Tea: Past and Present

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Tea: Past and Present

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Abstract

This thesis will provide a review of the rich history of tea, beginning with the myth of Emperor Shen Nong and concluding with the recent history of the tea industry in the United States. It will evaluate key topics with the use of historical information and statistics to allow the reader to better understand the journey of tea to the United States and its continuing impact on society. It will explain where and why tea is grown, its influence on societies, and its potential future with consumers in the United States. The main research questions of this thesis are, “What is the history and culture of tea, and its impact in 21st century society in the United States?” and “Does the consumption of tea impact cultures around the world?” The author will supplement the text of this thesis with images and drawings to reinforce some of the topics discussed. This will demonstrate the use of tea as an artistic medium, and accentuate the beauty and complexity of tea as a plant and a beverage. The art and photographs are incorporated throughout the thesis to illustrate tea from around the world, various infusion methods, and to show the versatility of tea.
Introduction

Tea, a product of the *Camellia sinesis* plant, is enjoyed all around the world and is the second most consumed beverage, after water. Over half of the population of the United States drinks tea, and according to the Tea Association of the U.S.A. Inc., “in 2014, Americans consumed over 80 billion servings of tea, or more than 3.60 billion gallons.” Tea is referenced in the history of many countries including India, China, Japan, England, and the United States. This thesis will provide an overview of the fascinating history of tea and its various impacts on major tea-consuming countries. This thesis will be based on the research problem, “Why and how did tea come to the United States and what is its impact on society?” This problem will be explored through historical research as well as analysis of the current tea industry in the United States. (‘Tea Fact Sheet’)

Tea’s humble beginning is captured in a Chinese legend featuring Emperor Shen Nong, who drank boiled water for its purity. The legend states that one day in 2737 BCE, while his water was boiling, a tea leaf fell into his water, and thus began the enjoyment of tea as a beverage. Tea was initially used for its perceived medicinal properties and later it became a social commodity. The agriculture and preparation of tea was detailed in *The Classic of Tea*, written by Lu Yu during the Tang Dynasty, which allowed people to learn more about the beverage. As tea’s popularity grew, it became not only a beverage, but a form of currency that was traded for goods and exported through the creation of the Tea Horse Road, a major trade route spanning from China to Tibet. Tea eventually made its way to the United Kingdom. Tea began as a delicacy that only the rich could afford, but in time, tea became accessible to a wide audience. The United Kingdom became a major player in the tea industry through its connection
to India and China. Tea eventually made its way to the United States and became the important commodity that it is today. (Pettigrew 8-11)

Once tea became prevalent across classes in Western societies, the professional tea industry began to grow in the United States and raise many important questions about the beverage and the people who consume it. The tea industry greatly evolved and was shaped by society’s increasing consumption of tea as it became a significant element of everyday culture. Why does the history matter? How did the tea industry in the United States expand into what it is today? What are the various branches of the industry? Who are the major players in the tea industry and how does the industry affect other countries? This thesis will briefly examine how the tea plantation model came to the United States in Charleston, South Carolina and how it connects to the history of tea. It will inform the reader about the specialty tea industry in the United States, and focus on professional education within the tea industry and its potential to impact society in the United States.
Chapter 1: The Journey of Tea

Tea, the beverage derived from the steeping of the leaves of the *Camellia sinesis* plant, is enjoyed all around the world. It has become so pervasive and influential, that it can be easy to overlook its role in shaping the history of many countries. The foundations of tea drinking began in China where people started to drink it for medicinal purposes and then primarily for pleasure. Many sources refer to the myth of the fabled ruler, Shennong or Emperor Shen Nong, and his discovery of steeped tea leaves in 2737 BCE. Sources state that Emperor Shen Nong tried various plants to understand their remedial properties. One day, he sat under a tea tree and fell asleep while he boiled some water to purify it. Some leaves from the tea tree fell into his water and the resulting beverage nourished him. This legend is widely used and provides a mythical view of the discovery of tea.

China’s Tea

James A. Benn, the author of *Tea in China: A Religious and Cultural History*, believes that the textural history of tea began before the Han Dynasty around 202 BCE to 220 CE. Textural references indicate that tea was “probably first drunk habitually, for pleasure or for medical reasons, in Sichuan (Southwest China).” He goes on to say that tea was considered a Southerner’s drink and was a local specialty rather than a national drink. Not much else is recorded about tea prior to the Tang Dynasty which began in 618 CE. The glyph for tea, *cha*, is commonly used when mentioning tea, but Benn states that the glyph didn’t exist until the Tang Dynasty. Many other glyphs were used to describe the plant or beverage that is known as tea, but the terms were not only used for tea. The glyph *tu*, which is derived from *cha* by the omission of one stroke, was used instead. Early texts, *Poetry Classic (Shijing)* and *Songs of Chu (Chuci)*,
included the glyph *tu*, but it most likely indicated a “‘bitter vegetable’ (*kucai*), such as sowthistle, chicory, or smartweed*. The earliest complete pharmacopeia, the *Materia Medica Classic of the Divine Husbandman* (*Shennong bencao jing*), which dates back to the first century, considers *tu* to be a bitter vegetable. Another term used to describe tea, *jia*, was mentioned in the *Approach to the Proper* (*Erya*) as ‘bitter *tu*’. Tea was clearly being consumed, but lacked a proper name and identification. *Cha*, the term used today to describe tea, was used in “large official post-Tang collecteana such as *Imperial Readings of the Taiping Era* (*Taiping yuan*, 983 CE).” Somehow copyists had replaced the term *tu* with *cha*. (Benn 21-23)

