Introduction

Global Networks and New Histories of Rice

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The history of rice is intricately entwined with the emergence of the early-modern world economy and the global networks of industrial capitalism. As a crop, food, and commodity, rice has played a critical role in shaping and linking the histories of Africa and the Americas, Europe, and almost every region of Asia. An essential staple of colonial growth and postindependence development programs, today rice is food to over half the world. How did this come about? How much can we recuperate of the history of the flows and interchanges, the introductions and *métissages*, and the shifts in patterns of production, consumption, and trade that made rice into a global commodity? And what might a focus on rice and its multiple facets, dietary and symbolic, genetic, economic, and political, contribute to the flourishing field of global history?

THE CHALLENGE

Our global rice project began early in 2010, with a panel on "New histories of rice" organized by Edda Fields-Black at the invitation of the American Historical Association (AHA). It is not often that a mere crop captures the attention of the historical profession, but the liveliness, not to say ferocity, of the debate around the "Black Rice thesis" clearly made it a newsworthy theme.[1] The AHA panel comprised papers by three Atlantic historians[2]: I was the commentator. As an Asianist I was astonished by the strangeness, the striking unfamiliarity of the questions and assumptions of historians discussing rice in Africa and the Americas; they were equally astonished by mine. And yet we were all talking about different parts of the same elephant:

[1] E.g., Carney 2001; Eltis et al. 2010.
[2] Max Edelson joined Edda Fields-Black and Peter Coclanis on the panel. He was unfortunately unable to join us in our subsequent workshop and book project.

rice in the early-modern world economy. We decided to pursue the comparison, and this book is the result.

With its challenging propositions about what the plantation economy of the United States might owe to West African knowledge systems, the Black Rice controversy addresses big issues about knowledge, inequality, power, and the sources of wealth, with implications that would seem to reach well beyond national or even hemispheric borders. Yet we realized that the exciting challenges and contrasts raised by the Black Rice debate had apparently bypassed China historians. Conversely, the questions that preoccupied historians working on rice in East or Southeast Asia barely featured in the Black Rice debates – for instance the impact of rice-farming systems on long-term environmental history,[3] national imperatives of food self-sufficiency,[4] merchant cultures,[5] the impact on state or farmer choice of evolving consumer markets,[6] the ideology of rice-breeding and other agricultural improvement programs,[7] the negotiation of irrigation strategies between state and locality,[8] or rice and national identity.[9] Meanwhile, the Black Rice scholars took it for granted that rice farming was integral to the growth of a modern capitalist economy, while in the East Asian context rice farming was more often taken as an obstacle to economic development.

The balkanization of regional historiographies of rice is striking and at the same time surprising. Granted, rice systems initially developed independently in different parts of the world, in diverse environmental niches and within different social matrices. Yet for the last four centuries the regional histories of rice as crop, as food, and as commodity have been inextricably entangled with the emergence of the early-modern world economy and with the global networks and commodity flows of industrial capitalism. But although rice was grown, traded, and consumed across intersecting circuits of exchange that stretched from Brazil to Japan, the historiography of rice has remained regionally segmented, articulated to distinct problematics. It is remarkable how widely the historical questions asked about rice differ between regions, or even between countries within a region, and how little dialogue there has been across these geographical divides. It is as if the local fields of enquiry occupied watertight compartments, forming a fragmented patchwork of intellectual communities unaware of each others' agendas.

Paradoxically, one obstacle to dialogue, comparison, and synthesis may be precisely that regional historians are so keenly aware of the links between rice

[3] Elvin 2004; Boomgaard 2007b; Bray 2007a; Harrell 2007.
[4] Francks 1983; Will and Wong 1991.
[5] Hamilton and Chang 2003.
[6] Francks 2009; Montesano 2009.
[7] Maat 2001; Moon 2007.
[8] Bray 1986; Lansing 2006; Li 2010.
[9] Ohnuki-Tierney 1993; Cwiertka 2006.

and modernity in their own bailiwicks. One cannot complain that rice has been neglected as a historical agent or a shaper of paradigms, ranging from the Black Rice thesis of the Atlantic region to models of "agricultural involution" or "growth without development" for early-modern China, and the concept of "industrious revolution" as proposed by analysts of Japan's particular path to modernity. Clearly, such debates are nested in very specific, regional problematics of historical change, and framed by quite distinctive questions about the material basis of society, about nature and human agency, knowledge and control, progress or the morality of power. Therefore, few historians have thought to ask what the similarities or distinctions between regional histories and historiographies of rice might signify, how they might connect, or which new factors demand our attention if we compare China with the southern United States or Java with Senegal.

