dutch investigators rendered infection with the 'mycobacterium tuberculosis' a plausible proximal cause in the late 1910s, they started debating the social origins of disease 'constitution'. Instead of emphasising the inherited 'disposition' for developing infection into symptoms, Dutch sanitary reformers preferred to explain disease constitution as resulting from the quantity of 'exposition' to causative agents in a harmful environment. Towards the end of the 1920s, however, sanitary reformers synthesised this tension by explaining tuberculosis as a 'developmental

condition' due to the relative weight of both biological *and* environmental 'health determinants' or 'epidemiological units'. I will explain this remarkable attention for environmental influence as resulting from the preference among Dutch sanitary reformers to improve developmental conditions to solve the social problem of tuberculosis. This case thereby illuminates the relationship between science-based solutions and expert consensus as interactional rather than one-directional.

*This paper is based on chapter 3 of my master thesis *Individualised Public Health – a conceptual history of heredity during the Dutch interwar years*.

An insult to science and justice. Distrust in Forensic Psychiatric Expertise in Liberal and Fascist Italy (1910-1930)

Franco Capozzi

The introduction of psychiatric expertise into nineteenth century criminal courtrooms was generally met with resistance by judges, who wanted to maintain priority of judgement over that of medical witnesses (Wollfram 2018; Eigen 2016; Rotondo 2009; Guarnieri 1991). Italy was not an exception in this sense: psychiatrists rarely determined verdict of criminal trials (Chiletti 2016, Miletti 2007). This paper aims to shed light on the role of forensic psychiatrists in the courtroom by investigating the influence of their expertise on trials for murder in early twentieth century Italy. To this end, it analyzes a series of criminal proceedings that took place in Turin between 1910 and 1930 in which Mario Carrara, professor of Forensic Medicine at the local university, was called on by the court to express his medical opinion on the mental state of the defendant. How often and in which cases did his testimony persuade judges and jurors and influence the final sentence? How many times, instead, were his judgements disregarded or contradicted by the verdict and why? How did the press covering the trial judge Carrara's forensic conclusions? The findings of this research add to our understanding of the role of forensic experts in European modern history.

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Abstracts short-list thesis award

[...]

Session 4A: Global histories of knowledge

How Diverse is the History of the Humanities, and Why is it Critical for the History of Knowledge?

Rens Bod

While the history of the humanities is rapidly expanding as a field of study, the question of how diverse and inclusive this field is has rarely been addressed. An initial investigation shows that the answer is not too positive. Taking the papers presented at *The Making of the Humanities* conferences since 2008 (728 papers) together with the papers published in *History of Humanities* since its foundation in 2016 (156 papers), it turns out that almost 88% of the papers deal with the humanities in the western world. The field appears even less diverse and inclusive when it comes to the authors: over 91% of all authors are located in the global north. In my paper I argue that there is no good reason to focus on the history of the humanities in the West only. I will contend that the pursuit for diversity is critical not only for the history of the humanities but also for the history of knowledge, because (1) such a pursuit can debunk myths in the history of knowledge, (2) it can uncover previously unknown influences between knowledge centers, and (3) it allows for finding global trends that are left unnoticed otherwise. I will offer some suggestions on how we can transform the history of humanities and the history of knowledge into more diverse and inclusive fields.

Quack Medicine in Malaya 1897-1940

Sandra Manickam

The process of medical modernization in British Malaya entailed segregating certain kinds of medical practice into that which was legitimate and responsible, and that which was not. The latter, called sometimes sorcery, superstition or quack medicine, was the subject of several attempts by doctors qualified in Western colonial medicine to reign in its practice and convince the public at large that they should not be utilizing these illegitimate practices. This paper will trace the beginnings of attempts by certified doctors in British Malaya to discredit and control a highly popular form of medical practice through legislation and newspaper exhortations. The “problem”, first identified in the late 1800s in Malaya’s medical journal, continued to be a subject of comment until the eve of the Japanese occupation of Malaya in 1940. Particular attention will be paid to the arguments of colonial-trained Asian doctors in Malaya and their views on quack medicine and quack doctors who were often their direct competitors as medical providers. The paper seeks to question the natural authority of colonial medicine in Malaya, and draw attention to the continued relevance of “quack medicine” well into the colonial period.