Even though the term *cha* is ultimately used to describe tea, the term *ming* was also used. In the *Newly Revised Materia Medica* (*Xinxiu bencao*) by Su Jing, published by imperial edict in 659 CE, *ming* is described as a medical substance that is “harvested in the spring… [and made into] a drink [combined with] dogwood, scallion, and ginger.” Around the same time, *Materia Medica of Curative Foodstuff* (*Shiliao bencao*, ca. 670) was released and described the medicinal benefits of *ming* leaves, “[to] promote bowel function, dispel heat, [and] dissolve phlegm.” *Ming* was used to describe tea until the release of the prominent Chinese pharmacopoeia, *Compendium of Materia Medica* (*Bencao gangmu*) in 1596. A mid fourth-century history record of the Shu region up to 138 CE, *Record of the Land of Huayang* (*Huayang guozhi*, 347 CE), describes *cha* as a tribute tea and references tea-producing regions of Wuyang and Fuling. According to Benn, “by the middle of the sixth century CE, it was evident that there was some general understanding of the tea plant and the properties of tea as a beverage, even if the terminology remained unstable.” (Benn 24-26)
Lu Yu (733-804), the patron saint of tea, wrote the *Classic of Tea* (*Chajing*) a comprehensive history of tea which included a chronological list of individuals associated with the history of tea. The first mentioned is “the mystical ruler of antiquity Yandi, (the Flaming Thearch), also know as Shennong (the Divine Husbandman). Lu Yu states that Shennong began the practice of drinking tea. During the Tang Dynasty, Shennong was one of the Three August Sovereigns (*sanshuang*) or enlightened rulers, who ruled China. Lu Yu fused Yandi and Shennong together to created Yandi-Shennong (Flaming Thearchy-Divine Husbandman). Shennong’s character has been regarded in different lights, from brutal, ancient and wise, to being the patron saint of farming and the inventor of agriculture. In the *Book of the Master of Huainan* (*Huainanzi*, ca. 139 BCE), from a collection of thought from the Han Dynasty, Shennong is represented as “the heroic pioneer who personally tastes and tests the various herbs on behalf of humanity [and] the figure that Lu Yu would cast as the discoverer of tea.” During the Tang Dynasty, tea was considered to have healing power and the deity Taiyi (Great One) granted Shennong the
ability to heal. Lu Yu was the first to make the connection between Shennong, a hero and mythological figure of medicine and agriculture, and tea. Lu Yu’s story became the cultural norm and people still teach it today. Lu Yu’s writings shaped the popularization of tea in both China’s religious culture and society in general. The “Classic of Tea marks the definitive shift from drinking tea primarily for medicinal/wellness purposes to the much broader consumption of the beverage in all kinds of private and social situations,” states Benn. (Benn 28-30, 98)

Lu Yu was an orphan and grew up during the An Lushan rebellion (755-763). He was adopted by a Buddhist monk, Zhiji, and spent the majority of his childhood in Zhiji’s monastery in Jingling, which is now known as Tianmen County, in modern Hubei. During his childhood, Lu Yu grew fond of classical literature, rather than traditional Buddhist texts. Some time after 745, Lu Yu adopted the habit of drinking tea from Zhiji and at the young age of eighteen, Lu Yu began sampling and gathering information about various teas. In 761, at age 28 he finished the first draft of the Classic of Tea. From 762 to at least 764, Lu Yu worked on revising his work and took trips around Jiangnan to pursue his tea research, which included planting tea in different locations to observe growth patterns. Lu Yu passed in 804 in Wuxing and was a true visionary who shaped what tea is today. (Benn 98-111)

After the Han Dynasty, the Tang, Song, Yuan, and Ming Dynasties continued to redefine the role of tea in society. Lu Yu was alive during the Tang Dynasty (618-907), and witnessed great change and growth in the world of tea. According to The Story of Tea: A Cultural History and Drinking Guide by Mary Lou Heiss and Robert J. Heiss, the Tang Dynasty “brought a refinement and sophistication to tea drinking.” The arts of calligraphy, painting, and poetry also developed rapidly at this time. Various cultural exchanges and an emphasis on one’s social life
impacted the use of tea. Drinking tea became a pastime across Chinese society and people “enjoyed formal tea gatherings.” There was an increase in tea etiquette and the presence of tea masters. As part of the increased focus on the arts, various styles of teaware were produced and tea rituals with a focus on spirituality were highly emphasized. During the Tang Dynasty, a government-regulated tea garden network was formed in western and southern China. The government also formed a trading system with the Mongolians and Tartars across China’s border. The government eventually started taxing tea and Chinese tea was traded for military horses. The Tea Horse Road, “which stretched from Sichuan and Yunnan to Tibet over the rugged Himalayan [Mountains],” was a series of caravan routes through vast terrains and various weather conditions. Over time, the road was extended and more routes were added to Mongolia and Siberia. (Heiss 9-11) See Appendix A for a map of the Tea Horse Road.

During the Song Dynasty (960-1279), tea was consistently used for religious ceremonies and personal enjoyment, and tea etiquette became more advanced. Tea culture expanded and new procedures of service and hospitality were implemented. Leaf grading methods and quality inspections were developed. Emperor Huizong had authority over all tea production in China, and the tea produced on Mengding Mountain was deemed a tribute tea fit for the emperor. Ts’An Hsiang, the first tea commissioner, was appointed to supervise the harvesting and packaging of the emperor’s tribute teas. The upper classes drank the younger leaves while the working class drank the larger leaves from a later harvest. New methods of tea preparations and teaware were developed. A form of powdered tea was invented where the tea is whipped and served. There was an increase in the number of teahouses in China and new opportunities arose for social tea drinking. (Heiss 12)
The Yuan Dynasty (1271-1368) drastically changed the way tea was consumed in China.

Under Kublai Khan, the Mongolians ruled China and diminished tea drinking to an everyday routine without any greater meaning or ceremony. The Mongolians preferred a dark, brick tea with mare’s milk to the powdered tea developed during the previous Chinese dynasty. The Mongolians developed a new technique, chaoping, in which the tea leaves are dried and roasted. The Chinese ended Mongolian rule under Zhu Yuanzhang or Hongwu during the Ming Dynasty (1368-1644) and Chinese tea culture was reestablished and strengthened. The basis for China’s tea industry, including cultivation, production, grading, storing, and transportation policies, were established during this time and are largely still in use today. The process of oxidation was discovered and used to improve the condition of tea after traveling long distances.