Rice: Global Networks and New Histories suggests how much we have to gain from breaking down the barriers and taking each other's preoccupations seriously. Rice history is currently a vital and innovative field of research attracting serious attention within the broader discipline. An impressive number of challenging and illuminating regional studies have appeared in the last few years.[10] But although regional historians are well aware that their local studies are part of a broader picture, as yet no attempt has yet been made to write a history of rice and its place in the rise of capitalism from a global and comparative perspective.[11] *Rice: Global Networks and New Histories* is a first step toward such a history.

Global history sets out to show how different regions of the world became linked, how they co-evolved toward a modern ecumene, what traveled along global networks and what did not, where the flows quickened and where backwaters or pockets of resistance lay, and how local matrices of environment and endowment, of social, political and material practice fed into global patterns or values. At the same time the global perspective is inherently comparative, pressing us to think critically about our locally generated questions or models: If we ask Black Rice questions about late imperial China, will it disrupt our current interpretations, prompt new questions, or inspire us to adopt new methods? And if a new research tool challenges prevailing narratives about rice in British India or Georgia, could it usefully be taken up by historians of Japan or Brazil?

[10] Among the recent regional histories are works by several of our contributors, including Cheung 2008, Fields-Black 2008, Hawthorne 2003, Lee 2011, and Stewart and Coclanis 2011.

[11] Sharma 2010 offers coverage of several regions, but it is a very different enterprise from global history, consisting of unrelated country histories and spanning over ten thousand years. Such histories were written for sugar (Mintz *Sweetness and power* [1985]) and for maize (Warman *Corn and Capitalism* [2003, first published in Spanish 1988]) almost 30 years ago. They became instant classics, setting the stage for vibrant new fields of comparative scholarship that are still going strong today.

Our collective brief in *Rice: Global Networks and New Histories* was to think both globally and comparatively about local cases, seeking to highlight and test the deep-rooted assumptions naturalized within regional research and debates, and to identify cross-cutting themes that would illuminate standard questions in new ways. In particular, we wanted to highlight and explore the nature of the local-global articulations that shaped local histories of rice as crop, food, and raw material, and the international networks of trade, labor, expertise, taste, and genetic materials in which localities participated or from which they were excluded. One valuable lesson to be drawn from recent work both in global history and in science and technology studies is that, rather than drawing categoric distinctions between production and consumption, or scientific research and farmer practice, or nutrition and ritual, we can often learn more from our historical sources by recognizing that making, doing, and using are in practice inextricably entwined, as are economic, social, and symbolic value, or dietary and cultural sustenance. So rather than attempting comprehensive coverage of the rice-growing and rice-eating world, or organizing the chapters by geography or date, or by unhelpful categories like production or consumption, we decided to focus on a small number of powerful, richly suggestive cross-cutting themes.

The 15 chapters of *Rice: Global Networks and New Histories* are written by specialists on Africa, the Americas, and several regions of Asia. Most of the contributions are richly empirical, locally embedded case-studies, some are synthetic reflections, others are speculative and explore the potential and implications of new research tools such as genetic mapping.[12] Each one brings a new approach that at some level unsettles prevailing narratives and suggests new cross-disciplinary linkages. The book is organized in three sections: *Purity and Promiscuity*, *Environmental Matters*, and *Power and Control*. We envisage these themes (explained more fully in the introductions to the sections) as conceptual bridges to disciplines currently setting trends in global history, respectively: the history of science, environmental history, and studies of governmentality.

The authors of *Rice: Global Networks* approach the comparative and global history of rice at several levels. The novel methods they deploy, and the big questions they ask, are premised on "the utility of a truly international approach to history. Regional or national approaches to the subject, self-contained and self-absorbed as they often are, will not do in this case."[13]

The authors thus seek new ways to connect micro- and macro-level histories (e.g., Biggs, Fields-Black, Smith). They propose a number of new approaches to

[12] Mouser et al. and Gilbert pioneer the use of genetic mapping to trace historical patterns of crop diffusion and breeding. Fields-Black suggests new ways to incorporate historical linguistics into regional history. Biggs and White both use topographical and hydrological mapping as tools.

