



Machines That Cook or Women Who Cook?

Lessons from Mali on Technology, Labor, and Women's Things

LAURA ANN TWAGIRA

ABSTRACT: By the last quarter of the twentieth century grain mills had proliferated across rural Mali and were central to the story of women and development. Yet, proponents of such supposed labor-saving technologies for women often assumed that women in Africa have little technological experience or know-how. The present article examines this well-worn narrative with an emphasis on the ways in which Malian women have interrogated different technological interventions from their own shifting perceptions. It is a history that predates the introduction of grain mills and post-colonial development. Earlier in the twentieth century colonial observers in the same region perceived women's use of the mortar and pestle as a sign of technological backwardness. At the same time colonial officials were anxious about women's use of newly-introduced mechanized technologies, characterizing their interest as unruliness. Such colonial stereotypes notwithstanding, women found some new Western tools useful for their own purposes. In fact, they demonstrated a general level of savvy when it came to assessing new technologies and ways of doing things, especially in relation to cooking. A more recent critique of the grain mill's use for food preparation (by older women) further illuminates women's concern not only for labor-saving technologies, but women's ability to shape the infrastructure of their work. In so doing, they gender their tools as women's things and assert control over the meanings of their own work, and status.

NOTE: THESE ARE UNCORRECTED PAGE PROOFS. NO IMAGES HAVE BEEN INCLUDED.

Laura Ann Twagira is an assistant professor of history at Wesleyan University. She is profoundly grateful to the women and men cited in this article and many other friends and colleagues who offered research assistance in Mali. She would also like to thank her anonymous peer reviewers for their constructive comments on an earlier version of this article, as well as Benjamin Twagira, Robyn d'Avignon, and Drew Thompson whose insightful suggestions greatly benefited the development of this article.



TECHNOLOGY AND CULTURE

JULY

2019

VOL. 60

In 1924, several African women in the colonial French Soudan (contemporary Mali)¹ caused a brief administrative stir by operating two newly introduced to the colony hand-held cotton processing machines. The women's actions were likely reasonable, even unremarkable, to most African inhabitants of the region, but they drew the attention of the highest French administrative officials for being particularly disruptive. Responding to the situation, Henri Terrasson the acting colonial Governor wrote to the regional administrator with specific concerns about the women using the cotton gin and the cotton press for what he supposed was home textile manufacture.² Terrasson surmised that the women were monopolizing the machines to produce cloth for purely domestic purposes, much to the detriment of male farmers who might otherwise make use of the machines to prepare their cotton harvests for export.³ For the officials, the women's actions were a matter of misuse, unruliness, even gender disorder. By contrast, the women clearly found the new tools useful for their own purposes. They likely would have seen them as especially suited to locally understood women's work. Moreover, the numbers of women who seemed to have learned to use the two new machines suggests a general level of savvy when it came to assessing new technologies and ways of doing things.

At issue in the 1924 case was the fact that Terrasson was specifically perplexed by the women's interest in the new mechanical devices. Indeed, French observers and officials more often associated African women with the iconic mortar and pestle, which to men like Terrasson symbolized Africa's supposed technological backwardness. When several women not only demonstrated an interest in the new French devices but also the technological aptitude for their use, they destabilized the widespread assumption of African women (and Africa by extension) as without technology. I take this moment as my starting point for re-examining narratives about technology in Africa and how those narratives shift when women are at the center.

In 1924 African *men* were the targets of colonial technological interventions in the French Soudan, and *they* were expected to be the users of the new gin and press. For decades, the French had tried to capture West African cotton harvests to support French industrial textile manufacture, and they sought to do so by integrating male farmers into new colonial

1. For much of the twentieth century, this region was administered by a French colonial administration under the name French Soudan (Soudan Français). In 1960 the colony gained its independence and was renamed the Republic of Mali. I will refer here both to the territorial name of the French colony and the contemporary nation of Mali.

2. In January 1924, when this letter was written, Henri Terrasson de Fougères was acting governor of the French Soudan. He was named Governor-General shortly thereafter in February of the same year.

3. Archives Nationales du Mali [hereafter ANM] 1R 16 Volume II, Agriculture Divers 1914–1931, Entretien, Culture, Égrenage du Coton 1914–1925, égreneuse de coton 1924, 11 A.E. 51, letter dated January 24, 1924.



TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

markets.⁴ Introducing the cotton gin and press was one proffered technical solution. Terrasson explained this administrative rationale in writing to the regional administrator who had initially reported the issue: removing the seeds and pressing the cotton would allow farmers to transport larger amounts of cotton to French markets for greater individual gain.⁵ Thus, the two new technologies were meant to stimulate African men's participation in the colonial export economy. In this context, the women's surprising embrace of the machines was interpreted by Terrasson and other officials as a problem. What was so wrong with the women's embrace of new agricultural technologies? For one, French officials were already critical of women's active participation in the region's agricultural production, which overlapped with emerging stereotypes about African women as overburdened by labor.⁶ It was deeply ironic, therefore, to discourage women from using a labor-saving device. The contradiction is perhaps explained by the widely circulating representations of African women in opposition to modernity or technological innovation.

PREPRINT

Notwithstanding, throughout the twentieth century women in Mali have actively engaged with (and even chosen to disengage from) new devices and machines like the cotton gin as it suited their needs. The machines most often associated with African women *today* are mobile diesel or petrol powered grain mills. Their introduction as a development intervention was meant to relieve women of the heavy physical labor associated with pounding grains using the mortar and pestle. Certainly, for women in Mali labor-saving has often been a concern, but not always the primary one. In the case of grain mills, women's technological choices more often reflect gendered and generational power struggles. Yet, the twin tropes of African women as without technology and overburdened by labor has continued to frame outside perceptions of their history.⁷ As a result, their own technological reasoning has been obscured.