New teawares were also developed including the gaiwan and the yixing teapot. The gaiwan was developed to prevent spilling. The small yixing teapot was the first porcelain teapot and allowed for reinfusion of the tea leaves. Flower-scented tea was also developed during this time period. (Heiss 15-16)

**Tea Comes to Japan**

Between the Tang and Song Dynasties in China, tea made its way to Japan during the Heian era (794-1185). Japan was enthralled with, and wanted to emulate, many aspects of Chinese culture. Tea was introduced to Japan during its time of advancement in arts and intellectual studies under the rule of Emperor Saga. Monks traveled to China to study at Buddhist
monasteries and Chinese monks and intellectuals were drinking tea at the time. Myoan Eisai (1141-1215), a Zen priest and the founder of the Rinsai sect of Zen Buddhism, brought tea tree seeds and some bushes back to Japan after a trip to China. He planted some of the seeds on the island of Kyushu in southern Japan. A friend of his planted some of the seeds in the Uji hills around where Kyoto is today. During his time in China, Eisai learned the technique of creating powdered tea which is now known as matcha in Japan, and is a crucial element of Rinzai Zen rituals. Eisai is said to have written the first Japanese book about tea. During the Kamakura period (1185-1333), Eisai’s interest in tea contributed greatly to the increasing popularity of the beverage. (Benn 145-172; Heiss 14-18)

Long after Eisai, Japanese tea masters began to emerge such as Murata Shuko, Takeno Joo, and Sen No Rikyu. Murata Shuko (1422-1502) is considered the father of the *chado* or the Way of Tea. He was a disciple of Ikkyu who taught him about the art of tea, including serving and gestures. He served tea to his guests and, as the official tea master to Shogun Ashikaga
Yoshimasa, he refined the preparation of tea. He created a building which was devoted to the preparation of tea. Takeno Joo (1502-1555), one of Shuko’s disciples, modified the tea ceremony to include the values of Zen simplicity. His ceremony was elegant, and highlighted the beauty of nature through the use of unadorned elements. He replaced the precious objects of Shuko’s ceremony with a simple piece of calligraphy and a flower arrangement. Sen No Rikyu (1512-1591), a disciple of Takeno Joo, unified the two styles of chado from his predecessors. He transformed chado into a spiritual and artistic practice, and created rules for chanoyu, the Japanese tea ceremony. He simplified chanoyu by reducing the amount of materials and utensils needed, and brought nature, humility, and modesty into the ceremony. He altered the previous teahouse to be built out of materials that were more reminiscent of nature. He created the nijiri guchi, a small entrance to the teahouse, which requires guests to bow their heads as they enter, thus making them more spiritually in tune with the ceremony. Sen No Rikyu also created the seven rules of the chanoyu ceremony, which exemplify its simplicity, beauty, and spirituality. Tea became a crucial part of society and culture in Japan and led to many advances in the industry.

(Benn 145-172; Heiss 14-18)

**Tea Heads to England**

In 1600, Queen Elizabeth I was frustrated that the Portuguese controlled most of the European trade with India and the Indies and decided to give the East India Company a royal charter which created a monopoly over British trade with the Indies. The company grew in power and started to compete with the Portuguese. Other countries such as the Netherlands, Denmark, and France followed suit, creating companies to trade with the Indies. Years later, political turmoil unsettled the East India Company until Charles II returned to the throne in 1660.
Charles II allowed the company to use military force to establish control in places where it traded. Tea was eventually incorporated into the East India Company by Catherine of Braganza who was Charles II’s Queen and a Portuguese princess who influenced tea culture in aristocratic society. In 1664, the East India Company placed the first order of 100 pounds of China tea for export to Britain. By the eighteenth century, imports had increased greatly as tea became a national English pastime and a major part of society and culture, “by 1750, annual imports had reached 4,727,992 lbs,” according to the UK Tea & Infusions Association. Tea at the time was very expensive due not only to the company’s monopoly, but also the high taxes placed on tea. The demand was so high that tea started to be smuggled in and sold to consumers who sought to avoid the taxes on tea. Some of the tea was actually brought to Britain on East India Company ships and then sold to smugglers. This changed in 1784, a year after William Pitt the Younger became the Prime Minister, with the passing of the Commutation Act. The act greatly reduced the tax on tea and smuggling soon diminished. ("History of Nation’s Favourite Beverage"; Heiss 20-26)

**Tea in North America**

Between 1750 and the passing of the Commutation Act, tea made its way to North America. Competition from smugglers avoiding taxes on tea had caused the East India Company to generate a surplus of tea. The company was granted permission from the British government to export tea to North America where tea was quickly incorporated into American society. However, just like the British before them, American consumers were enraged by the high taxes. According to *The Story of Tea: A Cultural History and Drinking Guide*, England also taxed other imports into America such as sugar, paper, coffee, wine, and glass. In 1767, the colonists rebelled
and boycotted English goods. England stated that the reason that the taxes were so high was due to the costs associated with shipping over the Atlantic Ocean. The colonists felt cheated by the English, which eventually led to merchants boycotting English goods and created opportunities for other countries to enter, or in the case of the Dutch, to re-enter, the market and sell tea to colonists. The Dutch began selling tea to the colonies in North America before the British, but lost control of the market when the British rose in power in 1674. Colonists started smuggling Dutch tea into the colonies due to the high tax on British tea. The Dutch, unlike the British, didn't put a tax on the tea. On December 16, 1773, angry colonists gathered at the Old South Meeting House in Boston, Massachusetts to demand that three ships in the Boston Harbor be returned along with their cargo of British tea. Governor Hutchinson refused the demands of the colonists and required that they accept the British tea. Later that night, a groups of patriots dressed like Native Americans, led by Samuel Adams, commandeered the tea shipments. They opened the chests and dumped the tea into the harbor. The turmoil between the colonies and England continued and many more shipments of tea were boycotted, with ships frequently being left at the docks. On March 7, 1774 more chests of tea were dumped into Boston Harbor, and within a year, the Revolutionary War (1775-1783) began, with the colonists demanding their independence from England. The war was won by the colonists and England backed out of the colonies. (Heiss 20-26)
Tea plants in China and Japan are primarily *Camellia sinensis sinensis*. This variety was first discovered in China, and thus *sinensis* which means “from China” is used for the species name. The plant has small, dark leaves and is highly resistant to the elements such as frost and drought. It can be grown in difficult climates and at high altitudes. Tea is also an important crop in India. Since 1815, a Singpho tribe in India’s Assam valley knew of wild-growing tea trees. This tribe was known to drink *miang* or *letpet*, a pickled and fermented tea leaf concoction. In 1823, Major Robert Bruce, an English explorer and trader, was sent to investigate the rumors of tea in India. Bruce found wild-growing tea trees, which the tribe had been using as a source of food and as a beverage. The Signpho chief gave Bruce some seeds and plants. The English deemed the plant to be inferior to *Camellia sinensis sinensis* and Bruce didn’t receive the proper amount of credit for his discovery until some time after his death in 1825. Major C. A. Bruce, Robert Bruce’s brother, continued his brother’s work and convinced the English government that the bushes in Assam correlated to the *Camellia sinensis* bushes in
Yunnan, China. Bruce brought British officials from the India Tea Committee to the region where the Indian tea trees grew in order to get their approval to create an experimental tea garden. This specific variety of tea plant, *Camellia sinensis assamica*, is a sub-species that thrives in tropical climates on flat planes with generous rainfall. The leaves of this variety are thicker, to increase water retention in dry climates. The plants grow considerably taller than *Camellia sinensis sinensis*. There is a third variety known as *Camellia sinensis cambodiensis* which is not normally used for cultivation due to its large, eight-inch leaves.

