So useful.

It is the second major approach in the history of science that is more useful for the study of world history and which is more accessible to non-specialists and useful in a world history course. This second approach is the study of science in the context of the surrounding society. The development of this externalist approach has gone hand in hand with changes in the field of history itself. Scholarship in the field of history itself has now more fully explored the history of non-western societies and recognizes the importance of looking at the world through the point of view of other societies. The scholarship in the history of science in the last few decades has been coming to grips with science as a human enterprise and the fact that science in some ways existed separate from the western scientific method. It is not something limited to modern western culture, but to a specific set of Greek and Modern Europeans, but part of the human experience of examining and understanding the environment.

This is the view of the history of science most useful for world history, examining how each culture understood the world around it. There are some caveats to this as much of the world view of ancient human cultures is tied up in supernatural and religious explanations for why things happen. This is not science, but natural explanations for phenomenon, even explanations rejected by modern science and disproven by the scientific method, are still a form of science and viewed this way, it is quite possible and enlightening to explore comparative science as one would comparative religions. This approach would ask what were the natural explanations developed by various cultures to explain the world without reference to the supernatural.

The examples in the history of science in the above approach show a natural human curiosity about the world and a common attempt in many cultures to explain the world with natural explanations. A key example is found in the history of medicine. A trend in Greek medicine to explain disease, not as a curse by the gods (though this is also prevalent in Greek culture), but as a natural result of an imbalance of fluids in the body is comparable to the view of disease as an imbalance in the three elements in Ayurvedic medicine in India or in the five elements in Chinese medicine. All are natural explanations about disease that different cultures developed and although rejected by modern medicine, these explanations are a kind of science. From this perspective, the story of science becomes not the history of how modern science developed, but a study of how human beings in various cultures developed natural explanations about the cosmos. It then becomes not a history of Western concepts of science, but a comparative history of human thought about the natural world. This then is the aspect of the history of science useful in the context of world history.

Many of these ideas and thoughts are echoed in more detail in the articles that follow. In Elizabeth Green Musselman’s “Teaching Science and Technology in World History: Notes from the Field,” we see a discussion of the challenge of teaching global science and technology to science and non-science students. “Silk Production as Women’s Work in the World History Classroom: Pearl S. Buck’s The Living Reed” by Robert Shaffer gives us a discussion of the Silk industry in China and how it forms the backdrop for discussions in the classroom about the broad themes that are the hallmark of world history. David P. Billington, Jr. also addresses issues of teaching technology in the classroom. In these cases, he explores questions of how to make the history of engineering accessible in the world history classroom.

John Mears’ “Nature, Biology, Culture, and the Origins of Technology in the Pliocene” presents a discussion of technology as a common human enterprise and searches for its origins in long ago prehistory. Alberto Grandi’s “From Global to Local: Technological Development and Evolution of the Ice Market” is a reminder of how the history of technology can be used to tell the story of the effects of global changes. Finally, Thomas Anderson’s “Spreading the Scientific Word: Missionaries as Global Naturalists on 19th Century Madagascar” tells the story of the globalization of modern science and how increasingly in the 19th Century modern science, though a Western phenomenon, was investigating and cataloguing nature on a global scale.

**Silk Production as Women’s Work in the World History Classroom: Pearl S. Buck’s The Living Reed**

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Pearl S. Buck, the first American woman to receive the Nobel Prize for literature, is best remembered for *The Good Earth* (1931), a novel which immortalized the gritty struggles for survival of a rural Chinese family. But Buck’s fiction and essays spanned many topics and continued for another four decades, and some of her other works may be even more important in illustrating Asian cultures and in trying to shape a more positive American view toward Asian peoples. I have used in my World History I classes for the past ten years a brief excerpt on the production of silk from *The Living Reed*, Buck’s well-regarded 1963 epic novel about Korean history from the mid 1800s to the mid 1900s. This excerpt not only describes in meticulous detail the process of silk production, from caring for the silkworm eggs to feeding the silkworms to teasing out the threads of silk from the cocoons, but also the particular role of women in household production. Consideration of this excerpt in class allows students to appreciate the technological genius behind silk production, and to highlight the role of women in the production of a commodity that has been so important in world history. Both aspects contribute to more general themes that I believe are central to the world history classroom: the development of technology, and women’s role in society. While Buck’s discussions of both production and women’s roles are undeniably idealized, they do accord nicely, for the most part, with recent scholarship of these issues. Moreover, even where *The Living Reed* is overly simplistic, it can become the subject of critical class discussion.