Human Subject Research in the Netherlands East Indies

Fenneke Sysling

This paper looks at human subject research in the Netherlands East Indies from the 1850s until 1940. Physicians in this period pursued research on all sorts of diseases, from leprosy to beriberi, and published about it in this journal. Local people unknowingly took part in this research as research subjects. This meant that they provided blood or urine, were examined and poked, and received drugs that could be beneficial but of which the effects and side-effects were not yet fully known. This happened in a colonial setting that drew stark political, social, and conceptual lines between Europeans and colonized subjects, and where distrust of European medicine was widespread. At the same time, Indonesians visited Western doctors in the hope of a cure and with the insistence that they be treated with the latest methods. This paper will discuss my survey of articles in the *Geneeskundig Tijdschrift Nederlandsch-Indië* that discuss human subject research. I hope to be able to say something about the scope of research on humans, about insistence

on treatment versus resistance, and on differences with Dutch practices in the Netherlands.

Session 4B: Public trust in science: opportunities and challenges

Public trust in science – contemporary mechanisms and conditions

A. Scholvinck, N. van den Broek-Honingh, J. Elahi

In contemporary, knowledge-intensive societies, in which governments use scientific knowledge as the basis for policy and in which public trust partly determines the societal impact of research[1], it is important to monitor and understand mechanisms affecting citizens' trust in science. Over the past decade, the Rathenau Institute has polled the Dutch public's trust in science under varying circumstances[2-5]. Public trust in science is affected by the context in which scientific research takes place[6]. Trust diminishes when research is conducted on behalf of the government[4,7,8]. However, concurrently people expect science to contribute to solving societal issues, which requires a certain level of proximity between governmental actors and scientists [9].

This apparent paradox was the starting point for the qualitative study that was conducted in the autumn of 2020[10]. Although the scope of the study reached farther than people's trust in COVID-19 related research, the corona-crisis as a circumstantial factor was taken into account. In nine focusgroup-discussions with Dutch citizens from a diverse background, we discussed the conditions that must be met to ensure citizens' confidence in science, even when the government commissions that research. This study concludes that there is a fine line between independent research and involvement of the government. Citizens believe involvement can ensure better research, as long as there is no pressure on the researcher to adjust results or conclusions.

This paper will provide a contemporary contribution to the conference, providing context to the currently apparent "general sentiment to question the foundations of 'modern' Western science and technology".

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Making uncertainty matter: Expertise and Boundary Work during the COVID-19 outbreak in Greece

Evangelia Chordaki, Sotiris Alexakis, Stathis Arapostathis, Manolis Patiniotis

Despite the universal character of the current health crisis, some early researches¹ have shown that its management differs remarkably within the various national and geographical contexts. The correlation between science and politics gives reveals complex functions that simultaneously shape the relationship between science and society. Experts and expertise have a prominent role either in communicating aspects of COVID-19 or configuring the governance of crisis. Hence, the social status of experts along with the public's trust towards scientific expertise did not remain stable. Nowadays, and in contrast with the first wave of the pandemic, Greek society experiences an increase of voices that fully or partly question scientific expertise. In order to understand the shift of the public's attitudes towards science, the paper explores the management of the first wave of the pandemic in Greece. Analyzing the leading expert epidemiologist's (Prof. Tsiordas) public briefings the period from February to May 2020, we argue that his communication practices of epistemic uncertainty, alongside his performativity and boundary work, allowed him to establish trust relations with the public, through what we call the "scientization of politics". This analysis helps us understand the increasing distrust over the following waves characterized by the "politicization of science."

Public trust in science and scientists: Pragmatism Revisited

Frank Miedema

Scientists chose to either insulate from external influences or opened up and engaged in order to building trust. The pragmatists (1870-1950) sought public engagement, the positivists, traumatised by fascism and Marxism, went for insulation and demarcation (1920-1960). In the 1960s scientist sought engagement which was in the 1980s captured by neoliberal economic politics. In response to the latter and to global societal challenges, we now are in times of Open Science and public engagement again. Insulation and engagement stem from different philosophies of science: a unique method to produce absolute knowledge (the positivistic 'Legend'), versus production of reliable and robust knowledge in collaboration with stakeholders in society.