Different cultivars have also been created to improve specific qualities of the tea plant such as disease resistance, ability to adapt to its climate, and yield of the plant. (Gascoyne 20-22; Heiss 25).

Tea bushes, like wine or coffee, grow best in a specific terroir. The tea plant is a very adapted species, but thrives in acidic, rich, and permeable soil. *Camellia sinensis* is a subtropical or tropical evergreen shrub which needs a large quantity of rainfall and temperatures around 65°F to 68°F. For the plant to thrive, it needs at least five hours of total sunlight and at least 70
percent humidity. The *Camellia sinensis sinensis* variety is more frost resistant than the two other varieties, *assamica* and *cambodiensis*, although most trees should not be grown in regions were the temperature drops below 23˚F. The tea plant thrives at higher altitudes, of about 3,300 to 5,000 feet, but is capable of being grown at lower altitudes, as is the case in Charleston, South Carolina, USA. Tea can be grown in South Carolina because of its latitude, between 16˚ north and south of the equator. This specific region has similar qualities to tea producing regions in China. The practice of cultivating tea on a plantation began in Sichuan, China in the fourth century. Plantations vary in size and style of tea produced. One hectare, roughly 2.4 acres, on a tea plantation, can contain up to fifteen thousand tea plants. Larger plantations tend to be known by a specific name, but smaller plantations generally just send their yields to a local manufacturing plant. Many of the tea plants on plantations are from cuttings rather than new plants. Cuttings allow farmers to have a consistent crop because a cutting is genetically the same as the parent plant. This reduces the amount of diseases and intolerances, and allows the producer to have confidence that favorable traits can be continued in a crop. Depending on the region, tea leaves are generally harvested twice a year, although sometimes growers will try to get a third harvest. In countries that have an optimal climate, tea can be harvested throughout the year. It takes the tea plant about a week to two weeks to grow new shoots. Tea plants are normally trimmed to about three to five feet to make it easier to harvest leaves. If the plant is not
trimmed, it could grow up to fifteen feet high. Tea leaves are traditionally picked by hand, but machines are used to make the process more efficient. Hand picking is done by skilled laborers who know what and how to pick the requested leaves of the day. The types of leaves picked depends on the final product the farmer or producer wants. Most tea is picked in one bud and two leaves. As the leaves descend on the shoot, they lessen in quality for specific types of tea. One bud and two leaves is the perfect balance between quality (the one bud) and the quantity (the two leaves). It takes roughly five pounds of fresh harvested tea leaves to produce one pound of tea. (Gascoyne 24-33)

**Tea in India**

Different types of processing were introduced to India in 1848 by Robert Fortune, a Scottish botanist, who was hired by the British to go to China to learn about tea processing. The British wanted to increase their profit in India by applying different production methods. Fortune was able to import tea plants, cuttings, and seeds to India. He was also able to recruit many Chinese tea specialists from China to help on the plantation in India. Fortune learned how the Chinese produce both green and black tea. This allowed the British to learn about oxidation, the key difference between types of tea. The plants that Fortune got were soon planted in India where they did not survive. The British did not understand why the
plants were dying until they hybridized the *Camellia sinensis sinensis* variety and the *assamica* variety. Once the plants were adapted to the region, tea production was gradually increased. The British eventually spread tea to Ceylon, now known as Sri Lanka, after the coffee blight of 1869. With the knowledge that Fortune got from China, the British increased their understanding of the tea plant and techniques for production. (Gascoyne 168; Heiss 26-28)

**Chapter 2: Processing Methods**

All types of tea are made from the processed leaf of the *Camellia sinensis* plant. There are five major types of tea: white, green, wulong or oolong, pu’er, and black. These five types vary in levels of oxidation and involve different processing methods. There are also tisanes or herbal teas which are infusions of herbs and spices in hot water. White tea is the purest form of tea and goes through the least amount of processing. White tea is plucked, withered, and dried. The leaves are plucked and then immediately set out to wither. Withering allows the moisture content of the leaf to be greatly reduced, by at least eighty percent, which causes the leaf to become very pliable. The leaves are then dried to further reduce the moisture content to provide extra stabilization for packing and storage. The next type of tea is green tea which is processed in a very similar way, but with added firing and shaping. As with white tea, the leaves are plucked and withered. In China, the leaves then go through a repetition of pan firing and shaping. The pan firing stops the oxidation of the leaves. Oxidation is the process by which the leaves’ cell walls are broken and release
enzymes that interact with the oxygen in the air. The level of oxidation drastically alters the aroma, color, and flavor of the final product. The firing denatures the enzymes that cause oxidation. The leaves are then shaped into their respective styles and then fired two more times to reduce the moisture content down to three percent. The leaves then go through a sorting process. Japanese green tea is also shaped and fired, but unlike Chinese green tea, it is steamed prior to further processing. The leaves are plucked, then steamed to inhibit oxidation and keep the leaves bright green. Most Japanese green teas are rolled and shaped, then fired. The finished leaves are then blended to ensure consistency in flavor and aroma. Oolong teas are partially oxidized teas, unlike white and green teas. There are many types of oolong tea ranging from jade (closer to green teas) to dark (closer to black teas). Pu’er teas, or dark teas, are fermented teas in which the teas are allowed to sit and ‘ferment’ which ultimately alters its flavor and attributes. Black tea is considered fully oxidized when the leaves go through all of the normal steps of tea production: plucking, withering, rolling, firing, and grading; but with added oxidation between rolling and firing. There are two types of black tea production, orthodox and non-orthodox, and each is used to produce different styles of tea. Orthodox tea preserves the integrity of the leaf while non-orthodox does not. The orthodox black tea processing method was invented by the British in India. It allows machines to do a portion of the work, such as hand rolling or shaping, that would have been done by specialized workers by hand. The orthodox method is very time-consuming when compared to the non-orthodox
method, CTC. The CTC method, or crush, tear, curl, removes many of the laborious processes and greatly reduces the time it takes to process the tea. Instead of the leaves being rolled, they are passed through rollers with teeth that process the leaves. The CTC method was developed so that the British could produce the kind of tea that they like to drink. The tea created by the CTC method is mainly used for teabags. (Gascoyne 56-71, 104-105, 138-141, 172-174)