Silk and the silk trade play an outsized role in the world history curriculum, which correctly highlights the spread of commodities from one region to another, and which locates the origin of many luxury goods in Asia and other non-Western areas. The Silk Road (or, “silk roads,” in most recent textbooks) as an analytical construct demonstrates for many of our students the existence of Eurasia as a region, rather than as two artificially divided continents, and it incorporates into world history not only the well-known “civilizations” of China, ancient Rome, and the Byzantine Empire, but also the intermediaries in central and western Asia which facilitated and profited from the transfer of silk and other commodities along these extended and shifting routes. In short, a world history class that spans the last two millennia without a consideration of the production and exchange of silk would be virtually inconceivable.

But too few textbooks explain in any detail the mechanics of silk production. As a result, students need help to appreciate just how ingenious this invention really is, and how it demonstrates the capacity for mastery over the natural world by human beings thousands of years ago. While the origins of the manipulation of wool from a sheep or cotton from a plant into thread, yarn, cloth, and clothing can be intuitively grasped by most students the process of making silk is far more difficult to comprehend how people first learned to use the secretions of a worm as the basis for thread and cloth. As Francis Bacon, the English scientist or “natural philosopher,” in the parlance of the day wrote in 1620: …if before the discovery of silk, any one had said that there was a kind of thread discovered for the purposes of dress and furniture, which far surpassed the thread of linen...
or of wool in fineness and at the same time in strength, and also in beauty and softness; men would have begun immediately to think of some silky kind of vegetable, or of the finer hair of some animal, or of the feathers and down of birds; but of a web woven by a tiny worm... they would assuredly never have thought. Nay, if any one had said any thing about a worm, he would no doubt have been laughed at as dreaming of a new kind of cobwebs.3

Indeed, characters in Pearl Buck’s fictional treatment of silk production regard the silkworms as “creatures of magic,” even as they carefully observe and nurture these creatures, and harvest their creation. The very difficulty of breaking down the various steps involved in the production of silk from the secretions of the silkworm helped maintain for many centuries the Chinese monopoly over this commodity, which itself insured the continuing importance of the long distance silk trade.

Moreover, in my experience teaching at both the high school and college levels, I have found that students are predisposed to believe that women’s work before the modern period, regardless of region or civilization, consisted of an undifferentiated notion of “housework,” which in students’ minds generally means cooking, cleaning, and childcare. For too many students, it has only been in some “modern” societies that women have begun to be able to make important contributions in the economic arena or other “public” realms of society. Thus, broadening students’ understanding of women’s work to include participation in what we would call “production” is very useful in breaking down stereotypes about both women’s role in world history and about the trajectory of history itself. The fact that women have historically played a major role in the production of silk, a commodity which has been such a distinctive feature of east Asian economic life, and which contributed for centuries to China’s economic importance in Eurasia, becomes, therefore, an opportunity to demonstrate to students women’s broader role in production and in economic life long before “Rosie the Riveter.” An emphasis on women’s role in silk production also helps bridge the gap that still too often exists, as Merry Weissner Hanks has recently reminded us, between world history and women’s history.4

