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Practicing Evidence-Evidencing Practice

How is (Scientific) Knowledge Validated, Valued and Contested?

Abstracts

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Contents

Pre-Conference Workshop

Conference

Forensic architecture - practices of truth-making at the intersection of aesthetic and scientific knowledge production

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‘Material is never neutral.’ (Miessen & Ritts 2018)

Such as material is never neutral, truth is never one dimensional. By critically examining the methodological approach of the interdisciplinary research agency Forensic Architecture, this research investigates practices of truth-making at the intersection of aesthetic and scientific knowledge production. Drawing the relation between current STS approaches of ‘Inventing the Social‘ (2018), it should be argued that, in order to take non- human agency and multiple ontologies equally into account, - ‘navigation’ (Forensic Architecture) - rather than - ‘experimentation’ - (Inventing the Social) should be the research design’s epistemological tool of choice.

In the era of Post-truth and post-humanities, practices of verification and scientific inquiry are under pressure alike. Such as fake news may not only be subsumed as mere lying, the fluidity of the boundaries of academic disciplines may not only be subsumed as the abundance of disciplinary identity. Simplistically spoken, core to of both of these phenomenon are knowledge production processes that claim to advocate the Truth. In either of these cases the evidence made accountant for this, may be characterized as socio-epistemic practices. Arguably, post-truth may be translated as the cutting off a multiplicity of voices to be heard, whereas post-humanities may be translated as the opening of the epistemological modes by disciplinary collaboration.
But why drawing this quite unusually comparison here, which at the first glance seems to point to the strikingly ‘postly’ notion of the two terms?
Because this is what this master thesis research is about. By critically examining recent STS research approaches which - under the premise of ‘Inventing the Social’ - argue for an interdisciplinary research approach, setting ‘experimentation’ as the epistemological tool of choice, this research offers a counter-hypothesis. Leaving from the investigations of the Goldsmith-based, interdisciplinary research agency Forensic Architecture, this research aims to challenge contemporary STS conceptions of ‘evidence’ by arguing that in order to conduct scientific research that equally takes into account the agency of material - physical as well as digital evidence; the socio-epistemic construction of evidence as practices of verification and the need for scientific research to position itself politically within a post-truth era - ‘navigation’ as proposed by the work of Forensic Architecture, rather than ‘experimentation’ should be the methodological premise of choice.

Established at Goldsmith Institute in 2011, Forensic Architecture, is an interdisciplinary research agency that investigates human rights’ violation through architectural modeling and aesthetic practices. By applying a counter-forensic approach the agency aims to investigate violation unfolding upon two axes: firstly, the violation of human rights, secondly, the violation of the evidence of the violence itself. Using architecture as an optical device, the researchers aim to trace how facts have been socially and technically produced. By cross-referencing different data sets, for instance, pictures and video footage, environmental and weather data, as well as sound and smell analysis, they remodel and reenact the incidents occurred. The hyper-aesthetitisation of matter in the practices of verification allows for the cross-referencing of human as well as non-human testimony which in its consequence offers to build multidimensional evidence. Providing material, as well as digital evidence, the aim is not only to bring the violations to court, but to bring the research conducted into public fora that enable their political dissemination. More precisely the research conducted by Forensic Architecture is based on three lines of reasoning: firstly, that in the era of post-truth and fake news, human rights violations committed by state agents demand for a counter-narrative unrevealing the incidents; secondly, that there is no such thing as one ultimate truth - what in turn should be investigated is the practices of truth-making, i.e. verification. At the very core of this therefor lies the analysis of material as mnemonic devices that allows for tracing spatio- temporal relations. Consequently - Forensic Architecture frames their approach as Forensis - which

differs from the forensic agency in the hand of state agents. Forensis in turn, refers to the greek origin of the word, which might be translated into 'pertaining to the forum', as a strategy to perform investigation. This includes not only to bring the violations to court, but to nourish the political dissemination and the circulation of the investigations in multiple public fora such as art exhibitions and media.

Consequently, this research argues for practices of truth-making at the intersection of aesthetic and scientific knowledge-production, that allows to equally take human and non-human agency, as well as the relationally of evidence and practices of verification as a network based approach, into account. By setting a statement for the need of politically engaged, activistic STS research, this thesis argues for a material, as well as sensoric based interdisciplinary research that acknowledges the co- and constantly reproduction of multiple truths, i.e. the socio-material constitution of evidence.

On the (im)possibility of identifying the evidence base of the impact of star architecture projects

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Since the opening of the Guggenheim Museum in Bilbao (GMB), designed by star architect Frank Gehry, the capacity of 'star architecture' projects to trigger economic and social effects has become known as the 'Bilbao effect'. Some go so far as to argue that "phoenix cities" (Power et al., 2010) have been able to counteract urban decline with such high profile architectural projects. Others have questioned the Bilbao formula altogether (Franklin, 2016). Despite of the inconclusiveness regarding the effectiveness of the GMB, the 'Bilbao effect' became an urban policy in motion (González, 2011) as city officials became eager to duplicate this supposed effect by commissioning star architecture. The popularity of the 'Bilbao effect' accentuates the need for scientific investigation of the evidence base regarding whether and if so how star architecture projects 'work' to achieve impact. Yet the discipline that is foremost enabling such projects to take shape, remains rather silent in terms of such investigations. This is quite remarkable, since on one hand architects bask in the fame and credit for these projects- they are in the front row when the ribbons are cut at inauguration ceremonies, they receive prizes and honours- on the other hand the question of whether and if so how such projects trigger effects and impacts is left to other disciplines to answer. Architecture's silence vis-à-vis the scientific investigation of the impact of star architecture can be explained by the need to mobilize research methods outside the skill set of architects. The possibility of identifying the evidence base is complicated by the necessity of undertaking multidisciplinary research and by the complexity related to the nature of such projects. Does such complexity render the exercise of identifying the evidence base impossible?

As part of a DFG funded research project "Star architecture and its roles in re-positioning small and medium-sized cities", Alaily-Mattar et al. (2018a, 2018b, 2019 forthcoming) undertook a multidisciplinary investigation of three case studies of star architecture projects. The team consisting of scholars from the disciplines of architecture, planning, economics, economic geography sociology and cultural sociology developed a conceptual impact model as a tool with a threefold purpose: (1) to analytically identify the outputs of star architecture projects, (2) to help assess if and how these outputs can be related to effects in a causal relationship, and (3) to offer a didactic means to debate the manifold elements associated with the impact of star architecture projects. We argued that in order to explain the process through which star architecture projects generate impact on their respective cities, the economic, socio-cultural and morphological effects of these projects must first be identified, unpacked and related to the outputs of these projects. Effect refers to linear causal relationships, while impact is a process that is multidimensional and multi-scalar. The impact model proved to be a useful tool to facilitate dialogue between the disciplines by visualizing the complexity of our subject of research. It facilitated paying attention to the whole while analyzing how the parts are interrelated. This paper argues that such a tool is useful for multidisciplinary research as analyses are undertaken in very different disciplines involving the mobilization of different interpretative skills.

Natural History on the airwaves: the BBC and its interwar audiences

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My research looks at the history of biology and natural history in mass media in early-twentieth century Britain. My work focusses on film and radio, hinging on the relationship between reproductive and broadcast technologies, and scientific knowledge. I am interested in how academic scientists became involved in the production of films and radio programmes, in their liaison with producers, and in how the representation of science through new media impacted, and was contingent on, a broader public culture of 'nature'. In relation to this last point, I am interested in public responses to early natural history film and radio, and in this paper I seek to examine how the idea of scientific evidence was performed on film and on the microphone. My paper will incorporate films and broadcasts which were situated at the intersection between entertainment and education.In relation to film, I will examine the highly popular short film series Secrets of Nature. I will use original archival material to assess what versions of scientific 'nature' the series chose to depict, and the role of audiences in co-producing this content. In doing so, I will refer to an experiment conducted in Devon in 1932, which measured the responses of rural audiences to these films. These responses will be contrasted with BBC Schools Broadcasts of the interwar period, many of which were intended to be combined with film and written materials to be used in the classroom. Taking these examples from film and radio, my paper will argue that in both cases new media served to engage a mass audience in the practice of scientific knowledge production, and helped to shape, alongside contemporary print culture, notions about nature and science in Britain during these years. In this paper, I hope to contribute to the broader discussion about evidence at this conference by offering insights into how inter-war British audiences reacted to, and helped to shape, the styles and forms of scientific evidence on screen and on the airwaves.

Image of/as evidence - visual evidence in forensic crime series

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LIE TO ME is both the title and paradoxical appeal of the professional psychologist Dr. Cal Lightman and his team of experts in the popular crime drama (Fox TV, 3 seasons, 2009-2011). The series tells in variations how the deception experts use the study of micro expressions to convict criminals. Their main character is not only inspired by the US-American psychologist and anthropologist Paul Ekman, but he is also the force behind the scientific consulting of the production. Against a larger background, the series can be read as part of the 'new golden age' for science as a subject in the 21st century (Kirby 2013): with demands for realism in representation (Jermyn 2013), an increase in scientific advice at the production level, the presence of scientific practices in fictional garb, novel expert figures, and not least media effects. (Cole/Dioso 2007, Kirby 2013 und 2017, Steenberg 2013, Tait 2007).

'Cinematic Science Television' is also becoming a prominent category in the ongoing quality TV discourse. LIE TO ME belongs to the subgenre of Forensic Crime Drama, originally founded with the "queen of forensic series" (Engell 2017: 301; o.t.) CRIME SCENE INVESTIGATION (CSI: VEGAS/CBS 2000-2015 & following SPIN-OFFS), which focuses on the depiction of reading traces and the production of evidence in such a way that the narrative and visual importance of staged scientific iconography becomes unmistakable by means of technological images. "The evidence can't lie" is the basic maxim in the series, combined with material preservation of evidence and laboratory topos. The central paradigm is the visualization of the invisible; techniques of "pre-eye-placing" dominate the preservation of evidence and argumentation; imaging procedures follow the ideal of transparency, which makes scientific images available and claims epistemic evidence by means of image power: "Only what has been made visible is at all, so does ontology want it". (Engell 2017: 306; o.t.) The series sketches a mostly deterministic and positivist world view without inexplicable remnants, what is visible is also true.