Chapter 3: Tea in the United States

Tea Sales in the United States

Before the invention of the tea bag and CTC tea processing, tea was sold in metal canisters as loose-leaf tea. In 1706, Twinings changed the world of tea forever by selling dry, loose tea to the wealthy (“History of Twinings”). Daniel Twinings, the grandson of Thomas Twinings, was the first to export tea in 1749. In England, tea sales doubled from 1720 to 1740 and again by 1750 (Schwartz 40). Tea sales kept rising in the following years and drinking tea became a societal norm. Eventually, other tea companies, such as Tetley, began selling loose leaf tea. Tetley was founded in 1837 in England and the company grew in the next forty years to where in 1888, it was exporting tea to the United States ("Tetley Tea History"). In 1860, the British developed the CTC
processing method to reduce labor costs in India. This made tea much more affordable than loose leaf tea. In 1892, both Salada and Red Rose tea companies began distributing tea throughout the United States. Salada appears to have been the first company in North America to sell packaged tea ("Salada Tea Company History"). In 1892, according to the Statistical Abstract of the United States from 1900, there was a total of 90,079,039 pounds of tea imported. The following year, Thomas J. Lipton Co. was established. Between 1893 and 1897, tea imports swelled from 89,061,287 to 113,347,175 and the average cost of tea per pound quickly decreased from 16 cents to 13.1 cents. The Lipton Tea Company benefited from the creation of iced tea and the development of the tea bag. Iced tea was introduced at the 1904 St. Louis World’s Fair by Richard Blechynden ("Sir Thomas Lipton's Vision"). This Englishman was sent to the United States in the hopes of promoting black tea. Due to the hot weather, he struggled to sell hot tea so he decided to sell it cold. This discovery of iced tea greatly evolved the tea market in the United States. The tea bag was developed by a tea merchant named Thomas Sullivan. He was hoping to greatly reduce his shipping weight so he packaged
tea in silk bags instead of in tins. His tea bags revolutionized the tea industry and increased tea sales both in the United States and United Kingdom. ("Imports and Exports of Tea")

**Growing Tea in the United States**

Since the late eighteenth century, individuals have attempted to grow tea in South Carolina, which has a similar latitude to China. Eventually, tea seeds were collected by the United States government and planted in various states to test whether or not they would be viable. The National Department of Agriculture wanted to produce tea in United States. An experimental tea plantation in Summerville, South Carolina was approved after 1880. The tea plants were planted in a different way than they are in China. Planters wanted to create a more mechanized process, and so planted in rows that allowed room for mule-drawn ploughs and other devices. Around 1960, Lipton Tea Company became interested in growing tea in the United States. The company bought a property on Wadmalaw Island in 1963 and moved some cuttings from the previous farm in Pinehurst. Lipton tried to lower labor costs by getting a harvesting machine to cut and collect leaves. In 1986, Lipton sold the farm to Mack Fleming and William Hall. Mack Fleming, who was once the head of Lipton’s research division, improved the harvesting machine technology to mechanically cut the tops of the tea bushes. William Hall, a professional tea taster, helped create what is now “American Classic Tea.” All of the processing is done on the plantation and the tea is sold to larger chain stores. In 1989,
Bigelow tea was sold at supermarkets and food service establishments. 177 million pounds of tea was sold at these venues and seventy-five percent of those sales were from supermarkets (Tipton). Beginning in 1945, Ruth Bigelow developed a packaged tea that would evolve into the Bigelow Tea Company. She developed a brand from her “Constant Comment” black tea with orange peel and spices. In 1949, she created the company and her tea was being sold in grocery stores by 1959. Her tea was the first ‘specialty tea’ to appear in grocery stores. In 1966, Ruth passed away and a few years later so did her husband, David, who had joined the business to help his wife. Their son, David, and his wife Eunice took over the family business. In 1973, a competitor released a tea that was very similar to “Constant Comment” so they needed to create a new, innovative tea for the industry. They began to sell their teas to more food service establishments and eventually began using a machine that individually wrapped tea bags. In 1979, the company developed herbal teas and decaffeinated versions of current teas. The company continued to grow in the coming years. In 2003, there was an opportunity for the company to buy the tea plantation in Charleston, South Carolina. The company bought the 127 acre plantation which has over 200,000 tea bushes. The plantation produces its own tea in small quantities and gives tours and explains the history of the plantation. Ruth Bigelow’s “Constant Comment” was a glimpse into the future of the ‘specialty’ tea industry. The industry continued to expand to include a wide variety of teas and an increasing need for educational resources for customers, producers, and tea enthusiasts. (Bigelow; Walcott)
Chapter 4: Tea From Other Countries

Exportation of Tea

Tea is grown, processed, and exported from countries all around the world. The top five tea producing countries are China, India, Japan, Sri Lanka, and Taiwan. China produces about 1,257,000 tons of tea annually, according to Tea: History, Terroirs, Varieties. Approximately 73.7 percent of tea produced in China is green, 5.6 percent is black, 10.5 percent is oolong, and 11.2 percent includes other teas such as white and pu’er. China is the largest producer of tea and specializes predominately in green tea. Japan, much like China, specializes in green tea and produces roughly 101,500 tons of green tea annually. Japan also produces a small quantity of black tea for domestic consumption. India, unlike China and Japan, produces mainly black tea, both CTC and orthodox. Out of the 1,429,400 tons of tea produced, roughly 90 percent is CTC, 8.9 percent orthodox, and only 1.2 percent green and oolong tea. Taiwan also does not focus on green tea production. Instead Taiwan specializes in oolong tea which represents 93 percent of the 18,497 tons of tea produced. Of the remaining seven percent, only four percent is green and three percent is black tea. Due to Taiwan’s small tea producing regions, the total production
amount is far lower than other countries. Surprisingly, Sri Lanka, with a relatively small land
mass, produces about 2,000,000 million tons annually and is the “fourth-largest tea grower in the
world.” Sri Lanka, like India, specializes in black teas especially Ceylon teas. (Gascoyne)

Beyond these five major tea producing countries, tea is grown in countries like Nepal,
Africa, Vietnam, Iran, Turkey, Indonesia, and Argentina. According to a Statista bar graph,
Global Leading 20 Tea Producing Countries in 2013 (in 1,000 Metric Tons), Vietnam produced
214,000 metric tons, Turkey produced 212,000 metric tons, and Iran produced an estimated
160,000 metric tons. Tea produced in Africa mainly comes from Kenya and Malawi. Kenya is a
rising tea producing country with roughly 432,000 metric tons of tea produced in 2013. Tea
produced in countries like Nepal and Korea are slowly gaining popularity as they became more
recognized and appreciated. In 2013, Nepal produced 20,590 metric tons of tea, a small amount
when compared to China and India. Nepal, Vietnam, Indonesia, among other countries are slowly
becoming more recognized for their teas through Fair Trade. See Appendix B for a map of tea
producing countries in the world.

