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# Interrogating the "Machine" and Women's Things

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When I interviewed Mariam "Mamu" Coulibaly in Kankan (Mali, West Africa) about women's work in the early twentieth century she told me about a labor intensive cooking process that involved farming, collecting and processing spices, pounding grains, and finally combining all those ingredients in the cooking pot.[2] Her description was echoed by other elderly women I interviewed in the same region. As we ended our conversation she joked that soon Westerners will bring machines to do the cooking![3] It was a light-hearted comment but fully intended to chastise young women for their changing cooking practices and reliance on Western things. Earlier in our discussion Mamu had lamented that women's lives are now "relaxed" because they no longer pound grains using the mortar and pestle, rather they take their millet and rice to be processed by machines.[4] Many of the younger women I spoke to sought out those very same diesel-powered grain grinding machines, which, contrary to Mamu's assessment, are not ubiquitous across rural Mali. These mobile grain-grinding machines, the product of various development interventions dating to the 1970s, have been widely promoted by scholars of women and development as labor saving devices.[5] Like

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[1] The author would like to thank Aissata Kassonke and Bonheur Souleyman Doumbia for their assistance in setting up and conducting interviews between 2009 and 2010 and also Labassy B. Gnono for transcribing the interviews.
[2] Interview by author with Mariam "Mamu" Coulibaly in Kankan (formerly Sangarébougou), Mali, May 4, 2010.
[3] Mamu's emphasis during the interview.
[4] Interview with Mariam "Mamu" Coulibaly.
[5] Writing about women in Mali, Mariam Thiam argued specifically for the introduction of grain grinding machines to promote women's development. See, Mariam Thiam, "The Role of Women in Rural Development in the Segou Region of Mali," in Women Farmers in Africa:

Mamu, historians of women and technology have reason to be skeptical of such broad claims about labor-saving technologies for women in Africa and elsewhere.[6] Certainly, women in Mali have been innovators in adopting labor-efficient technologies, and Mamu's criticism has much to do with generational differences, but her critique of the "machine" merits examination. [7] Embedded in her joke is a valid questioning of the emphasis on the role of Western machines in Malian society and their meanings for women. This interrogation also sheds light on larger questions about how we study gender and technology, women as users of technology, and even their role in designing technological systems. Mamu's central question is a good starting place: What will happen to women if they abandon the mortar and pestle and other specifically women's technologies, or as they are called in Mali "women's things"? I suggest that what is at stake is not only a question of labor time but also one of labor value in society.

My interviews with Mamu and other women took place in a region with a very specific history of technological change and European colonial rule. Mamu lives in one of the first villages established by the French for a large irrigated agricultural scheme situated along the Niger River. The Office du Niger (Office), as the scheme was named, was one of the most ambitious development projects by the French in West Africa. Beginning in the 1930s, the colonial administration began construction in the French Soudan (contemporary Mali) on a vast irrigation network to water the scheme's two main cash crops: cotton for the French textile industry and rice for urban West African markets. For the next three decades the project was defined by its large-scale technology. Industrial digging machines carved out irrigation canals and industrial farming equipment was meant to mechanize planting and harvesting. The technological centerpiece was the large dam built across the river to provide water to agricultural fields under French control. It was a full-scale effort to modernize agriculture in

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Rural Development in Mali and the Sahel, ed. Lucy E. Creevey (Syracuse: Syracuse University Press, 1986), 67-79.

[6] North American historians of women and technology have raised similar questions regarding domestic technologies. For example, see Ruth Schwartz Cowan, More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave (New York, NY: Basic Books, Inc., 1983). and Joy Parr, "What Makes Washday Less Blue? Gender, Nation, and Technology Choice in Postwar Canada," Technology and Culture 38, no. 1 (1997).

[7] See Laura Ann Twagira, "Women and Gender at the Office Du Niger (Mali): Technology, Environment, and Food Ca. 1900-1985" (Ph.D. Dissertation Rutgers University, 2013), 231-79.

West Africa, yet its technologies frequently met with failure.[8] Despite its complicated colonial history, the Office is still in operation today and it has retained a reputation as a space of new technology and economic development.