[13] Coclanis 1993b, 1051.

regional histories, notably through reconceptualizing the significance of rice in specific contexts (e.g., Cheung, Linares, Hawthorne, Maat). They identify some promising angles from which to develop better comparative analysis, and explore new ways to integrate histories of rice into the complex interwoven flows of goods, people, capital, knowledge, and power that converge to form the history of capitalism (e.g., Lee, Boomgaard and Kroonenberg, Coclanis). The contributions borrow stimulating ideas from cultural history (Hawthorne), science and technology studies (Biggs) or the history of medicine (Minsky): What happens when we pay serious heed to the suffering bodies of workers in the rice-fields, or introduce the Latourian concept of the assemblage into an analysis of landscapes in the Mekong Delta? Individually or collectively, the chapters also highlight inconsistencies and contradictions between interpretations, places where the dots refuse to join, where data are absent, where analytical frameworks won't travel, or where a new method of investigation raises awkward and apparently intractable questions. They also highlight and explore various irreducible tensions: tensions, for instance, between local and global values attributed to rice; between rice as subsistence crop, commodity, or foodstuff; or between the profuse variety of rices and of rice farming systems, and the pressures toward homogeneity that come with taxation, international trade, scientific breeding, and modern ideals of agricultural development. The work, in other words, is still in progress: we are at the exciting stage where new questions are coming thick and fast, but we are not sure where they will lead us.

In the rest of this introduction I will first set the scene in very general terms, sketching out some features of rice as a global crop and commodity in the early-modern and modern era. Then I consider what is at stake in two contrasting debates about rice history, the Black Rice debate in Atlantic history, and the involution debate in East Asian history. I go on to discuss some of the contrasting approaches to rice and society that characterize different regional histories, question the rice-ness of rice in different contexts, and conclude with some reflections upon making connections, across space and across time.

GLOBAL RICE

What might we mean when we talk of rice as a global crop or commodity? Cotton and porcelain have each recently been claimed as the first global commodity,[14] and the arguments made in support of these claims are instructive. The long-term trends and outcomes that they identify constitute a common matrix within which the history of rice also unfolded, and the cases of both porcelain and cotton highlight similar – though by no means identical – opportunities for fusing material and cultural analysis.

[14] Riello and Parthasarathi 2011; Finlay 2010.

Porcelain and fine cottons both began their global careers in around 1400 or 1500. In both cases local Asian industries were feeding high-quality goods into expanding export markets that eventually spanned the globe. Early-modern European monarchs, states, and entrepreneurs sought doggedly to discover or recreate the techniques for making fine Indian prints and Chinese porcelains. One goal was import-substitution, to staunch the drain on the national coffers. But as both new technologies were mastered not long before the first stirrings of industrialization, it was not long before European textile and ceramic manufacturers began to aim for mass production and mass markets, at home and abroad, ushering in the age of mass consumption.

The preindustrial long-distance trade in porcelain and fine ceramics had significant cultural as well as technical impact, creating an ecumene of aesthetic values, visual motifs, and new manners (including introducing Europeans to the dinner plate as a replacement for the trencher). Inter-regional flows of cotton goods and expertise had likewise promoted new tastes and patterns of consumption, but it is cotton's key role in triggering the English industrial revolution and its consequences that commands most attention from global historians. Developments in the intercontinental organization of cotton cultivation and production between the late-eighteenth and mid-twentieth century were integral to the rise of industrial capitalism, colonialism, and modern markets, and to the consolidation of new hierarchies of class, race, and expertise, of new international divisions of labor and resources whose legacy still endures.

As a crop, food, and commodity, rice likewise acquired global significance over the last four or five centuries. Although it was not a high-value commodity like fine cottons and porcelain, it also appeared initially to Europeans as a typically Asian product and source of wealth. In 1506, just a few years after Columbus claimed Hispaniola for the Spanish crown, the Dutchman John Huyghen van Linschoten recorded his impressions of Bengal. It was a land, he wrote, "most plentiful of necessary victuals, specially *rice*, for that there is more of it [in that country] than in all the East, for they do yearly lade divers shippes [therewith], which come thither from all places, and there is never any want thereof."[15]

The thriving trade of the Asian oceans was a source of wealth and of desirable commodities that Europeans longed to break into and control, indeed Columbus had been seeking a shorter westward route to the Indies when he set off across the Atlantic. Spices, rare woods, and costly dyestuffs, exquisite printed cottons, lustrous silks, and porcelain were among the luxury goods that traveled the Asian routes, and it was these high-value goods that the Europeans initially coveted. But traffic in mundane necessities like raw

[15] Quoted by Minsky (this volume), emphasis added.

cotton and silk, iron nails and pots, copper cash, timber, and rice was equally vital to the expanding manufactures and markets of the Asia trade. Entrepots and industries, like armies, march on their stomachs: rice cultivation spread and intensified through tropical and temperate Asia in step with flourishing states, demographic expansion, rising prosperity, and a steady growth of commercial cropping, manufactures, and cities. With the conquest of the Americas, Europeans soon saw good reasons and opportunities for launching into rice-production themselves.

