The Republic of Plants: Plant Agency in the Movement of Cropscapes

Organizers: Tiago Saraiva, John Lourdusamy, Barbara Hahn, Francesca Bray

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In tune with the Philadelphia conference theme *Technology, Democracy and Participation*, we propose an unconventional session that positions crop plants themselves as central agents in the constitution of a *cropscape*, its technological characteristics and its capacity to move through space and time. Eight papers divided in two panels and a round table will explore the often unexpected forms of agency of crop plants in the constitution or movement of cropscapes in history.

The concept of cropscape developed out of our group research project, hosted by the Max Planck Institute for the History of Science, on *Moving Crops and the Scales of History*. We envisage the project as a contribution from historians of agriculture to the growing spectrum of projects challenging Eurocentric accounts of the role of technology in the colonial and global eras. The present session thus includes contributions dealing not only with Europe, but also with Asia, Africa, and the Americas.

By cropscape we denote an assemblage formed around a crop, the heterogeneous elements deliberately or fortuitously brought together in a specific location and moment to make and grow a crop: plants, people and pests; technologies, skills and ideas; tastes and markets; environment and biology; labour and capital, etc. As well as underlining the historical contingency of such actors and their associations, the term cropscape draws attention to the nested spatial and temporal dimensions of growing a crop, from the level of the international market to that of a plant's root system, and to the criss-crossing trajectories that maintain, destabilise or transform these associations. The concept of cropscape also encourages us to play with unexpected backgrounding and foregrounding or hierarchies of agency. Here, for example, rather than spotlighting plant breeders, agronomists or engineers as the "designers" of cropscapes, we experiment with putting plants themselves, with their likes and dislikes, characteristics and proclivities, centre stage.

In the first panel - The inconstant denizen - contributors will explore the evolving nature of a cropscape in history in a specific national context. Coffee in Angola, bark bread in Finland and corn in Germany, all formed different assemblages in different periods of time bringing together different labor regimes, tastes, or pesticides. The second panel – the moveable denizen – includes papers dealing with the many challenges of moving a cropscape between different locations. Rice, knotweed, cocoa and cotton all traveled at transcontinental scales. The focus on the actual process of transfer will bring to the forefront the multiple actors involved, namely the plants themselves. A roundtable with all the speakers and the organizers of the session will discuss the potential of cropscape as a concept for historians of technology and allied fields. By focusing on crops and their movements over space and time we want to discuss the possibility of developing a historiography of the material world that will be helpful in liberating us from some of the

often rejected yet persistent teleologies of global, post-colonial or even environmental histories, and their tendency to reify or downplay the historicity of such technical objects as crops.

Panel 1 **The inconstant denizen**
Franziska Torma (Deutsches Museum): From Savior to Frankenstein: The Changing Cropscapes of Corn in Germany, 1950s to 2000

Timo Myllintaus (University of Turku): Political Economy of Emergency Food: Class Conflict on Bark Bread during the Great Finnish Famine of the 1860s

Maria do Mar Gago (University of Lisbon): Standardizing Robusta: coffee beans and agricultural science and colonial Angola

Elena D. Kunadt (University of Wuppertal): Corn Production with Atrazine. Atrazine's Use in the United States and West Germany, 1950-1991

Panel 2 **The moveable denizen**
Harro Maat (Wageningen University): From India to the Guyanas: The origins of rice production in British Guyana and Surinam

Sam Smiley (Independent Scholar): Ornamentalism: The Migrations and Translations of Japanese Knotweed

Marta Macedo (University of Lisbon): The resistance of nature: imperial imaginaries in the early 20th century in Sao Tome islands.

Yuan Yi: (Columbia University): American Cotton in Early twentieth Century China

Panel 3 **Roundtable**

Joint discussion with paper presenters and organizers Tiago Saraiva (Drexel University), John Lourdusamy (IIT- Madras), Barbara Hahn (Texas Tech) and Francesca Bray (University of Edinburgh).

