

Suns, Moons, Clocks, and Bells: Native Americans and Time.

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In 1635, French missionary Jean de Brébeuf recalled the puzzlement with which the Huron greeted the clock. "They all think it is some living thing," de Brébeuf wrote, for the Huron "cannot imagine how it sounds of itself; and when it is going to strike, they look to see if we are all there, and if some one has not hidden, in order to shake it . . . They think it hears . . . When it strikes they say it is speaking" (de Brébeuf, 2003:115). More than two hundred years later, Lakota Luther Standing Bear revealed an equal unfamiliarity with clock time. During his father's 1880 visit to the Carlisle Indian Industrial School in Pennsylvania, his father gave him

silver dollars and a gold watch and chain. There was a little cross-piece in the center of the watch chain to fasten through my vest button. How proud I was to receive this watch! When any of the boys or girls looked at me. I always took out that watch and looked at it, imagining that I could tell time!! At that day I did not know how to tell the time by looking at a watch or clock (Standing Bear, 1928: 151).

Scholar Douglas Givens' book, *An Analysis of Navajo Temporality*, revealed little progress from 1880 to 1977, for Givens argues that Navajos did not understand clock time. He points, in part, to medical prescriptions as evidence of the Navajo's reliance solely on sun time. On the Navajo reservation, physicians used picture labels, which indicated the position of the sun rather than concrete clock times to indicate when the medicine should be taken (Givens, 1977: 19, 20). Native Americans did not understand the workings of the clock or use it to measure time.

However, the experiences of other Native Americans revealed a very different picture of Indian clock-consciousness. As early as the 1820s, the Cherokee National

Committee functioned on clock time and the Gregorian calendar. The October 22, 1828 edition of the *Cherokee Phoenix* revealed that the Committee adjourned its meeting on the New Echota Constitution on "Tuesday 10 o'clock October 14" and agreed to reconvene on "Wednesday 9 o'clock October 15" (Phoenix, 1828). Clock-consciousness however, was not limited to the Cherokee nation. Witness an 1863 letter from Union General and Senecan Isaac Newton Parker to his wife in New York.

Take the watch to O.E. Sibley[']s shop in Buffalo, New York for] . . . [t]he watch has not been cleaned in seven years . . . I want it cleaned and repaired thoroughly, for I send it north for that express purpose . . . When the job is finished, you take the watch, after a due trial in running by hanging still in the shop for a few weeks: and give it a trial to see how it will run by carrying. It will run [a] full 48 hours before it will run down . . . [M]ade and brought over from Germany I know myself that it is a splendid time keeper when it is all right . . . But I will not trust it [to North Carolina watchmakers who are nothing] but the unfinished apprentices of our northern cities and some not knowing the difference between a 'balance wheel' and 'main spring' (Parker, 1995: 80).

Clock time for Parker was so critical that he sent his watch more than 1,000 miles for repair. Reverend G. H. Atkinson of the American Missionary Society acknowledged the Indian conversion to clock time. During an 1878 visit to the S'Kokomish reservation in Puget Sound, Washington, Atkinson noted that the Indians embraced mechanical time, for each house had a clock and "often two" in use (Atkinson, 1878: 309). Choctaw Edmond J. Gardner recognized Native American clock usage and in 1910 opened a watch repair shop in the largely Native town of Valliant, Oklahoma (Gardner, 1937). While the Hurons and Luther Standing described unfamiliarity with clocks, other Native Americans clearly possessed a sense of clock time.

Consequently, two opposite portraits of Native-American clock-consciousness emerge. As a group, Indians seemed simultaneously clock-conscious and ignorant of the clock, and thus simultaneously modern and premodern. Although such a notion seemed

to be at odds with itself it was not, largely, because the processes through which clock time were introduced to Natives were complex and contingent. The processes were complex in the sense that the adoption of clock time required to a certain extent the erosion of some traditional temporal understandings. The processes were contingent in the sense that the evolution of Native American clock-consciousness depended on the degree to which Europeans, Americans, and Natives interacted. Because "no society is static . . . each [is] stirred by social forces from within and bombarded by social incursions from without, from the internal dynamics that shape change within a culture, and from external influences that invade from a neighbor culture" (Lyon, 2003: 59), the processes through which Native Americans inculcated clock-consciousness were uneven and conditional ones which occurred at different times and in different places.

