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**Title:** Material Lives: Science and Technology Studies (STS) and modern Middle East History

**Abstract:**

This article critically surveys the field of Science and Technology Studies (STS) and modern Middle East History. Scholarship in STS has helped transform the writing of history by developing new ways of thinking about what the political and the technical are and how they work. Historians of the modern Middle East have expanded on these microstudies to think about the larger, more extended effects beyond the laboratory, and to reconfigure the role of nature and technology in the reassembly of questions of agency, knowledge production, governance, political community and nation, and possibilities for democracy in the region. The discussion tracks the turn to the *material* or *technical* in modern Middle East History by placing the nonhuman at the center of the analysis of power. Making extensive use of industry and company archives, recent scholarship has drawn on STS to introduce new puzzles to the field of Middle East History concerning the political economy of the countryside, large-scale infrastructures, energy and democracy, and the political agency of the multinational corporation.

**Key words:** Science and Technology Studies (STS), Middle East History, Non-human, Nature, Environment, techno-politics, socio-technical

**Main text:**

As humans take part in disrupting “climatic, geological, and evolutionary processes” of the current age of the so-called Anthropocene (Chakrabarty, 2009a, 2012b), both the “effects and futures” of modern technical, economic, and infrastructural development projects appear unstable (Anand et al, 2018, p.8). Humans appear to have transformed themselves into a kind of geologic force that is impacting the environment with dire consequences for the world’s sustainability. Scholars are now aware that our current predicament lends itself to a critique of the continuity of human experience that is central to the field of history. As the post-colonial historian, Dipesh Chakrabarty, argues, what scientists are saying about climate change challenges ideas about the human that usually sustain the discipline of history, but also challenge analytical strategies that postcolonial and post-imperial historians have deployed in recent decades in response to the postwar era of decolonization and globalization.<sup>1</sup> Have we reached a

moment described by Chakrabarty in which it is impossible to conceive of a mere “interaction” between non-human or “species history” and the history of capital?

Scholars in Science and Technology Studies (STS) have, for a number of decades, argued that the world has never operated on such dualist terms even though modern politics has produced this effect through various forms of technical, scientific, and economic expertise, representation, and practice (Callon, 1984; Latour, 1987b, 1993e). Such debates, then and now, are indicative of an increasing awareness among scholars that our modes of explanation are limited and that we need to reconfigure historical and political analysis to develop new tools for addressing contemporary crises in the Global North and South. By following scientists, engineers, and economists through laboratories and financial markets in Europe and North America, studies in STS first developed new ways of thinking about what the political and the technical are and how they work (Biagioli, 1999; Bowker, 1994; Callon et al, 2009; Latour, 2004b; 2005c). In the age of fossil fuels, however, countries of the Global South, particularly in the Middle East, equally served as laboratories for producing knowledge and know-how on nature and on society. In recent years, scholars have drawn on interdisciplinary tools from STS to introduce new puzzles to the field of Middle East History concerning large-scale infrastructures, energy systems, the multinational corporation, state formation and empire, techno-scientific expertise, and democracy (Mitchell, 2002d, 2011b; Shafiee, 2018a). Such works have also brought the study of the Global South, specifically the Middle East, to the field of STS which has tended to focus on questions and issues concerning countries of the West on a smaller scale.<sup>2</sup> This essay considers the novel ways in which historians of the Middle East have expanded on these microstudies to think about the larger, more extended effects beyond the laboratory and to reconfigure the role of nature and technology in the reassembly of questions of

agency, knowledge production, governance, political community and nation, and possibilities for democracy in the region.

### **Nature, Technology, and the Middle East**

The emergent field of STS and Middle East History is in part a response to historiographical debates of the past decade about the role of nature and technology in shaping the region's history. The environment defines the region of the Middle East and North Africa more than any other region in world history (Mitchell, 2011a, p. 265). Its arid environment was once thought to produce distinct histories and political dynamics. According to Diana K. Davis, an "environmental Orientalism" found in colonial and imperial histories argued that the natural shaped the region's history as something "unnatural," that is to say that, the arid ecology of the region was treated as "abnormal" in comparison to Europe's "normal and productive" environment (Davis, 2011, p.16). Plagued with an incapacity to manage its difficult "human-natural balance," Europeans often justified their colonial projects in ecological terms (Mitchell, 2011a, p. 265).