Women and men from Mamu's town interacted with these colonial-era agricultural technologies, and by the time of our interview Mamu had also witnessed the introduction of consumer technologies like metal cooking pots, bicycles, radios, plastic wash basins, and mopeds. She was certainly not afraid of these new technologies; in fact, when she came to the project in its early decades she liked that it was a place of many new things.[9] Yet, she happily judged which new things are of use and which ones might even be ridiculous to adopt. Many of these twentieth-century technologies such as grain grinders or tractors are now simply called "machines," a French short-hand adapted to local speech and expanded in its meaning. Using the word "machine" can be an off-handed way to dismiss Western technological objects as foreign to local society, or undefined in their usefulness. At the same time, Malians have heartily embraced many of these new objects. What I want to explore here is Mamu's suggestion that the use of, even a reliance on, such "machines" can go too far. Moreover, women in particular may lose out when "women's things" are replaced with Western technologies without women's explicit control over the infrastructure of their use.

During another interview with Tiesson Dembélé in a town that pre-dated colonial rule, Banbugu, I encountered a similar critique of Western machines. Tiesson narrated for me the history of a canal building project in the same region where the Office stands today. Under the eighteenth century Segu Empire a prince named Nci Jara controlled Banbugu, which was some distance from the Niger River.[10] All the other Segu princes held their seats of power along the Niger, a river that myth associated with political control over the region.[11] When dignitaries visited Banbugu, they mocked Nci: How could he claim political power or

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[8] For example, see Amidu Magasa, Papa-Commandant a Jeté Un Grand Filet Devant Nous: Les Exploités Des Rives Du Niger, 1902-1962 (Paris: François Maspero, 1978); Jean Filipovich, "Destined to Fail: Forced Settlement at the Office Du Niger, 1926-45," The Journal of African History 42, no. 2 (2001).

[9] Interview with "Mamu" Coulibaly.

[10] I employ the pre-colonial spelling of the town name in the text (Banbugu), but use the official town name as altered by the French (Bambougou) in the references to my oral history interviews. The rulers name Nci is also spelled Nji.

[11] Germaine Dieterlen, "The Mande Creation Myth," Africa: Journal of the International African Institute 27, no. 2 (1957).

importance so far from the river?[12] The same dignitaries pointed out that Nci's wives only had well water to drink. This particular remark implied that women, even royal women, in Banbugu had an extraordinary labor burden in their daily task of water collection. Women in Banbugu drew water from wells when women in other towns had only to gather it from the river.

Clearly, women's labor time was of political value. Stories like this one have influenced contemporary perceptions of women's labor in the past and the need to reduce women's undue burdens. In this historical account, the ruler Nci was even admonished to redress the problem of women's water collecting labor. Subsequently, Nci decided to dig a canal from the river to Banbugu. Using the might of his warriors he raided settlements outside of Segu for laborers to do the work of bringing the river to him. Upon its completion the female bard Musokura celebrated Nci for the feat.[13]

What distinguished the pre-colonial canal from the later French irrigation system were the purposes of the waterways and their appearance in the landscape. Nci's canal was meant to bring water from the river to facilitate bathing, cooking, and other daily needs for the residents of Banbugu. More specifically, it reduced the domestic labor of women in the town. The canal also brought the mythical qualities of the river to the people, and healers are remembered to have used the soil removed to build the canal to treat maladies. It was a man-made waterway but was not meant to radically alter agricultural practices, unlike the French infrastructure. In fact, today, the older canal appears very much like an extension of the river, while the French ones were meant to look specifically modern, according to the French aesthetic. The French irrigation system - like today's machines- stood out, and not surprisingly farmers found its usefulness as a technology difficult to harness.[14]

Nci is still celebrated in oral tradition for building the canal, even revered as a saint. In speaking to me, a white American researcher, Tiesson stressed at the end of our interview

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[12] Interview by author with Tiesson Dembélé in Bambougou Nji, Mali, June 3, 2010. At the time Tiesson was the town's official caretaker of Banbugu Nci's oral history and his tomb.
[13] Interview with Tiesson Dembélé. In other accounts of the same events in Banbugu the female bard Musokura is specifically credited with shaming the prince. See Catherine Bogosian, "Forced Labor, Resistance and Memory: The Deuxième Portion in the French Soudan, 1926-1950" (Ph.D. Dissertation University of Pennsylvania, 2002), 84-88.
[14] In the early decades of the Office scheme, its irrigation canals frequently flooded, ruining the harvest, and even displacing villages.

that the canal was a river made only by men with hoes and buckets -- without any machine (imagine)![15] Tiesson, like Mamu, was articulating a critique of Western hubris with regard to technology. From Tiesson's telling of Nci's story, the French machines used to create the Office canals symbolize a lack of human skill and genius, but also spiritual blessing.[16] In some ways the French machines actually signify human inability. A similar interpretive mode is at work in Mamu's criticism of machines for cooking when compared to older women's technologies powered by female labor.