Traditionally scholars have offered two explanations for the inculcation of clock-dependent time consciousness. E. P. Thompson argued that changes in the work place wrought by industrialization resulted in the emergence and eventual preponderance of clock-regulated wage labor, which evolved into an all-encompassing clock-dependent time consciousness (Thompson, 1967: 28). Mark M. Smith, however argued that under the pressures of the market revolution, antebellum southerners embraced a capitalist economy largely absent of wage labor (Smith, 1997). Clock-dependent time consciousness emerged in the antebellum South through participation in the market. By the 1830s, Euro Americans and African Americans functioned in a world increasingly based on the clock.

The emergence of clock-consciousness among Native Americans, however, fits into neither category. In fact, some scholars dismiss outright the compatibility of Native

Americans and clock time. Calvin Martin, for example, argues that clock time was not Indian time (Martin, 1987: 16) while Donald L. Fixico argues that the cyclical nature of American Indian time inoculates against inculcations of linear and clock based time (Fixico, 2003). Historian Shep Krech quite rightly questions such assumptions and urges scholars to "restore balance and fullness to temporality in native North America. It is time," he urges, "to bring linear time back in" (Krech, 2006: 585). Native American temporality is not linear or cyclical, natural or mechanical. Native Americans, like Euro Americans and African Americans, functioned with in multiple, conflicting, cyclical, linear, natural and clock times amongst others. What they did not share was the processes through which clock time was instilled. While Euro Americans and African Americans inculcated clock time through participation in capitalism, the vast diversity of Native American cultures dictated that the inculcation of clock dependent time consciousness occur at different times, in different places, and through a variety of complex, uneven and contingent ways. Some Native Americans inculcated a sense of clock time through interaction with missionaries and educators while others learned to tell clock time through participation in plantation capitalism.

Native Americans always possessed a finely honed sense of time. Graeme Davison's astute insights into Aborigines and temporality in Australia are equally applicable to North American Indians. American Indians, like

Aborigines were not strangers to ideas of divided time. In some ways, their ideas of time were more precise than those of the Europeans. They were more alert to the subtle changes in foliage, wind direction, tidal movement, and bird migration that marked the passage of the year (Davison, 1993: 8-9).

Indians and Aborigines were "punctual people, for they were obedient to the time-signals that mattered to them" (Davison, 1993: 9).

Before widespread European contact, the environment provided such time signals. Natural time imparted a rhythm, an order, and a measure to Indian life. While sunrise and sunset organized the parameters of the day, the cycles of nature organized task-based labor. For the Lenape, nature scheduled the planting of corn: "when the leaf of the white oak [was] the size of a mouse's ear" (Thatcher, 1833: 194), it was time to plant. The blooming of chokecherries signified to the Crow the appropriate time to plant their sacred tobacco while deep snow signaled to the Algonquians the close of hunting season (Voget 1995: 13; Hecht, 1980: 48). The cycles of nature directed Indian agricultural life.

Nature also scheduled rituals. For the Hopi, the winter solstice indicated the beginning of their Soyal ritual (Wedel, 1975, 134). The summer solstice scheduled the Kiowa's Sun Dance ritual (Mikkanen, 1987: 7). The spring equinox instructed the Pawnee to inaugurate their First Thunder Ceremony (Hecht, 1980:48). "When the sun r[ose] over a certain point on Corn Mountain," the Zunis began celebrating the Great Feast of the Winter Solstice (Merrill, 1945: 3).