Surprisingly, only a few world history survey textbooks or primary source readers point out the gendered component of silk production, even as most assign major importance to silk and the silk trade. Jerry Bentley and Herb Ziegler, in the first volume of Traditions and Encounters, include a concise but clear description of early Chinese sericulture, and an explanation of why Chinese silk was superior to that produced by wild silkworms elsewhere. Bentley and Ziegler’s textbook has an entire chapter on the Byzantine Empire with a detailed account of how it acquired the knowl

edge of and materials for sericulture, thus breaking the Chinese monopoly and changing the dynamics of both local production and long distance trade. Bentley and Ziegler explain how important silk production became to the Byzantine economy, and they reprint a graphic of Byzantine women weaving cloth, with a caption on the prominence of women as textile workers there. But the cloth is not identified as silk, and there is no mention in this volume of the textbook’s cover, which is on the modern era, of women’s role in the production of silk thread itself. Bentley and Ziegler do note, however, the gendered implications of silk consumption, as they report on Roman fears that the “revealing silk garments” which wealthy women wore led to both moral decay and an unfavorable balance of trade.5

To their credit, however, Bentley and Ziegler include two paintings in the second volume of Traditions and Encounters which illustrate the importance of women in silk production. The first is a seventeenth century portrait of “women unwinding filaments from silk cocoons,” which can serve as a visual aid accompanying Pearl Buck’s description in The Living Reed. The only problem here from my point of view in teaching about silk production is that I teach this issue in World History I, but this textbook corresponds to World History II. The second painting shows a late nineteenth century Japanese silk factory, with male managers and female operatives, with a caption emphasizing this gendered division of labor in early industrialization of textile production around the world.6 Traditions and Encounters typifies the importance that textbooks place on silk production and the silk roads, and is actually better than most in its attention to women’s role in production. The Earth and Its Peoples, by Richard Bulliet et al, has brief and not really adequate descriptions of silk production, but sustained coverage of the importance of silk roads in creating long distance networks of exchange of both goods and ideas. But there is no discussion of who actually produced the silk threads or cloth, and the only mention of gender concerns coerced male labor in road building during the Han Dynasty, which appears below a map of the early Silk Road.7 An older textbook by William Duiker and Jackson Spielvogel, World History, includes brief descriptions of breeding silkworms and silk production, and devotes a lot of space to the significance of the silk trade in global economic development. But it does not mention women’s role in silk production, although it emphasizes, as did Bentley and Ziegler, the complaints of Roman men that the consumption of silk and other “baubles” by Roman women were leading to a trade deficit with Asia.8 Robert Strayer, in the new, brief textbook, Ways of the World, devotes eight pages to the silk road trade, emphasizing the consumption of silk and the spread, in general terms, of silk making technology. While including “silk handling machinery” in a long list of technological innovations which China contributed to the world, Strayer does not explain how silk is made, and he certainly does not make any connection between silk making and women’s labor.9

Craig Lockard’s newer Societies, Networks, and Transitions devotes enormous attention to silk production and the silk trade he even calls the Silk Roads an early example of “globalization” but fails to explicitly point out women’s role in silk production. Indeed, one early description of the care and feeding of trays of hundreds of thousands of silkworms in China appears in a paragraph about male labor during the Han Dynasty. Lockard explains how Song Dynasty engineers mechanized the process of spinning and reeling silk, using what he calls the first industrial machinery; although he does not identify these engineers as male, most readers will assume that they were men. In a paragraph on “social life and gender relations” under the Song, the author notes the decline in women’s status, with the spread of footbinding and the system of concubinage, but he notes also women’s employ ment in commerce, as household servants, and in household labor. However, Lockard offers readers nothing on silkworm breeding or silk spinning and weaving. Similarly, when noting later that Japan became the largest producer of silk by 1900, Lockard does not see fit to mention women’s role as factory labor.10 Lockard has two less than satisfactory references to women’s role in textile production in China, both separate from any discussion of silk. In the course of a discussion of women’s labor during the Han Dynasty, the author notes their work in the fields and market places, and adds that “they also formed groups to spin or weave together” but with no connection to his previous comments on the importance of silk production and trade to Han social and economic life. Puzzlingly, Lockard’s most explicit comment about women’s textile labor in China though still not mentioning silk is in a passage lamenting its passing. Explaining China’s economic decline by 1900, he states that “imported British textiles frequently displaced Chinese women from textile production, offering peasant women had done for centuries to supplement family incomes,” with spinning eliminated and weaving earning lower income.11 Only the most careful textbook reader would make the connection between women and silk production from these passages.