LIE TO ME also relies on visual evidence, inherits central representation strategies, and relies on the aesthetics of "placing before the eyes" as a staged and ostentatious gesture. The series comments on supposed visuality on several levels: as a reference to medialization in American court TV and failure of forensic evidence and reference to popular scandals and media images, whereby visualization per se stands neither as a guarantor of truth nor for ensuring social order. The process of producing evidence goes beyond mere appearance and must be rhetorically produced as inner certainty.

It is no coincidence that the "forensic turn" in popular culture corresponds with the "material turn" and cultural studies evidence discourse as the "longing for presence" (Harrasser 2009) in the digital age. In the popular context, CSI pursues a regaining gesture that restores social order through the body as a frame of reference; a body that, however, cannot be de-emiotized and de-medialized. LIE TO ME negotiates the validity of visual evidence in various directions: as a picture lie (as it can be found in evidence discourse from the beginning also in picture vs. text dispute) and as a process that must run into emptiness as narcissistic self-reflection and in times of post 9/11 and CCTV. Unlike CSI, here the search for traces and the

production of evidence do not start from the body, but return to it in order to systematically measure it; the anthropological longing is reminiscent of Ginzburg's paradigm of circumstantial evidence.

The planned presentation is intended as a contribution to the media cultural studies evidence debate between discourse on medialization, visual evidence generation and genre development. Using two exemplary highlights of the format, changing modes of representation, methods of production and pointing gestures will be discussed against the background of televisual popular representation and scientific, media and socio-political changes. It will be argued how the change manifests itself both in an increasing display as obsolete marked strategies of authentication and in the ongoing ironization of the gesture of pointing.

Of bodies, bottles, boxes and spirits: policemen, doctors and 'admissable' legal evidence in British India, 1870-1900

In my paper I narrate a history of the notion of 'admissible' evidence in the common law world through the lens of the decomposed body parts and the glass bottles, wooden boxes and chemical preservatives in which they circulated across crime scenes, police stations, morgues, hospitals and laboratories on their way to criminals courts in British India in the late 19th century.

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I read a range of archival documents to track official debates that erupted in British Bengal around the 1870's regarding the 'proper' means of 'preserving, packaging and transporting' 'suspected substances for medico-legal purposes' to show how the colonial authorities' pre-occupation with decapitated human organs and humble items of everyday use reflected the challenges of administering crime in the colony according to the principles of the 'rule of law'. I demonstrate that the material objects which could be presented in court as 'admissible' evidence in criminal trials for the dispensation of justice, i.e., the 'working objects' (Daston 2000) in the process of legal knowledge production, were not pre-given. They had to be carefully and meticulously forged by a wide range of actors located across widely different disciplinary, social and institutional sites. By adopting a material approach to a history of evidence production, I look to restore visibility to a range of quotidian forms of labour – collecting, packing, preserving, labelling, transporting etc. – and their attendant forms of expertise that are otherwise occluded in juristic accounts and scholarly meditations on the nature and meaning of evidence in law. I argue that the production of legal evidence was not simply the application of legal directives to police and medico-legal work, or vice versa. Rather, the case of British India shows how legal notions of admissible evidence emerged in response to the contingencies of cross-departmental collaboration among officials with widely disparate professional and disciplinary orientations, within the challenges thrown up by the peculiarities of the physical conditions of the hot and humid climate of the Indian sub-continent.

The process of establishing the 'truth' about crime in the colony was inherently fraught from the perspective of the colonial authorities: contemporary accounts of British administrators are replete anxieties and frustrations with native witnesses who, it was widely assumed, frequently lied to policemen and magistrates and changed their testimonies in court during trials. Added to the problem of 'native mendacity' was the higher officials' concerns with native officers of the police service who were frequently charged with allegations of malpractice, corruption, and particularly the use of torture to extract confessions. These political considerations had propelled the passage of the Law of Evidence for India in 1872, which secured the importance of physical evidence in criminal trials as a foil for witness testimonies in the legal reconstruction of the events of the crime to determine its perpetrators. Subsequently, the body (especially of the victim) emerged as a prime 'source' of legally admissible 'material' evidence in criminal courts. My paper looks at a period when the colonial authorities eagerly sought the expertise of doctors, and later chemists – especially in complicated murder cases – to make the dead bodies of victims speak the 'truth' of crime. It examines the ways in which this vision of men of science as the ideal architects of legal evidence was undercut by the abiding reliance on police inspectors and constables for the practical work of collecting and processing material evidence from crime scenes and transporting them (often across great distances) to the scientific experts in

hospitals, laboratories and examination rooms. I examine the range of micro-practices that were forged gradually in and around a set of material objects in the course of the 1870s-1900s to re-think the question of what counted as evidence in the 19th century common law world.

Forensic Knowledge in Practice. On the (re)creation of forensic knowledge(s) in rape and murder investigations in The Netherlands, 1930-1988

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Since the end of the nineteenth and beginning of the twentieth century, forensic science and its associated experts have come to play an ever larger role in criminal investigations and trials. In recent years, historians have taken on the topic of forensic science, resulting in a diverse body of scholarship that comprises histories of specific techniques, the relationship between varied legal environments and forensic science, the attainment of credibility by experts and the influence of ideas on gender, race and class on forensic science, among other issues.

While these histories have, in many cases, taken the involvement of actors other than forensic experts into account — for example in discussions about the important role played by judges and juries in the granting or withholding of credibility and authority to a would-be expert —I believe that they have underplayed the diffuse nature of forensic evidence making. (Re)solving a crime is a complicated business. It often involves a large number of actors — victims, witnesses, police officers, suspects, prosecutors, judges — who all engage in a variety of (forensic) evidence making practices at a number of different sites, including crime scenes, police stations, forensic laboratories and courtrooms. Put differently; although forensic knowledge is most clearly visible, perhaps, in the practices of forensic experts, I proceed from the assumption that such knowledge comes to be not only in the laboratories, minds or performances of such experts, but instead in the messy ongoings of actual criminal proceedings.

As may be evident from the language used in the preceding paragraph, I take my theoretical cue from historians who have utilised insights from practice theory/ praxiography. Thus rather than foregrounding the development of discourses, concepts or theories I focus on routine practices and technicalities. Studying such practices allows us to uncover the — often unarticulated — knowledge(s) that are (re)created in them and which are likely to remain hidden in analyses that focus solely on what has been made explicit. Such knowledge(s) may include, for example, subconscious understandings about the gendered nature of certain crime, or about guilt and innocence, or about hierarchies of actors and pieces of evidence.

Thus, in my PhD project, I investigate how twentieth-century forensic knowledge(s) came to be (re)created in the forensic practices of a diverse group of actors, operating in forensic laboratories, courtrooms, police stations, as well as at the crime scene. I focus specifically on cases of (attempted) criminal homicide and (attempted) non-consensual sexual offences, tried in the district court of Utrecht, The Netherlands, between 1930 and 1988. I pay particular attention to the types of forensic knowledge concerned with physical traces of a crime; that is, forensic medicine and criminalistics. My main sources are case files, though I supplement these with verdicts in cases where the case file has not been preserved, and media reports.

I hope to share some preliminary thoughts about the opportunities and challenges that a practice-oriented approach brings to the history of forensic science. I will delve into a case study — a murder case from the 1950s — drawing attention to a number of actors, sites and practices that play a role in the diffuse (re)creation of forensic knowledge(s).

Sites of Forensic Drama: performances of forensic expertise in court, crime fiction, and newsmedia, England 1930-2000

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In the 1930s forensic science became institutionalized in England. However, this did not mean that from this moment onwards forensic scientists and doctors were accepted as experts contributing valuable evidence to crime investigations. Instead, these specialists worked hard to carve out a position for themselves as legitimate conveyors of knowledge on criminal cases. In my thesis, I research how, why, and when forensic scientists, doctors and psychiatrists were accredited as experts contributing relevant evidence in criminal trials in England 1930-2000.

I take up the theoretical concept 'performance of expertise', as applied by Reiner Grundmann – which states that expertise is not something a person has, but something they do – to explain how forensic specialists practised authority. I follow the line of thought of Stephen Hilgartner, when I argue that forensic specialists are theatrical and bodily performers. I claim that they enacted their expertise through the display of gestures, clothing, rhetorical techniques, strategic use and demonstrations of the latest technologies, and interaction with their audience's lay knowledge. What counted as evidence in a specific context, and who was recognized as the contributor of this knowledge, depended both on 1) the way experts displayed their own personas (which needed to fit the cultural script on professionalism, science, class and gender) and 2) their presentation of their knowledge-making practices, inter alia the technologies, concepts, diagnosing practices and interpretations.

I analyse enactments of expertise, and expert evidence, in three different contexts; the courtroom, newspapers, and crime fiction (including novels, radio shows, and television series). I ask how forensic expertise and evidence were 'done' in these different contexts. However, using the concept fact-fiction hybrids, derived from Actor-network-theory, I simultaneously look at the ways in which these contexts were entangled with each other and through their practices jointly gave shape to the figure of the forensic expert and forensic evidence.

In my presentation I will offer an analysis of source material – primarily advice literature for forensic experts on how to act as expert witnesses, but also newspaper articles and crime novels – to illustrate how forensic expertise was performed in England during the 1920s/1930s. I will ask the other participants to help me reflect on my theoretical framework, by engaging in a debate on the question to what extent performances of expertise shape(d) expert evidence. Are the techniques and knowledge practices of an expert on the one hand, and the performance of the expert persona on the other hand, always interrelated? Or can research methods have an independent status as legitimate or illegitimate ways to develop evidence regardless of who applies them? And how does an expert performance for a peer group, differ from presentations before laymen? I hope that these questions lead to a lively discussion on the ways in which performance theory and ANT can serve as a theoretical framework to come to an understanding of how knowledge and the people producing it are validated.