From Savior to Frankenstein: The Changing Cropscapes of Corn in Germany, 1950s to 2000

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During the 20th century, corn had several careers in West Germany. Hybrid corn, developed in US American laboratories and on field stations at the beginning of the 20th century, reached Germany as part of the post-World-War-II reconstruction programs. From the 1950s to the 1970s, the plant became an agent of agricultural modernization, a key crop within the mechanization of the West German food chain, and was hence referred to as the "industrial crop" par excellence. The highly industrialized agricultural system, however, and its symbolic crops came under severe criticism in the 1970s. The oil crises and debates on limits to growth challenged the common post-World-War-II-ways of agricultural production. In addition, the numerous negative environmental aspects came to the fore: soil erosion, over-fertilization and formation of resistance to pests. This assemblage put new meaning on plants, and within this mood of crisis, corn reappeared as ambiguous savior in the 1970s and 1980s, either as utopian resource of a future sustainable agriculture, or as energy crop that could help in keeping up the production and growth rates of the pre-1970s era. Although all these topics framed corn's changing semantics within agricultural debates, the semantics did not change the material success of hybrid corn cultivation. A profound change was then given by the invention of the first transgenic breeds in the 2000s. Plant breeding companies gave transgenic corn a pioneering role in the introduction of genetic engineering to German agriculture. The fate of this variety, however, was completely different from that of hybrid corn: it became the focal point of hot tempered risk debates on genetic engineering for agricultural purposes. The slogan of "Frankenmais" symbolized modern science's potential to create monsters. From 2009 on, the cultivation of transgenic corn in the Federal Republic was prohibited by law.

Working with the concept of cropscapes, the paper focuses on the specific assemblages of plants, people, things and knowledge that created the changing semantics and functions of corn. Furthermore, I ask the question of how and when the crop itself was assigned agency. The first line of investigation puts emphasis on the histories of the above mentioned "versions" of corn, e.g. the industrial crop in the 1950s, the savior from crisis semantics, its use as utopian resource in the 1970s, and finally its new lifeform as monster plant in the 2000s. Who invented which "career" of corn and for what sociocultural purpose? I argue that corn was always seen as a pioneer in building changing coalitions of people, of things and of knowledge that made agricultural innovations and its effects visible.

The second line of investigation analyzes the extent to which corn had (and was assigned to have) a "life" of its own by reading the human histories against the grain: The warnings of the 1970s, for example, gain new meaning beyond their function as sociocultural markers of environmental sensibilities. The fact that these debates did not endanger the material success of hybrid corn could be analyzed as the crop's "refusal" to change or disappear. Following this train of thought, the current debates on transgenic corn do not only confirm notions of environmental alarmism. I argue that debates on genetic engineering acknowledge the plant's agency in certain, although dystopian ways: Technologically manipulated plants came from human laboratories and testing grounds, but gained

autonomy in nature and hence the ability to create (potentially dangerous) cropscapes beyond human control.

CV

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Since July 2015: research associate at the subject area History of Technology, TU Munich

July 2013 - June 2015: assistant professor, chair for European Cultural History, University of Augsburg (2014/2015 on parental leave)

September 2012 - June 2013: John F. Kennedy memorial fellow, Minda de Gunzburg Center for European Studies, Harvard University

November 2009 - August 2012: research fellow, Rachel Carson Center for Environment and Society, Munich

2006 - 2009: Dr. phil in Modern and Contemporary History, topic: "Turkestan-Expeditionen. Zur Kulturgeschichte deutscher Forschungsreisen nach Mittelasien (1890 - 1930)" (advisor: Prof. Dr. Martin H. Geyer)

2006 - 2007: Postgraduate Programme "Ost-West", Ruhr University Bochum

2003 - 2006: freelance, Martin Meidenbauer Verlag, München

1996 - 2003: Modern and Contemporary History, Theatre Studies, Ancient History, LMU Munich

Selected Recent Publications

Fluid Frontiers. New Currents in Marine Environmental History, co-edited with John R. Gillis, Cambridge, UK 2015.

Turkestan-Expeditionen. Zur Kulturgeschichte deutscher Forschungsreisen nach Mittelasien (1890-1930), Bielefeld 2011 (1800/2000 Kulturgeschichte der Moderne, Band 5, hg. von Peter Becker, Jane Caplan, Alexander C.T. Geppert, Martin H. Geyer, Jakob Tanner).

Eine Naturschutzkampagne in der Ära Adenauer. Bernhard Grzimeks Afrikafilme in den Medien der 50er Jahre, München 2004.