In addition to scheduling tasks and rituals, Indians used nature to measure the passage of time. Most Natives "reckoned time by nights" rather "like the whites by days" (Thatcher, 1833: 192). Indians spoke of traveling "so many nights" to reach a certain destination (Nilsson, 1920: 15). Larger temporal distinctions were reckoned in a number of ways. The Comanche and the Pawnee "reckoned time by the cold and the warm seasons" (Nilsson, 1920: 59) whereas the Algonquians measured time by the passage of the budding of spring, earring of corn, highest sun, corn gathering, and winter (Hecht, 1980: 48). Other Indian nations such as the Lenape and the Blackfoot for example, measured time through the passage of winters comprised of 13 lunar cycles. The naming

of the lunations, however, was contingent on geography. When the Lenape lived in Pennsylvania, they referred to the Euro-American month of March as "the shad moon" for this was the time at which the shad fish "began to ascend the fresh-water rivers from the sea" (Thatcher, 1833, 193). Upon their removal to Ohio, the same month was referred to as the Moon of "the sap-running" (Thatcher, 1833, 193). Native Americans relied on nature to organize their civilizations and direct action and inaction.

Indigenous people meticulously measured changes in nature and left physical evidence of their linear and cyclical time measurement. Plains Indians, like those who inhabited the Bighorn Range in Wyoming, used medicine wheels to craft lunar calendars to mark the passage of time and to measure time. Designed to "measure the Sun's position exactly" in order to reflect "[c]hanges in the position of the stars and suns," medicine wheels told "ancient Native Americans when to plant crops or hold religious ceremonies" (George, 2004: 9).

Native American calendars also marked and tracked the passage of time. Linear in nature, these calendars tracked days, months, years, and the occurrence of important events. Natives of the Northwest often measured time through the construction of string records. The Salish of British Columbia, for example, marked the passage of "[d]ays, weeks, months, and years . . . by different knots or marks" while the passage of each moon was indicated by bead markers which "occurred every twenty-eight knots" (Leechman, 1921: 13, 6). Other Indians recorded their histories using a calendar stick. On William Clark's famed 1804 voyage west, he visited the Santee and witnessed how they measured time. According to Clark, the Santee calendar stick was "a slender pole about 6 feet in length, the surface of which was cared with small notches" (Merrill, 1945

:2). These notches, an elder told Clark, represented particular battles, events, and births. In short, they "represented the history of [the] tribe for more than a thousand years" (Merrill, 1945: 2). The Pawnees used their calendar stick "for the computation of nights or even of months and years" (Nilsson, 1920: 14, 15). The Ho-Chunk nation's calendar stick measured only part of the tribe's history. Notches in the stick represented nineteenth century lunations and permitted the Ho-Chunk to track time and its important events (Merill, 1945: 1). Sioux Iron Shell diligently paid attention to time. "[W]hen the moon first rose, Iron Shell made a nick in a long pole he kept by the bed for that purpose. Every night he made another nick, until the moon finally disappeared. . . . He got a new stick each year, cutting it in the Moon of the birth of the Calves" (Hassrick, 1964: 11).

Other nations opted to record their histories in the form of winter counts. The keeper of the winter count measured time by recording one significant event each winter or, in Euro American terms, each year. The Dakota and Kiowa winter counts reveal the co-existence of linear and cyclical time. Chronological in nature, the counts allowed Indians to calculate their ages. Black Elk recalled that he was born in "the Winter the Four Crows were killed" during "the moon of the popping trees" (Elk, 1984: 101). He then counted the characters between those of his birth and those of his present to determine his age.

While winter counts permitted Indians to think linearly, they also allowed Indians to conceive of time cyclically. Visually the Kiowa organized their Dohasan Calendar "in a continuous spiral, beginning in the lower right-hand corner near the center" (Mooney, 1898: 43). Indians, therefore, understood winter counts specifically, and time generally,

as simultaneously linear and cyclical; in short, as multiple and dictated by the cycles of nature.