Governing through behavioral experiments. An ethnography of behavioral governmental practices

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Nudging is a form of systematically regulating human behavior by altering the environment in which people make decisions. Drawing on insights about human decision making from behavioral economics, choice architectures are designed in a way, that certain, socially wanted decision-outcomes are more likely than others. The effect of each Nudging-intervention is then evaluated in order to see what works. Experiments become tools of governing. The concept of nudging and the discussions surrounding paved the way for a broader application of behavioral knowledge in public policy. Much has been written about the behavioral insights movement, its ethical dilemmas and its (post-)political implications. But an investigation of the epistemic practices of behavioral governance is missing.

In my dissertation project I conduct ethnographic fieldwork in organizations that apply behavioral insights (BI). I want to find out how BI-based policies are conceptualized, designed and evaluated in practice. How are policy challenges translated into behavioral problems? And how are these behavioral problems developed into lab and field-experiments that produce evidence about the effectivity of governance?

Thus, my project directly aims at answering two questions that are relevant for the Practicing Evidence-Conference: How is evidence done in the practice of behavioral governance? What is the role of evidence-based knowledge in neoliberal, democratic and knowledge-based societies?

I am conducting fieldwork until the end of 2019 and would like to discuss some of my empirical material in the workshop. I will either present ethnographic vignettes or transcripts of work meetings, depending on a selection that I will do when sifting through my material in January 2020.

Big Data, Migration Governance and the Production of Knowledge

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In June 2018, the European Commission and the International Organisation for Migration launched the Big Data for Migration Alliance. The aim of this alliance is to "advance discussions on how to harness the potential of big data sources for the analysis of migration and its relevance for policymaking".1 In December 2018, 164 states signed the Global Compact for Safe, Orderly and Regular Migration. The compact's first objective is to "collect and utilize accurate and disaggregated data as a basis for evidence-based policies" (UN 2018, 6). Among the proposed actions is the use of big data for the governance of international migration.

What is so fascinating about big data for migration policymakers? Why would they like to make use of social media posts, web search histories and mobile phone positioning data? Employing the term evidence-based policy the official explanation brought forward is that the more accurate knowledge policymakers have about migration the better they can develop policies and tools to manage it (Stielike 2017, 129ff.). In this respect, it seems promising to access big data that is virtually realtime or can be updated frequently, that covers geographic areas with no or limited official migration statistics and that has much larger sample sizes and more flexible definitions of migration than traditional surveys (Rango and Vespe 2018, 6).

I argue that the (big) datafication of migration perpetuates the myth of the governability of migration, namely the belief that migration can be governed for the benefit of all if there is only enough evidence available. In this view, migration governance becomes a question of knowledge. This perspective obscures who is (not) seen as a legitimate producer of knowledge, which knowledge is (not) recognized as relevant knowledge and how the produced knowledge about migration stabilises power relations. Thus, migration governance is constructed as a rather technical instead of a highly political problem, ignoring the conflictual relationship between migratory practices and the attempts to govern them.

In the workshop, I would like to discuss how evidence is produced and used in the context of big data and migration. First, I will present a preliminary mapping of the emerging transnational network of international organisations' data hubs, data researchers at universities, internet and technology companies and non-profit organisations involved in the big-data-based production of knowledge about migration. I frame this network as an apparatus (Foucault 1980) which emerged in response to two discourses of urgency related to the crisis of migration governance and the UN Sustainable Development Goals. I will explore how the urgent calls for evidence-based migration policymaking lead to "policy-based evidence-making" and "evidence-based institution-buliding" (Geddes 2015). Second, I will present some initial findings from my analysis of big-data-based research papers on migration produced by data scientists. I will show how the use of big data and its related methods and theoretical assumptions produce knowledge about migration that is distinct from conventional social science migration knowledge. I will argue that we witness the emergence of a new migration studies subdiscipline which I describe as evidence-based discipline-building.

Panel Five: Evidence from Bones

Under the Influence. Genetic Evidence Between Methodology, Technology, and Narrative

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Human genetic history has become a topic of great interest also to the lay public. While genetics is generally perceived as being a “hard” and exact science, sampling choices and methodology have a major impact on the outcome of studies of genetic history. In addition, interpretation of results also plays a major role in shaping scientific conclusions, and in turn, also in shaping news features' headlines, and the opinions of the general public.

We will present two case studies. One is focused on the Homo sapiens species as a whole, and on controversies relating the amount of admixture of this species – our species – with a closely related group, the Neanderthals (Homo neanderthalensis). There have been numerous scientific articles on the issue of admixture and introgression between these two species. We claim that this interest reflects the sensitivity of the topic, as some people or groups of people seem to find the notion of admixture between Homo sapiens and the Neanderthals somewhat disturbing, in light of our perceived superiority over our relatives. We will present contrasting results from various studies and discuss how "hard" sciences could have led to such contrasting results. Among other things, we will discuss the gap between admixture estimates that were based on mitochondrial DNA to those that are based on autosomal DNA (e.g., Serre et al. 2004, Green et al. 2010).

As a second case study we will examine a controversy among geneticists on the possible contribution of the Khazar people from the Caucasus area to the Ashkenazi gene pool. According to some historians, the Khazars, a tribe of nomadic Turks, have converted to Judaism in the 8th century, and the theory has been advanced that a large fraction of the ancestry of eastern European Jews derives from them. As with possible the admixture of our species with the Neanderthals, we claim that this second case study has fascinated both researchers and the general public precisely because this is a somewhat sensitive subject, that challenges a group's narrative of its own history. This controversy cannot be discussed without raising the question of the impact of national narratives on scientific studies and the interpretation of scientific results. These points will be discussed in light of the scientific results of two research papers that reach very different conclusions regarding the Khazar hypothesis, even though both papers are based on the same DNA samples (Elhaik 2013, Behar et al. 2013). We will suggest that the choice of dataset, methodology and technology has a significant impact on the results of the studies, which will still be based on “scientific evidence”.

Panel Five: Evidence from Bones

Politics and paleontology: interpreting fossil evidence in the Age of Revolution

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This project analyzes a broad historical project of root-seeking and national belongingness that took place in the mountains and caverns of Germany in the half-century between the Seven Years War and the Napoleonic Wars. Drawing especially upon Swiss and Scottish models, German travelers turned mountains into historical spaces, vaults of a shared and palpable past. While the project incorporates a broad range of actors—miners and administrators, philologists and poets, men, women, and children of various classes—it coheres around a cohort of surgeonspeleologists and their study of human and terrestrial interiority, Menschenkörper and Erdkörper. The project aims to shine new light on the social aspirations then pulsing through scientific life, and to show how mountain science in Germany's age of revolution can be understood a social and political accomplishment in its own right.

This paper revisits an episode from the history of paleontology—a debate about the origin of large mammal bones found in the Franconian Alps and the Harz Mountains—to study the many uses of fossil evidence in the turbulent political age that spanned the Reign of Terror and the so-called Wars of Liberation (1793–1815). While the Swiss savant Jean-André Deluc located these large mammal fossils in an antediluvial Vorwelt (part of a counter-revolutionary geo-history consistent with the Noachian Flood), Franconia-native Johann Christian Rosenmüller attributed the petrified bones to a "cave bear" indigenous to Germany. Rosenmüller employed nascent evolutionary ideas (especially Blumenbach's "Bildungstrieb") to establish the bear not as a "witness of former continents," to borrow Martin Rudwick's apt phrase, but of a more recent human history.

In sharing this paper, I hope to think collectively about the evidence practices at play, particularly Rosenmüller's use of paleontological evidence about the bear's flight from German lands as anthropological evidence for the emergence of civilization there. I wish to draw this little-known story of Franconian fossils into a broader constellation of histories about the social and political value accorded to scientific evidence. And, finally, I hope to gain conceptual tools for further study of the way in which Rosenmüller, in his more popular works, translated fossil evidence from an elite scientific debate into a widely-accessible narrative of nationhood grounded in the (sub)soil.

Scientific practice in Yugoslavia: from Marxism-Leninism to self-managed socialism

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As a result of acknowledging the social importance of science, inherent to the Marxist-Leninist ideology, in the aftermath of the WWII the process of accelerated scientific development was initiated in Yugoslavia with the assistance of the USSR. The Yugoslav communists relied on the USSR, and therefore the Soviet science model was one they opted for. However, in 1948. Yugoslavia broke away from the Eastern bloc led by the Soviet Union. The Communist Party of Yugoslavia (CPY) was excluded from the Information Bureau of the Communist and Workers' Parties (Cominform), charged with reintroducing capitalism and displaying nationalist tendencies. Prior to this, and in line with the practice in the USSR, the scientific discourse in Yugoslavia was critical of the scientific practice in the West, which was labeled idealist, positivist, historicist, bourgeois, etc. The scientific practice in Yugoslavia was placed in the framework of historical and dialectical materialism, Marxism-Leninism, which postulated that the science should grow from and be as close as possible to the concrete realities of the Yugoslav society. The basic feature of this practice was "partisanship", which meant that science, as all other spheres of human activities, is also a field of ideological struggle. Edvard Kardelj, one of the main ideologists of the CPY, delivered a speech in 1949, at the Slovenian Academy of Sciences and Arts, which stood as the first explicit critique of the Soviet model of science by the Yugoslav communists. In this speech, the USSR was accused of anti-scientific tendencies, of making the science an "unprincipled layman of practical bureaucracy" (which is how he saw the partisanship in science); instead, the science, according to the new Yugoslav ideology, should serve the "truth" and "prosperity", while the scientists in Yugoslavia should be "free in their creation." The promotion of the sovereignty of science and the criticism of "partisanship" by the Yugoslav communists runs counter to the Marxist-Leninist understanding of the role of science. That speech clarified ideological shift that was taking off, and laid the ideological foundations for the new scientific practice in Yugoslavia. One which will encompass liberal elements and would, thus, correspond more to the new political system in Yugoslavia – the so-called self-managed socialism. It is my intention to examine the line of argument in social sciences that emerged as a result of this ideological shift, and which provided the new system in Yugoslavia with the ideological framework for new practices, including the ones in the field of the organization of science. I will analyze the nature of the evidence present in the official ideology discourse of the direction that Yugoslav society has taken in the period before and after the split with the USSR, as well as try to examine, in that context, the issues of the relationship between political ideology and (social) science.