While women have long understood their work to encompass a wide range of activities including the processing of cotton for home use and sale, most attention paid to women's work has centered on their food production labors, and often their continued use of the mortar and pestle for grain

4. Charles Monteil, *Le coton chez les noirs*; Richard Roberts, *Two Worlds of Cotton*.

5. ANM 1R 16 Volume II, Agriculture Divers 1914–1931, Entretien, Culture, Égrenage du Coton 1914–1925, égrenage de coton 1924, 11 A.E. 51, letter dated January 24, 1924.

6. ANM FA 1Q 191, Bureau des Affaires Economiques, “Note sur la participation du H.S.N au ravitaillement de la métropole 1916-1918.” Report dated June 15, 1917.

7. The work of Ester Boserup was foundational among development theorists in directing attention to African women, especially their increasing labor burdens in the twentieth century and, in her view, the need for technological interventions to liberate women from labor. However, Boserup did not frame women as the agents of technological change. See, Part I “In the Village” in Ester Boserup, *Woman's Role in Economic Development*.



TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

processing. By the last quarter of the twentieth century, African women were no longer discouraged from using new technologies. Rather labor-saving machines became central to the story of women and development, and especially those machines that mechanized the labor of grain processing.⁸ Yet, proponents of such advancements for women often assumed that rural women in Africa have little technological experience or know-how.⁹ This attitude toward women in Africa exemplified broader perceptions in Western development circles of Africa's relationship to technology. The present article examines these narratives with an emphasis on the ways in which women have interrogated such technological interventions from their own shifting perceptions.¹⁰ In some cases women actively incorporated new technologies into their labor routines, as the 1924 example illustrates. Women have also been deeply ambivalent about the use of machines in other contexts. It is a history that resonates with the debates of feminist scholars over the emancipatory potential of new technologies for women.¹¹

In this article, I aim to raise several fundamental questions about women in Mali as technological agents, their labor value, and specifically gendered things. The following section provides a brief history of French colonial attitudes toward technology and gender in Africa. It is followed by a discussion of the mortar and pestle and the fascination of French observers with women's on-going use of the labor-intensive technology. The argument will then shift focus to a rural development scheme where women regularly interacted with new agricultural machines. The remaining sec-

8. See for example, Hazel R. Barrett and Angela W. Browne, "Women's Time, Labour-Saving Devices and Rural Development in Africa." Other scholars of women and development in Africa have questioned the utility of labor-saving technologies often termed "appropriate" technologies. See for example, Deborah Fahy Bryceson and Michael K. McCall, "Lightening the Load on Rural Women: How Appropriate Is the Technology Directed Towards Africa?" In addition to grain mills, development experts have examined the possibilities for improved cook stoves as a way to save women from the labor of wood fuel collection. See for example, Jonathan B. Tucker, "The Lorena Cookstove: Solution to the Firewood Crisis."

9. One notable exception is Jacqueline Ki-Zerbo who, in the early years of the new field of women and development studies, presented women as experts in the use of what she called "traditional technologies." She also saw women as key actors in adapting "appropriate technologies," neither of which she argued should be read as inferior technologies even if they were meant to be simple to produce and inexpensive. See, Jacqueline Ki-Zerbo, "Appropriate Technologies for Women of the Sahel."

10. In unpacking misperceptions about women and development in Africa I build on the work of Andrea Cornwall, Elizabeth Harrison, and Ann Whitehead. Andrea Cornwall, Elizabeth Harrison, and Ann Whitehead, "Gender Myths and Feminist Fables: The Struggle for Interpretive Power in Gender and Development." More broadly Jane Guyer has questioned narratives that uncritically depict African women as icons of prehistory and, therefore, static in relation to history. Jane Guyer, "Female Farming in Anthropology and African History."

11. See chapters 1 and 2 in Judy Wajcman, *Technofeminism*.



TWAGIRA | Lessons from Mali on Technology, Labor, and Women's Things

tions will directly interrogate the most recent machines associated with labor-savings for women: motor-driven grain mills. In the context of women's long technological history in Mali, their critiques of such 'machines' illuminate the ways in which women seek not only labor-saving technologies but to specifically gender them as women's things. In so doing, they assert control over the meanings of their own work and status.

PREPRINT

Disruptive Women, Anti-Technological Women, and the Question of Women's Work

French administrators had trouble imagining women in their African colonies in relation to what they defined as modern technology. From the earliest days of colonial rule in the late 1890s and for much of the twentieth century, colonial officials sought to develop the agricultural economy of the French Soudan through the introduction of "modern" farming techniques and machines.¹² Around the same time that hand-operated cotton gins arrived in the colony, agricultural officers also introduced the oxen-drawn plow to male farmers at several agricultural stations with varying rates of success and interest.¹³ Technology broadly construed, and the anticipated economic progress it would bring to rural African society, was meant to be a male affair, albeit with European men teaching African men.¹⁴ When officials observed women using new tools meant for men, they did not see innovators, rather they saw disruptive women.

In 1924 the women using the cotton gin and press had obviously been numerous enough for a local administrator to report the situation. At the time, fewer than five cotton gins were in use across the colony.¹⁵ Local men were recruited to experiment with the machines, and because the few machines in operation were precious resources, it only amplified the concerns of officials when men were not the primary users. In response, Terrasson directed the regional official to renew his efforts to encourage farmers to

12. African historians and scholars working in other non-Western regions have questioned the term 'modern' especially its deployment in colonial era histories. See Lynn Thomas, "Modernity's Failings, Political Claims, and Intermediate Concepts." Here, I draw attention to an underlying hierarchical assumption that presupposed France and other Western countries were advanced societies and, thus, were marked especially by technological innovation in contrast to a timeless and less technologically advanced Africa.