With the encroachment of European missionaries and the establishment of missions, traditional Indian soundscapes and time cues began to change. Missionaries sought to Christianize and civilize indigenous peoples by purging Indians of their perceived indolence while simultaneously instilling a seemingly missing respect for industry and labor. The Spanish modeled such efforts on their previous experiences with indigenous peoples in Latin America.

In Latin America generally, Mexico specifically, Europeans recognized indigenous calendars and time systems. European missionaries also labeled them heretical and immediately sought to eradicate such ideas. The Spaniards systematically "destroyed the elite [indigenous] cadre that could understand, amend, and disseminate the [indigenous] calendar[s] in [their] full complexity" (Hassig, 2001: 139) thus destroying the underpinnings of indigenous temporality. The Spanish replaced them with the Christian calendar and European temporality sensibilities as articulated through bells and natural time organized by sundials (Nunis, 1976: 81-84; Costello, 1991: 35; Englehardt, 1963: 49-50).

In the North American context, the Spanish relied on their experiences in Latin America but with modifications. They viewed the North American context through different eyes. They saw a land that lacked highly developed and evolved civilizations and a recognizable sense of time. Since the Spanish recognized no timekeepers, none could be destroyed. Instead, they, along with the French and the English, relied on missionaries to instill a deep sense of time and discipline in their Indian charges.

Missionaries sought to do this through the introduction of tightly regulated clock time typically in the form of bells and strictly regimented natural time in the form of sundials.

Missions employed sundials as a means of temporal control. Aware that Native Americans functioned according to the sun, missionaries grafted such consciousness onto mission life. The sun still dictated the completion of tasks much as it had before contact but missionaries dictated what tasks were to be accomplished. Missionaries' dedication to precision manifested itself in their use of sundials. In order to ensure accuracy, artisans crafted each sundial for the specific latitude of the mission. At California's Mission San Carlos Borromeo, the highly specialized sundial clearly married the position of the sun to specific tasks. "All around the" sundial's face,

carved in stone, were objects and figures indicating, apparently the various duties to be performed by the neophytes at the hour marked by the shadow of the gnomon. For instance, there were carved figures of kneeling Indians calling attention to the hour of prayer; figures of Indians partaking of food – an immense kettle in which it had been cooked indicating the time for breakfast, dinner, and supper. Then there were shown sheep tended by Sheppard's, workers in shops and fields, reminding the Indians that it was time for work when the shadow touched the spot. All around the dial's face, the activities of the day were so noted that all could understand (Webb, 1952: 38).

In addition to instilling Natives with a sense of European time, sundials also regulated the mission clocks. Most missionaries possessed mechanical timepieces as Jean de Brébeuf did in 1635. In 1774, for example, mission records revealed that Father Junipero Serra used an alarm clock at California's Mission San Carlos to regulate time (Webb, 1952, 36). At Mission Santa Clara, "a wood clock with little bell, or chimes," marked "the hours and quarter hours" (Webb, 1952, 38). These clock times, set by the missions' sundials, then transferred the time to the larger mission community through the ringing of bells.

“No single mechanism,” notes scholar Richard Steven Street, “was more important in setting the schedule of labor, dividing the day into discernible units, and reminding” the Indians “who was in charge than the mission bells” (Street, 2005: 40). Converts “worked, played, prayed, ate, slept, married, and were even born and buried according to a system of bells” (Street, 2005: 40). These bells, in turn, challenged the authority of nature to organize Native American time. Whereas Indians once rose at sunrise and worked according to, what missionaries saw as, vague natural cues, the bells, set by the precision of the sundial and articulated through the clock, rigidly scheduled time.

Jesuit missionary Jean de Brébeuf recalled that during his 1635 mission among the Huron that the Indians initially had no understanding of mechanical time and arrived at all hours. Over time, however, the Huron learned that when the clock “sounded four o’clock of the afternoon, during the winter” that the mission was closing. They recognized the time and “immediately . . . arose, and went out.” Similarly, the Huron learned that at noon, sound indicated that a meal was ready. The Huron “never fail[ed],” de Brébeuf recalled, “to come at that hour” (de Brébeuf, 2003: 115).