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Field experiments: evidence, plants and the production of concensus in agriculture, 1789-1848

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During the French Revolutionary and Napoleonic wars, promoting the agricultural sciences became a priority in many European states. With the establishment of the Board of Agriculture in 1793, a scientific society emerged in Britain with the aim of gathering data on agricultural production in Britain and producing reports on how best to improve methods and cultivation within the country. Farmers, animal breeders, and nurserymen became integral actors within these new knowledge networks, raising new questions about how farms, plant nurseries, and gardens could serve as sites where scientific evidence was produced. The importance of these sites to natural history and agricultural science was of course nothing new: but with the proliferation of agricultural societies and journals that occurred in the early nineteenth century, the varieties of evidence produced by farmers and gardeners to support theories of heredity and disease came under new scrutiny. Drawing on the agricultural print culture in Britain from 1793 to 1836, this paper argues that citizen-led experimentation and knowledge production were integral to the larger ambitions of the state, producing a variety of pathways adopted by farmers and gardeners to promote their own observations as valuable evidence contributing to the establishment of a self-sufficient agricultural state.

"Evidence", law and global knowledge in the 1959 United Nations' "Study on the traffic in persons and prostitution"

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In 1959, the United Nations published its first report on the traffic in persons and prostitution ('1959 report'). Reports on trafficking had been produced by international organizations since the early years of the League of Nations and have most recently been analysed as practices of the production of knowledge and "information-gathering projects" experimenting in the "knowledge formation in studying a social phenomenon on a global scale" (Liat Kozma). This paper approaches the production of "global knowledge" as a practice embedded in and reflective of international legal frameworks on the one hand and of multi-scalar processes of the negotiation of knowledge across local, national and global scales on the other.

This paper investigates the production of the 1959 report from three perspectives and identifies three ways in which international law shapes the global production of knowledge of politically and legally sanctioned evidence on human trafficking in a specific type of source: The "report" published by and through an international organization. The 1959 report was based on the legal framework governing the United Nations mandate in the field of trafficking, the 1949 "Convention for the Suppression of the Traffic in Persons and the Exploitation of the Prostitution of Others". This paper argues that the "global" knowledge produced within the UN and, more generally, within international organizations, is both constrained and enabled by the language, provisions and frames of relevant international legal frameworks. This paper looks at the bureacratic process within and across international organizations, states, state and local governments to offer a microanalysis of the negotiation and construction of global 'evidence'. In doing so, it connects the history of knowledge with the history of international organizations and international law.

First, international law and, specifically, the 1949 Convention itself is analysed as knowledge. As a kind of "master frame", the 1949 Convention is based on certain narratives, assumptions and explanatory frameworks of how trafficking manifests itself, how it can be explained and, consequently, how it can be solved. Secondly, the paper looks at the the creation of the questionnaire sent to governments and NGOs to solicit information for the report and the ways in which the questions reflected the political mandate of the United Nations and the kind of information that could be collected in the first place. Thirdly, this paper goes beyond the international level of the production of knowledge and looks at the ways in which the German government, its Länder and localities responded to and engaged with the UN questionnaire. In a brief case study on Stuttgart, this paper will trace the ways in which the UN questionnaire travelled from the UN offices to the German Federal Government to the Länder and Stuttgart's local city administration and back up and thus offers a micro-study of the processes of fragmentation, filtering and contradiction that inevitably characterize global "flows" of knowledge and information across both institutional and national boundaries.

Ethnographic objects: the politics of truth and evidence in the 'Missing Persons' cases in Pakistan

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Based on fieldwork among the families and claimants of the 'missing persons' – suspected Islamic militants, separatists and their sympathizers, extra-judicially abducted and detained by state military and intelligence services – in Pakistan, my paper explores the politics of truth by examining the objects and practices of evidence-making in anthropological research. Specifically, the paper critically examines the use of documents/documentary artifacts – various forms of files, petitions, applications and other archivable things – as objects of scientific inquiry. Their scientific use is contrasted both with how these objects are used by people in social life – particularly, by the activists, petitioners, protestors and families of the missing persons – as well as how they are used/disused (i.e., how contestations over their use value take place) as evidence in the courts and legal and forensic practice (Weld 2014; Hull 2012).

Ethnographic fieldwork is marked by a profound contradiction: ethnographers are expected to maintain a "critical detachment" from their informants/interlocutors, while, at the same time, by means of (participant) observation, collection of material data, and spatial and social, and I add, emotional, proximity, they are presumed to bridge their (ethnographers and their interlocutors') epistemological and cultural worlds together (Robben 1995). Working in the context of state and other forms of violence, the political stakes of ethnographic practice increase immensely, as the anthropologists often find themselves caught in the production of truth and/or history about violence, its agents and victims (Trouillot 1995). Both the victims as well as the perpetrators of violence are – actively but also, inadvertently – engaged in the (re)construction of evidence and truth about the events of violence, their agents and the making of the stories of trauma and suffering.

Therefore, the paper will explore: how are ethnographers seduced into the politics of 'truth', particularly, the truths about political violence, its victims and perpetrators, and what role does the anthropologist, as the collector of evidence of violence and trauma, play in such politics (Felman 2002)?

In social life, contestations over power are marked by disputes over myriad forms of facts and manipulation of 'truth'; they are representative of maintaining or contesting authority, that is, who gets to set the social facts (Wolf 1999)? This aspect of sociality and politics has been amplified by the recent outcry about "post-truth" and "alternative facts" as they have become part of popular and scholarly discourses on populist politics in United States, Europe, India and elsewhere (Ho, Cavanaugh, Greenhouse et al. 2019).

On the other hand, post-modern and post-structuralist critiques in Social and Cultural Anthropology have questioned the settled notions of ethnographic data and ethnographic methods (Marcus and Fisher 1986). This paper engages with these debates and asks: What counts as "ethnographic" evidence? Many social-scientific disciplines, sociology, law and legal studies, political science, and so on, have adapted 'doing ethnography' as their method of research; the now common use of ethnographic methods adds to the significance of the latter question; thus, I ask further: why has confidence in empirical methods of inquiry grown in Social Sciences even after the ethnographic method has come under intense epistemological scrutiny in its parent discipline, Anthropology?

On top of the hierarchy: evidence practices and practicing evidence of systematic reviews in biomedicine

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The semantic of evidence production is currently widely established in science. Many contributions dealing with practices of evidence production in science and technology studies explored technologies of evidence production in the process of data generation and regulation (Cambrosio et al. 2006), that is, trials, experiments, or the construction of guidelines (Timmermans and Angell 2001). In this contribution, we aim at questioning the relationships between evidence production and its use by focusing on the discourses, infrastructures and audiences of a particular genre of writing, that of systematic reviews. Particularly in the biomedical sciences, systematic reviews have been proposed to stand at the top of an alleged hierarchy of evidence (Atkins et al. 2004). Systematic reviews are ascribed several attributes, as being, for instance, more generalizable (Chalmers and Glasziou 2009), less inclined to bias, or particularly transparent in providing information about evidence. Several transnational collaborations formed around the production and dissemination of systematic reviews which have allowed for constructing large data bases, making this type of research particularly visible among a large community of professionals. In addition, non-medical fields have also adopted the idea of evidence based practice and are increasingly leaning heavily towards the promotion of systematic reviews.

Taking up the conceptual and theoretical perspective of this workshop, in this contribution, we question the ways in which the production of evidence in systematic reviews (evidence practices) is related to its audiences, that is, to practitioners using that evidence, and stabilized by specific infrastructures of evidence, that is, guidelines, data bases and regulations. Systematic reviews are established as particularly credible in practices of presenting evidence, for instance, by relying on specific statistical practices of evidence identification. Dedicated review methodologists have designed specific rules which authors need to comply with, if their papers are to be perceived as systematic reviews. Thus, regulations for systematic reviews construct what can be perceived as credible evidence while practices of using these guidelines in turn reproduce that credibility. Yet, what is more, the evidence of systematic reviews is also stabilized by “inscription devices” (Latour and Woolgar 1979), transforming the evidence established to recommendations in clinical guidelines. Thereby, different objects and infrastructures are related to each other (Callon 1986) which make systematic reviews a particular valuable way of constructing and using evidence. Systematic reviews hence can be perceived to be substantially involved in what Ludwig Fleck (Fleck 1980) has termed the making of facts in science, taking particularly the socio-epistemic configurations of such processes into account. The results presented are based on field work, expert interviews and document analyses in a project focused on review articles and their reception in science.

Research-based fictional ethnography: representational accuracy and the predicament of evidence

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The proposed paper addresses the ethical question "to what extend are we allowed to fabricate evidence in order to make the ethnographic narration more accurate and more accessible to the wider public?". It draws on the research project "Ethnography and/as hypertext fiction: representing surrogate motherhood" (HYFRESMO), currently implemented at the Anthropology Department of Panteion University of Social and Political Sciences (Athens, Greece), and it is funded by the Hellenic Foundation for Research and Innovation & the General Secretariat for Research and Technology.

The project HYFRESMO focuses on the emerging social practice of surrogate motherhood in order to critically address digital ethnographic textuality. Its aim is threefold: (a) it attempts a small-scale ethnographic study of surrogate motherhood in contemporary Greece, employing the collaborative research methodology of duoethnography, (b) it seeks to interrogate the practices of ethnographic writing by proposing that research findings may be presented in a form of fiction writing, such as poetry, short stories, animation, podcasts etc. and (c) it supports the opening up of the ethnographic text to new forms of mediation by the experimental production of ethnographic hypertexts (with links to research-related media and materials, ranging from recordings, videos & photos to notes, academic papers and discussion excerpts) and even digital representations-posters through emerging technologies, such as Augmented Reality (AR). The overarching stake is to fashion ethnographic 'texts' which facilitate the non-linear reading of fictional ethnography and its access by non-expert readers. The study aims at mapping out the areas of theoretical interest that promote a new modality of ethnographic 'writing', relevant to the object of representing surrogate motherhood and at the same time, presents affinities with new media, feminist thought and experimental methodologies

The proposed paper presents the research project's orientation towards the re-conceptualization of ethnographic evidence, since it does not distinguish between collected and creatively manufactured data, so long as the end narration of the fictional ethnographic artefact agrees with the experience of research participants, i.e. they can recognize themselves in the final digital 'texts'. It describes the normative understanding of current social sciences as mechanisms of "achieving evidence" (from research design to data analysis) and it presents an alternative epistemological and methodological standpoint, from which to argue that an orthodox management of research data may in fact lead to less accurate depictions of the phenomena under study.