Peter Stearns and his co-authors, in World Civilizations, say less about silk production and the silk trade than do most authors. The only explicit connection between women and silk comes in a reference to footbinding, in which the authors explain that silk cloth was often used in the bindings. Thus, many students might infer that silk contributed only to the oppression of women. When noting the rise in silk production in Japan in the early 1900s, Stearns et al make no reference to female labor in these factories, but do note the low wages earned. Nevertheless, World
Civilizations does include a very nice graphic of
Chinese women and girls working on embroi
dered cloth in the pre modern era, with a caption
that reads: “Textile weaving, sewing, and finish
ning was often done in the household in family
workshops. In this way, women and young girls
were income earning members of the family.”
Professors might point out to students that the
graphic (identified only at the back of the text
book) dates from twelfth century China, and was
called “Court Ladies Preparing Newly Woven Silk.” Just a bit more work by these authors or
their publisher could have highlighted the con
nection between women and silk production
Kevin Reilly’s Worlds of History, a compilation
of primary and secondary sources, in its coverage
of women in classical civilizations, devotes more
attention to ideology than to production and
labour, and does not mention silk at all. But in a
selection on patriarchy in prehistory which Reilly
includes, author Natalie Angier notes the impor
tance of women as weavers of cloth derived from
plant materials.

The relatively brief, thematically oriented
Experiencing World History, which emphasizes social histo
ry, has only a handful of refer
ences to either silk production
or the silk trade, but does note
the importance of women as
spinners and weavers in Han
China, and suggests “that
weaving brought in almost as
much income as farming.”
Commenting on the spread of
silk production in Chinese
peasant communities in the
post Han era, the authors note
the growing proliferation of
mulberry trees, whose leaves
fed the silkworms, but inadver
tently belittle the skill, hard
work, and long hours involved
in silk production when they
write: “Silk thread and cloth
were produced by peasants in their idle hours, by
women, or, especially, by old or young or dis
abled persons. In short, their production fit into
agricultural space and into work routines conve
niently.”14

In their ambitious recent entry into the world
history textbook field, Robert Tignor and his col
leagues, in Worlds Together, Worlds Apart, do
more than most in tying silk production explicit
ly to women’s labor, even as they emphasize con
sistently the considerable importance of silk pro
duction and trade in Chinese and global society.
In the one volume edition, published in 2002 and
covering world history from 1300 to the present,
Tignor et al explain early on, in their survey of
Chinese society circa 1300, that “[p]easant
women contributed not only to labor in the field,
but they also engaged in commerce through the
silk industry. The growth of trade and the urban
demand for silk cloth enabled many women to
raise silkworms and to spin silk yarn.” They also
note later that people could pay taxes in silk in the
Ming dynasty, and that wealthy women tended to
wear silk while their less fortunate counterparts
wore hemp clothing, thus further cementing the
connection between women, economic life, and
social status in China.15 The second edition of
Worlds Together, Worlds Apart, published in
2008, includes a volume on earlier world history,
but this volume does not discuss women’s role in
silk production. It does include, however, a rea
sonable description of the process of breeding
silkworms, and mentions that silk had uses
beyond clothing: for fishing line and as a substi
tute for paper, for example. While noting that in
Han China silk was worn by men and women of
all classes (a detail worth noting compared to
what the authors had said in 2002 regarding Ming
China), Tignor et al also cite, along the lines of
some other textbooks, the complaint of Pliny the
Elder about the demand for this complicated and
expensive import from China “so that Roman
women can appear in public in transparent cloth
ing.”16