The machine most on Mamu's mind when I spoke to her was not a canal digging machine. She was worried about the introduction of grain grinding machines that now perform an essential role in women's food preparation labors. What of women's skill, genius, ability and value as women if they rely on machines? Other elderly women I interviewed similarly complained about younger women using the machines, citing the danger of the metal grinding parts chipping and allowing small metal shards to enter the food. Another common refrain was that women in the younger generations are just too much in a hurry to spend the necessary labor time preparing good quality food.

In striking contrast to these negative assessments of the recent transformations in women's labor time, the earlier oral tradition valorized Nci's actions to relieve women of undue labor burdens. What does the historian make, then, of the contemporary shaming of younger women who avoid the work of pounding grains? The subject of women's labor time is clearly one of much contemporary debate between women, especially between elderly mothers-in-law and their sons' wives. On the one hand, mothers-in-law value labor time spent preparing food for the family; on the other hand, a young woman understandably values any extra time saved by going to the machine so she can sell her left over produce in the market, or engage in other money-making activities. One older woman I interviewed, Hawa Coulibaly, was fairly enthusiastic about the grain grinder and solar dryer that a local women's cooperative in Fouabougou managed. Hawa was a leader in the cooperative and shared the younger women's interest in saving time for cash-earning activities. The Fouabougou grinding machine

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[15] Interview with Tiesson Dembélé, his emphasis

[16] I take inspiration from Clapperton Mavhunga who argues that spiritual blessings are essential to pre-colonial technological systems that persist in contemporary African practice. See, Clapperton Chakanetsa Mavhunga, Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe (Cambridge, MA: MIT Press, 2014).

and others now in operation in towns around the Office were donated by the Malian NGO Alphalog and were meant to help women improve their economic standing.[17] Women of several generations clearly also associate reduced labor time in cooking with increased economic opportunity.

Many more grinding machines are owned and operated by male entrepreneurs.[18] The grinders sit outside men's houses and often attract lines of local young women and children sent by the mothers ready to pay a small fee for the use of the machine.[19] While I would not argue that women's labor time is an unimportant concern, the emphasis on the labor saving aspect of the grinding machines obscures other important and overlapping questions: How do women access technologies necessary for their work? How do they share technical knowledge? How do they imbue "women's work" with social value?

The fact that men are far more likely to own and operate the new grinding machines is at the heart of Mamu and other women's critiques of the machine. It is a signal, or warning, that women are no longer in control of the technology associated with women's work. In fact, even the machines managed by women's groups are actually operated by young men who receive a small wage for their work.[20] By and large women do not control the economic or social networks responsible for distributing these new machines, none of which is surprising to scholars of women and development in Africa. However, it is a new and troubling transformation to women who until very recently managed their own technological infrastructure.

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[17] Interview by author with Hawa Coulibaly in Fouabougou, Mali, March 30, 2010. Alphalog also donated a grain grinder to a women's group in Kolony (km 26). Interview with Djewari Samaké in Kolony (km 26), Mali, March 22, 2010.

[18] During an informal conversation, one wealthy and exceptional woman who lived at the Office had purchased a rice threshing machine. Like other machine owners she largely used the machine to generate income. Conversation between the author, Djenebu Coulibaly, and Djewari Samaké, in Kolony (km 26), April 9, 2010.

[19] In all likelihood women used their own earnings to pay for the use of the machine. Men and women in this region have tended to maintain separate incomes in the household, leaving women with a degree of control over their own income. However, they are also without the support of a partner's income for food production, including the fees for using a grain grinding machine. See chapter Richard Schroeder, Shady Practices: Agroforestry and Gender Politics in the Gambia (Berkeley, CA: University of California Press, 1999), 21-77.