The paper raises the persistent issues of research practice, data collection & analysis, interpretation and representation in anthropology, in attempting to frame them in an expanded understanding of research ethics that leaves room for imagination, creativity, omission and "tampering with evidence" as part of the ethnographic representational practice. We wish to show that a greater degree of interference with evidence may paradoxically diminish scholarly authorship and bring forth more immediate ways of interpreting and portraying social reality. We argue that, since academic writing has often failed to engage with the ways of apprehension of non-academic audiences, research-based fiction may be an answer to a wider politics of representation and sharing research findings.

Furthermore, even though fiction writing may be viewed as promoting the singularity of authorship on the part of the ethnographer, the replacement of academic jargon with literary multi-vocal fiction might actually diminish the effect of this authoritative voice and re-shift the focus on research subjects' lived experience (in our study: surrogate motherhood). What we hope to achieve through fictional transmedia ethnography of surrogate motherhood is the creation of a new discursive-ethnographic space that "accurately" reflects new sensibilities and manners of registering the "non-tellable" of social reality and/or motherhood.

Evidence and the scientific method as understood in academic philosophy during the 16th, 17th and early 18th centuries

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This proposed presentation focuses on the role of evidence in philosophy (as taught at academic institutions) during the 16th, 17th, and early 18th centuries. While philosophy is understood here to include metaphysics, physics, mathematics disciplines, ethics, family life (oeconomica), politics, logic, and rhetoric, the focus here will be on metaphysics, physics, mathematics, and logic.

Prior to the 1670s, evidence in academic philosophy could include the views of authoritive writings (for example, Aristotle, Peripatetics, Scholastics, and/or then-recent authorities as well as common consensus, universal or common experience, and right reason). The introduction of experiments (largely at the initiative of individual philosophy instructors) in academic instruction on mathematics and physics (and in medicine) provided new forms of evidence without, however, fully replacing previously utilized forms of evidence.

In this connection, the meaning of the term "scientific" in the context of what was known then as the scientific method (methodus scientifica) will be discussed. The first known use of that term is within a treatise on logic by Jacob abarella first published in 1578. He actually refers to two scientific methods: one is synthetic/ deductive and the other is analytic/inductive. Roughly this same dichotomy was made in the first known treatise on scientific method, published by Joannes Bellarinus in 1606. Bellarinus states that his treatise combines metaphysics and logic.

Bellarinus distinguished between teaching/learning and discovery but did not discuss the latter. In connection with teaching and learning he refers to the three operations of the human mind (which was first? used by Thomas Aquinas). After Bellarinus the scientific method was linked to those three operations through the 18th century. As a concept, scientific method was largely neglected (after Bellarinus) until Christian Wolff began (in 1728) to include it within the titles of his Latin-language textbooks; it was utilized during Wolff's lifetime but far less so thereafter (until the late 19th century). Although Wolff himself offered experiments within his own academic instruction, he (and many of his academic contemporaries) nonetheless asserted that logic, using the three operations of the mind / scientific method, provides scientific knowledge.

In this proposed presentation, an answer to the following general question will be ventured: Why did the inception of experiments in academic instruction at the outset of the Early Enlightenment apparently not completely displace earlier viewpoints pertaining to scientific knowledge within academic instruction? In this connection discussed will be 1. changing views with regard to the concepts of contingency, necessity, society, and value, 2. older concepts (including humors, spirits, and temperaments) that appear not to have changed much, and 3. experiments within the context of academic institutions up to the mid-18th century.

Data, theory, and scientific belief in early molecular biology: Pauling's and Crick's conflicting notions about the genetic determination of protein synthesis and the solution to the 'secret of life'

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Opinions on the relationship between data and theory (here broadly understood as any universal statement that purports to describe and explain phenomena of the natural world) vary greatly and fall between the two poles of empiricism and anti-empiricism. On the one hand, the Duhem-Quine thesis holds that theories are so radically underdetermined by data that data are insufficient to determine what scientific beliefs a scientist should hold. Moreover, according to this thesis, a hypothesis cannot be tested in isolation, but only as part of a whole system of hypotheses together. The underdetermination thesis also has a strong appeal in science studies, where it has been used as a rationale for the claim that theory choice is the result of social processes of 'negotiation' and personal interest. On the other hand, proponents of big-data science have declared a new era of empiricism in which the volume of data accompanied by computational tools enables data to speak for themselves, free from theory.

Motivated by these contradictory arguments, I examine, both historically and conceptually, the 1950s generation of two highly important and conflicting theories in early molecular biology, namely Linus Pauling's structural and Francis Crick's informational theory of protein synthesis. Both Pauling and Crick considered their theories crucial to solving the problem of the 'secret of life'. Pauling believed that the three-dimensional molecular structure of proteins determined biological specificity and that this structure was based not on amino acid sequence, but on 'templates' in proteins' environment such as antigens. Crick, by contrast, believed biological specificity to be based on DNA base sequences that determine amino acid sequences, and he assumed that the latter determine proteins' shapes.

My goals are:

- To explore the relationship between experimental data and theory in Pauling's structural and Crick's informational theory of protein synthesis, and to show that both Pauling and Crick based their views on protein synthesis and the 'secret of life' on only a few direct experimental data that were to a large extent - though not entirely - identical.
- To show that despite this apparent 'underdetermination', scientific theory choice was possible at the time, if factors other than direct empirical evidence were taken into account.

To argue that:

- Pauling's and Crick's theories consisted of different hypotheses and that, unlike what is claimed by the Duhem-Quine thesis, each of them could be tested separately.
- Despite their crucial importance for the generation of knowledge in biology, experimental data are not the only basis, and that in the generation of long-lasting biological theories, experimental data was complemented by logic, a causal analysis, and a broad scientific knowledge outside the field in question.
- Personal predilections affect data selection and, for better or worse, theory preference. This bias does not call into question subsequent objective theory testing.
- A reliance on data alone does not lead to a causal understanding of basic features of life.

Engineering Evidence and Technological Practices in the Second Industrial Revolution

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For the conference "Practicing Evidence – Evidencing Practice," I propose to discuss engineering evidence, knowledge practices of engineers, and engineers' efforts to align themselves with, and distinguish themselves from, scientists and the epistemic and professional practices in the (exact) sciences. I look at the period of the so-called "Second Industrial Revolution" (about 1890 to 1930), which was not only a time of rapid and profound technological change but also when engineers were constituting themselves as a new profession and social group.

Constituting and articulating ideas and practices of evidence was a crucial part of this process of professionalization. Engineers used established ideas of evidence borrowed from physics, chemistry, and mathematics, but they were also keen to establish a specific identity of engineering knowledge and engineering evidence practices. They were thus walking a fine line between latching onto the established authority of the modern exact sciences (and their institutionalization in the modern nation state in the course of the 19th century) and distinguishing themselves from science and scientists, drawing boundaries and using the idea of novelty, to make their own evidence practices legible and credible to larger expert and lay publics.

Industrialization brought into being novel types of evidence, knowledge, reasoning, practices, and expertise, exemplified, for example, in the disciplines of chemical engineering (derived from the science of chemistry) and electrical engineering (derived from the science of physics). This required realigning boundaries between science, engineering, and industry, and new types of epistemic and social boundaries. Such revisiting and realigning happened among scientists, engineers, and philosophers, as well as in state administrations, at universities, in private corporations, and in popular discourses.

I trace such efforts of demarcation in particular in engineering periodicals, archival and published work by engineers such as textbooks and other monographs, and the work of philosophers of technology. My focus is on US American and German-speaking Central Europe. Engineers established epistemologies, were involved in ongoing debates over where to draw the line between modern science and modern engineering, constantly redefining both. They also integrated other forms of evidence into the debates, such as from historical, philosophical, economic, art historical, archeological, and legal scholarship. Taken together, such work constituted modern engineering and, not least, created the term "Industrial Revolution" as a historical event.

The evidence practices of modern science thus acquired a sibling in the course of industrialization. It is ironic that engineering, in distinction to science, often is looked down upon as a mere but literal evidence "practice." It has thus encapsulates and defined a characteristic and critical class conflict of modern industrial societies. At the same time, the practical part of modern science has been among its most influential and profound agents in social and economic change lasting all the way to our "digital" age.

Proliferation, Networks and Opening: changing evidence practices in modelling for policy

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Computer models have become increasingly prominent technologies to support public policies on a wide range of complex and societally controversial questions, ranging from climate change or economic policies to the regulation of chemicals. Closely associated with calls for evidence-based policy-making, computer models are expected to fulfil a variety of functions, from the identification and analysis of societal problems to the examination of different policy instruments and the assessment of the costs and impacts of planned and implemented policies. Modelling at the science-policy interface entails specific evidence practices that entangle multiple epistemic, political and social rationalities, demands, principles and norms.

Within this presentation, we aim to discuss three developments in modelling for policy and their implications for respective evidence practices, i.e. modelling, and practicing evidence, i.e. their use in policy-making: a) the proliferation of modelling approaches and tools, b) the development of complex model networks and c) initiatives of open modelling. Our reflection is backed by insights and examples from three distinct domains of modelling for policy, namely trade policies, risk governance of nanomaterials and energy system transition.