So how does Pearl
Buck’s description
of silk making in
The Living Reed
add to these text
book accounts of
this process? The
novel focuses on the
lives of Sunia and
Il han, an upper
class Korean couple
in the late 1800s
and into the 1900s.
Il han, the husband,
is an advisor to the
royal family, at a
time when China,
Japan, Russia, and
the United States all
desired greater con
trol or involvement
in Korean affairs; the tension in the novel is the
Korean struggle to maintain its independence in
the age of colonialism and then in the period of
the two world wars. Sunia, while educated like
her husband, devotes her attention to running the
extensive household, overseeing children, ser
vants, and many types of production on an estate
that was moderately self sufficient. In the section
that I assign to my students, Sunia has just had a
baby, but nevertheless oversees the silk making
process and the work of her female servants.
Buck didactically, but to my mind divertingly,
had her explain for the reader the steps involved, in
the guise of explaining the process to her older
child, who is perhaps six or seven years old.
Sunia, “ever since she was a child and in the
care of her old nurse,…had loved the art of mak
ning silk, from the moment when the web of tiny
eggs, no bigger than the dots of a pointed brush
on a paper card, were hatched in the warm silk
worm house to the last moment when the silk lay
in rich folds over her arms.”17 Buck notes that the
actual weaving “was done in the country,” but
Sunia keeps a loom in her home for ceremonial
purposes, just as the Queen herself “at this season
must cultivate silkworms and do her share of
spinning, while the King must till a rice paddy.”
Sunia’s first task, which is the first indication of
the skilled labor involved, is to taste the mulber
ry leaves, to determine whether they are at the
precise “ripeness” for the silkworms to eat.
Deciding that they are, she has her female ser
vants take out the silkworm eggs from where they
had been cooling all winter, and prepare them to
be warmed up so they will hatch and eat. Feeding
the silkworms was labor intensive, and not a
process that could just be squeezed in to one’s
spare time: “For three days and three nights the
women fed the small creatures every three hours,
in the night again and again Sunia arose from
her wide bed…to see how her silkworms did.”
The silkworms then shed their skins, which have
to become too small from all this eating, and the
process is repeated four times. As if to emphasize
the knowledge that has been developed about
how to care for the growing silkworms, Buck as
narrator adds: “Meanwhile, no man or woman
was allowed to smoke a pipe of tobacco near the
silkworm house, for such smoke kills the
worms.” When the silkworms changed color to
a “silvery white,” the women provided “twirls of
straw rice,” so that the worms could spin their
cocoons.

Just before the chrysalids turned into moths,
much of the cocoons would be dropped into boil
ing water, “so that the gum which held the fila
tments together could be melted and the filaments
reeled off and spun into thread.” Sunia, as the
skilled overseer, had to determine the best
moment to do this: too soon, and the optimal
amount of silk would not be gathered; too late,
and the moth would break the cocoon and hence
the threads. But the skilled labor did not stop
there. Sunia also had to choose “the best and
biggest of cocoons to make next year’s seed,” and
these were allowed to become moths, break their
cocoon, and lay their eggs on paper cards before
dying. While the filaments from these broken
cocoons could not be reeled into thread, they
could be salvaged by boiling and then drying
for use as matted linings of “winter garments.” It was
Sunia’s son who comes to see the silkworms as
“creatures of magic,” while her husband, though
he knew that “silkworms are women’s business
and…pretended no interest in them,” clearly
admired both his wife’s skill in overseeing the
process and the symbolic equation of silkworms
and silk making with “the life process.” Buck
concludes that “[i]n such ways Sunia tended her
household and faithfully she kept the old cus
toms,” while the author adds that these old ways,
which she has portrayed in quite idyllic terms,
were even then under attack by outside events.

On the sheet that I distribute to my students
along with the excerpt from Buck’s novel, I pose
three questions, which become the basis for class discussion:

What parts of the process of making silk should be considered “skilled labor”? Why?

What implications does this selection about women’s responsibility for the silk making process have on our view of women’s role in history?

What feelings about “traditional” Korean or East Asian, technology does the author hope to impress upon the reader?