Post-colonial historians have, since the 1980s and 1990s, sought to rectify these Orientalist assumptions by "interrogating and disassembling the representations of nature that govern the region's history" (Mitchell, 2011a, p.266). As large-scale infrastructural and industrial projects around dams, railways, communication networks, cotton, coal, and oil proliferated in the late 19<sup>th</sup> and first half of the 20<sup>th</sup> century, novel environmental imaginaries were constructed in controversial ways and often contested by local populations. Environmental historians of the Middle East now insist on abandoning the false binary that persists between representations of nature and nature itself in these projects (Mikhail, 2012, p.5; Varlik, 2015; White, 2011). However, as Mitchell (2011a) has argued, the distinction between the two worlds

is still maintained if “nature and stories about nature” are simply “superimposed” (p. 269).

Instead of tracing the overlaps and interconnections leaving nature-environment on one level and history on another, scholars need to account for the modern politics of nature, technology, and other foundational concepts precisely by tracing how the binary has been brought about historically. It is here that STS can play a pivotal role in providing the tools with which to track the material-historical practices concealed by taken-for-granted binaries in the history of the Middle East.

This essay critically surveys the major questions and arguments that have motivated the development of the field of STS and Middle East History. It identifies the most important achievements as well as limitations in the scholarship, and highlights the novel directions the field is moving toward. Coinciding with a parallel development in the social sciences and humanities (Anand, 2018l; Bennett et al, 2010), the *material or technical turn* in Middle East History places the non-human at the center of the analysis of power to rethink the political economy of the region, the history and politics of energy, and large-scale projects of techno-economic development.<sup>3</sup> Scholarship now recognizes the urgency of extending studies beyond Europe and North America to consider the *sociotechnical construction* of such a large undertaking as the building of a global oil industry and the political consequences for empire, transnational corporations, monopoly power, and organizing relations between countries of the Global North and South. This involves factoring the practices of various international regulatory regimes and institutions of economic governance such as the International Court of Justice at The Hague, the World Bank, International Monetary Fund, and the United Nations. Taking seriously the materiality of the history of the Middle East demands a rethinking of the fixity of concepts such as nature, technology, and the state. The following discussion is organised into three

themes around which the key questions and arguments have emerged and shaped the field to date: 1) non-humans and the political economy of the countryside; 2) the material and political life of infrastructures; and 3) energy and democracy.

### **Reconfiguring Political Economy: Techno-politics of the Non-Human**

Since the late 1990s and early 2000s, post-colonial historians of the Middle East have drawn from some ground-breaking works in the History of Technology and the Environment to rethink the political economy of colonizing and postcolonial transformation with specific regard to non-human actors. Thomas Hughes' *Networks of Power* (1983) and William Cronon's *Nature's Metropolis* (1991) sought to reconfigure the technical as a set of connections between politics and technology in the building of the electricity industry in America and Europe and a future's market in grain in the American Midwest, respectively. These studies do not ask how electricity or railways or capital or other non-human "factors" transformed society or politics, as though forms of energy and technology are external forces that somehow alter or distort their environment. Rather, they explore how the distribution of electrical light or the creation of a global grain market required the simultaneous engineering of politico-econo-technical worlds. They therefore avoid any distinction between histories of non-human entities and the history of capital from the start because these have always been mutually constructed. Drawing on this seminal work in the history of technology, STS scholars, specifically the Paris school that developed around the writings of Michel Callon and Bruno Latour known as Actor Network Theory (ANT), took the further step of arguing that to understand and advance prospects for democracy, we should abandon our certainty that nature and society, technology and politics, belong to separate and stable spheres (Muniesa, 2015).

How then do the social and natural worlds take form according to an approach that places the non-human at the center of the analysis of power? In his influential essay about the domestication of scallops in northwestern France, Michel Callon proposed a new analysis of power using the concept of “translation” as a mechanism by which the social and natural worlds progressively take form, resulting in a situation in which certain entities control others. Power relationships involve describing the ways in which actors are defined, associated and obligated to remain faithful to their alliances. This not only entails a symmetrical description of a complex process which mixes together a variety of social and natural entities. The approach also permits an explanation of how a few obtain the right to express and represent the many silent actors of social and natural worlds they have mobilized.

