The Cultural Pharmacology of Chocolate

The relationship between chocolate and female health in our culture is legendary. How many times have we heard a female friend say they “need chocolate,” with a tone of desperation in her voice? Indeed, despite its relatively recent reputation as a confection, chocolate has a long history of use for medicinal and nutritional purposes in various cultures. In this article, I will explore the cultural pharmacology of chocolate, drawing extensively on an excellent review of the anthropology of chocolate by Dillinger et al. (2000).

The Archaeology of Chocolate Ecstasy

Theobroma cacao, which is native to the Americas, was used in both Mesoamerica and South America and while cultivation and use of cacao was more extensive in Mesoamerica, many scholars have argued for a South American center of domestication (Cheesman 1944, Stone 1984). The wild ancestors of cacao found in Mexico are genetically distinct from both current cultivars and South American wild cacao plants (De la Cruz et al. 1995, Gómez-Pompa et al. 1990).

Chocolate is cacahuatl in Nahuatl (Aztec language), derived from Olmec/Mayan etymology. The word cacao originated with the Olmec peoples who occupied the lowland regions of the eastern Mexican gulf coast (Coe and Coe 1996) and is said as ‘kakaw’ in Olmec. Cacao terms were subsequently developed by adjacent Mayan people who in the early 21st century have a detailed cacao vocabulary (Coe and Coe 1996). The Nahuatl (Aztec language) term cacahuatl for cacao was concocted from the Mayan word for cacao (Cuatrecasas 1964, Davila Garibi 1939, Thompson 1956). Indigenous peoples of the New World transmitted knowledge of cacao through oral histories, stonework, pottery and the creation of intricate, multicolored documents (codices).
According to the Maya, the god Sovereign Plumed Serpent gave cacao to the people after humans were created from maize (Bogin 1997, Coe and Coe 1996, Montejo 1999, Tedlock 1985) and they celebrated an annual festival in April to honor their cacao god, Ek Chuah, by sacrificing a dog with cacao-colored markings (Aguilera 1985, Thompson 1956). The Mexica (Aztecs) adopted cacao as a food and medicine when they arrived in the central valley of Mexico (Coe and Coe 1996) and the Aztec god Quetzalcoatl (also Plumed Serpent) discovered cacao in a mountain filled with other plant foods (Coe and Coe 1996, Townsend 1992). The Madrid Codex depicts priests lancing their ear lobes and covering the cacao with blood as a suitable sacrifice to the gods. The Mexica also served cacao beverages to sacrificial victims to “comfort them” during an annual festival to honor Huitzilopochtli (god of war and the sun) (Townsend 1992, Vaillant 1941).

Before initial European-Mexica contact in 1519 cacao was taken only as a beverage and reserved for adult males including priests, high government officials, military officers, distinguished warriors and sacrificial victims, since cacao was considered intoxicating and unsuitable for women and children, as well as very valuable (Coe and Coe 1996, Townsend 1992). Cacao residues are found at archaeological sites where chocolate beverages were offered to the deceased (Bañales 1999, Hall et al. 1990, Hurst et al. 1989). Cacao seeds also served as currency (Hernández 1577, p. 303).

### European Discovery of Cacao

Columbus, in 1502, was the first European to encounter chocolate, when he captured a canoe that contained mysterious-looking “almonds” in use as a source of currency (Coe and Coe 1996). When Hernando Cortés (Cortés) landed on the east coast of Mexico near modern Veracruz and marveled inland (Cortés 1519, Díaz del Castillo 1560), Montezuma’s guards brought him, in cups of pure gold, a cocoa drink followed by a feast featuring jugs of chocolate (Díaz del Castillo 1560, pp. 226-227). It is possible that Cortez and his men might have been aware of cacao already from the islands of Cuba and Haiti but the consumption of cacao as a beverage was certainly first observed at Montezuma’s court (López-Gómez 1552, p. 162) and introduced to the Spanish court in 1544 by Kekech Maya nobles brought by Dominican friars (Coe and Coe 1996). Within a century, demand for this beverage led the French to establish cacao plantations in the Caribbean, while Spain developed cacao plantations in their Philippine colony (Bloom 1998, Coe and Coe 1996, Knapp 1930). The Mayan word cacao entered scientific nomenclature in 1753 when Linnaeus labeled it Theobroma cacao (food of the gods), blending Greek with Mayan etymology (Coe and Coe 1996, Linné, 1741-1778). In the 1880s cacao became a major commercial crop in the English Gold Coast colony in West Africa (Bloom 1998, Knapp 1920 and 1930).