Biofakte als historiographische Linsen: Die Technik- und Gesellschaftspolitik des Hybridmaises im geteilten Deutschland, in: Pflanzliche Biofakte, special issue of the journal „Technikgeschichte“ (hg. Nicole Karafyllis, Karin Zachmann), forthcoming 2017.

Lebensraum Meer. Umwelt- und entwicklungspolitische Ressourcenfragen in den 1960er und 1970er Jahren, co-edited with Christian Kehrt, special issue „Geschichte und Gesellschaft”, 40, 3 (2014)

Frontiers of Visibility: On Diving Mobility in Underwater Films (1920s-1976), in: Transfers. Interdisciplinary Journal of Mobility Studies, Volume 3, Issue 2, Summer 2013, 24-46.
Explorer les sept mers. Vers un concept océanique et postcolonial de la tropicalité, in: Revue d`anthropologie des connaissances, Vol. 6, no. 3, 2012, 135-156.

Political Economy of Emergency Food –
Class Conflict on Bark Bread during the Great Finnish Famine of the 1860s

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Bark bread is one of the most common famine foods in the Northern Europe from Norway to Siberia at least since the Middle Ages. It is made of a thin inner layer between the outer bark and wooden trunk of a tree. The phloem layer usually scraped by a wooden knife from deciduous trees such as elm, ash, aspen, rowan or birch, but scots pine has been the most popular. Pine for collecting phloem must be at least fifty years old, and preferably thin and smooth skin knot-free wood. A pine phloem comes off the best during the latter part of May to early July. Before grinding dry phloem sheets, which as fresh look like parchment slips, are at first prepared by roasting or boiling for removal of harmful substances (bark, resins, waxes, terpenes, lignins). By grinding dry phloem sheets, it is possible to get so called *pettu* (pine bark) flour, which was generally used to replace part of rye flour in baking bread. For centuries, pine bark bread has been known as a famine food in taiga, the Northern boreal zone of Eurasia.

An exciting feature of bark flour is that social groups of late agrarian Finland had quite different – even contrasting opinions – on bark flour, its preparation and using as nourishment. In the Nordic countries, the upper class started to despise *pettu* bread as a primitive and useless emergency food. In contrast, peasantry and especially the poorest strata of the rural population valued it as the best substitute food during famines. For the Sami people, bark flour and *pettu* bread made from Scots pine served as an important source of vitamin C. Even normal years, they used *pettu* flour by mixing it in rye flour while preparing gruels and bread.

The situation around the bark bread escalated in the 1860s, when Finland faced several harvest failures and food crises turned into a massive famine in 1867 - 1868. The paper examines how economic values, technological practices and supply of food substances affected social considerations on bark bread. Why some social groups hated it, while others were fond of it and regarded bark bread as trustworthy food in the case of emergency? When I start examine this issue, I will pay a special attention on the interest conflicts in the use of the country' s national resources and hope finding the explanation in that sphere.

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Bio

Timo Myllyntaus is Professor of Finnish history at the University of Turku. He gained his first two degrees at the University of Helsinki and a Ph.D. in economic history at the London School of Economics. His research interests stretch from economic and social history to environmental history and the history of technology. He has published several monographs and more than 100 scientific articles. His edited volumes include *Invisible Bicycle. New Insights in Bicycle History* (co-edited with Tiina Männistö-Funk, forthcoming in 2018), the special issue of *ICON* (no 16), titled *Technology in Everyday Life* (London 2012), and *Thinking through the Environment: Green Approaches to Global History,* (Cambridge 2011). He is the president of the Committee for the History of Technology (ICOHTEC).

Timo Myllyntaus has lectured on various topics – also in English. In spring 2015, he lectured a course *Industrialization of Nordic Countries* at the Turku University. In April 2016, he delivered his third Erasmus course *History of Technology – New Challenges* at the University of Transylvania in Brasov, Romania.