Building on this novel conception of power, Timothy Mitchell’s *Rule of Experts* (2002d) is perhaps the earliest example of the turn to the material or technical in the field of Middle East History.<sup>4</sup> It emerged within a broader context in which Middle East Studies programs were abandoning more traditional approaches to the history of the region by incorporating French post-structural theory, for example, to unpack systems of representation and show their construction out of sets of devices and material practices, and ways of organizing the world.<sup>5</sup> Thinking specifically about colonial and post-colonial transformations in Egypt, Mitchell first argued that connections between war, an epidemic, and a famine, depended upon connections between mosquitos, rivers, dams, fertilizers, food webs and additional conditions that were not just separate historical events affecting one another at the social level. Taking seriously the technical (natures, tools, obstacles, and resources) as well as the social *simultaneously*, enabled Mitchell to mobilize an alternative historical and political account, one that did not draw its

structure and relevance from “human history” or an implied comparison with other more general cases in the history of Europe or the West.

The study enabled a tracking of the ways human agency drew its force by attempting to divert or attach itself to other kinds of energy or logic, including that of capital. The book’s central question asks how the ambivalent, almost oppositional, relation between non-human and human gets resolved in modern politics. Thus, *Rule of Experts* introduced the innovative concept of “techno-politics” from STS to Middle East History and Political Economy as emerging “from a process of manufacture whose ingredients are both human and nonhuman, both intentional and not, and in which the intentional or human is always somewhat overrun by the unintended (Mitchell, 2002d, p.43).” In other words, “[h]uman agency like capital is a technical body, something made.”

The advantage of a sociotechnical approach to Middle East history is that it offers a point of entry for challenging the division of labor in the social sciences and humanities that places social, cultural, and political-economic studies of humans and non-humans on one side, and technical or environmental histories of nature, infrastructure, and innovation on the other. Mitchell’s intervention coincided with parallel developments in the history of science and the Middle East, which followed a similar line of tracking the co-construction of science and politics in the production of archeological knowledge around the Israeli state (Abu Elhaj, 2001), and the production of western racial science in colonial Egypt (Elshakry, 2013).<sup>6</sup> Nevertheless, Mitchell’s work gave impetus to a number of monographs published in the past decade that have made explicit use of analytical tools from STS, focusing on the colonial history of Egypt as a popular point of entry for reconfiguring the political economy of the countryside.



For example, the “human” was first inscribed in legal processes of colonizing during the British occupation of Egypt (1882-1936) through the building of the cotton industry as the primary mode of transforming the countryside into a source of revenues for British empire and other world markets. Following the legal texts and reform practices that proliferated over time, Samera Esmeir’s *Juridical Humanity* (2012) reassembles “the juridical and the political” by detailing the human-nature relationship that took shape in criminal legislation, “cementing an association between humans and animals that challenged the bounded characteristics of the human (p.13).” The relationship intensifies through an examination of the “coercion of human labor in its encounter with nature,” that is, with colonial cotton production. Egyptian peasants failed to become conscripts in a legal-scientific war waged against insects attacking the cotton fields and were penalized by the colonial state as a direct consequence. The shifting colonial regulation of the human-nonhuman relationship through the institution of forced labor followed by its relegation to the domain of private property highlights the construction and maintenance of the binary between human and “inhuman” or the juridical and the political. Following Latour, Esmeir argues that “humanity” emerged precisely out of the specific and local process of associating humans and nonhumans in the Egyptian countryside (Esmeir, 2012, p.125). In this way, the associations and connections that have always existed between the animal or the non-human and the human was “temporally fixed’ at this particular moment of occupation to produce modern colonial politics (p.133).

Mapping the sociotechnical reorganization of the countryside helps undermine Orientalist narratives of the environment, serving as a critical site to examine technologies of late 19<sup>th</sup> and 20<sup>th</sup> century government. Animals, fertilizers, laws, prisons, cotton, methods of reform, debt, and coercion were always at work in shaping the political economy of rural areas. While social

scientists have embarked on contemporary sociotechnical studies of cotton markets, water management, and other technologies in transforming the Egyptian countryside (Caliskan, 2010; Barnes, 2014), numerous research projects await historians of the Middle East to consider other historical moments and locations by engaging with tools from STS.