### Chocolate in Mexica Medicine

The Florentine Codex (1590), a massive compilation of Mexica culture compiled by priest Bernardino de Sahagún who moved to New Spain in 1529 (D’Ower 1987), emphasizes the effects of green cacao in causing a drunken, dizzy state in high doses and a refreshing, invigorating state in moderate doses (Sahagún 1590, 119-120). Chocolate was drunk by the Mexica to treat intestinal complaints, and combined with liquid from the bark of the silk cotton tree (Castilla elastica), to cure infections (Sahagún 1590 112). Patients with cough who expressed phlegm took an infusion prepared from opossum tail, followed by a chocolate beverage mixed with mecacoxchiti (Piper sanctum), uey nacaztli (Chiranthodendron pentadactylon) and tillcoxchiti (Vanilla planifolia) (Castillo Ledón 1917, Coe and Coe 1996, Sahagún 1590, Part 12: 12, Durand-Forest 1967, Gauge 1648). Chocolate served as a vehicle to deliver other medicines, including quinamelli made of “the bones of the ancient people called giants” (vertebrate fossils?) which was used to treat patients who passed blood (Sahagún 1590:189). The Florentine Codex offered a prescription of cacao beans, maize and tlacoxchiti (Calliandra anomala) to alleviate fever, paining of breath and faintness of heat. The Badianus Codex (1552) noted the use of cacao flowers to treat fatigue.

### Chocolate in European and Colonial Medicine

Sixteenth to early 20th century manuscripts in Europe and New Spain discussed the use of cacao in emaciated patients for weight gain, stimulating the nervous systems of exhausted patients, improving digestion and elimination, and stimulating the kidneys, as well as treating anemia, poor appetite, mental fatigue, poor breast milk production, tuberculosis, fever, gout, kidney stones, reduced longevity and low virility. Chocolate paste was used to administer drugs and counter the taste of bitterness. Cacao bark, oil (cacao butter), leaves and flowers were used to treat burns, bowel dysfunction, cuts and skin irritations. Hernández (1577:304) wrote the first natural history of cacao and noted that larger trees produced seeds that were used for currency while smaller tree’s seeds were used for beverages. Hernández described a medicine called atexiti, which was a thin paste made of cacao beans and maize, that could be “compounded” by adding mecaoxchiti (Piper sanctum) and tillcoxchiti fruits (Vanilla planifolia) used to excite the “venereal appetite” (Hernández 1577: 305). He also mentioned a beverage called choclalt, made by mixing grains of pohochit and cacahoatl in equal quantities, that had the properties of making the consumer “extraordinarily fat” if used frequently which was prescribed to “thin and weak” patients (Hernández 1577: 305).

Humoral theory became an important element in chocolate prescription. In 1591 physician Juan de Cárdenas complained that un-toasted cacao produced a constipating effect on the stomach, drained menstruation, closed the urinary tracts, blocked the liver and spleen, reduced facial color, weakened digestion, caused shortness of breath and led to fatigue and fainting (Cárdenas 1591), yet if cacao was toasted, ground and mixed with atole (ground maize and water), it led to a robust state of health (Cárdenas 1591).