13. ANM 1Q 19 FR, Charrures, Demandes de Charrures 1927–1930.

14. On the gendering of technology in the context of European imperialism see: Michael Adas, *Machines as the Measure of Men*. On the gendering of technology in the context of French agricultural development initiatives see: Laura Ann Twagira, "The Robot Farmer and the Cosmopolitan Worker."

15. For this time period, I have only found evidence for the introduction of a cotton *press* in the Bougouni and Sikasso regions, the same regions where women's use of the machines was reported. The slightly more numerous cotton gins were also distributed outside the region.



TECHNOLOGY AND CULTURE

dedicate their labors to the cultivation of cotton for export. Terrasson further ordered that the machines in question be made more widely available, the implication being that they be made explicitly available to *male* cotton farmers.¹⁶ The women's actions seemed to disturb the administration's efforts to reach out to male farmers, and by extension official efforts to capture to the cotton harvest.

JULY
2019
VOL. 60

Terrasson clearly misunderstood the local gendered divisions of labor and why women in particular began using the machines. Reading Terrasson's records, his reasoning seems sound: if men were the ones to sell their cotton; they ought to be the one's using the machine. Yet, men were not the ones processing cotton. Women sought out the machines to ease their own labor burden. They were responsible for harvesting cotton, removing seeds from the cotton fiber, carding the resulting cleaned cotton, and spinning it into thread.¹⁷ It was all labor-intensive work. The cotton gin, in particular, would have eased the time-consuming task of removing the cotton seeds from the fiber by hand. Therefore, it was not surprising that women would try out the new machine. At the same time, the French officials were not completely wrong in looking to men to sell their cotton. Men often controlled the cotton fields, and they would have performed distinct men's labor related to the harvest. However, when they sold their harvests it was often in the well-paying domestic cotton markets and not to colonial export firms.¹⁸ At the same time, men would have remunerated women for their cotton labors with a share from the final harvest. Terrasson did not see women as potential participants in the export market, and therefore, thought them in little need of mechanical aid for their labors. It was a vision of modern technology that excluded domestic market needs and domestic labor concerns. Ultimately, the role of men and women in the cultivation and sale of cotton was much more complicated than Terrasson allowed. Indeed, the gin and press likely did not appeal to men as they specifically aided *women's*, not men's work.

By contrast, since the mid-nineteenth-century French officials in the North African colony Algeria had sought to increase women's textile production, specifically handicraft rugs. In addition, they sought to improve women's access to the technologies of craft production. Why was the case different for Sudanese women? One reason was the demand in France for Algerian knotted rugs and other "oriental" handicrafts, a trend that continued well into the twentieth century. The colonial administration in Algeria went so far as to establish state-run carpet factories and to recruit female laborers.¹⁹ Similarly, nineteenth-century French manufacturers had sought

16. ANM 1R 16 Volume II, Agriculture Divers 1914–1931, Entretien, Culture, Égrenage du Coton 1914–1925, égrenouse de coton 1924, 11 A.E. 51, letter dated January 24, 1924.

17. Roberts, *Two Worlds of Cotton*, 51–59, 93–105.

18. *Ibid.*

19. Julia Clancy-Smith, "A Woman without Her Distaff," 31–32.

TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

to increase women's production of popular embroidered textiles from the Lorraine region of France. They did so by introducing the embroidery frame, a technological aid meant to supplant hand embroidery and increase production. Strikingly, many women rejected the use of the frame and continued to embroider by hand.²⁰ In both comparative cases women's handicraft production was clearly associated in the French popular imagination as "women's work" and at the same time beneficial to the overall French economy. Women's craft production in the French Soudan, however, was not understood by most officials to benefit the colonial economy.

Even so, in the early decades of the twentieth century Catholic missionaries in the French Soudan sought to similarly stimulate women's handicraft production. They likewise emphasized the manufacture of rugs, incorporating what they believed to be distinctive Soudanese designs. In particular, the White Sisters established craft workshops (*ouvroirs*) at several mission stations to financially support their missions and provide their young female students and converts with domestic training. The missionaries even recruited additional female wage labor to support the endeavor. For the young girls and women at the missions, the work of spinning thread was understood to be women's work, but across much of the region weaving was *men's* work. Indeed, the workshops were sites of gendered social and technological exchange, and they offer further evidence of women's complicated technological engagement. However, the mission workshops in the Soudan faced significant financial challenges and were short lived.²¹ Moreover, while the missionaries perceived women's domestic production as essential to women's moral and economic advancement, the civil administration did not see African women's domestic textile production as valuable to the colonial economy. For them the question of women, work, and technology centered on agriculture and most notably the production of food.

French observers regularly remarked upon women's heavy agricultural and domestic labor burdens. At the same time such concerns did not rule out benefiting from women's labor. In one example, the Compagnie Cottonnière du Niger (Niger Cotton Company) requested and received official assistance in 1924 in recruiting women's labor for the harvest at their concession to the north in Diré.²² The contradictions in thinking are striking: the administration sought women's labor in the context of French eco-

20. Whitney Walton, "Working Women, Gender, and Industrialization in Nineteenth-Century France," 45–50.

21. Missionnaires d'Afrique, Fonds des Soeurs Blanches, Daires, Volumes 1920–1940 (Région du Soudan). Similar mission sponsored workshops and Catholic female religious participation in the manufacturing economy met with greater success in the neighboring colony of Haute Volta (contemporary Burkina Faso). See, Katrin Lange-wiesche, "Transnational Monasteries," 138.