By 1700 rice was the chief provision of the slave trade between West Africa and the Americas; it subsequently became the main staple of colonial labor forces throughout the tropical zone. The eighteenth-century rice plantations of Brazil and Carolina harnessed African skills and labor to produce rice for export to Europe and to European colonies in the Caribbean. Through the nineteenth century, as they expanded their colonies through Asia, the British, French, and Dutch colonial powers carved out new export rice-zones in Burma, Indochina, and Indonesia to meet the expanding needs of empire, in the process pricing the rice industries of the Americas out of the market. Independent kingdoms in Southeast Asia, notably Siam but also smaller states like Kedah, also entered the fray and opened up new rice frontiers to feed miners, plantation workers, and growing urban populations through the Western colonies.

Rice farming as a source of accumulation and growth was by no means confined to colonial contexts, however. Until the late eighteenth century the Chinese economy was probably the largest in the world. The immense wealth and power of late imperial China was rooted in a system of intensive, small-scale rice farming that supported commercial cropping, rural manufactures, and a huge volume of trade. While the state invested heavily in developing rice production to feed its population and sustain the army and government, shifts in markets were equally important in shaping the balance between rice farming and other economic activities in any given locality. In Mughal India, which rivaled China in early-modern times as an exporter of manufactures, the state promoted rice farming to support the expansion of commercial cropping. In Japan advances in rice-based farming powered first the dynamic urban and commercial growth of the Tokugawa shogunate, and then the ambitious modernization, industrialization, and militarization programs of the Meiji state.

In their encounters with colonial-industrial capitalism the rice economies of India, China, and Japan each followed a different path. Under British rule the rice systems of Punjab and Bengal were further diversified and intensified to support the production of colonial export crops like indigo, cotton, and sugarcane. China had no formal colonies of its own, but by the late nineteenth century Chinese millers and merchants controlled most of the rice trade not only in China itself but also throughout Southeast Asia, including the

European colonies. Meiji Japan met its remorselessly expanding resource needs by seizing colonies for itself, annexing Taiwan and Korea and taking control of their rice production.

From around 1600 or 1700 the rice industries and consumption practices of the New World and the Old were gradually linked up through overlapping and often competing circuits of exchange, of rice itself, and also of labor, skills, technology, and agronomic knowledge and models. As demand increased, rice steadily conquered new territories. Paddy-fields crept down from river-valleys to flood-plains and coastal mangrove swamps, and up from valley floors to dizzying tiers of mountain terraces. By the mid-nineteenth century new technologies for draining, pumping, and levelling meant that swampy deltas and flood-plains could be turned into paddy fields for the first time. In Cochinchina, Burma, and Siam export rice-industries were set up, partly to feed migrant workers on the mines and plantations of European colonies through South and Southeast Asia, and partly to undercut imports of rice to Europe itself from America or Bengal.

The new Asian rice-bowls, though they operated on a much larger scale than traditional farms, still relied on intensive use of labor. But a revolutionary change took place in Louisiana beginning in the 1880s. There, as Peter Coclanis explains, immigrant Bonanza farmers and agronomists from the mid-West succeeded in "turning rice into wheat," transforming virgin land into vast tracts of paddy that could be irrigated, tilled, and harvested with machines. Instead of requiring the minute and continual toil of many workers, now one or two men could run a huge farm whose labor requirements amounted not to man-days but to man-hours. A new, productivist model for industrial rice farming was born. It proved its worth in Louisiana and later in California, and in the terms of modern economics it appeared supremely efficient and advanced compared to the micro-farms of old Asia. This model has since been exported around the world, first by colonial governments, later by modernizing independent states, frequently as part of a broader Green Revolution package. But its record has been checkered.

Even today we can still map an exuberant profusion of local varieties and types of rice, of ecological niches, and farming practices that elude the Green Revolution model of monoculture "miracle rices" grown with tractors, chemical fertilizers, and herbicides in large, rectangular fields. There are still good reasons for some farmers to choose dry rices, floating rices or rattoon rices; to select from a host of continually evolving landraces, some hybridized with "miracle rice" breeds; to till pocket-handkerchief terraces or patches of swidden cleared in the forest. Modern, large-scale rice farming quite often succeeded on lands where no rice had previously been grown; it often failed where improvers tried to transform existing small-scale farming. Success or failure hinged not only on the natural, but also on the social and political

environment in which such radical transformations of the landscape were attempted.