As science 'in the making' is increasingly accessible to the public, engagement is to be preferred to build trust. This requires deliberation and reflexivity on part of the scientists regarding choices, values and actions. This realistic philosophy of science, 'neopragmatism', is not widely known among academics. On the contrary, positivism, long been shown to be untenable by historians, sociologists, and philosophers, is still very influential in the discourse and politics of science. I will discuss how this persistence of 'the Legend' in several ways distorts academia and is inhibitory to building long-term relationships of engagement and trust between science and society and thus the transition to Open Science.

Session 4C: Replication studies in the humanities

¹ Special Issues: COVID-19 and science communication, Parts I & II, 2020, vols. 5,7. Journal of Science Communication.

Due to perceived problems in core studies in the social- and biomedical sciences attention for replication studies is consistently growing. Recently increased attention is given to replication in the humanities. Although research in the humanities differs greatly from other disciplines, several authors have argued for the necessity or feasibility of replication in the humanities as well. The number of replication studies in history is very scarce. Our panel consists of both case-studies and meta-reflection on replication in history. Proposed papers are:

- (1) Huistra, Pieter
- (2) Huijnens, Pim
- (3) Matthijs Sweekhorst
- (4) A direct replication of John Hedley Brooke's study on the relation between religious and scientific reform. (Hans Van Eyghen)

Hans Van Eyghen will present the initial results of an attempt at direct replication of John Hedley Brooke's study concerning the reception of heliocentrism in the 16th century. Apart from the issue whether the original conclusions stand the test of replication, the paper will also discuss encountered problems or issues in replicating historical research.

Pim Huijnen and Pieter Huistra will discuss the results from their research project on replication in history. They will reflect on the possibility and desirability of replication in the discipline of history, and will formulate possible avenues to increase historical replicability.

Matthijs Sweekhorst will offer a historical perspective on replications in the discipline of history. Contrary to common held beliefs, he argues that replication in history is not new at all. Rather, it was already part and parcel in the discipline's ethic and practice around 1900. These findings, he will show us, have implications for our present-day understanding of replications.

Session 5A: Round table: Trust in science and the responsibility of the humanities

Chair & session organizer: *Luca Forgiarini*

Panellists: *Lukas Verburgt, Frank Huisman, Kaat Wils, Rens Bod, Marieke Hendriksen*

Since about the second half of the 20th century, the humanities have paid increasing attention to social, cultural, and economic factors involved in the production of scientific knowledge. Long gone are the days in which the facts spoke themselves. Instead, it is us humans, with our instruments, our protocols, our practices, and our politics that fabricate, that produce the objectivity of facts that was once considered universal. Given our collective role as scholars of the humanities in demystifying the scientific ideals of objectivity and disinterestedness, we should ask ourselves to what extent we are also co-responsible in the diminishing trust in science and scientific institutions witnessed since the end of the previous century. The aim of this panel discussion is to reflect on:

- 1- The relationship between the humanities and the sciences and how we, historians of science, treat our object of study.
- 2- The responsibility of the humanities with respect to societal problems concerning science.
- 3- The notion of objectivity itself and how it could be recuperated even from a constructivist perspective.

Session 5B: Round table: Patient files – how to move forward? (N.B. session will be in Dutch)

Organized under auspices of History, Health & Healing (HHH) - the Dutch academic network for medical history. Chair and session organizer: Timo Bolt.

Patient's files are a rich source for medical historians, but they are also subjected to doctor-patient confidentiality. During the HHH workshop on the subject held in January, 2021, participants agreed that there was a serious lack of good policy and well-organized practice around the issues of conserving, archiving, accessing and using patient files for historical research. It was decided to take inventory of current ethical, legal and practical frameworks regarding patient's files, of archiving practices of such files in healthcare institutions and of their use for historical research. This survey was done by Eileen van der Burgh (Erasmus MC), Ralf Futselaar (EUR), Eveline Buchheim (NIOD) and Timo Bolt (Erasmus MC). The survey report answers a number of questions, but also raises new ones. During this round table, we would like to debate how to move forward. Recommendations will be presented, but there is ample room for discussions and exchange of (other) good ideas! Participants will be expected to have read the survey report, which can be downloaded [here](#).