22. ANM 1R 16 Volume II, Agriculture Divers 1914–1931, Entretien, Culture, Égrenage du Coton 1914–1925, Correspondance 1924.





TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

conomic interventions, all the while chastising local communities for demanding too much of women. Yet given the possibility of introducing technologies to lessen women's labor burdens, French officials discouraged women from using those technologies. In other instances, women were simply assumed incapable of adopting new techniques and technologies. The latter argument resonated with earlier popular French notions about women and technological change.²³ Women's supposed stubbornness was a persistent criticism when it came to women in Africa, even as women in France increasingly worked with new domestic and industrial technologies.

The Mortar and Pestle: An Iconic African Women's Technology

Perhaps no African women's technology garnered more Western interest than the mortar and pestle. The amount of time women spent manually pounding grain everyday day was arguably the most remarked upon aspect of women's cooking labor. For example the French travel writer Félix Dubois opined on the subject emphasizing what he saw as African women's technological conservatism. In *Notre Beau Niger* (1911) he cited a letter written by an enlightened Soudanese man. In it Moussa Taraouré, an interpreter in the colonial service, requests assistance from a past employer in procuring a hand-operated millet grinder:

You know how women grind millet in the Soudan; it is time-consuming. Save for us, men do not realize that it is very very [repetition in original] onerous. My mother, who for much of her life did this work, will not allow my wives, who are still young, to be rid of this labor. Notwithstanding, I would like to relieve them a little, if I could trouble you.

. . . I ask you to inquire with several Parisian merchants, or commercial houses and manufacturers in neighboring towns or the countryside to find a *hand-operated grinder* capable of grinding approximately 10 kilos of millet in less than a *quarter of an hour*, and the price. If they do not have what I am looking for, please do all possible to order one with a manufacturer [emphasis in original].²⁴

Interestingly, Taraouré appears here as a man devoted to women's technological advancement. Elaborating on Taraouré description of his wives'

23. For example, French manufacturers had similarly argued that women embroiderers in the Lorraine region refused to adopt frame embroidery over hand production because they were stubborn. The embroiderers reasons for not adapting the frame had more to do with its impracticality. Walton, "Working Women, Gender, and Industrialization in Nineteenth-Century France," 47–49.

24. All translations from French are by the author unless otherwise noted. Quoted in Félix Dubois, *Notre Beau Niger*, 243. The letter in the text is dated the 23rd of November 1908.





TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

cooking burden, Dubois further commented on the heavy labor involved in pounding millet, and implied that such a grinder would relieve women like Taraouré's wives of unnecessary and even "primitive" labor, suggesting what Dubois thought of the general condition of women in the Soudan.²⁵

In this case, Dubois credits Taraouré for innovation since he had never seen such a grinder in Paris, but rather simply had the idea for one. While Dubois offers little evidence to substantiate the authenticity of Taraouré's letter, its inclusion in Dubois' text reflects the French writer's thinking on gender and technology in Africa. Moreover, a colonial interpreter's interest in the potential for new technologies is entirely plausible.²⁶ Dubois reasoned: "It would appear that the idea for the grinder did not come to [Taraouré] like a butterfly soon to flutter away. He has applied himself and shown that he is both a friend and innovator of progress. If such a grinder did not exist on the market, one had to be built for him."²⁷ Yet, Dubois little doubts that such a machine would be manufactured in France, and not by the imaginative Taraouré. Here, Dubois anticipates the widespread narrative about technology in Africa as a history of transfer rather than indigenous invention.²⁸ It is also one in which *women* supposedly trouble that transfer.

In the Dubois travel narrative, the reader is also to take for granted that the mortar and pestle was a rude and "primitive" technology. Indeed, Dubois implicitly asks: why would African women persist in its use? For Dubois (and Taraouré), a hand-operated millet-grinder was one of many possibilities of French manufacture for the African market. It was also explicitly meant to be operated by women, most likely women in Taraouré's generation married to similarly progressive men. Despite the heavy manual labor involved in pounding grains by hand, Taraouré's mother reputedly resisted even the idea of her son purchasing a mechanical grinder. Indeed, Taraouré's letter suggests the power wielded by older women over food preparation in the household. The mother held enough authority to oppose her son, the household head, when it came to cooking. Dubois attributed her insistence to a general resistance by African women to mechanization and progress. He supposed: "First, there is the mother, an obstinate primitive, who raises her hands to the sky! How could it be that others will not strain

25. *Ibid.*, 245.

26. The letter writer identified by Dubois as Moussa Taraouré is likely a misspelling of Moussa Travélé. Moussa Travélé was one of the primary interpreters for the French Soudan and is the author of a French-Bambara conversation guide, a publication referenced by Dubois on page 244. Here, I retain the spelling employed by Dubois in the text. For more on the role of African interpreters and other colonial intermediaries see, Benjamin N. Lawrance, Emily Lynn Osborne, and Richard L. Roberts, "Introduction: African Intermediaries and the 'Bargain' of Collaboration."

27. Dubois, *Notre Beau Niger*, 245.

28. For a brief critical overview of the idea of technological transfer and Africa, see Clapperton Chakanetsa Mavhunga, "Introduction: What Do Science, Technology, and Innovation Mean from Africa?," 2–9.