Santiago de Valverde Turíces in 1624 argued that cacao was “cold” by nature, whereas chocolate prepared from beans was “hot” and “dry” and therefore suitable to prescribe to those suffering from “cold” or “wet” illnesses (Valverde Turíces 1624, pp. D1-2). Antonio Colmenero de Ledesma wrote his treatise on chocolate, Curioso Tratado de la Naturaleza de la Chocolate in European and Colonial Medicine

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was administered to patients with "cold livers" and one mixed with cinnamon promoted urine flow and was administered to patients suffering from kidney disorders and to others "troubled with cold diseases" (Gage 1648, p.108). Henry Stubbe noted that in the Indies, chocolate was drunk twice each day to restore energy if "one is tired through business, and wants speedy refreshment" and that tiilxochiti (vanilla) was added in a mixture to strengthen the brain and womb. He reported that English soldiers stationed in or about Jamaica lived on cacao nut paste mixed with sugar that the troops dissolved in water and that Indian women often survived entirely on chocolate yet did not exhibit a decline in strength. He noted that the cacao nut was a remedy against inflammations, ergot poisoning and mixed with Jamaica pepper provoked urine and menstrual flow, strengthened the brain, comforted the womb and dissipated excessive "winde," or flatus, while vanilla added to chocolate strengthened the heart, "beget strong spirits" and promoted digestion in the stomach. And when achiote was mixed with chocolate it "allays feverish distempers...repels praeternatural tumors...strengthens the gums" (Stubbe 1662:58-60). He added that different varieties of peppers, specifically mecaxochiti or piso, when mixed with cacao paste "opens obstructions, cures colds, and distempers arising from cold causes; it attenuates gross humors, it strengthens the stomach, and it amends the breath" (Stubbe 1662, p. 67). Several varieties of ear flowers (xochinacaztlis or orichelas) (Cymbopetalum penduliflorum) when mixed with chocolate provided a quality scent and taste to the medicine that was used to strengthen the stomach, revive the spirit, "beget good blood" and to "provoke monthly evacuations in women."Stubbe cited famous physicians who noted that drinking chocolate "helps to digest ill humors, voiding the excrements by sweat, and urine" and that "one may live months, and years using nothing but chocolate" (Stubbe 1662: 97-98).

William Hughes' ethnobotany of plants growing in English plantations in America noted chocolate's use in "preventing unnatural fumes ascending to the head" and to cure the "pustules, tumors, or swellings" experienced by "hardy sea-men long kept from a fresh diet" (scurvy?). Once ashore, sailors drink chocolate because it "is excellent to drive forth such offensive humors, opening the pores, and causing moderate sweats." Hughes urged readers living in England to drink chocolate, especially persons with "weak constitutions, and thin attenuate bodies." He notes "I think I was never fatter in all my life, than when I was in that praise-worthy Island of Jamaica, partly by the frequent use (of chocolate), neither had I one sick day during the time I was there, which was more than half a year" (Hughes 1672: 147-148). Sylvestre Dufour published an early recipe for a chocolate drink consisting of 700 cacao nuts, and a pound and a half of white sugar, two ounces of cinnamon, 14 grains of Mexican chile pepper, half an ounce of cloves, three straws of vanilla or anise-seed, a filbert size amount of achiote, almonds, and filberts (Dufour 1685: 72-73). Anise-seed was added to neutralize the "coldness" of the cacao. The fattening properties of chocolate are described as due to the hot and moist, buttery

### Chocolate

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properties of chocolate which go to the parts of the body (fat) that is like theirselves.