Obviously, from my summary of the excerpt above, it is clear that I perceive several aspects of the silk making process to be skilled labor, and my students can usually readily identify these. The second question often leads to a discussion of other examples of household production in pre industrial societies, which I usually reiterate later in the semester to counter notions that pre modern men engaged “only” in cooking, cleaning, and childcare. While my goal in presenting this excerpt is certainly not to minimize the oppression that women have suffered historically or today, I do try to have students see that they have been active historical subjects, not merely objects manipulated by men. The third question generally elicits comments about the favorable depiction of Korean society that Buck conveys, and leads to a discussion of why she would do that for an American audience in the 1960s, and whether it is too rosy a picture. I try to get students to see both the positive aspects of labor, as Buck does here, but also the drudgery and exploitation that can be involved, by highlighting the round the clock nature of this work and the importance of silk to East Asian governments as an export item and as a means by which to pay taxes. I encourage students to think about the ways in which governments would be served by idealized stories of all women from the queen to the poorest rural wife working, seemingly in concert, on silk production.

Women’s history has maintained a delicate balance between portraying women as victims, on the one hand, or as victors and agents, on the other. Between emphasizing the lack of power that women have, and the ways in which, despite obstacles, they exercise power in the family and society. Women’s historians also go back and forth between emphasizing the common factors which unite women’s experiences across societies and emphasizing differences among women based on race, class, political status, culture, and time period. But Buck in this excerpt obviously emphasizes the contributions that women make to East Asian economic and family life, as well as the commonalities among women, as they operate in a gendered division of labor that nevertheless does not signify only oppression. Most students recognize that this idealized view of women cheerfully engaging in silk production may not be true to life with regard to how many women experienced such labor. But they also comment that it showed them that women in pre industrial Asian societies did more than just serve their husbands, fathers, or mothers in law, and that they note that women had to know a lot more about the natural world to accomplish their tasks than they had previously thought exactly Buck’s purposes in writing in this fashion. I note to students that it is somewhat anachronistic to present a fictional portrait of nineteenth century Korea, written by a twelfth century American woman, as a stand in for silk making in Han China, which is the point in the curriculum at which I discuss this material. Regardless of the reference to tobacco smoke, for example, this is a calculated risk I am willing to take. Indeed, the specialized literature on silk making and women’s role in China tends to buttress Pearl Buck’s portrayal, although with some added dimensions that I will use to make my own presentation of the issues more complex in the future.

Joseph Needham’s multi volume Science and Civilization of China includes one 500 page book devoted solely to technologies of spinning and reeling thread in China, with about half of that devoted to silk production. (The weaving of silk and other types of cloth is only covered tangentially in this volume.) In its detailed focus on spindle wheels, silk reeling frames, and the like, this volume, written by Dieter Kuhn, and based on exhaustive translations from Chinese written sources throughout the ages, did not set out to focus on the gendered nature of such labor or technology. Nevertheless, the association of women with silk production and reeling is present throughout, and very much corroborates Buck’s portrayal. Kuhn’s fifteen page description of the care and feeding of silkworms follows the stages that Buck’s excerpt laid out, especially regarding the importance of keeping the silkworm eggs at the right temperatures, feeding the mulberry leaves to the worms at just the right times, and the intensive, round the clock care that the silkworms need during the crucial weeks. Kuhn adds, citing romantic poems of the Zhou era, that picking mulberry leaves was often the “job of girls”; one reads in part: “the girls take their beautiful baskets, they go along those small paths; they seek the soft mulberry leaves...she gave me a time (to meet her) in the mulberry grounds.” He includes a painting, from 1313 C.E., of women steaming silkworm cocoons, and another from 1710 C.E. of women “at work in a silkworm breeding room.” (Both of these would be appropriate for classroom use to illustrate Buck’s account of silk production.) But other paintings and photographs show men as well as women working with silkworms and cocoons, which shows that, especially in more recent times, silk work was not always exclusively in women’s sphere. Nevertheless, as Kuhn elaborates the development of the Chinese legends of the “silkworm goddess” and the “first sericulturist,” he concludes: “In the Northern Chou [Zhou] dynasty [557 C.E. to 581 C.E.] the final rationalization of the legend appears, crediting a woman with having been the first Sericulturist, probably because of the fact that sericultural work in China and elsewhere was always performed by women.”