PREPRINT



TECHNOLOGY AND CULTURE

themselves as she had done? The son certainly did not acquire his taste for progress from the good woman.²⁹ By contrast, Dubois viewed the son as especially open to change and progress, a promising sign for French colonial rule. His elder mother is portrayed as unreasonable and obstinate. It is not an image of African women as mechanically savvy or innovative.

JULY
2019
VOL. 60

A few decades later the French colonial anthropologist Henri Labouret similarly lamented the fact that women in French West Africa continued to pound grains using a mortar and pestle. Specifically he bemoaned how much energy and time women put into pounding grains in this manner for what he called “mediocre results.” Labouret made these observations in 1933 in a larger government report on diet and nutrition in France’s colonial possessions. In the same study Labouret also observed that women in French West Africa make use of “pre-historic” technology to process grains: the grinding stone.³⁰ The (misguided) implication was that these static and inefficient technologies resulted in poor diets. Yet, mechanized food preparation never became a priority for the colonial government.

What these observers missed was the way women in the region readily adopted new devices like the cotton gin and cotton press. In fact women were innovators in domestic technologies, and have a long history of producing and using household technologies, even organizing the larger technical infrastructure for their own household labor. For example, women potters produced cooking pots, clay steamers, large water jars, and other necessary domestic tools, and the knowledge for their production disseminated through specifically maternal networks.³¹ Women were also the skilled users of all these and other items, and younger women learned to use them from their mothers, other female relatives, female in-laws, even from female friends.³² Women have also been innovators in adopting labor-efficient technologies, such as fast cooking metal pots. 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.³³ Before the introduction and spread of grain grinding machines, the technological infrastructure of cooking in Mali was predominantly a female affair. In the case of the cotton gin and press, women also sought to claim new technologies for “women’s work.” This is not the picture of technologically backward old women, as presented by Dubois and Labouret. Rather women were technologically sophisticated enough to

29. Dubois, *Notre Beau Niger*, 245.

30. Henri Labouret, “L’alimentation des indigènes en Afrique occidentale française,” 146.

31. Barbara E. Frank, “Marks of Identity,” 31–35; Barbara E. Frank “Reconstructing the History of an African Ceramic Tradition,” 139–154.

32. Laura Ann Twagira, “Women and Gender at the Office Du Niger (Mali),” 66–73.

33. Twagira, “Women and Gender at the Office Du Niger (Mali),” 72, 231–79. See also Jeremy J. Cunningham, “Pots and Political Economy” and Emily Lynn Osborn,



TWAGIRA | Lessons from Mali on Technology, Labor, and Women's Things

discern which tools and mechanical devices suited their needs, and they built and maintained a specifically gendered infrastructure for their work.

“Machines” and Development

Writing in the same decade as Labouret, another French administrator Robert Delavignette described women's food production labors in more nostalgic terms than his colleague. For him the sounds of the mortar and pestle romanticized daily rural life. The technological problem Delavignette identified in colonial West Africa was that Africans were too interested in industrialization and its economic possibilities. In *Les paysans noirs* (*Black Peasants*), Delavignette offers a fictionalized narrative about the introduction of a peanut processing machine in an ordinary West African village. In it, he imagined the women's reaction: “The women, dark and naked, now wide-eyed looked with eyes glinting of amber and violet at the oil cakes, it was food shooting out in remarkable quantity from the presses.”³⁴ Here the women seem awestruck at the ability of the machine to carry out women's work (producing cooking oil), and at such a volume. They are not obstinate, like Taraouré's mother, but they still appear naïve when faced with Western technology. Ultimately, with the introduction of the “machine” Delavignette suggests that men will be seduced by the wages of industrialization, leaving women the increased burden of subsistence production (and supposedly without technical aid).³⁵ His account recalls the twin tropes of women's incomprehension before technology and their labor burden at the same time suggesting their persistence in the face of colonial development.

Originally published in 1931, Delavignette's imagined portrayal of colonial West Africa did capture the drive by many officials to modernize the rural Soudan. Throughout the first half of the twentieth century, the colonial administration sought to introduce new agricultural technologies, such as Delavignette's peanut oil processing machine, but also irrigation canals, tractors, and harvesting machines with uneven results. As Delavignette imagined, women continued to demonstrate an interest in new industrial technologies, but their assessments of the potential role for such machines in their own lives differed substantially from his and drew on their own material experiences. For example, in the late 1950s new rice threshing machines attracted women's attention for the possible labor savings in processing the grain for home consumption. The women's interest drew administrative scrutiny over their use of machines meant for men, once again.

At issue was the question of whether or not women ought to have access

“Casting Aluminum Pots.”

34. Robert Delavignette, *Les paysans noirs*, 146.

PREPRINT



TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

to industrial technology located at the development scheme called the Office du Niger (hereafter I will refer to this project as the Office). The Office was a large irrigated agricultural scheme flanking the Niger River, and it was the site of the region's most intensive development efforts by the French. The project's agricultural landscape was unique as a space identified with technology, and its residents were also among the first to see Western consumer technologies such as radios, bikes, and motos in their markets. Unsurprisingly, the French targeted men as users and consumers for most of these new technologies, with the distinct exception of iron cooking pots.³⁶ As had been the case in the previous decades, women surprised the French when they engaged with this industrial space meant for men.