Nicolas de Blény notes that taken with vanilla syrup in the evening, chocolate suspends rheumatomides and inflammation of the lungs (Blény 1687: 282-285). In his *The Natural History of Chocolate*, D. de Quélus described a "councilor about a hundred years old, who, for 30 years past, lived on nothing but chocolate and biscuit, yet was so vigorous and nimble, that at fourscore and five, he could get on horseback without stirrups." He also added that chocolate was used as a vehicle for millipedes, earthworms, vipers, and eels and chocolate oil works to ease pain and treat the skin (Quélus 1719:77-77). The famous naturalist Carl von Linné (Linnaeus) noted that chocolate helped wasting brought on by lung and muscle diseases, hypochondria and hemorrhoids and worked as an aphrodisiac (von Linné 1741). Alexander Peter Buchan suggested that women in labor should be served chocolate as well as to prevent fainting brought on by blood loss (Buchan 1792:224). Antonio Lavedan cautioned against chocolate drinking in the afternoon and recommended it for tuberculosis and consumption by replacing "the loss of nutrient balsams that have stolen the consumptive warmth" (Lavedan 1796:223). Anthelme Brillat-Savarin noted that chocolate is an antidote to the inconveniences ascribed to coffee and is "suitable to those who have much brain work to do, such as clergymen and lawyers, and especially for travelers" and urged people to drink a cup after breakfast, as this facilitated digestion as well as chocolate mixed with ground amber dust as a remedy for hangover, when the "faculties are temporarily dulled, and during periods of troubled thinking." He also suggested that people with "delicate nerves" mix it with orange flower water (Brillat-Savarin 1825:100). Auguste Saint-Arroman noted that ginger, pimento, cloves, Spanish arachis or earth pistachio - a plant known in English as the peanut (Saint-Arroman 1846:82) were all added. Auguste Debay like so many other European writers, recommended the addition of sugar to chocolate, but he also recommended addition of ground lichen, quinine extract, and cinnamon to create a vermifuge and treatment for syphilis (Debay 1864:91). Others emphasized that chocolate was capable of "repairing the losses due to work, pleasures, and staying up late at night" (Panadés y Poblet 1878: 192). According to Pedro Felipe Monlau, to create purgatives, ground cacao was combined with *Convulvulus scammonia* (scammony) and *Convulvulus jalapa* (jalapa). Anthemorrhoid suppositories were prepared using cacao butter, cocaine hydrochlorate and ergot and a "calming suppository" (*supositorio calmante*) was made of cacao butter, belladonna extract and laudanum (Monlau 1881:202-203). Cacao butter was often used to prepare suppositories that contained belladonna or ergot. Gustavo Reboles y Campos noted in a work he translated, that to force-feed patients "it is preferable to mix [the medicine] with chocolate or liquors" (Reboles y Campos 1888: 183). Mariano Villanueva y Francesconi suggested that "people suffering from cancerous diseases eat wild game and fowl, like partridge, duck, pheasant, woodcock, avoid coffee and tea and use chocolate instead, and avoid acids and alcoholic beverages." When mixed with ground melon/pumpkin seeds, ground almonds, milk of sweet almonds, chocolate was used as an emulsion to counter diarrhea (Villanueva y Francesconi 1890: 333). Cacao butter was frequently used in ointments, along with pig lard, tallow, oil of sweet almonds, olive oil, and lanolin. Juan Bardina recommended that an ointment prepared from cacao butter be applied to the breasts of nursing women who developed sores and cautioned that candy bars were often wrapped in silvered paper, which was toxic (Bardina 1905; 307). Other writers cautioned against the use of chocolate as a candy and by nervous or excitable people (Varios Profesores 1912: 4).

Chocolate Today

The idea of using chocolate to deliver bitter tasting medicines as a binder by pharmaceutical companies eventually led to the modern candy industry that flourishes in the US today (indeed Mars, Inc. sponsored much of Dillinger's research). Pharmacist Jean-Antoine-Brutus Menier created a chocolate factory in France in 1825 where he coated medicines with chocolate until his sons took over and transformed it into a candy factory which became more lucrative. Also it is interesting that traditional people used all parts of the tree: cacao bark, fat, flowers, fruit pulp and leaves and we are beginning to see a revival of interest in this in modern health foods and beverages.

Recent ethnographic fieldwork by one of the authors in Oaxaca, Mexico showed that many Mesoamerican and Colonial practices of chocolate use continue to survive, it is one of the principal foods consumed in Oaxaca on a daily basis. The oils make it a useful medicine for bronchitis and it is used as antivenom against scorpion, bee or wasp and used to treat espanto (susto), a disease of fright, by feeding the earth at the location of the fright with cacao.

The use of chocolate through history for medicinal purposes attests to the many health-promoting and pleasure-inducing properties of this food and explains widespread interest in the use of chocolate today for its nutritious, medicinal and cultural properties.

About the Author

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Sources

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Cacao seed pods, Ethnobotany Fellowship, Kauai, 2000.

Photo by Tim Batchelder