### **Material Life of Infrastructures**

In recent years, a key criticism of the “new materialism” approach in Middle East History has been that it ignores the old (Marxian) materialism and political economy altogether (Jakes, 2015, p. 379). A powerful response to such claims has manifested in the shift to examining the building of large-scale infrastructure where “methods of planning, measuring, valuing, estimating, and other modes of representation and calculation are always at work” (Mitchell, 2014c, 272). The material lives of infrastructure frequently undermine narratives of technological progress, serving as another productive site to examine the constitution, maintenance, and reproduction of political and economic life (Anand et al, 2018). As a set of organizational practices, infrastructure was a “technology of liberal rule” that permitted states to separate politics from nature, the technical from the political, and the human from the non-human. The modern concept of “liberty” was therefore achieved through the “subordination, colonization, and racialization of others” in these modernization projects. Like the non-human turn, the infrastructural turn can therefore be seen as part of a wider anti-anthropocentric turn in the human sciences that scholars have extended to Middle East History by drawing on analytical approaches from STS.

Scholars of the Global South have demonstrated that infrastructures make certain temporalities possible such as the effect of a linear time model of national development (Anand et al, 2018, p.10). On Barak’s *On Time: Technology and Temporality in Modern Egypt* (2013) is

one such study in the field of STS and Middle East History that tracks the mixing of human and non-human entities in the work of technological innovation in transport and communications infrastructure in modern Egypt. Framing the problem in terms of the relation between technology and modern time, he critiques the supposed dichotomy between “culture, religion, and spirituality on the one hand and technology, materiality, and instrumental rationality” on the other. From the mid-19<sup>th</sup> century through the period of British occupation and colonisation of Egypt, the steamer, railway, telegraph, tramway and telephone introduced novel technologies of timekeeping that clashed with local institutions, actors, and their nonlinear temporalities. Following Latour (2005b), Barak opens the “black-box” of technologies of modern time-making to reveal the heterochronicity of “slave...rural... women...ethnic or southern times” and their entanglement in the infrastructural and governmental technologies of colonial rule.

Material reality can no longer be seen as existing independently or prior to representational practices. In *Electrical Palestine* (2018), Fredrik Meiton tracks how political power, just like electrical power, moves through physical materials whose properties govern its flow. By following how a large-scale hydroelectrical project was conceived and built in Palestine in the 1920s, Meiton makes visible distinctions made between the technical and the political depending on the interests at stake in the Zionist-led engineering project to electrify Palestine. The “making and substance of modern political power” is therefore elucidated by following how the sociotechnical properties of the electric grid opened or closed political possibilities in terms of an ethnonational binary – “Jewish” and “Arab” – simultaneously including the former and excluding the latter (p.6).

In the post-World War Two political order, the calculation of risk became a central feature of the planning and management of such large-scale development projects in both rural

and urban settings in the Middle East and North Africa. In *Seismic Risk* (2017), Daniel Williford transports the reader to 1960s Morocco to reveal how a new and independent Moroccan state “seized on the disaster” caused by an earthquake in the city of Agadir to create new forms of urban governance (p. 983). Drawing on French colonial science and engineering, international experts, bureaucrats, and seismographers transformed the city into a “seismically vulnerable space” by framing the destruction in ways that empowered and shaped the policies of Moroccan authorities. Through a process of bifurcation in which responsibility for the destructive impact in the poorest areas was attributed to “natural forces or ineffective building practices,” Williford follows the transformation of risk into an object of technoscience that rendered the role of “material inequalities” invisible by transforming political questions about the city’s reconstruction into technical ones.

Thus, the material life of infrastructures can be seen as a politics of nature revealing how human and the natural take shape in sociotechnical struggles over technologies of time keeping, reserves of electricity, and seismic risk. The STS approach enables a consideration of how infrastructures “enable, transform, or inhibit ways of thinking and living collectively” in colonial and postcolonial settings (Mitchell, 2014c, 437). In the Middle East, public infrastructures such as dams or modern irrigation technologies did not simply emerge through a linear process of “invention” (the birth of an idea) and “technological innovation” (commercialization) imposed from the West and funded by development agencies such as the World Bank. On the contrary, processes of invention and innovation involved a peculiar process of manufacture organizing human and nonhuman actors on multiple spatial-temporal scales with consequences not only for the shape of the modern state and its large-scale infrastructure projects but for how political

possibilities, institutions of economic governance, and the agency of the actors involved would get defined (Shafiee, forthcoming).