While the Office was still under colonial rule in the late 1940s and 1950s it began to employ African men as tractor drivers and machine operators. A small number of women were also engaged on an informal basis winnowing rice alongside threshing machines. They were not paid wages like the men; rather they received threshed rice as compensation. It was a measure of machine-processed rice that saved them significant physical effort and labor time. The extent to which women might benefit from their work with the machines became the subject of some debate at the Office. Specifically, the subject under discussion was whether or not to allow women greater access to the machines in order to process rice for home consumption on a larger scale. The visiting agricultural expert René Dumont raised the question in 1950. He, in fact, suggested the program use its machines to process rice for household use. Dumont's reasoning was that the move would allow women more labor time to spend in the fields, thereby increasing the project's overall production.³⁷

The internal staff response to Dumont's suggestion was immediate rejection. One memo (erroneously) stated that women do not farm. It further suggested that men at the project opposed mechanized threshing for their wives.³⁸ Clearly, the implication was that the Office staff supported the patriarchal control exerted by men at the Office, which extended to their access to technology.³⁹ However, Dumont did not overtly suggest mechanized threshing as a means to empower women. In fact he couched his idea in terms favorable to the colonial economy. Yet clearly, the suggestion raised concerns about women's relationship to the technological

35. Ibid., 262.

36. See chapter five in Twagira, "Women and Gender at the Office Du Niger (Mali)." See also Osborn, "Casting Aluminum Pots."

37. Archives Office du Niger [hereafter AON] 138/2, "Notes et Reflexions au sujet du rapport de M. Dumont," Service de l'Exploitation, c. 1951.

38. AON 138/2, "Notes et Réflexions au sujet du rapport de M. Dumont," Service de l'Exploitation, c. 1951.

39. Supporting the patriarchal authority of indigenous men in the French Soudan was a policy elaborated by administrator-ethnographers in the first decades of colonial rule in an effort to legitimize French rule. See, Roberts, *Litigants and Households*, 141–



TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

apparatus of the scheme. The official response to his suggestion reinforced a viewpoint that women had little to do with agricultural production at the project and had no need for machines to ease their labor. Yet, women who lived at the project sought work by the machines precisely because it allowed them access to rice processed by the threshers (and perhaps it was the prospect of paying additional wages to the workers who would process the rice for home use that concerned staff). Ultimately, the archived debate depicted African men, and not the European administered Office, as holding their wives back from accessing the new technology. The depiction of African men in this case is certainly a stark contrast to Dubois's earlier representation of Taraouré.

PREPRINT

A few decades after Dumont's visit to the Office, the idea of providing women with access to labor-saving technologies gained a wider Western audience. Mali gained its independence in 1960, and the new post-colonial state took over the Office and its machines. Mali like many African states continued to seek funding and advice from Western development experts, many of whom promoted technological solutions. Women in development, in particular, emerged as a key theme by the 1980s. Even before this turn, Mariam Thiam a rural state development officer stationed in the Office region observed in 1976 the potential labor-saving benefits for women of independently owned and operated grain-processing machines. However, she also noted that the mills were predominantly owned by men with village wide monopolies, and that they set prices for the use of the machines to their own advantage. In the following decades scholars of women and development increasingly promoted mobile grain processing machines as labor-saving devices. Just as Ruth Schwartz Cowan and others have argued for women's domestic technologies in North America, Thiam noted that such labor-saving machines did not ensure rural Malian women worked any less.⁴⁰ Indeed, scholars of women and technology have reason to be skeptical of such persistently broad claims about labor-saving technologies for women in Africa and elsewhere. For Malian women, they have been assessing the value and gender politics of new technologies for decades.

By the 1990s small-scale grain mills proliferated across rural Mali, including at the Office. Like many other African countries struggling financially in the 1980s, Mali's economy underwent a major restructuring, including the liberalization of the market in cereals. It resulted in the expansion of small-scale grain traders and entrepreneurs who operated mobile grain processing machines. At the same time, international development projects and NGOs began to distribute mechanized rice threshers and grain mills to farmer cooperatives.⁴¹ A little more than a decade after

46. It is a pattern that appears to have continued into mid-century among Office staff.

40. Mariam Thiam, "the Role of Women in Rural Development in the Segou Region of Mali," 75. See also, Ruth Schwartz Cowan, *More Work for Mother and Joy Parr*, "What Makes Washday Less Blue?"





TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

Thiam's initial assessment, the Dutch program for international aid donated small rice threshers to collective women's groups formed at the Office as part of a larger women's development initiative. The reason for the distribution of the threshers was that at least 50 percent to 70 percent of rice for home consumption was still processed by hand, despite the presence of machine threshers at the project.⁴² The issue raised by Thiam of whether or not these machines benefit women is of on-going interest women in the region today.

Machines that Cook?: Part I

In 2010, I interviewed long-time women residents of the Office about the ways they experienced its particular technological history. When I interviewed Mariam "Mamu" Coulibaly about women's work 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.⁴³ Her description was echoed by other elderly women I interviewed in the same region. As Mamu and I ended our conversation she joked that soon Westerners will bring *machines to do the cooking!*⁴⁴ It was a light-hearted comment but fully intended to chastise young women for their changing cooking practices and a 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.⁴⁵ Despite such criticisms from older women, many of the younger women I spoke to sought out those very same diesel-powered grain mills, which, contrary to Mamu's assessment, are not quite ubiquitous across rural Mali.

Mamu's criticism has much to do with family politics and generational differences, echoing an observation about the organization of women's labor in Dubois' description of Taraouré's mother. She supposedly oversaw the work of her son's wives and refused to allow a machine in the household that would lighten their load. Indeed, mothers-in-law benefit from the labor of their younger daughters-in-law. Women also gain in status when they supervise the work of younger women. At the same time, all women are

—41. R. James Bingen, "Overview-the Malian Path to Democracy and Development"; Salifou Bakary Diarra, John M. Staatz, and Niama Nango Dembélé, "The Reform of Rice Milling and Marketing in the Office Du Niger"; Niama Nango Dembélé and John M. Staatz, "The Response of Cereals Traders to Agricultural Market Reform in Mali"; Sjoerd Zanen and Aly Diallo, "Le projet Arpon."