First, mainly driven by scientific rationales and cultures, we observe the proliferation of models, modelling approaches and tools and concomitant a differentiation of respective modelling landscapes and communities. In terms of evidence practices this implies a competition of methodologies, model structures and potentially results. The differentiation of the scientific modelling landscape is not reflected to the same extent in their use for policy-making. For example, mainly three consultancies provide modelling expertise for almost all EU Impact Assessments on trade negotiations, using the same modelling approach. Hence, for practicing evidence, the proliferation of models may result in an intensified competition for political authority as well as early path dependencies in their political use.

A second development is the integration of multiple models into broader model networks. For example, large EU projects are currently developing and testing integrated risk governance frameworks and platforms for nanomaterials that include a variety of scanning and assessment methodologies. Such developments meet the (political) demand for evidence for ever more complex policy issues. The result is a high degree of integrative work and a kind of ‘assembled evidence’ that raises questions on comprehensibility and accountability.

Third, modelling for policy experiences calls for opening from scientific and political sides alike. Energy system modelling is a frontrunner of open modelling initiatives. Open source principles in modelling imply disclosure in terms of the epistemic but also the value basis of modelling practices and therewith serve scientific demands of replicability and verifications as well as political demands of transparency and quality assurance. Inter-model comparison allows for greater scrutiny of the validity of model development, outputs and interpretations, particularly against the background of the above-mentioned proliferation of models. The question is whether this trend also leads to the opening of respective evidence practises.

Separating urgency and validation – A comparative reading of humanitarian mapping and disease surveillance

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In disease surveillance and in humanitarian mapping practitioners increasingly use pre-validated information on the grounds of urgency and before routine validation procedures will follow. I have conducted research in both fields over the last years and will put those cases side by side to navigate some of the question outlined in the conference' call for papers. Unvalidated maps are used by field workers in disaster relief situations because, so it is argued, they do not always have the time for validating the accuracy of the mapped information. In the case of infectious disease surveillance, the clustering of collected but unvalidated information about disease may at times be enough to generate an alarm, even though the cases still need to be validated by laboratories.

What can be abstracted from the similarity and differences of those two cases? Both work in face of an emergency, whether within the rationale of preparedness or in relief efforts. And both bear on formal organizational structures that separates the work of collecting information from that of validating it. Whereas the list of those allowed to collect information increases steadily, the work of validation is still limited to fewer experts. In the case of humanitarian mapping, publics are enrolled into the mapping/collecting of information, while only expert mapper with enough experience and training may become validators. In the case of disease surveillance, information may be collected from drug sales, hospital admission data, and in some cases even from social media, whereas validation remains to be limited to laboratories and control centers.

Within the sequential organization of first collecting then validating information, it would seem that both validation practice and information collection converge on the problem of the truthfulness of information. However, I would argue for taking the affective urgency serious that enrolls more and more actors in the collecting of information. By contrast, validation lures with community recognition and distinction qua expertise and with the gesture of confirming true belief or negating it. Could we go so far to claim that validation work relies on belief in correspondence truth while pre-validation work makes affective intensities primary? While this may be applicable to humanitarian mapping – where the affective milieu of information collection is curated through mapathons, the design of interfaces and twitter conservations – the processes of information collection in disease surveillance is at most entangled with the fear of too many 'false positives' and therefore still in relation to a model of correspondence truth. The separation between affective collecting and truthful validating is therefore not one in kind but one in degree and we can study how it structures fields of evidence practice differently.

'Evidence-making intervention': New ways to think about evidence, policy and interventions in health

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Implementing 'evidence-based interventions' is the catch-cry of governments but realising this ideal has proven challenging. Many interventions are never actualised into use, others fail, some harm, and most produce unexpected effects. These complexities have generally been regarded as a problem of translation. By taking a different approach, we can think critically not only about the problem of translation but also consider how evidence, interventions and policies are made relationally in practices. This presentation invites a shift away from thinking with evidence primarily as a matter of epistemology – the different ways interventions can be known – towards thinking with evidence as a matter of ontology – how interventions are performed through knowledge-making practices. An 'evidence-making intervention' approach (Rhodes & Lancaster, 2019) offers a framework for conceptualising how evidence and interventions are made relationally in practices, thus working with the politics and contingencies of implementation and policy-making. By emphasising relational materiality and performativity, this approach engages with interventions, and their knowing, as matters-of-practice in local implementation events. This thinking has practical implications for evidencing and intervening. Drawing on case examples from the fields of drug policy and viral hepatitis, this presentation will illustrate how thinking with an 'evidence-making intervention' approach challenges presumptions of separation between the material and social, nature and culture, and evidence and practice, which dominate mainstream evidence-based paradigms, making visible how evidence and interventions are transformed and put-to-use in unanticipated ways in relation to local matters-of-concern. I suggest that this approach might afford a more critical, as well as more careful, way of knowing and doing health intervention which does not simply ask 'What is the evidence?', but also asks 'How is evidence made?', 'How is evidence put-to-use?', and 'How is evidence made-to-matter?'. This shifts our focus away from the catch-cry of 'What works?' to instead ask 'How are things done?', and further, 'How might things be done well?'.

Practicing evidence by visual narration in the historic Anti-Vaccine movement

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During the 19th century, scientific and medical discoveries dramatically changed everyday life in Europe, especially in the fields of contagion and vaccination. Hygiene exhibitions, posters, popular scientific talks and articles in the mass marketed family journals aimed at educating the public about the newly augmented reality. Despite these endeavours, anti-vaccine movements gained ground, starting with the introduction of vaccines in Europe by Jenner in the end of the 18th century. Anti-vaccinists started to take a stance against mandatory vaccines, first legally introduced in 1807 in Bavaria.

In my talk, I address the evidential practice of the historic anti-vaccine movement. I claim that anti-vaccine propaganda mimics the contemporaneous discourse of medical and scientific education, especially with regard to its use of photography. Evidence is created through establishing a similarity of discourse to the medical discourse, for which an evidential gesture has been established. Examining the evidential practices of the historic anti-vaccine league thus in turn throws light on the contemporaneous popularization of the scientific medical discourse. The medical case narrative and its relation to photography are at the centre of my argument, yet as the discourse builds around the intersection of fear and photography, it relates to non-hegemonial photographic discourses, particularly historic spirit photography.

While similarity frames the evidential practice of the anti-vaccine movement, a more detailed analysis of the material reveals another aspect of its evidential strategy: Magazines, pamphlets, booklets, books, flyers and postcards disseminate anti-vaccine propaganda at the time. These publications routinely use images, which are collected and compiled by anti-vaccine activists. The photographs are published in combination with case narratives, which tell the story of the depicted vaccine victim. One example of many, which stands out due to the volume of collected anti-vaccine cases, is Hugo Wegener's collection Der Impf-Friedhof, which was first published in 1912. The evidential practice through images in Wegener's publication is typical for the anti-vaccine movement: Photographs accompany case studies, and they provide visual evidence, making use of the idea that photography is privileged to give an objective rendition of reality due to the physical and mechanical connection between the depiction and the depicted. A closer look at this supposedly objective image however reveals that the evidential practice is decidedly narrative. The case studies suggest a biographical reading of the images, and in addition the images themselves display narrative elements, such as an image-within-an image to infer a flashback, or a before-and-after effect by displaying respective photos.

As they incorporate such narrative elements, and due to the iconicity resulting from repeated publication, the images gain independence with respect to the textual case studies and they simulate witness statements. This iconicity, the impression of an ubiquity of vaccine victims due to the volume of cases, their geographical spread, and the fact that photographs and medical cases are solicited directly from the readers of anti-vaccine journals, establishes a socio-epistemic evidential practice, convincing recipients to recognize vaccines as personal threats. The anti-vaccine movement exemplifies narrative witnessing as it is produced by images and fuelled by fear.

Narratives as evidencing practice in the science coverage of genomic research

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The scientific community has developed specialized practices to determine what counts as validated, "true" knowledge. However, these scientific evidencing practices are usually less meaningful to the general public. Consequently, the scientific foundation of findings and results is often neglected in the coverage of science in mass media. While science journalists can use data and methods to substantiate scientific findings in the media coverage, they have also developed own evidencing practices to present scientific claims and facts in the science coverage as true. One established evidencing practice of journalism generally and science journalism specifically is to reference experts, sources and other authorities. In addition, narratives form an important evidencing practice of science journalism. By telling stories about researchers, people affected by the research, or about the development of a study or research program, scientific findings are substantiated and thus made plausible. While existing studies highlight that narratives form a substantial part of the science coverage, their function as an evidencing practice has not been investigated yet. To address this caveat, we conducted a quantitative content analysis of German print coverage of genomic research to analyze the use of the identified evidencing practices: (1) references to authorities, (2) data and methods, and (3) narratives. A sample of n 1023 articles on genomic research, that were published between 01.01.2000 and 31.12.2016 in a selection of national quality newspapers, regional newspapers, tabloids as well as weekly news magazines were analyzed. The results of our study show that references to authorities were by far the most common evidencing practice that was used both as a solo evidencing practice as well as in combination with other evidencing practices. Notably, data and methods as well as narratives almost never appeared alone but were usually accompanied by other evidencing practices. Narratives were often combined with references to authorities as well as both authorities and data, and helped to make new, beneficial and uncertain scientific findings understandable and memorable.

Communicating novel food technologies through narratives: evidence from a Canadian consumer survey

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Despite efforts to promote biotechnology communication, public perceptions of agricultural biotechnology have become more entrenched and polarized. Studies have challenged the "knowledge deficit" hypothesis that simply providing more information facilitates technology consensus and acceptance, arguing instead that framing matters for scientific communication. We contribute to the literature on information framing effects in technology communication by examining whether narratives (stories) about agricultural biotechnology result in consumer attitudes and choice behaviours that differ from when information is positioned in the logical-scientific frame more commonly used by scientists, regulators, and experts.

The technological focus of the study is gene editing (also known as CRISPR-Cas9), which increases the speed, precision and ease with which genetic improvements are possible in plant and animal breeding through targeted changes to specific genes. The CRISPR Cas9 gene editing revolution was greeted with considerable enthusiasm by the scientific community, along with optimism that the technology would be more acceptable to the general public and not subject to the same divergence in regulatory approaches across countries that has befallen genetically modified (transgenic) foods. Nevertheless, relatively little is known about consumer responses to this new technology, and divergent regulatory approaches to gene editing have already emerged.