Standardizing Robusta: Coffee beans and agricultural science in colonial Angola

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This paper discusses the agency of coffee in the construction of the Portuguese colonial state in Angola. Robusta coffee is *Coffea canephora,* an allogamous species, fairly resistant to plant breeding experiments. It's also an indigenous species to Angola, highly dependent on the environment, a fact that hampered several development projects of social and ecological engineering. To accept Robusta' s heterogeneity was a prerequisite for colonial undertakings. In order to cope with Robusta's challenges, the standardization of coffee beans was paramount. The job was taken over by the agricultural scientists of an imperial marketing board, the Board of Coffee Exports. It included controlling and improving existing coffee processing operations and designing a classification system for beans (according to size, defects, origin, etc.). This paper follows such practices and argues that the export of coffee to the US (world's biggest coffee consuming country) was the Portuguese imperial board main goal; it also suggests that American institutions influenced the process of transforming Angolan coffee into a global commodity. Coffee (and its forced labour regimes) has been presented in the historiography on the Portuguese empire as a paradigmatic case of retrograde imperial rule and an example of an aborted road to modernity. By following the challenges of transforming Robusta into a commodity, this paper presents an alternative view of Portuguese empire in Africa, highlighting not only the role of American markets but the importance of considering also Robusta coffee own nature to make sense of colonial dynamics in Angola.

CV

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Maria do Mar Gago is a doctoral candidate at the Institute of Social Sciences of the University of Lisbon. Her dissertation *Science and Coffee: Trajectories of the Late Portuguese Colonial Empire"* deals with the importance of Robusta coffee in defining the nature of Portuguese colonialism in Angola from the second half of the nineteenth century to the 1960s. It explores the transformation of coffee into a scientific object involving botanists, plant breeders, and phytopathologists, unveiling unexplored relations between scientific practices and colonialism in action. Although the narrative is centered on a Portuguese colony in Africa, the study of the technoscientific nature of Robusta coffee is particularly apt to connect Portuguese imperial history with other European imperial undertakings as well as with the emergence of the United States as hegemonic power in the Cold War years. The dissertation brings together history of science, history of technology, environmental history and colonial history to produce a nuanced narrative of coffee and colonialism in Angola avoiding simplistic top down stories involving the imposition of plantation schemes of European powers in Africa.

Publications:

Maria do Mar Gago, "Things of Darkness: Genetics, Melanins and the Regime of Salazar (1936–1952)." *Centaurus* 57.1 (2015): 1-27.

Júlia Gaspar, Maria do Mar Gago, and Ana Simões. "Scientific life under the Portuguese dictatorial regime (1929–1954): The communities of geneticists and physicists." *Journal of History of Science and Technology* 3 (2009): 1646-775.

Maria do Mar Gago,. *The emergence of genetics in Portugal: JA Serra at the crossroads of politics and biological communities (1936-1952)*. Diss. 2009.

Ana Delicado, Maria do Mar Gago, and Alcina Cortez. "A visita a uma exposição científica vista pelos/as professores/as: elementos para uma análise." *Educação, Sociedade & Culturas* 40 (2013): 187-207.

Corn Production with Atrazine: Atrazine's Use in the United States and West Germany, 1950-1991.

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Since the second half of the 20th century, the West German and American corn production changed radically. West Germany started to grow U.S. hybrid corn and imported not only the seeds but the corn-growing technique, knowledge, and practices as well. The growing system of corn production (cropscape) was based on high pesticide use. The herbicide atrazine reduced human labor in weed control on the field, which was a relevant and cost-intensive factor of corn production. Once detected as a substance to which some crops, including corn, were naturally resistant, atrazine became the mainstay of the American corn industry. It was presumably one of the main factors for the rapid growth of corn cultivation in the United States and, to a lesser extent, also in West Germany and other European states. West Germany followed the U.S. corn producing practices until residues of atrazine were found in ground and drinking water in the mid-1960s. After years of debates, West Germany banned the use and selling of atrazine in 1991, forcing the national corn cropscape to change. The United States, on the other hand, declared the residues of atrazine as safe for human health, and the use of atrazine as necessary for corn production. My paper will show the historical development of the cropscape corn with a focus on the close interrelation between corn production and atrazine's use in the United States and West Germany.

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Education

M.A. History and Culture of Science and Technology (2015) Technical University of Berlin, Germany
Advisors: Prof. Wolfgang König (History of Technology) and Prof. Friedrich Steinle (History of Science).
B.A. Culture and Technology. Major: History of Science and Technology (2009) Technical University of Berlin, Germany.