Display of tea from around the world
(China, Japan, India, Sri Lanka, Taiwan,
Nepal, Argentina, and Africa)
Dry loose leaf tea, glue, acrylic sealer
© 2016 Alexander Ahearn
**Fair Trade Tea**

The United States Fair Trade Certified tea program was started back in 2001 and is designed to inhibit unfair tea industry practices and issues such as inadequate nutrition, housing, and healthcare, and lack of access to proper education. Tea estate workers often suffer through poverty and harsh living conditions which largely depend on the tea market and prices. If the prices fluctuate below the cost of production then the farmers and workers will not have the bare necessities needed to live. The local governments near rural areas are also unable to help the tea farmers and workers because there is a lack of funds, and in return they are unable to supply the families with water, food, and housing. To be Fair Trade, the plantation must meet the standards of the various Fair Trade organizations such as Fair Trade USA, Fair Trade International, and Fair Trade Federation. The standards required by Fair Trade International include certification, labeling and packaging, production description, traceability, product composition, contracts, production, sustaining trade, pre-finance, and pricing (“Fair Trade Standard for Tea for Small Producer Organizations”). These standards are strictly for small producer organizations, but many of these standards are similar to those for larger organizations. According to a Statista bar graph, Imports of Fair Trade Tea into the United States from 2001 to 2012 (in Million Pounds), in 2001, just a year after the creation of the United States Fair Trade Certified tea program, 70,000 pounds of Fair Trade were imported into the United States. In 2005, the number of imported Fair Trade tea
grew 700 percent to 490,000 pounds. In 2011, the imports continued to rise to 1.76 million pounds. As the number of imported Fair Trade tea grew between 2004 and 2012, the total global production of tea also increased from 3.15 to 4.68 million metric tons ("Global Production and Exports of Tea from 2004 to 2015"). The global production of tea increased due to the increasing popularity and consumption of tea. An IBISWorld Business Environment Report about per capita tea consumption states that in 2004, 0.8478 pounds per capita were consumed and in 2012 the number increased to 0.9462 pounds per capita ("Per Capita Tea Consumption"). During this increase in tea production and consumption, the specialty tea industry also expanded. ("Impact")

While there are many subjective definitions of “specialty tea,” according to Sharon Bailey in a Market Realist article, “[the term] specialty or premium tea [in the United States] is used to define tea of high quality,” and the definition varies between countries. Standard “black tea” is not considered specialty tea because there is no additional special processing techniques such as hand harvesting, flavoring, or scenting. A loose leaf black tea from the Yunnan region of China is a specialty tea. Bigelow’s “Constant Comment” would be considered a specialty tea due to its added flavorings. Specialty tea needs some indication of origin, style of tea, flavor characteristics, or nutrition facts. Specialty tea can be blended, flavored, scented, decaffeinated, or of a high quality. The higher the quality, the more comprehensive the specifications. The label will most likely include origin, plucking time, processing, and even variety. As stated by Anya Cohen in “Tea Production in the US,” 57.7 percent of the tea sold in the United States is black tea, 22.6 percent is green and white tea, and 19.7 is tisanes or herbal teas. Black tea controls more that half of the U.S. market mainly because of its historical roots. The tea which initially was imported to North America beginning in the 1600s was almost exclusively black tea.
Consuming black tea soon became the social norm just as in the United Kingdom.

The United States tea market can be broken into five segments: exporters, mass merchandisers, other retailers, grocery stores, and the foodservice sector. Mass merchandisers include warehouses and department stores. The grocery store segment of the market is mainly purchasing in bulk, but in recent years, grocery stores have been buying directly from the manufacturer rather than wholesalers. This allows more local or specialty teas to be put on shelves. Tea companies sell their products to foodservice establishments such as fast food chains, restaurants, hotels, and airlines, and the establishment may then promote the specific products. Cohen states the difference between major brands and niche companies; “the product lines of … Lipton, Bigelow, Celestial Seasonings, and Tazo, typically comprise mid- to low-value, high-volume, branded products,” while smaller companies like DAVIDsTEA and boutiques “focus on niche markets, supplying specialty products that are of high value and margins, but have shorter production runs and lower volumes.” This greatly separates the two halves of the tea industry and creates competition. Cohen talks about the separation and internal competition within the industry; “the fragmentation in the market stems from consumer interest in driving a wide variety of teas, especially as the average consumer becomes increasingly educated,” and small and medium companies have a hard time competing with “the high level of brand loyalty and associated perceptions of superior product quality.” She goes on to talk about customer perception of certain branded products; “brand-loyal customers are less sensitive to changes in price because of the associated perceptions of quality.” In 2016, the tea industry in the United States has an estimated revenue of 1.3 billion dollars. (Cohen)
Tisanes or herbal teas are becoming an influential part of the expanding tea industry. Tisanes, unlike tea, do not have any caffeine and are a mix of herbs, spices, and plants infused in water. In 2015, the herbal tea industry in the United States had an estimated revenue of one billion dollars, according to Britanny Carter in “Herbal Tea Production in the US.” The herbal industry has a significant presence in grocery stores, with 69.2 percent of the herbal tea produced in the United States sold in grocery stores and 18.9 percent sold in retail stores like convenience stores, which allows tea companies to increase awareness and sales. There is some competition within the herbal tea industry around factors such as brand loyalty, quality, and product differentiation. Companies sometimes have trouble differentiating their products due to the rapidly growing amount of herbal tea in the market. This problem is also noticeable in the ready-to-drink or RTD tea industry. RTD tea drinks are available at grocery stores, convenience stores, superstores, and vending machines. Grocery store sales make up 37.3 percent while convenience stores make up 21.7 according to Chrystalleni Stivaros in “RTD Tea Production in the US.” In 2016, the RTD tea industry has an estimated revenue of 5.4 billion dollars. The competition within this section of the industry is very similar to that of the general tea industry. Companies struggle to compete with name brands like Lipton or Arizona. In a Statista bar graph, "Leading Ready-to-drink (RTD) Tea Brands in the United States in 2015, Based on Sales (in Million U.S. Dollars),” Arizona is the number one seller of RTD tea drinks with roughly 677.6 million dollars in sales in
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2015. Lipton Pure Leaf, Brisk, and traditional Lipton follow Arizona in the next three spots, and have a total sales amount over 1.2179 billion dollars. Even though Lipton is not number one for RTD tea, it leads in sales of bagged/loose leaf tea in the United States. A Statistic bar graph, "Sales of the Leading Bagged/Loose Leaf Tea Brands in the United States in 2016 (in Million U.S. Dollars),” shows that Lipton has 275.41 million dollars in sales in 2016. Small companies are also gaining sales due to customers becoming more educated about tea. (Carter)