Kuhn goes beyond Buck in his discussion of women’s role in silk reeling and spinning. Noting that spinning of silk filaments had to be done right after the harvesting of the cocoons, Kuhn states at the very outset of his book: “Throughout Chinese history, spinning bast fibres and reeling silk were considered to be household tasks for women, and so were mostly executed by the female members of the peasant class.” Moreover, he says that while the production of yarn was “a sideline in the family budget,” it was so important that “the socio economic history of the yarn producing peasant households is the history of the peasants of pre modern China,” thus reinforcing the economic significance of women’s labor in Chinese history. Kuhn also concludes, based on his study of “Han and pre Han sources,” that women were instrumental in improving the spinning wheel, the treadle operated loom, and the silk reeling frame, “for they alone would have had both the working experience and technical skill required to see which alterations were necessary and practicable.” Kuhn’s contribution to Needham’s compendium of work on Chinese science and technology both underscores the essential accuracy of Buck’s account of women and silk production, and provides professors with additional background knowledge and some visual and written materials that can be used to supplement The Living Reed. Two histories of women and gender in China, both published in the 1990s, also emphasize the interconnections between women and silk production, and spinning and weaving more generally, but both approach the subject with more critical perspectives. Patricia Buckley Ebrey devotes an entire chapter of her book to “Women’s Work Making Cloth,” and delineates for modern readers unfamiliar with such production the various steps involved: growing or producing the fibers, spinning the thread, and weaving and dying the cloth. I appreciate these clear explanations and distinctions, as I have long tried to make clear to my students that...
making clothing generally involves a range of discrete steps, especially spinning, weaving, and sewing. (Making clothing from fur has different steps, of course.) In her four page description of sericulture, Ebrey seems to echo Pearl Buck’s account, from the “science” of getting the mulberry leaves just right to the care of silkworm eggs, from the seemingly continual feeding of silkworms to the reeling of silk thread from the cocoons placed in steaming water. In contrast to mundane work with hemp or cotton thread, says Ebrey, “[m]uch more romantic and miraculous was work with silkworms,” which, “if treated just right, would spin extremely fine but strong fibers hundreds of meters long.”

While Ebrey agrees that in theory there was a strong division of labor in China between male work in grain production and female work in making cloth both of which were important for the state, as both were required to be paid as tax goods she argues that the spheres blurred as commercialization extended in the Sung dynasty. Specialized weaving tasks were most likely to be taken over by men after this point, according to Ebrey, although some women learned and performed these skilled jobs. While “women seem to have special charge of the silkworms,” men were likely to care for the mulberry trees, and as some households began to specialize in silk production “both men and women undoubtedly shared in the tasks.” Ebrey discusses a twelfth century painting which illustrates the numerous steps involved in silk making, and which features forty two women, twenty four men, and several children: thus, women predominate in this depiction but do not monopolize the production process.

Ebrey’s critical perspective emerges most clearly as the author concludes that, despite women’s critical contributions to the making of cloth, there is no evidence that it raised women’s status or autonomy within the family or society. In an analysis based largely on the commentary of Chinese intellectuals of the Sung period, Ebrey observes, “If the women who sold their textiles gained a greater sense of self worth in the process, no literated seems to have noticed.” Moreover, Ebrey notes that women often performed “the most tedious tasks” involved in making cloth, especially splicing fibers and spinning thread. Indeed, she reprints a number of poignant poems, written by men, which depict women cloth producers, in general, and in some cases, silk workers in particular, as oppressed by their hard labor and especially by the system of taxation which requires the delivery of cloth to the state.