Data from an online survey of 804 Canadian adults is used to examine the role of narratives versus logical-scientific information in communicating about novel food technologies. The survey features a discrete choice experiment (DCE) situated around a purchase decision involving a sliced apple product with two consumer-oriented features (non-browning and antioxidant enhanced), introduced through three potential technologies (gene editing, genetic modification, edible coating). Respondents are randomly assigned to different information conditions regarding the technologies. The logical-scientific information condition is written in a scientific style using the passive voice with generalized and impersonal language and is attributed to either a government agency or a scientific organization. In contrast, the narrative-style information condition is framed as a story, using a more lively and vivid personal style, and is attributed either to a science journalist or a consumer blogger. In addition to assigned treatment conditions, a self-selection treatment condition allows some respondents to choose which type of information (narrative versus logical scientific) they access from which source (consumer blogger or journalist, government agency or scientific organization).

Data are analyzed using multinomial logit and random parameters logit models. We find that the way in which information is presented (logical-scientific vs. narrative) matters: narratives help reduce negative perceptions regarding agricultural and food technologies. Initial negative reactions to gene editing are softened when information about the technology is framed in a narrative format. Factors that predispose consumers to seek logical-scientific versus narrative information sources are also examined. Implications for the scientific community, policymakers, and the agri-food sector are discussed.

Media of 'Making-Evident': epistemic Images and the 'Problem' of Inscription

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Not only since bacteriologist Robert Koch's famous dictum that in experimental contexts under certain circumstances 'the image of an object can be more important than the object itself' (Koch 1881), scientific knowledge production has committed itself to the production of images to such an extent that 'knowledge' and 'visibility' seem to have become indistinguishable. Lab-based 'experimental systems' (H.J. Rheinberger) not only provide images as mainly illustrative, secondary by-products, but deploy 'epistemic images' as visual, material and discursive modes of 'making visible', and thus – by means of a conventional epistemological shortcut – of producing 'visible evidence'. 'Epistemic images' for making something 'evident' can be situated at the intersection of media technologies and dominant epistemic regimes (sensu Foucault). At the same time constitutive media of knowledge production and deriving from inscriptions of material traces in a medium, 'epistemic images' urge to re-conceptualise the process of knowledge production regarding its media premises.

Since media always seem to generate corresponding forms of knowledge (and vice versa), any form of visual production of scientific evidence is entangled in the interdependency of (media) technologies as its condition of possibility, social (research) practices and routines, issues of representation and reference-as-inscription as well as the highly specific and dynamic reconfigurations of 'material-discursive agency' (K. Barad). The problem is intensified by the use of electronic and computational media that generate their own 'tempor(e)alities' (W. Ernst) and operate at micro-temporal scales without any direct connection to human sense perception (M. Hansen), i.e. visibility-as-evidence is entwined with more-than-human 'technoecologies of sensation' (L. Parisi, E. H rl).

Reflecting on the onto-epistemological implications of relational, entangled 'machine vision' in experimental 'naturecultures' (D. Haraway et al.) or 'medianatures' (J. Parikka), the paper traces the problem of visible and material 'inscription' from the moment of the implementation of micro-photography in modern bacteriology (1830-1880) to contemporary uses of nano-technological imaging and other modes of 'making visible' in particle physics. It will be argued that any 'media epistemology of scientific evidence' has to take into account a media archaeological reconstruction of scientific discourses and practices that preconceives contingent media premises, their historical contexts and technological conditions of perception. Gaston Bachelard's phenomenotechnical dictum that modern science "thinks with(in) its instruments", could as well be modulated with respect to how science 'sees' with(in) the machinic assemblages that it constructs and implements. Each time new 'visibilities' are emerging from these assemblages, they require and enable a problematization of the say-able and the see-able and lead to transformations of the concept of evidential referentiality and indexicality, while implying theoretical assumptions as well as aesthetic choices. Evidence, hence, emerges with and from relational machinic entanglements, in other words: media.

Charting course: rendering, evidencing and mediating data

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This abstract represents a proposed line of research for a postdoctoral project that will commence in August 2020. Having recently completed my PhD in Communication & Culture at York University (Canada), I am currently conducting preliminary research on how charts are implicated in documentation practices. This project will consider political and financial documents specifically for their infrastructural role in securing and promulgating power, and focuses on the chart as a particularly recognizable element of information aesthetics. The political nature of charts, charters, charting and chartering implicate capital, territory, and knowledge into the realm of representation. In this way, this research considers the chart as a semiotic formation through which contents (words, icons, numbers, etc.) are rendered into precise relation with each other, while also treating the chart as an aesthetic process that is relational and affective. Working across historical and contemporary accounts of "charting" and its relationships to mapping, this research will explore the changing visual culture of informatization, rationalization, and modernization, seeking to establish how charts cultivate a particular relationship to information and notions of objectivity and truth.

Considering the transition of documents from analogue to digital, the chart is a particularly interesting aesthetic element to examine in the context of the shift from information to data. In an age of leaks, fakes, easy copying, and digital dissemination, how information and data perform aesthetically are necessary inquiries for cultivating deeper understandings of contemporary culture. Interrogating these documents as aesthetic media objects, as opposed to mere carriers of information, invigorates possibilities for critical engagement. To these ends, this project traces the genealogy of charting from earlier instantiations (maps, royal charters, etc.) that help tell the long history of and connection to concepts such as evidence, objectivity and fact (Daston & Galison, Objectivity). Here, charting upholds a unique relationship to forensics and evidence in that charts represent forms that at once delineate the forum (charters and legal frameworks), as well as perform as a means for evidencing particular relationships (maps, data, visualizations). While the contemporary forensic sensibility has become particularly aligned "to material investigation based on an expansion in our capacity to bear witness", we must remain cognizant of the ways the notion of material evidence is complicated through mediation. Moreover, the seeming de-materialization of forum "no longer confined to arena-like buildings, but incredibly diffused across a wide spectrum of sites and media forms," (Weizman, Forensis, 10) further implicate the tensions that arise in mediating material circumstances into evidence through forms of documentation. To these ends, this research examines how charting becomes part of what Weizman describes as a shift from testimony to evidence, from speech to data. Here, I question whether documentation bears the same potential to what artist Harun Farocki deems "operative images"—images that go beyond merely representing objects, and, in practice, become an integral part of operations themselves. Ultimately, this research poses the question of how practices of charting information are implicated in practicing evidence, as well as how they complicate material realities by way of rendering evidence into data.

Practices of evidence production in digital forensics

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Digital forensics (DF) refers to the extraction, preservation, analysis and interpretation of data from personal and network devices, public and private remote sources and in transit communications. DF has emerged in the last thirty years in response to the intertwining of technology and crime. A rapidly evolving domain, it is routinely used to obtain intelligence for investigations or provide evidence for criminal proceedings. Data acquired from digital devices can map a suspect's movement, actions and intent and help determine sequences of events, patterns of behaviour and/or alibis.

While in the beginning data extracted from digital devices was regarded as 'fact-based evidence' (Casey 2019), the subsequent development of the field has led to its recognition as a forensic science discipline, configured by guidelines and standards, quality assurance processes and method testing. Yet, to date, DF is struggling to maintain balance the balance between the competing interests of investigative needs, scientific rigour and privacy concerns. This has potential major consequences for the criminal justice process, for the law's ability to dissect and question the credibility and epistemic authority of digital evidence, and more generally, for the public understanding of and engagement with forensic science.

Building on ongoing ethnographic work on the application of DF in four police forces in England and Wales, this paper explores how the production of digital evidence is transforming in light of technological advances on one hand, and the pressures of operational speed, range and number of devices submitted for analysis as well as the volume of data examined, on the other hand. The analysis concentrates on 'dead box forensics' practices (rather than live-networks analysis), i.e. conventional computer investigations that collect, preserve and analyse media and devices where exact copies of the hard drives of the systems examined are obtained – in other words 'the data at rest' (Cummings 2008). In this context it further discusses the uptake and integration of DF expertise within existing knowledge structures and practices. The paper draws on observations of everyday activities, interviews with DF practitioners, forensic managers and police officers to map how digital evidence is practically accomplished and to scrutinize the socio-epistemic configurations that enable its production.

It is argued that as forensic expertise becomes increasingly applied to the digital domain, there is urgent need to document the process of digital evidence making and examine the challenges it faces. Despite an enduring academic, practitioner and policy interest in the contribution of forensics to the investigation of crime, DF activities have rarely been scrutinized in their complex settings, professional exchanges and routine undertakings. While subsumed to police work, these are neither self-evident, nor should they be taken for granted. The work of forensic practitioners must thus be understood not only in its wider context and implications - as captured by extant sociological scholarship on traditional and genetic forensics - but also in its current arrangements.

Psychoanalysis and the practice of forensic psychiatry in the Netherlands, 1930-1960

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The history of forensic science has often been written as a progressivist history, of forensic science becoming ever more technical and accurate, culminating in the use of DNA in court. It is unclear how the development of forensic psychiatry relates to the development of criminalistics and medicine (here referred to as forensic science). How does the increased faith in forensic science impact on the influence of forensic psychiatry in the courtroom? Does psychiatry seem increasingly unscientific? Or does psychiatry take over the scientific image of criminalistics and medicine?

To tackle this question we can resort to insights from Science and Technology Studies and praxiography, which show how knowledge and expertise are constructed in specific places, in this case the courtroom and the media. Particularly, the dynamic relationship between expertise and lay knowledge comes to the fore, since expert witnesses need to explain their scientific claims to judges, lawyers and the media.