Chapter 5: Tea Education and Health Benefits

Tea Education in the United States

Over the last twenty years, tea companies have been evolving and increasing their focus on educating their customers. In 1999, Numi tea was created and sells organic and Fair Trade tea. Numi Tea is an advocate for Fair Trade through marketing and education. Numi tea company educates its customers through flyers, brochures, and informative packaging. In Appendix C, there are examples of the company’s various educational models. In 2008, DAVIDsTEA opened its first retail location in Toronto, Canada and soon expanded into the United States (“Our Story”). Only four years later, Starbucks acquired Teavana to appeal to a wide audience of customers (“Starbucks Company Timeline”). Both DAVIDsTEA and Teavana educate their customers through face-to-face interactions, while their websites do not yet provide comprehensive educational materials. Adagio Teas, which began in 1999, has a separate website dedicated to tea education (Schwartz). The website allows customers to chat about tea, look at current tea trends, and maps of retailers and tea rooms. The rise of these impressive tea companies has coincided with a revitalized tea industry in the United States. According to the Tea Association of the U.S.A, “Approximately four in five consumers drink tea, with Millennials
being the most likely (87% of millennials drink tea)” (“Tea Fact Sheet”). While specialty tea companies expanded, in 2002 with the merger of the Specialty Tea Registry (ST*R) and the American Premium Tea Institute (APTI), the Specialty Tea Institute was created. According to the Specialty Tea Institute’s website, it helped create [the United States’] “first standardized and accredited tea education curriculum.” The Specialty Tea Institute educates tea enthusiasts and professionals from all around the world and conducts certification exams upon the completion of its classes. There are also many online certification websites that provide videos and lectures for hands-on learning. Most websites will provide the materials needed for the class and require that students complete written and tasting exams after each section. In Canada, George Brown University offers both a Tea Foundations certificate and an Advanced Tea certificate. The Tea Association of Canada, formed in 1954, educates tea professionals and represents the tea industry of Canada (“About Us”). The Tea Association of Canada recently created an online Tea Sommelier course. Both George Brown University and the Tea Sommelier course allow customers to learn more about tea in and outside of the class. All of these education models allow for customers to know more about the product that they are purchasing and consuming. Johnson & Wales University in Charlotte, Denver, North Miami, and Providence offers a Coffee, Tea, and Non-alcoholic Beverage Specialist course. In this course students learn about the history, production methods, styles, and various infusion methods. This course is a great introduction to tea and the tea business in the United States. (“About”)
Tea in China, Japan, and the United Kingdom

In China, Japan, and the United Kingdom, tea was an essential part of society. In China, as stated in *Tea in China: A Religious and Cultural History*, “tea was often the medium of friendship and preferred for that purpose over alcohol.” Buddhist institutions and individuals promoted tea as having a religious significance and as an art form. China’s spiritual, religious, and cultural connection to tea is very similar to that of Japan. Eisai’s introduction to tea in Japan allowed tea’s various medicinal and religious uses to be explored. *Kissa yōjōki*, which translates to *Drinking Tea for Nourishing Life*, is an important work of Eisai’s. Benn states that this work is “a bold attempt to move a commodity (tea), a theory (dietetics), and an esoteric technological system (the complex...
interplay of flavors, viscera, mantras, and mandalas) across cultures from China to Japan.”

Eisai’s work tried to explain why people in China live long lives while, “[Japan] is teeming with sick and emaciated people — this simply because [Japanese] do not drink tea.” Eisai’s work led to an increased consumption of tea in Japan for centuries to come. In A Social History of Tea by Jane Pettigrew and Bruce Richardson, before the nineteenth century alcohol was being consumed daily at “all mealtimes and celebrations.” Due to the large consumption of alcohol and its bad reputation, the Temperance Movement was created in the mid 1800s to abolish all alcohol. Tea eventually was being consumed more as an alternative to alcohol and allowed people to focus on healthier lifestyles. This drastic change from consuming alcohol to tea changed society. Tea soon became a social norm leading to the creation of tea rooms and gardens. Tea was marketed heavily and evolved as society consumed more of it. The societal shift in all three countries eventually led to the consumption of tea for its various health benefits. (Benn 146-150, 1871-197; Pettigrew and Richardson 147-150)

**Health Benefits**

In recent years, U.S. society has become more health conscious and tea is being recognized for its many health benefits. Tea is said to have many health benefits. According to Tea: History, Terroirs, Varieties, tea does contain caffeine like coffee, but it has a different effect on the body. The caffeine in tea “stimulates the central nervous system and the cardiovascular system … [and acts like] a stimulant … [which] sharpens the mind, increases concentration, eliminates fatigue and enhances intellectual activity.” Tea, the beverage, contains about four percent protein, a small percentage of carbohydrates, and only one to two calories per cup. According to the book, tea “also contains many vitamins (including A, B complex, E, K, and
flavonoids), [and] about thirty minerals (including potassium, phosphorus, iron, magnesium, and calcium). The book summarizes the benefits of tea: “it supports the heart system, activates circulation, helps detoxification, fights hypertension, prevents certain types of cancer, helps digestion, reduces cholesterol, and strengthens the immune system.” Tea also contains some antioxidants, especially in green teas (258) There are many other studies on the health benefits of tea and specific compounds such as L-theanine, a crucial amino acid. In a 2008 study of L-theanine and the brain, by Anna C Nobre PhD, Anling Rao PhD, and Gail N Owen PhD, the affect of L-theanine “achiev[es] a relaxed but alert mental state via a direct influence on the central nervous system” (Norde). (Gascoyne 248-258)