One reason for the enduring appeal, despite its proven limitations, of the mid-Western model of rice farming is that it embodies key aspects of industrial or even corporatist rationality: it is capital-intensive, brings economies of scale, and prioritizes labor productivity. As Jonathan Harwood explains, this is by no means the only rationality that has been applied to scientific seed-breeding, but within the broader matrix of capitalist and commercial interpretations of efficiency and progress, it has come to prevail. A capitalist mode of production is "encapsulated," as Biggs puts it, in the high-yielding varieties developed by US-trained crop-scientists over the last century. A recurring theme in the following chapters is how modern rice gradually took shape – in constant tension with the specific requirements of local environments and social formations – as a global crop, a scientifically tailored instrument of development that governments and corporations, policy-makers, economists, and scientists strive to deploy in the form of "universal varieties" that they hope will thrive – and prove acceptable as food – anywhere in the world.

Faith in transferable seeds or technologies, what Latour calls "immutable mobiles," is by no means confined to the modern era: in about 1100 Chinese state bureaus for agricultural development were distributing imported seed of quick-ripening rices to farmers. But the pace quickened and confidence in universals grew in the colonial era, as science was applied to crop selection. Scientific rice-breeding was part and parcel of the colonial enterprise in French Indochina, of nation-building in Republican China and postindependence Senegal, and of succeeding visions or ideologies of international development from the Green Revolution of the 1960s to the International Rice Research Institute's current project for Golden Rice. Today centralized scientific rice-breeding is widely accepted as a global solution to global problems of hunger and poverty. The contributors to this book offer various explanations of how and why the idea of universal rice has come to be so persuasive and so powerful, despite the resilience of alternatives. Some focus on recent processes, others trace its roots back to a more distant past.

Whether we stand in China or Louisiana, Sierra Leone or Bengal, it is clear that the local history of rice is closely entwined with worldwide trends in colonial and capitalist expansion, and with the emergence of modern science and institutions. The question is how we might weave the different strands together to produce something more than a patchwork of local stories. Here let me briefly compare two local debates about rice, history, and capitalism. The incommensurability between them, I suggest, reveals deeper agendas within the historical enterprise. Exposing these underlying goals and values suggests some promising new points of reflection at the level of global history.

WHAT WE TALK ABOUT WHEN WE TALK ABOUT RICE: DEBATES AND AGENDAS

The terms of the Black Rice debate, in a nutshell, are as follows.[16] The Black Rice thesis is that African workers in the rice-fields of South Carolina or Brazil were not simply carrying out tasks defined by white farm-owners but effectively transplanting or recreating a West African set of agricultural skills and knowledge system. In her book entitled *Black Rice*, Judith Carney drew upon ethnographic evidence from West Africa to propose that women were the chief custodians of rizi-cultural skills and knowledge, and therefore the chief agents of technological transfer across the Atlantic. The evidence on which the Black Rice arguments are based has been fiercely contested by other historians. Some argue that there is no convincing evidence that the majority of rice-plantation workers in the Americas came from the African regions (mainly the Guinea Coast) where rice was grown; others contest the role of women as purveyors of technical skills. Still others believe that the rice-systems of the colonial New World are better understood not in terms of simple binaries of power and knowledge between black and white, but as much more complex hybrids.[17]

With its challenging propositions about what the plantation economy of the United States might owe to West African knowledge systems, the Black Rice controversy addresses big issues about knowledge, inequality, power, and the sources of wealth, with implications reaching well beyond national or even hemispheric borders. It also raises tricky methodological questions about sources and interpretation.

As a historian of China the familiar debate with which I grapple is quite different: it is about agricultural involution and the historical trajectory of rice-based agrarian economies like imperial China. For anybody not familiar with the term, it was coined by the anthropologist Clifford Geertz. Geertz' *Agricultural Involution*, published in 1963, is a study of the social and ecological impact of the colonial "Cultivation System" (*Cultuur Stelsel*) in Java. Geertz argued that there is something technically special about wet rice as a staple. In Java the capitalist dynamism of the colonial sugar-plantation sector offered a dramatic contrast with the peasant rice farming which fed its laborers. Geertz argued that the technical characteristics of irrigated rice farming in Java permitted infinite small-scale increments in output, but these were achieved largely through the intensification of labor inputs, achieved not through development of the means of production, but through the reinforcement of the traditional, non-capitalist social institutions within which rice farming was embedded. Involution occurred in Java, Geertz argues, because there was no industrial or urban sector to absorb surplus population;

[16] For more critical detail see the chapters by Fields-Black, Smith, and, especially, Hawthorne.
[17] For example, Smith (this volume); Hawthorne 2003.