### **Energetics of Democracy**

Scholars are now aware that our thinking about the non-human (nature or technology) and politics needs to be reformulated to enable it to shape the kind of post-carbon (fossil fuels) world we need to achieve. In recent decades, nothing in contemporary historical studies, particularly on the Middle East where large concentrations of oil are located, has offered much help in addressing these larger questions about oil and democracy and the consequences for thinking about our current predicament. The years of the Iraq war and a renewed concern with the politics of oil in the Middle East triggered novel debates around the question of democracy in the region. Scholars of the Middle East started to argue that one way to begin is to stop thinking of oil as an external factor that affects the sphere of politics or democracy (Vitalis, 2006). In recent debates about the rise of capitalism in Europe, particular importance has been attached to the transition from renewable sources of energy to non-renewable fossil fuels (Malm, 2016; Podobnik, 2005; Pomeranz, 2000). The switch from animal, human, water, wood and other essentially solar-produced forms of power to subterranean carbon deposits—first coal, then oil—now appears as a critical factor. It marked a change from ways of living based upon restricted but virtually inexhaustible sources of power to forms of sociotechnical life based upon energy that was almost limitless in the short term but unsustainable for more than a few generations (Mitchell, 2011b).

In the current century, these broader concerns of ecology and environmental history for thinking about contemporary threats of climate change also made sense for thinking about carbon-based fossil fuels, their history and politics. As Mitchell argues in *Carbon Democracy*

(2011b), these concerns require us to rethink in sociotechnical terms both the origins of democracy and its future prospects, opening up important connections between energy, democracy, and questions of territory in the Middle East. Mitchell explains that the carbon-based energy system took form in the age of modern empire and the age of democratization, which clashed as new political forces depended on the concentration of populations in cities and in manufacturing. This transformation was enabled in part by the control of colonized territories and enslaved labor forces, but was also associated with mass “collective life made possible by organizing the flow of unprecedented quantities of nonrenewable stores of carbon (p.21).” The materiality of fossil fuels was connected with mass democracy of the late 19th and early 20th centuries because most of the world’s industrial regions grew near supplies of coal.

Industrialized regions thrived within networks that moved coal to railways, ports, cities and sites of manufacturing and electric power generation. These were also sites of labour activism. A new kind of political power was therefore gained from the positioning of labour at key nodes in the energy system, to disrupt or cut off energy supplies and make demands for a better life. In contrast, oil’s sociotechnical properties significantly reduced the democratic potential of oil workers and oil producing states in the Middle East to reconfigure the energy system toward more equitable forms of control. Rather than opposing mechanisms for democracy and mechanisms of carbon energy production, distribution and usage, or studying how one impacts the other from the outside, Mitchell argues that the two mechanisms are inextricable

An illustrative example of this process is evident in the local history of the building of the first oil industry in the Middle East, in southwest Iran, where the Anglo-Iranian Oil Company, known today as BP, was first built in the early 20th century. Building on Mitchell’s work, *Machineries of Oil* (Shafiee, 2018a) takes seriously the sociotechnical properties of oil to argue

that producing, transporting, and selling oil from a remote corner of Iran posed numerous technical, social, and political problems. British investors and technologists, Iranian government officials and local oil workers embarked on a battle to define the building of what would become one of the largest transnational oil corporations in the world - BP – a new political actor of the 20th century. As the battle unfolded, many of the conflicts involved the authority and terms of the contractual oil concession agreement. The wording of concession contracts, the management of oil workers and production rates, and the controversies that they generated, were all events that contributed to constituting and co-producing the Iranian state as well as the forms of organization and strategic priorities of the largest multinational oil companies. This history was punctuated by dramatic crises over the terms of these relations organized around oil. In each crisis, the strategy followed by the British-controlled oil company centered on defining the terms of a nonhuman actor, a formula or the calculations used to determine shares of profits and other areas of dispute. A calculating technology could be put to work to manage political uncertainties and unruly actors such as the oil, striking oil workers and the national claims of a sovereign government over a natural resource. The analysis highlights the ways in which the oil corporation, understood as an extended machinery, used other measures to resolve critical moments, such as international law and disciplinary regimes, economic sanctions and boycotts, forms of coercion and an engineered overthrow of the Iranian government in 1953 (also see Shafiee, 2018b).

Tracking the co-construction of human-nonhuman in the building of carbon-based energy systems helps make visible how differences in calculative equipment shape relationships of domination and provide a point of entry into the analysis of power struggles. The approach exposes how the intertwined machinery of carbon-based infrastructure and finance capital gave

way to the political and economic power of the large-scale multinational corporation. Abstract conceptions of the Middle Eastern oil-producing state, however, overlook the extended energy networks that have often represented the most widespread, complex and localized forms of state power and authority (Mahdavy, 1970). Only by recovering the tools and arguments that are made available for handling modern forms of infrastructure and energy system can we build more durable and productive structures for collective life.