42. Netherlands Direction Générale de la Coopération Internationale, "La Riziculture Paysanne à l'Office du Niger, Mali, 1979–1991," 158–59.

43. Interview by author with Mariam "Mamu" Coulibaly in Kankan (formerly Sangarébougou), Mali, May 4, 2010.

44. Ibid. (Mamu's emphasis).





TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

expected to carry out women's work in order to be recognized as respectable women. Preparing foodstuffs and cooking are two of these labor tasks specifically associated with women.⁴⁶ With the advent of ever more machines in Mali, younger women are re-negotiating what exactly those women's tasks will entail. They are also challenging the authority of their mothers-in-law who sometimes demand too much labor. Indeed, the domestic cooking space and its technological infrastructure has been highly politicized and is a symbolic site for debating how exactly women (and specifically in this case junior women) are to carry out their domestic labors.⁴⁷

PREPRINT

While older women are certainly motivated to maintain domestic authority, Mamu's critique of younger women's increasing reliance on "machines" still merits examination. Embedded in her joke about machines to do the cooking 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.

Women and men from Mamu's Office town had long interacted with 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 and televisions, refrigerators, plastic wash basins, and motos. She was certainly not afraid of these new technologies; in fact, when she came to the project at mid-century she liked that it was a place of many new things.⁴⁸ Yet, she happily judged which new things were 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 or meaning of their use.

45. Ibid.

46. Maria Grosz-Ngaté, "Hidden Meanings," 172, 176.

47. Ruth Oldenziel and Karin Zachman, "Kitchens as Technology and Politics: An Introduction."





TECHNOLOGY AND CULTURE

A Pre-colonial Interlude

JULY
2019
VOL. 60

Examining women's long labor history is instructive for understanding Mamu's questioning of the future of women's work. 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.⁴⁹ All the other Segu princes held their seats of power along the Niger, a river that myth associated with political control over the region.⁵⁰ When dignitaries visited Banbugu, they mocked Nci: How could he claim political power or importance so far from the river?⁵¹ 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, a claim that women like Mamu fear has lost its resonance today.

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.⁵²

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

48. Interview with "Mamu" Coulibaly.

49. 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 ruler's name Nci is sometimes spelled Nji. On the Segu Empire see: Jean Bazin, "Genèse de l'Etat et formation d'un champ politique."

50. Germaine Dieterlen, "The Mande Creation Myth."

51. 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.

52. 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."





TWAGIRA | Lessons from Mali on Technology, Labor, and Women's Things

older canal appears very much like an extension of the river, while the French ones at the Office were meant to look specifically modern, according to a mid-century 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.⁵³

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 that the canal was a river made only by men with hoes and baskets—*without any machine* (imagine)!⁵⁴ 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.⁵⁵ 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.

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Technology, Women's Labor, and Social Value

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 mills 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 pre-paring good quality food.⁵⁶

53. In the early decades of the Office scheme, its irrigation canals frequently flooded, ruining the harvest, and even displacing villages. For an extended discussion of these and other technological failures at the Office, see Amidu Magasa, *Papa-Commandant a Jeté un Grand Filet Devant Nous* and Jean Filipovich, "Destined to Fail."

54. Interview with Tiesson Dembélé, his emphasis.

55. I take inspiration from Clapperton Mavhunga who argues that spiritual blessings are essential to pre-colonial technological systems that persist in contemporary African practice. Clapperton Chakanetsa Mavhunga, *Transient Workspaces*. More specific to West Africa, scholars of the blacksmith caste have similarly argued that ritual and esoteric knowledge is central to technological practice. See, for example, Patrick R. McNaughton, *The Mande Blacksmiths*.

56. Interview by author with Aissata Mallé and Assane Plea in Kouyan N'Péquèna, Mali, May 29, 2010. Conversation between the author, Djenebu Coulibaly, and Djewari Samaké, in Kolony (km 26), April 9, 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. In Zanzibar Tanja Winther found similar concerns over the quality of food cooked by electric appliances when compared to food prepared over wood fueled stoves or ovens. Tanja Winther, *The Impact of Electricity*, 197–202.



TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

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 mothers-in-law and their sons' wives. On the one hand, mothers-in-law value labor time spent in 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 a grain mill 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. Thus, women of several generations clearly associate reduced labor time in cooking with increased economic opportunity. The Fouabougou grinding machine and a few others now in operation in towns around the Office were donated by the Malian NGO Alpha-log and were meant to help women improve their economic standing.⁵⁷

Many more grinding machines are owned and operated by male entrepreneurs.⁵⁸ As Thiam observed for the 1970s, one machine in a village will be owned by a man who sets the price for his benefit but at a high cost to women. The machine owners operate the machines according to their own schedule, making the machines unavailable when they host major social gatherings or travel without leaving a junior man in charge of the machine's operation.⁵⁹ Still the grain mills sit outside men's houses and often attract lines of local young women and children sent by their mothers ready to pay a fee for the use of the machine.⁶⁰ The manner in which women now access these grain mills suggests that women's social and political power is shifting, and the new dynamic is impacting their ability to control their own labor.

57. Interview by author with Hawa Coulibaly in Fouabougou, Mali, March 30, 2010. Alpha-log 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.