For the Huron, a temporal miscalculation resulted in hunger. More severe punishments awaited California mission Indians. Like Jean de Brébeuf, the Franciscans used clocks to control bells. In the eighteenth century, Franciscans ordered the Indians’ day so that they

first heard the voice of God just before sunrise, when the prayer bell woke them for mass. They continued hearing prayer bells as they trudge through the darkness to attend devotion, and again sometimes at the conclusion of services. At the sound of work bells around 9 A.M., Indians assembled in the quadrangle or some other previously designated point, picked up their tools, received instructions and marched off to start the day’s labor. They remained at their posts

until a bell tolled out a lunch break around 11 A.M. Following a siesta, work bells sent them back to the fields at 2 P.M. (2 P.M in winter) and summoned them for evening prayers at 5 P.M. An hour later, the prayer bell rang them to supper. At 8 P.M. the Poor Souls' Bells announced curfew and finally, at 9 P.M., one of the esquilas commanded the Indians to retire to quarters. Except for Sunday, when field labor ceased and the work bells were not rung, the sequence never changed (Street, 2005: 40, 41).

Nor had it changed by the nineteenth century. Missionaries rang the Santa Cruz mission bell, for example, "[a]t eleven a.m. [every morning] to call [the Indians] together" for dinner. "At the end of the hour the bell was rung again and all went to work until" (Harrison, 1892: 47) the work bell indicated the end of labor. Missions served to instill time in their charges through sound.

Not all Indians co-operated with the demands issued by mission bells. Some refused to abandon their older time schedules and responded to the same time cues as they always had. Indians on California's coast frequently left their missions in the late spring and "congregated by the seashore to catch sardines and gather shellfish or dispersed to the hills to collect grasses, acorns, and other wild seeds" (Hackel, 2005: 299) and returned to the missions, as they previously did to their own settlements, in early fall. Indians at Mission San Gabriel, likewise, favored older temporal cues over the clang of the mission's bells. "Sometimes," complained the missionaries,

the lure of the wilds, a sort of spring fever, would seize [the Indians]; at other times wild berries were ripe, or the hunting season was on, when nothing would detain the young fellows; in most case the pent up animal propensity, which they could not gratify at the Mission, would make them leave (Polley, 1963: 352).

Missionaries misunderstood Native impulses. What missionaries viewed as Natives' abandoning the regulation of the missions was, in reality, Natives privileging and adhering to older temporal signals dictated by nature. Native Americans did not lack a sense of time, as missionaries argued, but rather selected which temporal cues to follow.

When older indigenous temporalities, based on task orientation and Native time cues, trumped clock-regulated mission bells, Indians paid a steep price. Missionaries enforced the authority of the clock and controlled their labor force by systematically employing brutal violence as a deterrent to disobedience. In California missions, "infractions against the work schedule" often resulted in "a variety of coercive measures, including solitary confinement, whippings, stock, and leg chains" (Lightfoot, 2006: 60). When mission Indians opted for unauthorized rest periods following the completion of a task, missionaries severely whipped them for violating the ticks of clock. Tardiness to Mass also met with violence. In 1829 at the San Luis Rey Mission, visitor Alfred Robinson noted that the alcales drove the laggard Natives "under the whip's lash . . . to the very doors of the sanctuary" (Robinson, 1953: 14). For other mission Indians resistance took the form of unauthorized leaves from the missions. Some escaped back into the interior of California. Luck however, eluded others. Those captured faced punishment for leaving the mission, and thus the authority of mission bells. Once captured and marched back, missionaries gathered the Indians to witness the punishments. Russian Vasali Turkanoff noted that offending Indians

were all bound with rawhide ropes, and some were bleeding from wounds, and some children were tied to their mothers . . . Some of the runaway men were tied to sticks and beaten with straps. One chief was taken out to the open field and a young calf which had just died was skinned and the chief was sewed into the skin while it was yet warm. He was kept tied to a stake all day, but he died soon and they kept his corpse tied up (Turkanoff, 1953: 14).