### **Achievements and Futures of STS and Middle East History**

Alongside parallel developments in environmental history and the history of technology, studies in STS have transformed the writing of history by taking seriously the nature of technological and infrastructural transformations in relation to society and politics. This discussion has highlighted the remarkable role of engineers, economists, seismographers, lawyers, accountants, animals, formulas, fossil fuels and electric power which have been made visible by plunging into the material practices and technicalities of the battle to think about the consequences for political agency, technologies of governance, empire, and democracy. As the field has matured, ongoing research and writing by a number of PhD students gives a sense of the direction the growing field of STS and Middle East History is going. Dissertation topics include the building of the stone and cement industries in mandate Palestine, the mid-20<sup>th</sup> century politics of oil and pipeline construction from Iraq to the Mediterranean coast, and the Litani hydro-electricity project in Lebanon (Ben Zeev, 2018; Lawson, 2019; Pesaran, 2019; Pinhas, 2018). Such contributions will enrich existing studies to contemplate further the consequences of the approach for disassembling foundational concepts (e.g. nature, technology, state, capital) and to reconfigure the history and politics of the Middle East. Collectively, the studies in this discussion indicate the diverse ways in which an STS approach can help students



and scholars make more rigorous use of industry and company archives that remain understudied.

## **Conclusion**

The latter decades of the 20<sup>th</sup> century were marked by the emergence of fields such as STS that helped develop rigorous and interdisciplinary analytical tools for questioning the limits imposed by the disciplines. STS and Middle East History aims to recover the history of how the binary of “nature versus history” has been brought about. It is no longer possible to treat the Middle East as one instance of a universal theoretical account that starts from an abstract ideal such as technological progress, democracy, or development. Moving past large, abstract actors such as the state, society, or the economy also entails reconfiguring the history of capital as a sociotechnical one that draws on multiple logics and forces.<sup>7</sup> The central concern is to understand “what combinations of natural forces and technical skills, human effort and nonhuman devices...produce the worlds we inhabit (Mitchell, 2011a, 273).” Whether in a laboratory, the site of a dam, a railway network, or an oilfield, the representation of the “recalcitrance of natural forces,” (Latour, 2004b) is not a mere cultural construction because the forces can defy what is said about them and escape mechanisms of control. Instead of resolving the world into separate spheres such as material reality versus its representation, nature versus society, or technical versus political, we must abandon these dualities peculiar to the modern era. Following Latour, we must define politics as what leads toward the earth and the assembling of a common world, not the global or the national (Latour, 2018a). This reconfiguration of the human and non-human captures the agenda of STS and Middle East history, drawing attention to the material practices of assembling common worlds that histories of globalization and more standard forms of social, political, and economic history have been unable to achieve.

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## Endnotes

<sup>1</sup> Some examples of these analytical trends include social history and Subaltern Studies that make (non-elite) humans the central agents of change.

<sup>2</sup> A few exceptions are worth noting by Barry, 2013; Hecht, 1998; Pritchard, 2011; and Von Schnitzler, 2016.

<sup>3</sup> The problem has to do with the “downplaying of nonhuman agency in accounts of events favored in the social sciences and the humanities” *and* the simultaneous downplaying of human

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agency in accounts of events favored in the natural sciences. The events that need to be accounted for are the “conjunction of all kinds of agencies” that cannot be subsumed under the simple human/nonhuman divide. See Muniesa, 2015.

<sup>4</sup> It should be noted that Mitchell’s earlier engagement with the material reality/representation divide was not informed by STS but rather drew on Michel Foucault for thinking about modern forms of power and on Jacques Derrida for thinking through questions of representation.

<sup>5</sup> This period was preceded in the 1990s by the publication of works by Michel Foucault, Edward Said, and Jacques Derrida which helped transform the writing of history and shaped an intellectual environment that called for greater interdisciplinarity within the humanities and social sciences.

<sup>6</sup> While beyond the STS-focus of this discussion, recent contributions along this line also include Determann, 2015, Doostdar, 2018, and Stolz, 2018.

<sup>7</sup> This project is distinct from another recent trend in Middle East history to write “new histories of capitalism” that draw on analytical tools from cultural history. For a survey, see Cheta, 2018.