**Conclusion**

Almost all tea used for drinking, except tisanes or herbals, comes from the *Camellia sinensis sinensis* or the *Camellia sinensis assamica* plant which are semi-tropical plants that grow abundantly in regions of China, India, Japan, Sri Lanka, and Taiwan, and many developing countries. Tea is consumed all over the world, but in the United States, its popularity is growing rapidly because it is seen as a healthy alternative to drinks like soda and sweetened fruit juices. (“Tea Fact Sheet”)

Tea has only recently gained widespread interest in the United States due to the influence of Millennials. Before 2000, tea brands that sell CTC tea in tea bags were being consumed because people did not seek out other options. These brands were sold in grocery stores across the country and were easy to find and inexpensive. Black tea was seen as the only tea available because the British greatly influenced United States society in the 1600s and 1700s and it initially was the predominant tea that was being exported to the United States. According to the
Boston Tea Party Ship website, Bruce Richardson explains the history of green tea during colonial times, “twenty per cent of the tea aboard those three ships was green tea. Later, in the 19th century, general stores across America often stocked a tightly-rolled Chinese or Japanese green tea called gunpowder” (Richardson). Many people had no idea that tea had other forms until the introduction of green tea. People in the United States drink tea because of its various health benefits and the influence of current social trends. For years tea companies that sold tea in grocery stores that made tea accessible to customers controlled the tea market. The tea sold in grocery stores does not specify where the tea comes from, how it processed, and the type of tea. The tea in grocery stores are just ‘tea’ whether it is black, green, white, or oolong. It often has no guarantee of authenticity and could made with any kind of blend. Most of the tea in tea bags is CTC from India or China where companies can source inexpensive tea to make larger profits. The art and authenticity of the tea is lacking due to the mass production of the product.
Tea companies like Numi and Teavana provide additional information to educate the customer about what they are consuming. With the creation of the Tea Association of the U.S.A and the Specialty Tea Institute, tea education has greatly expanded the tea industry. Tea professionals can now learn more about tea from a standardized tea curriculum which will hopefully someday inform the average consumer. Tea companies like DAVIDsTea and other private establishments educate their customers through face-to-face interactions. Customers have the option to ask more questions and understand what tea truly is. The rise of Millennials has greatly influenced tea education due to their interest in the origin of items that they use and consume. Tea companies are slowly evolving to include more information like origin, processing methods, and nutritional facts. High-quality tea is now a trend which has led to the increase of loose leaf tea sales. Loose leaf tea connects the place of origin to the customer. The customer can now see the tea in its full form and see how it changes when it is steeped. People in the United States are now more interested in tea culture and preparation and have accepted elements of various tea cultures from around the world. Eleven Madison Park and Atera in New York have tea programs that provide customers with both high-quality teas from all around the world and tea education. Cynthia Gold, of L’Espalier in Boston, is an accomplished tea sommelier who creates high-quality tea blends for the restaurant, where she also leads an elegant tea program. She has also written Culinary Tea where she discusses the relationship between tea and cooking. She works with the Specialty Tea Institute as an instructor for the Tea in the Food Service Environment class. Tea education is being taught in these restaurants and then passed on to the customers. Customers are able to try quality teas from around the world and experience something new.
Tea has greatly impacted society in the United States. In recent years, tea culture has grown in parallel with health trends such as yoga and mindfulness. People are taking more time out of their day to stop what they are doing to drink tea. Taking time to stop and drink tea causes people to connect more to each other and to other cultures. From 2737 BCE in China with Emperor Shen Nong to now, tea has evolved into not only an art form, but a way of life. Tea will only continue to expand and evolve in the United States. As society changes, the tea industry will continue to change with it. Tea was introduced into society and then grew into the culture of the country. In the future, tea in the United States will be mainly loose leaf tea and drinking high quality tea will become a social norm. People will take time out of their busy, hectic days to stop and enjoy tea. Tea education will aid in this mindset. The more people know about the history, preparation, and uses of tea, the more they will appreciate the art of tea.
Appendix A: Tea Horse Road Map

Image Source:

Appendix B: Map of Tea Producing Countries in the World

Image Source:
Appendix C: Numi Tea’s Educational Models

Tea Overview

Looking for...
- Antioxidants: All teas (containing the tea leaf) contain antioxidants. However, Green Tea and Pu-erh in particular are known to contain polyphenol antioxidants. Rooibos (an herbal tea) also contains polyphenol antioxidants.
- Relaxation: Chamomile, Lavender, Rooibos, White Tea
- Digestive Aid: Mint, Licorice, Ginger, Dandelion Root, Pu-erh
- Energy: Yerba Mate, Pu-erh, Green Tea, Black Tea

Tea Tasteful Quality:
- There are 4 categories that are associated with the size and strength of tea leaves - Whole Leaf, Broken Leaf, Fannings & Dust.
- The majority of bagged teas on the market are made with fannings and dust, which release color and tannins more quickly, leading to a darker and bitterness tasting cup.
- A fuller tea leaf means a higher quality, smoother tasting cup of tea.

Ingredients:
- Teas are often flavored by the addition of artificial and “natural” flavorings or fragrances. For a pure tea experience, look for real ingredients on the label.

Choosing Organic
- Choosing Organic is important when it comes to tea, as tea leaves go directly into bags after being picked and processed.
- Unlike other food items, tea is not washed prior to consumption. As a result, any chemicals used at the gardens can go directly into your cup.
- Organic farming protects the health of farmers, the planet, and you.

No-GMO’s
- Genetically Modified Organisms (GMOs) combine the DNA of a plant with the DNA of something else to create a new organism that has never before existed in nature.
- When you choose certified Organic products and/or those that are Non-GMO verified, they are free of any genetic engineering.

Fair Trade
- Fair Trade Certified sourcing ensures an equitable wage to workers, allowing their families and communities to thrive.
- Fair Trade Funding supports: healthcare, education and community development projects.

Image Source:

Bibliography


Works Cited