From India to the Guyanas; the origins of rice production in British Guyana and Surinam

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The end of slavery implied a major transition of the economies of British Guyana and neighbouring Dutch colony Suriname. The British, first to end slavery, recruited wage labourers from India to replace the freed slaves. The Dutch followed the example some decades later, using British contacts to recruit workers from India as well. The Indian labourers were to rescue the 'old' economy but the plantation system in the Guyanas was not very competitive on the global market. Most Indian labourers started to cultivate rice, for their own food security and trading surplus rice was encouraged by the colonizers for national food security and exports. The rice farms appeared productive enough to become a prime basis of the agrarian economies of the two colonies. This paper presents the Indian origins of rice cultivation in the Guyanas from the perspective of intra-colonial and inter-colonial networks in which rice circulated as seed, an item mainly of interest to botanists and plant breeders, and as a food product, of interest to millers and traders. Besides connections between India and the Guyanas, British and Dutch colonizers, the networks also covered linkages with other countries in the Caribbean, the Americas and Africa. The argument developed in the paper is that connections with Asia are a major incentive for the emergence of rice cultivation in the Americas. The paper therewith provides a commentary to the dispute, known as the Black Rice debate, about the relative importance of African rice farming knowledge and skills to the emerging American rice sector.

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Selected Publications

Tinde R. van Andel, Rachel S. Meyer, Saulo A. Aflitos, Judith A. Carney, Margaretha A. Veltman, Dario Copetti, Jonathan M. Flowers, Reinout M. Havinga, Harro Maat, Michael D. Purugganan, Rod A.Wing and M. Eric Schranz (2016), Tracing ancestor rice of Suriname Maroons back to its African origin. *Nature Plants*, Vol. 2 (October). doi:10.1038/nplants.2016.149|

Flor, R.J., C. Leeuwis, H. Maat and M. Gummert (2016), Rice postharvest learning alliance in Cambodia: comparison of assumptions and implementation of a network approach. *Journal of Development Effectiveness* DOI: 10.1080/19439342.2016.1231705

Sandip Hazareesingh and Harro Maat (eds) (2016), *Local Subversions of Colonial Cultures; Commodities and Anti-commodities in Global History* (Palgrave MacMillan).

Harro Maat (2015) Commodities and anti-commodities: rice on Sumatra 1915-1925. In: *Rice: a Global History* eds. Edda Fields Black, Francesca Bray, Dagmar Schäfer and Peter Coclanis. Cambridge University Press.

Harro Maat and Dominic Glover (2015), 'Agriculture, Biotechnology and Development' *Food Security*, 7(1), 167-172.

Mokuwa A, Nuijten E, Okry F, Teeken B, Maat H, et al. (2014) 'Processes Underpinning Development and Maintenance of Diversity in Rice in West Africa: Evidence from Combining Morphological and Molecular Markers' PLoS ONE 9(1): e85953. doi:10.1371/journal.pone.0085953.

Harro Maat (2014) 'Agriculture in Indonesia' in: *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures* (Dordrecht: Springer) DOI 10.1007/978-94-007-3934-5_10229-1

Harro Maat and Dominic Glover (2012)) 'Alternative configurations of agronomic experimentation.' In: *Contested Agronomy: Agricultural Research in a Changing World*, Edited by James Sumberg and John Thompson, Earthscan, pp.131-145.

Ornamentalism: The Migrations and Translations of Japanese Knotweed

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Japanese Knotweed [Fallopia Japonica (*North America*) or Polygonum cuspidatum (*Europe*).] is a segmented herbaceous plant that can grow in large stands to about 10 feet tall. Its primary means of dispersal in the United States is through its rhizomes. As a result of its rhizomic growth, it forms a monoculture in its place of habitat. It also is a plant of many names by humans. These names, from many different times and places include Mexican Cane, Japanese Cane, Japanese knotweed, Fleeceflower, Mexican bamboo, Huzhang, *Fallopia japonica*, *Polygonum cuspidatum.*

Using humans as a vector, Japanese Knotweed travelled from Japan in 1847-48 through the expeditions of German born Dutch trader Phillipe von Siebold to Utrecht, where it was introduced to the Netherlands. Its journey continued via the Kew Botanic Gardens in England, and eventually to the United States by the later 1800's. Its adaptation as an ornamental closely matched the timeline of the European field of "Orientalism" used by European scholars at the time to characterize the esthetics and ontologies of a broad swathe of Middle Eastern, South Asian, African and East Asian cultures.