58. During an informal conversation, I learned that 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.

59. This observation is based on numerous complaints from women overheard during multiple trips to Mali (2000–2001, 2009–2010, 2016) and an anonymous conversation with a male owner of a grain mill (July 2016).

60. In all likelihood women use their own earnings to pay for the use of the machine. Men and women in the wider 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 often without the support of a partner's income for food production, including the fees for using a grain grinding machine. Richard Schroeder, *Shady Practices*, 21–77.



TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

At the same time, grain mills and other labor-saving machines largely controlled by men persist in their association with women and development. In fact, the Malian President Ibrahim Boubacar Keita recently (2017) donated 1,000 agricultural machines to rural women in celebration of an international day focusing on food production and rural women.⁶¹ 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?

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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.⁶² 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.

Ordinarily tools associated with women's tasks are meant to be women's affair. Collectively the technologies that women employ in their household labor are called women's tools or women's things (*musow minanw*). The women I met take a great deal of pride in their use and ownership of all these items, as they reflect their owner's expertise and social network.⁶³ Women are invested socially in the female network that provided their first *musow minanw* 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 minanw* was durability. For example, women from all generations complained that new serving and eating bowls made of plastic are too easily cracked or broken. 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, another woman I interviewed, Fatoumata Coulibaly, even commissioned a medium sized mortar and pestle made of metal. It was a costly investment to be sure but to her a worthwhile one.⁶⁴ The content and infrastructure of women's things, therefore, is subject to on-going maintenance, assessment, and re-working. Moreover,

61. Ibrahim Dia, "Commune de Awa Dembaya-Médine."

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

63. I draw from Judith McGaw's analysis of modest and so called "feminine technologies" as requiring complex knowledge. Judith A. McGaw, "Reconceiving Technology: Why Feminine Technologies Matter."

64. Interview with Fatoumata Coulibaly in Kolony (km 26), April 9, 2010.





TECHNOLOGY AND CULTURE

women's things matter not just for women's work, but they also constitute women's wealth.

JULY

2019

VOL. 60

Certainly pounding grains and other cooking ingredients is a labor-intensive task. However, it can also be a collective activity marked by singing and dancing. It is even a venue to show off skill. These public displays of women's prowess around the mortar and pestle dramatize their work.⁶⁵ Indeed, nostalgia marked many women's recollections of earlier eras when they gathered around the mortar and managed their labor burdens by working together.⁶⁶ In many accounts of women's on-going use of the mortar and pestle, daily life is still marked by the early morning sound of the pestle hitting the mortar. The very ubiquity of those sounds makes the value of women's labor audible to everyone in earshot.⁶⁷

Machines that Cook?: Part II

During my interviews, I met Hawa Diarra for a conversation just outside her home and we encountered the sounds of cooking labor anew. One of Hawa's (male) neighbors owned a grain mill. 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.⁶⁸ 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 and 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. Many older women observing the lines for the grain mill think that as women working together they had no need for such 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 fla-

65. Twagira, "Women and Gender at the Office Du Niger (Mali)," 66–68.

66. 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.

67. Twagira, "Women and Gender at the Office Du Niger (Mali)," 240–42.

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





TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

voring cubes widely distributed by Maggi, 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.⁶⁹ In these complaints the now elderly women ignore that as young women they adopted new technologies such as 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.⁷⁰ Indeed, the path taken by a grinding machine, manufactured and purchased by a development agency or an 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 labor is bound up in their ability to design, own, use, and distribute cooking technologies. In so doing, the women also gendered their technologies as "women's things." Historians of gender and technology have rightly questioned why specific technologies are gendered, the impact of such gender associations on society, and women's roles in it. Their work 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.⁷¹ My goal here is to examine the ideological links between technology, women's labor, and women's status in Malian society, connections drawn by the elderly women I interviewed. Indeed, Mamu's suggestion that

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69. 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. Popular concerns about industrial flavor cubes are increasingly matched by news coverage by health reporters documenting the negative health effects of MSG. See, for example, B.S. Diarra, "Les Dangers des Bouillions d'Assaisonnement."

70. My attention to technological infrastructure and women's labor draws on the in-sights of historian Joy Parr on the role of infrastructure or rather lack thereof in relation to women's domestic technologies such as the washing machine in Canada. Parr, "What Makes Washday Less Blue?"

71. The literature on gender and technology is a rapidly expanding field, but a few notable examples are Francesca Bray, "Gender and Technology"; Barbara E. Frank, *Mande Potters and Leather Workers*; Frank, "Marks of Identity"; Eugenia W. Herber, *Iron, Gender, and Power*; Nina E. Lerman, Ruth Oldenziel, and Arwen P. Mohun, eds., *Gender and Technology*; McGaw, "Reconceiving Technology"; Ruth Oldenziel and Karin Zachman, eds., *Cold War Kitchen*, Ruth Oldenziel, *Making Technology Masculine*; Ellen van Oost, "Materialized Gender"; and Christine Saidi, "Pots, Hoes, and Food."



TECHNOLOGY AND CULTURE

JULY
2019
VOL. 60

a “machine” that cooks ought to be nonsensical (as a non-woman’s thing) illuminates a great deal about gender, development, and technology in Mali. The problem it would seem many women have with the new grain mills is that all machines appear to have been gendered male or at best un-gendered (as a few wealthy or elite women also own mills). In Mali, technologies that become women’s things support women’s control over their own labor time, expertise, and social value. By contrast, women like Mamu interpret the masculine technologies used for women’s work as undermining those same goals. I remain 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.”

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TWAGIRA | **Lessons from Mali on Technology, Labor, and Women's Things**

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2019
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TECHNOLOGY AND CULTURE

JULY
2019
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