Session 5C: Trust in research and the university

“Objective but Not Neutral”: Reijer Hooykaas on Science and Worldview

Jelmer Heeren

Self-identifying as a traditional Reformed Christian, Dutch historian of science Reijer Hooykaas (1906-1994) never shied away from showcasing his own perspective on the subject matter at hand. Although this wasn't always well-received by the history of science community, it was Hooykaas, on his part, who criticized theologians when they overstepped their bounds in trying to make science serve their theology. At the root of Hooykaas' seemingly idiosyncratic position lies his own distinction between “objectivity” and “neutrality.” Although he tried to produce, in his own estimation, “objective” history of science, he nevertheless never thought himself to be “neutral.” What did he mean by those terms and how did he deal with the (perceived) tension and interplay between worldviews and science?

Considering disciplinary tradition, independence, trust and support in student-supervisor relationships: the undergraduate geography dissertation as rite of passage (1954-2014)

Mette Bruinsma

Undergraduate students may be seen as novice academics, entering a disciplinary field from a distinctive educational context. In their first independent research projects, they may follow, reshape, question or even reject disciplinary traditions. Histories of geography often emphasise the works of established academic geographers. Yet, students who complete geography undergraduate degree studies vastly outnumber professional academic geographers. The student experience is given scant regard in conventional historiographies. The School of Geographical and Earth Sciences, University of Glasgow, holds a collection of undergraduate dissertations (dating from 1950s–present). Using these archival sources, I will explore changes in the educational contexts of geography students, focusing on the relationship between students and their supervisor, and

between students and the wider departmental academic community. The hierarchical relationship between student and supervisor is implicitly a relationship built on trust: trusting the intellectual as well as often more personal ability to guide students into the academic field and to graduation.

Understanding the rise of New Public Management in Dutch universities

Floris van Berckel Smit

This paper explores the rise of New Public Management (NPM) in Dutch universities through an innovative interdisciplinary approach. Since the 1980s, developments such as declining public trust in government and the public sector have encouraged governments to implement NPM reforms to increase their systems' efficiency, effectiveness, and performance. The objectives, processes and impact of these NPM-driven changes have been widely debated, with NPM often regarded by its opponents as the primary cause for a great variety of organizational problems. Yet, the concrete historical practices and challenges regarding NPM within universities are still scarcely systematically analyzed, which hampers our knowledge of how NPM has been interpreted and 'translated' into practices and what ultimately has been the impact on universities. This paper aims to bridge this knowledge gap by incorporating social science insights on NPM into historical research. It presents the findings from an in-depth case study of a Dutch university in the last 40 years: Vrije Universiteit Amsterdam. By using a social science based analytical framework on NPM in higher education (Broucker & De Wit 2015), the study will systematically analyze the rise of NPM. To do this, the paper draws on archival sources as well as oral history data. The analysis reveals how and why NPM-inspired approaches were embraced and appropriated within the university including the introduction of new management concepts such as 'operational excellence'.

Round table: How to be Relevant? On History of Science, Technology and Medicine that Matters

Chair and round table organizer: Geert Somsen

This year's Woudschoten conference theme, 'Contested Expertise', resonates with pressing current societal concerns about science, technology, and medicine. Pandemic policies, the climate crisis, geopolitics, decolonizing curricula – many of today's hotly debated issues revolve around the role and status of expert knowledge. What does this mean for history of science, technology and medicine? Can and should we relate our work to these discussions? This Roundtable session brings together a number of historians who try to make their research speak to issues of public concern and seek to make history matter to the present and the future. Should historians of science, technology and medicine relate to current concerns? And if so, how precisely? How can history 'teach lessons'? And do we risk losing trust ourselves if we pursue 'an agenda'? This Roundtable offers different perspectives on these questions and aims to start a wider discussion. Panelists are:

- Floor Haalboom (Erasmus University Rotterdam): the future of factory farms
- Jeroen Oomen (Utrecht University): ways of seeing the future
- Larissa Schulte Nordholt (Leiden University): decolonizing and activism
- Geert Somsen (Maastricht University/Vrije Universiteit Amsterdam): internationalism and inclusivity