This paper explores the concept of Japanese Knotweed as ornament. It uses as a point of departure, Edward Said's concept of "Orientalism". In his updated preface to his classic text from 1978, Said says "Orientalism is a style of thought based on an ontological and epistemological distinction made between "the Orient" and (most of the time), "The Occident"." These two distinctions have been constructed as binaries, which maintains that hegemonic stability [on both sides]. I am proposing to remix and reframe an adaptation of his theory into a theory of human aided plant migration which I am calling "Ornamentalism". In this case, the binary constructed is human/non-human. The argument that is made in this paper is the following: In being seen by humans purely for its esthetic properties, the material and biological ontology of the plant itself is ignored. This paper will raise the questions: What kind of work does Japanese Knotweed do with/on/for humans? How has it adapted or changed genetically in the course of its 150 year migration?

The resistance of nature: imperial imaginaries in early 20th century São Tomé's cocoa plantations

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This paper, by framing the concepts of resistance and colonialism in the context of environmental history, brings to light underappreciated objects and actors in the history of early 20th century imperial Africa. More specifically it discusses the contingent association of planters, local populations, migrant workers, colonial experts, and less obvious protagonists such as cocoa trees, insects and the tropical forest on São Tomé's cocoa plantations. Considering that, in large-scale plantations, projects of simplification and standardization envisioned the control of both nature and people, I claim that resistance to colonial forms of domination cannot be fully understood if we center our attention on human collectives alone.

The specific ecology and political economy of these equatorial Atlantic islands made them the worlds' first cocoa producer in the 1900s. The huge amount of work – meaning labor and the energy require to grow cocoa – involved in the consolidation of that modern landscape also allowed for its apparent stability, that remained unchallenged until the 1920s. Even if laborers' various forms of resistance continuously threatened the colonial order, it was a leaf-sucking insect that managed to disrupt São Tomé cocoa plantation system. In this text, I follow *cacao thrips* (Selenothrips rubrocinctus) to discuss the different colonial repertoires that emerged from this situation of crisis. The colonial anxieties unleashed by environmental degradation fueled a conservationist discourse, inspired by desiccation theory. I will discuss how this new scientifically driven colonization questioned the plantation mode of production and proposed new forms of colonial control responsive to nature's resistance, allowing for different alliances between the human and the non-human worlds.

CV

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Marta Macedo is a European Research Council research fellow at the Institute of Social Sciences – University of Lisbon. Currently her research deals with the historical connections between cocoa and coffee, plantation technologies, work, race and imperial regimes.

Publications: (selection)

1. Macedo, Marta, and Jaume Valentines-Álvarez. "Technology and Nation: Learning from the Periphery." *Technology and Culture* 57.4 (2016): 989-997
2. Marta Macedo, "Império de cacau: ciência agrícola e regimes de trabalho em São Tomé no início do século XX" in Miguel Bandeira Jerónio (org.), *O império colonial em questão: poderes, saberes e instituições*, (Lisboa: Edições 70, 2012), pp. 289-316.
3. Marta Macedo, *Projectar e construir a Nação. Engenheiros, ciência e território em Portugal no séc. XIX* (Lisboa: ICS, 2012).
4. Marta Macedo,"Port Wine Landscape: Railroads, Phylloxera and Agricultural Science", *Agricultural History*, 85:2, 2011, 157-173.