While I have only recently encountered Ebrey’s work, I plan to use the following thirteenth century Chinese poem she includes as a counter balance to the rosy account in *The Living Reed*, in order to encourage my students to think about the exploitative as well as liberatory aspects of labor, and the subordinate role that women could occupy in a system of household production:

*Wu people are pressed for time in the third month of spring. The silkworms have finished their third sleep and are famished. The family is poor, without cash to buy mulberry leaves to feed to them. What can they do? Hungry silkworms do not produce silk. The daughter in law and the daughter talk to each other as they carry the bas kets. Who knows the pain they feel in their hearts? The daughter is twenty but does not have wedding clothes. Those the government sends to collect taxes roar like tigers. If they have no clothes to dress their daughter, they can still put the [wed ding] off. If they have no silk to turn over to the govern ment, they will go bankrupt. The family next door went bankrupt and is already scattered. A broken down wall, an abandoned well the sadness of out migration.*

The poem, by Wen hsiang, also illustrates the long tradition of protest against state policies, and on behalf of the common people, by some Chinese intellectuals, which is itself a valuable perspective for students. While the poem focuses on a poor family, rather than the elite family of *The Living Reed*, Wen hsiang makes visible, if one is willing to extrapolate just a bit, the faceless servant women who labored under Sunia’s direction in Buck’s account. Moreover, students might recognize in this ironic account of a silk worker who lacks wedding clothes similarities with popular and literary accounts in other cultures of shoemakers, for example, whose children are without shoes, or textile workers dressed in rags.

Francesca Bray, meanwhile, devotes three chapters to women’s textile work in her book, *Technology and Gender: Fabrics of Power in Late Imperial China*. Bray follows Kuhn and Bray also points to a 1956 Chinese short story which described women’s involvement in the care for silkworms in very maternal terms, not unlike those that Buck employs in her novel.

Aside from the wealth of detail, Bray adds two main conceptual strands to the discussion, one of which challenges Buck’s analysis and one of which supports it. Bray observes that Qing empresses resurrected the sericultural rituals at a time when “the popular industry they were intended to promote had changed almost beyond recognition.” The invocation of the “old customs,” as Buck had phrased it, was therefore not so much about actual silk production, but about reinscribing gender norms as a means of solidifying imperial power, despite the erosion in fact of both traditional gender roles and relations between emperor and subject. On the other hand, Bray argues forcefully, as Buck does implicitly, that the women’s sphere of textile production in the “inner quarters” of the household in China, because of its importance to family income and imperial taxation, and because of its connection to young women’s dowries, does not correspond to the “domestic sphere” of Western households of the nineteenth and twentieth centuries, as it was not strictly isolated from the public realm. Thus, Bray offers an alternative to Ebrey’s view of the meaning of cloth production, in that the former maintains that women did gain status in the family from their labor and from their direct contribution to tax payments. Women’s participation in textile production in China could, therefore, press against the boundaries of Confucian ideology and strengthen women’s identification with each other; it also shows that the household could be a site of production rather than (as in Western “separate spheres”) simply reproduction. Bray concludes that modern feminist conceptualizations of Chinese women as simply oppressed by their bound feet, seclusion in the home, and subjection to fathers and husbands represent “our own historical experience of industrialization,” which relegated women’s roles primarily to reproduction and domesticity, rather than a true engagement with Chinese women’s experiences. Nevertheless, Bray ends by emphasizing the loss of Chinese women’s status with the relative decline of their special role in cloth production by the Qing dynasty.
Bray’s work is too complex and detailed to assign to a first year world history class, and even Bray’s chapter is more useful as background information for a teacher and for the primary sources that it includes. But a very readable dis-
tillation of the two perspectives, along with some of their main pieces of evidence, now appears in a three page section on “Textile Production” in Tang and China in Shang Envisioning Women in World History, volume I, by Catherine Clay, Chandrika Paul, and Christine Seacen, a book which should be easily accessible for teachers and professors, and which may profitably be assigned to students.20 I will continue to assign from The Living Reed, nevertheless, because its fictional narrative, didactic though it might be, has shown that it attracts student inter-

1 Paa S. Buck, The Living Reed (New Yo k: John Day Co, 1963), 55-58. A np ed on was su ed n 1990 by Moye Bell L.d of Mount Keno, N.Y. For a c ep on e fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
2 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
3 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
4 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
5 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
6 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.
7 For a s u g e ess on he s h g s am as s- s of clo h s ng y a fav e able ev e of a h novel he lec he lec schol a ly or nal on As a see, Kyung Chun Chong, ev ew, Journal of Asian Studies 23 (May 1964) 481-482.