[20] Conversation with Assane Keita (Office staff member and women's outreach worker) and Hawa Coulibaly in Fouabougou, Mali, March 30, 2010.

Historians of gender and technology have rightly questioned why specific technologies are gendered, objects such as washing machines, cars, razors, and even closets(!), and the impact of such gender associations on society. It has given rise to productive conversations on the co-production of gender and technology, the value of women's technological work and thinking, as well as new ways to see gendered connections between the domestic and political arenas.[21] My goal here is to examine the ideological links between technology, women's labor, and women's status in society, connections drawn by the elderly women I interviewed.

Women in Mali have a long history of producing and using household technologies, even organizing the larger technical infrastructure for their own household labor. For most of the twentieth century, women also owned all the items necessary for household maintenance, including cooking pots, clay steamers, spoons, large water jars, stools, grinding stones, calabashes, bowls, spinning needles, cloth, and so on. Women were the skilled users of all these items, and younger women learned to use them from their mothers, other female relatives, female in-laws, even from female friends.[22] Women received many of these technologies, like the mortar and pestle, from their mothers as wedding gifts; brides also received other items as presents from their mothers' friends. While the groom was specifically responsible for purchasing a clay cooking pot to give to his bride, female potters manufactured

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[21] The literature on gender and technology is a rapidly expanding field, but a few notable examples are Judy Wajcman, Feminism Confronts Technology (University Park, PA: The Pennsylvania State University Press, 1991), Parr, "What Makes Washday Less Blue?.", Ruth Oldenziel, Making Technology Masculine: Men, Women and Modern Machines in America 1870-1945 (Amsterdam: Amsterdam University Press, 1999), Nina E. Lerman, Ruth Oldenziel, and Arwen P. Mohun, eds., Gender and Technology: A Reader (Baltimore, MD: The Johns Hopkins University Press, 2003), Nelly Oudshoorn and Trevor Pinch, eds., How Users Matter: The Co-Construction of Users and Technology, Inside Technology (Cambridge, MA: The MIT Press, 2003), Francesca Bray, "Gender and Technology," Annual Review of Anthropology 36 (2007), Ruth Oldenziel and Karin Zachman, eds., Cold War Kitchen: Americanization, Technology, and European Users, Inside Technology (Cambridge, MA: The MIT Press, 2009).

[22] Twagira, 66-73.

and sold those pots along with many other household items in a young bride's trousseau.[23] In fact, the dissemination of knowledge for producing these items has been traced through specifically maternal networks.[24] Before the introduction and spread of grain grinding machines, the technological infrastructure of cooking in Mali was predominantly a female affair.

Collectively the technologies that women employ in their household labor are called women's things or musow minaw. The women I met take a great deal of pride in their use and ownership of all these items. They are invested socially in the female network that provided their first musow minaw and invest their own money in new items, or to replace worn ones. During my interviews, one issue that often came up for women when they thought about their musow minauw was durability. For example, women from all generations complained that new serving and eating bowls made of plastic are too easily cracked or broken.[25] Similarly, they spend a great deal of time examining a mortar and pestle pair before purchasing it for a daughter or for themselves. With this concern in mind, Fatoumata Coulibaly even purchased a medium sized mortar and pestle made of iron, a costly investment to be sure, but to her a worthwhile one.[26] The content and infrastructure of women's things, therefore, is subject to on-going maintenance, assessment, and re-working.

Perhaps no technology has garnered more Western interest than the mortar and pestle. It has been one of most written about technologies associated with women in Africa. Nineteenth and early twentieth century French observers often wrote about the mortar and pestle in relation to the time women extended in preparing food, and the emphasis of these early observers on women's labor time has endured in analyses of women across Africa. Certainly pounding grains and other cooking ingredients is a labor intensive task. However, women have also transformed it into a collective activity marked by singing and dancing; it is

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[23] Even when male artisans manufactured cooking tools such as the mortar and pestle or metal pots, women played a large role in shaping the consumer market and types of tools produced. Ibid., 231-79.
[24] Barbara E. Frank, "Marks of Identity: Potters of the Folona (Mali) and Their "Mothers"," African Arts 40, no. 1 (2007).
[25] Fatoumata was equally critical, like other women, of the contemporary use of grain grinder machines, and she was explicitly concerned with the rushed nature of cooking labor as a consequence. She was not primarily concerned, as were others I interviewed, about the dangers of metal shards appearing in the food. Interview by author with Fatoumata Coulibaly and Yaini Tounkara in Kolony (km26), Mali, May 25, 2010.
[26] Interview with Fatoumata Coulibaly in Kolony (km 26), April 9, 2010.