American Cotton in Early twentieth Century China

Yuan Yi: (Columbia University)

This paper examines the challenging process of the cultivation of American upland cotton (*gossypium hirsutum*) in early twentieth-century China. Upland cotton, well known for its long staple suitable for spinning, is the most wildly planted cotton species in China, and the world, today, but its cultivation in China began only in the late 1890s. Until then, China's major cotton species had been tree cotton (*gossypium arboretum*), also called "Old-World" cotton, originated in India. While tree cotton's great adaptability allowed its rapid diffusion in China centuries ago, its coarse and short fiber began to be considered a serious disadvantage as the new machine-based factory system proliferated and demand for high thread countsincreased. In an effort to find a more suitable type of cotton for spinning, thereby increasing productivity in cotton mills, Chinese started to import upland cotton from the U.S., but its successful cultivation in Chinese soil was not easily achieved. American cotton continued to fail to acclimatize, which often led to its degeneration. Using the concept of cropscape, this paper investigates how upland cotton broughttogether American cotton experts, Chinese agriculture schools, their students, and local farmers, and provided a forum where they exchanged knowledge and skills to improve cotton quality. By utilizing contemporary journals, newspapers, and governmental reports, which discussed cotton's traits and technologies of acclimatization in great detail, I argue that many of agronomic improvements made in the course of experiments and research began with a careful observation of cotton itself.

CV
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Yuan is a PhD candidate in modern Chinese history. Her dissertation examines the industrialization of Chinese textile production in the early twentieth century with emphasis on the textile machinery business between China and the US. By charting the challenging process of mechanization on the shop floor, where US machines often malfunctioned, it attempts to show how various groups of experts engaged in the making of the factory system, with multiple layers of knowledge obtained through hands-on experience of machines, formal engineering education, and the long tradition of handicraft technology in spinning and weaving. Yuan received her BS in Business Administration from Korea University, Seoul; an MA in Clothing & Textiles from Ewha Womans University, Seoul; and an MA in History from the University of Utah. Before coming to the US she worked for Korea Cultural Heritage Foundation and LG Electronics.

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ACADEMIC APPOINTMENTS

Since Fall 2012 Assistant Professor, Drexel University
2011/2012 Visiting Assistant Professor, University of California, Berkeley
Winter 2011 Visiting Associate Professor, University of California Los Angeles (UCLA)
2005-2012 Research Scholar, Institute of Social Sciences, University of Lisbon
2007-2008 Visiting Assistant Professor, UCLA
2004-2005 Postdoctoral Research Fellow, New University of Lisbon and UCLA

EDUCATION

2004 Ph.D History of Science, Universidad Autónoma de Madrid
2000 M.A. History and Philosophy of Science, Universidad Autónoma de Madrid
1997 B.Sc Materials Engineering, Superior Technical Institute (IST), Technical University of Lisbon

PUBLICATIONS

Tiago Saraiva (2016), *Fascist Pigs: Technoscientific Organisms and the History of Fascism* (Cambridge, Mass: MIT Press;
Tiago Saraiva (2016), "Fascist Modernist Landscapes: Wheat, Dams, and Forests, and the Making of the Portuguese New State", *Environmental History,* 21: 54-75.
Tiago Saraiva (2014), "Oranges as Model Organisms for Historians", *Agricultural History*, 88.3: 410-16.
Tiago Saraiva (2013), "Banking the Commons: Gene Banks and the Building of Europe", in Nil Disco and Eda Kranakis (eds.), *Technology and Transnational Commons in Europe* (Cambridge, Mass: MIT Press).
Tiago Saraiva (2013), "The Production and Circulation of Karakul Sheep and Frontier Settlement in the Empires of Hitler, Mussolini, and Salazar ", in *Bringing STS into Environmental History*, eds. Dolly Jørgensen, Sara Pitchard, and Finn Arne Jørgensen (Pittsburgh: University of Pittsburgh Press)
Tiago Saraiva (2011), "Costruire il fascismo: autarchia e produzione di organismi standardizzati", in Francesco Cassata and Claudio Pogliano (eds.), *Storia d'Italia – Annale Scienza* (Torino: Einaudi), 203-240.
Tiago Saraiva and M. Norton Wise (2010), "Autarky/Autarchy: Genetics and the Political Economy of Fascism", *Historical Studies in the Natural Sciences*, *40*, (4): 419-28
Tiago Saraiva (2010), "Fascist Labscapes: Genetics, Wheat and the Landscapes of Fascism in Italy and Portugal", *Historical Studies in the Natural Sciences, 40*, (4): 457-498.
Tiago Saraiva (2007), "Inventing the Technological Nation: the Example of Portugal (1851-1898)", *History and Technology***,** 23 (3): 263-273.
Antonio Lafuente and Tiago Saraiva (2004), "The Urban Scale of Science and the Enlargement of Madrid", *Social Studies of Science, 34*: 531-569

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BA (Chinese Studies), Cambridge 1973; PhD (Social Anthropology), Cambridge 1985.