My paper will study these broader questions by focusing on one case study: the influence of psychoanalysis on forensic psychiatry in the period 1930-1960 in the Netherlands, particularly in cases of murder and infanticide. In my research (based on scientific texts, newspaper articles on court cases and archival files belonging to those cases), I have found strong evidence of the increasing impact of psychoanalysis on Dutch (forensic) psychiatry in the late 1940s and 1950s. For instance, the theories developed by Alfred Adler and Helene Deutsch were applied to explain infanticide committed by women: repressed hate, female sexuality and 'masculine protest' were seen to be explanatory factors. These theories were not only formulated in scientific books and articles, but also expressed by psychiatrists who were expert witnesses in court cases. My paper will address the questions: What counted as evidence in these court cases? How did traditional forms of evidence, such as trace evidence and witness testimonies, relate to the developing forensic sciences? And were there different standards for the quality of evidence for forensic science and psychiatry respectively? How did psychological methods such as IQ tests relate to psychoanalytic theories as evidence? What was the relationship between the practices of evidence in these court cases and the authority accorded to forensic psychiatrists in newspaper coverage of court cases?

My paper will argue that on the one hand the 1950s were the heyday of scientific authority, scientists playing a large role as expert witnesses in court cases. This applied to psychiatrists as well. On the other hand, positivist standards of evidence that applied to forensic science, could not apply to psychoanalysis, whose readings were simply based on the psychiatrist's interpretation. Therefore we see a potential clash here between the natural sciences and the more interpretative paradigm of the social sciences. My paper will analyse how this clash was solved. It will suggest that the place in which evidence was made (especially the courtroom and the media) made a difference in regard to the acceptance of this evidence and the accompanying authority of the expert witnesses.

The Dustbin of History: archives as material evidence

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How does one rescue history, literally, from the dustbin? For nearly a century, scholars of China have used de-accessioned government papers, often peddled at flea markets outside the law, to peel away the country's opacity. Even till today, these "garbage materials" have spawned archival collections and academic careers, but little understood is their provenance and circulation, let alone their enduring impact on history and historiography. For all its bureaucratic tradition and documentary heritage, how could China also be such a lax custodian of state secrets and historical records? More importantly, what is the nature of archival evidence, and how do collecting practices shape knowledge production?

In my dissertation, I trace the transformation of state secrets to street commodities to scholarly resources. Drawing on ethnographic observation at grassroots collections across China, I conceptualize a distinctive political economy of paper. From underground publishing to private museums, the most marginal members of Chinese society, such as waste recyclers, have mobilized a variety of adaptive informal institutions to retool state secrets for personal profit and social memory. Their cultural entrepreneurship has connected a transnational cast of collectors, spawned new subfields of grassroots history, and unsettled discrete conceptions of who is a "historian" and "archivist." By considering archives are political actors, rather than scientific instruments of objective truth, I rethink the evidentiary basis of history as a discipline. In my fieldwork, I have followed Chinese scholars and librarians to living room archives across China and back to their home institutions, where a wide range of digital technologies are deployed to re-accession records that have lost their provenance and context. I argue that the effects of commodification and, more recently, digitization have paradoxically reified the truth value of archives, while impinging on the integrity of the historical record and profession. As material and method, these grassroots archives challenge us to rethink the nature of bureaucratic writing, while raising urgent questions about the definition of archive, the meaning of preservation and destruction, and the processes and possibilities of history.

No "Mere Accumulation of Material": land as evidence in Early Americanist Anthropology

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To late 19th century scholars of comparative civilizations, the terms "America" and "New World" were not merely geographical, but evoked a shared belief that the once isolated continent held something unique and worthy of focused scientific attention. As Latin American nations emerged from decades of instability following the Independence wars, foreign and local scientists alike sought to apply the tools of old knowledge practices to this apparently wide-open field of untouched raw material – the land, plants, animals, and people of the Americas.

For much of the 19th century, Americanists—as those applying scientific methods to New World civilizations would soon be called—were divided between those who examined objects in the laboratory or museum, and collectors in the field. Many European Americanists typically had little to no face-to-face knowledge of the American places or people they recorded, despite a thick stream of natural scientists who had for centuries ventured to all corners of the earth. Most were armchair scientists, removed from any real-time and on-the-ground experience with the region. On the other hand, the raw material they wrote about was overwhelmingly drawn from sites on American soil, in nations such as Mexico, Argentina, Peru, and North America. Over the course of the next few decades, Americanist anthropologists would increasingly promote direct contact, with artifacts, monuments, and landscapes, and of course with the living inhabitants of the continent. By 1910, the field had taken on greater importance as a site that could confer not just authenticity on artifacts, but also scientific legitimacy, and fieldwork was increasingly seen as necessary to interpret and lend meaning to the objects.

A fundamental source material for the coalescing of Americanist science was land. Though they had many intellectual and methodological disagreements, one thing Americanists – whether they hailed from Europe or America – agreed upon was that land, and the relics found in it, were a vital source of evidence. To these scientists, the earth itself was at once a universally accessible medium and arguably, the richest one, literally presenting multiple layers to be mined for data. Physical geography as well as signs of human transformations of landscape – including maps, caves, mounds, fossils, shards, and monuments – were key to their study of human civilization.

In this paper, I explore late 19th-century Americanists' practices on and with land during this foundational stage in the development of the modern human sciences. In particular, I will discuss how an examination of Americanists' encounters with the earth and its contents helps us better understand changing anthropological norms and methods over time. I argue that as they penetrated ever-deeper layers of landmass, landscape, and soil in Latin America, these scientists laid the groundwork for key methodologies typically associated with 20th century anthropology, such as fieldwork, language and cultural immersion, and the contextualization of evidence.

Panel Six: Alternative Evidence

Adjudicating What Counts as 'Sound Science': practices of rendering data into evidence in Canadian Environmental Science

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Science, Religion, and the Practice of Evidence-seeking

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In his discussion of historical evidence, philosopher R.G. Collingwood suggests that "anything is evidence" which enables the answering of a question, such that evidence is dependent on, and relative to, a given epistemic framework. But, what happens when there is more than one epistemic framework involved? How can evidence be situated amid multiple fields of knowledge, bridging disparate ontologies and epistemologies?

This question is particularly salient for anyone studying religious groups that seek to divorce modern scientific knowledge from its secular background in order to appropriate it within their own frameworks. For secular critics, such efforts are a manifestation of pseudoscience that confounds how science and religion ought to work. From their perspective, such confusion is possible because religious groups insists on not discriminating between scientific knowing and religious believing. As such, religious appropriation of modern science is seen as a misrecognition of boundaries, such that all conflicts around science and religion would be resolved only when religious groups learn where religion begins and ends.

In this paper, I focus on modern Muslim claims about the affinity between traditional Islamic concepts and modern scientific knowledge. I argue that such claims are possible not because Muslim misrecognize 'proper' boundaries of science and religion, but because of their privileging of evidence-seeking as a spiritual practice. Indeed, one of the main challenges for the study of evidence in nonsecular contexts is the post-Enlightenment separation of evidence itself from evidence-seeking subjects. From the privileging of the internal evidence of things over the external evidence of trustworthy testimonies, to the radical separation of revelation from reason, modern discourses have tended to render evidence as a contextless and disembodied concern, neglecting tradition guided rationalities, moral dispositions, and sensory capacities that help enable subjects' discernment of truth or falsehood (e.g., Lorraine Daston, "Marvelous Facts and Miraculous Evidence in Early Modern Europe"; Ian Hacking, The Emergence of Probability; John Milbank, Theology and Social Theory).

I suggest that evidential accounts, as truth claims, not only presume a relationship to their objects – a relationship between the question that guides the evidentiary inquiry and the things that turn into evidence, as Collingwood suggests –, but also one that includes evidence-seeking subjects. By focusing on modern Islamic healers and their indiscriminate use of Quranic and biomedical concepts, I further argue that religious notions of evidentiality acquires a positivity out of this triangulation between question, potential evidence, and religious subjects. As scholars shift the science and religion debate from boundary conflict to different conceptions of evidence, they will not only capture what comes to be represented or constructed as evidence, but also certain kinds of attitudes and sensibilities that enable and orient the evidence-seeking subject in religious contexts.

When patients mobilize evidences: activism and the production of knowledge on AIDS in Brazil

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Aids epidemics changed many social and cognitive processes related to illness, medicine, and public health in late 20th century. Among the important transformations associated to aids it is the emergence of an important way of social mobilization, organized and executed by the patients, the activism. In Brazil, aids activism started at late 1980s during the return of democracy in the country after over two decades of dictatorship and the creation of a new health system based on the constitutional right to health which made health care a governmental obligation. The organization of the new system and social perception of health as a right were related to the amplification of social mobilization towards health rights and specific disease patient's care such as aids. We discuss in this paper how aids activism in Brazil, specifically the Group for the Valuation and Dignity of Aids Ill-Person (Grupo pela Vidda – For the Life Group) acted in the production of evidences concerning the disease. Created in 1989 in the city of Rio de Janeiro and later other cities as Sao Paulo, the Grupo pela Vidda gathered seropositive patients for HIV/aids, their families and friends engaging in the fight for citizenship, health and sexual rights for aids patients. The activism group edited its own journal such as the Boletim pela Vidda (in Rio) and the Cadernos pela Vidda (in Sao Paulo); the later composed by translation of international papers' pieces and articles written by Brazilian physicians. In the journal, articles were published about new therapies, foreign research, prevention and other aspects related to the clinical experience of the disease. The content published in Cadernos pela Vidda consisted of translating scientific statements into a language of everyday use, seeking to give seropositive patients greater autonomy to negotiate, and even inform their doctors about new treatments and medications available. In addition to informing, it also advocated for a decent and effective treatment which could be done even by changing the physician. Both journals indicated doctors and locations for testing and appropriate care. We argue that transforming a technical-scientific inscription into understandable statements that may be used by patients can be considered a process of evidence production. Dialoguing with the literature on the role of activism in shaping "lay expertise" and "collective hybrid models" of decision-making in health care, we discuss in this paper the relationship between the evidence produced by AIDS activism and important processes in the fight against aids by Brazilian society in the late twentieth century. This study is a historical analysis of the production and articulation of scientific knowledge, from the methodological parameters of the history of health and the social studies of the sciences. The empirical sources for the research consist of the Grupo pela Vidda's publications, medical literature on aids in Brazil, public health documents, and mass communication materials.

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Venue

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