even a venue to show off women's skills. These public displays of women's prowess around the mortar and pestle dramatized their work (See Figure 1 of a women's work party to prepare shea butter in Kalaké-Bamana, Mali in 2000. Photo by L. Twagira).[27]

**Figure 1: Women's work party prepares shea butter in Kalaké-Bamana, Mali in 2000. Photo by L. Twagira.**

Nostalgia marked many women's recollections of earlier eras when they gathered around the mortar and managed their labor burdens by working together.[28] In all these accounts of women's on-going use of the mortar and pestle, daily life is marked by the early morning sound of the pestle hitting the mortar. The very ubiquity of those sounds also made the value of women's labor audible to everyone in ear-shot.[29]

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[27] See Twagira, 66-68.
[28] Interview by author with Fatoumata Coulibaly, Kadiatou Mallé, and Maïssa Sountura in Kouyan-Koura, Mali, April 14, 2010. Interview by author with Wassa Dembélé and Kalifa Dembélé in San-Koura, Mali, May 5, 2010.
[29] See Twagira, 240-42.

During my interviews, I met Hawa Diarra for a conversation just outside her home and we met with the sounds of cooking labor anew. One of Hawa's (male) neighbors owned a grain grinding machine. Soon after she and I began to talk, we heard the machine start-up. It was immediately impossible to hear one another, and we were forced to move locations.[30] Grain grinding machines, like the mortar and pestle continue to make the work of food production public. They are very noisy in their operation, but their sounds do not amplify women's roles in rural society. Rather they signal a transformation in contemporary society that troubles older women like Mamu. It is worrisome when women lose control over the technology of food production and are not understood to be playing a central role in the work. Their labor, in effect, no longer embodies the social networks of women constituted around work or their technological expertise. This recent shift risks devaluing women's labor, even their role in society. From my own observations, gatherings around the machine also lack the social element that women fondly remember around the mortar and pestle--perhaps forgetting when it was not so easy to organize women in a household. Yet, as women working together they had no need for a machine.

Certainly, the elderly women's criticism of the younger generation contains other elements of nostalgia. I often heard that slower cooking (like we did before) was better. It is no coincidence that women (and men) also criticize women for the use of industrially produced food flavoring cubes widely distributed by Maagi, a Nestlé subsidiary. They worry it replaces quality ingredients from women's gardens and other nutritious ingredients collected by women from wild trees and bushes.[31] In these complaints the now elderly women ignore that as young women they adopted new metal cooking pots to ease, in part, their own labor burdens. Why not adopt grain grinding machines too? Simply dismissing the older women's comments would obscure a very real shift in how women are able to control the technologies of their own labor. The problem, then, is not really with the machine but women's ability to integrate it into an infrastructure managed by women. Indeed, the path taken by a grinding machine,

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[30] Interview by author with Hawa Diarra in Nara, Mali, April 30, 2010.

[31] Interview by author with Djenebu Coulibaly in Kolony (km 26), Mali, April 9, 2010. Interview by author with Djewari Samaké in Kolony (km 26), Mali, April 9, 2010. Interview by author with Oumou Dembélé in Kouyan N'Goloba, Mali, April 13, 2010. The fear of metal pieces from machines entering the food was also expressed among elderly men. Interview by author with Daouda Coulibaly in Sokolo, Mali, April 5, 2010.

manufactured and purchased by a distant NGO, to a rural town in Mali contrasts greatly with the ways in which women historically acquired new domestic technologies. Moreover, the machines are unreliable in their use. For example, when fuel is expensive it raises the price of using the machine beyond the means of many women, and when fuel is unavailable so too is the machine.

Ultimately, this shift to machines that cook rather than women who cook using their own technology matters a great deal. The value of women's embodied labor is bound up in their ability to design, own, use, and distribute cooking technologies. I am concerned with the younger women's real concerns for saving time so as to earn income doing things other than household labor. However, I am also interested in listening to Mamu and older women who place value on acquiring and using specifically "women's things."