Academic posts:
1973-84: Research Associate, Needham Research Institute, Cambridge
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1994-96: Reader, Centre Hist Sci Tech Med, Manchester University
1993-2004: Professor of Anthropology, University of California Santa Barbara
2005-: Professor of Social Anthropology, University of Edinburgh.
Honorary Professor, Hong Kong University, Institute for the Humanities and Social Sciences, 2011-2017; Distinguished Professor, Beijing Normal University (appted 2016).

Selected publications:
Books:
Science and Civilisation in China, Volume VI.2: *Agriculture*, Cambridge University Press, 1984 (Chinese trs. Commercial Press, Taipei, 1994; Japanese tr. Univ. Kyoto Press, 2007); Prix Bordin, Académie des inscription et belles-lettres, 1985.
The Rice Economies: Technology and Development in Asian Societies, Blackwell, 1986 / University of California Press, 1994.
Technology and Gender: Fabrics of Power in Late Imperial China, U. California Press, 1997; SMC Publishing, Taipei, 1997 (Ch. trs. Jiangsu People's Press, Nanjing, 2006); SHOT Dexter Prize 1999.
Technology, Gender and History in Imperial China: Great Transformations Reconsidered, Routledge, 2013 (Ch. trs. Jiangsu People's Press, Nanjing, 2016).
Francesca Bray, Peter Coclanis, Edda Fields-Black and Dagmar Schäfer (eds), *Rice: Global Networks and New Histories*, Cambridge University Press, 2015. CHOICE Academic Title Award 2015.
Recent articles and chapters:
'Tools for virtuous action: technology, skills and ordinary ethics', in Charles Stafford (ed), *Ordinary Ethics in China*, Berg, 2013: 175-193.
'Technological transitions', ch. 5 in Jerry H. Bentley and Sanjay Subrahmanyam (eds), *Cambridge History of the World*, vol. 6 part 1, *The Construction of a Global World, 1400-1800 C.E*. Cambridge University Press, 2015: 76-106.
'Feeding the farmers, feeding the nation: the Long Green Revolution in Kelantan, Malaysia', in James L. Watson and Jakob Klein (eds), *Handbook of Food and Anthropology*, Bloomsbury, 2016: 173-199.

Professional service:

Society for the History of Technology (SHOT): Vice-President (2013-14), President (2015-16), Past President (2017-18).
Contributing Editor, *Technology & Culture* (2006-); Associate Editor, *East Asian Science, Technology & Society* (2016 -).

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EMPLOYMENT
Associate Professor, History Department, Texas Tech University, 2012-present
Marie Curie International Incoming Fellow, School of History, University of Leeds, 2014-2016
Assistant Professor, History Department, Texas Tech University, 2006-2012

PUBLICATIONS
Books
The Cotton Kings: Capitalism and Corruption in Turn-of-the-Century New York and New Orleans (with Bruce E. Baker)*.* Oxford University Press, 2016.

Making Tobacco Bright: Creating an American Commodity, 1617-1937. Studies in the History of Technology. Johns Hopkins University Press, 2011.

Selected Articles
"Spinning through the History of Technology." *Textile History* 47, no. 2 (Nov. 2016): 227-242.

"Does Crop Determine Culture?" and "The Question of Causation." Introduction and Conclusion to a Plenary Round-Table. *Agricultural History* 88, no. 3 (Summer 2014): 407-39.

"The Social in the Machine: How Historians of Technology Look Beyond the Object." State of the Field Essay. *Perspectives on History: The Newsmagazine of the AHA,* Mar. 2014.

"Paradox of Precision: Bright Tobacco as Technology Transfer, 1880-1937." *Agricultural History* 82 (Spring 2008): 220-235.*

SERVICE-Professional
Associate Editor, *Technology and Culture,* 2013-present
Editorial Board, *Enterprise and Society,* 2014-present
Trustee, Business History Conference, 2013-2016

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