In too many cases, death resulted from resistance to European imposed temporal systems.

Some Indians thoroughly co-opted the authority of the clock with the approval of missionaries yet in other cases missionaries reacted to the same co-option with fear. On March 8, 1876, missionaries Father Philip Rappagliosi and Father Imoda traveled among

the Blackfeet and Pend d'Oreilles of the Rocky Mountain region to perform baptisms. The missionaries discovered that the Pend d'Oreilles "brought a little bell from the mission . . . [i]n order to bring a signal to alert the Indians" (Rappagliosi, 2003: 69) that it was time for baptismal. Because these Natives had tied the ringing of the bell to the scheduling of religious events, they followed the authority of the bell and appeared, much to the delight of Rappagliosi and Imoda, at the appropriate time for their slated baptisms. During Pontiac's rebellion in 1763, the new regularity that mission bells introduced to Indian life breed fear amongst the white population. The missionaries inside of Fort Joseph, Michigan, forbade the ringing of mission bells. They feared that Pontiac and his men would use the bells to co-ordinate their attacks as the bells indicated the hours. The bells remained silent and Pontiac did not use the clock-regulated chiming of the mission bells to co-ordinate his attacks (Journal, 1793). Although the missionaries' fears remained unfounded, the existence of those fears are telling and serve as a strong indicator of the inculcation of clock time as articulated through mission bells in the surrounding Indian population. Missionaries' responses to Indian clock inculcation varied as did the ways in which Native peoples inculcated and used clock time as articulated through bells.

With few exceptions, the missionary zeal to convert the Indians, in part through the inculcation of clock time, continued with the founding of schools. All schools dedicated to Indian education shared the same goal: namely, to strip Indians of their traditional ways and understandings and replace such things with European and American ways and understandings. In this context, school officials systematically employed the clock as a weapon of deculturalization and assimilation. Educators

believed that the inculcation of clock time was the route from savagery to civilization due to clock times close association "with such positive virtues as work, money, and progress" (Adams, 1979:348). In schools, deIndianization occurred through the ticks of the clock or the sound of clock regulated bells, whistles, and horns. As in missions, punishments greeted those who violated such institutional time.

The use of sound to mark time organized Indian schools for most Indians did not initially possess personal timepieces. "One of the first difficulties," John Homer Seger encountered in his attempt to teach the Cheyenne and the Arapahoe, "was getting the children to come at the right hour. They were not used either to going to bed or getting up at any specified time, and as they had no timepiece punctuality was out of the question" (Seger, 1956: 7). Seger solved this problem in the same way that missionaries alerted converts to the start of services. Seger used his watch to track time but articulated the time through sound; in this case, a cow's horn alerted students to the start of classes. Luther Standing Bear recalled that at the Carlisle Industrial Indian School in 1879, the students "knew by the sun" when it "was near dinner time" so they would "play close to the dining room, until the woman in charge came out with the big bell in her hand to announce the meal was ready . . . After a while they hung a big bell on a walnut tree near the office. This was to be rung for school hours and meals" (Bear, 1928: 139) in order to replace sun time with sound articulating mechanical time in Indian consciousness.

The marriage between clock time and sound organized schools as clock-regulated bells and whistles scheduled the school day. For most Natives, the sound of clock-regulated bells and whistles negatively altered their soundscapes. They found the sounds jarring and foreign. Zitkala-Sa complained of the "loud metallic voice" of the bells in

her "sensitive ears" on her first day of school (Zitkala-Sa, 1900: 186). At the Shoshone Episcopal Mission School, bells startled new female students. "Listen," one wrote "what is that loud, ringing noise" (Markley, 1997: 76). Chaos ensued as the girls scrambled back and forth trying to out run the sound. Lakota Mary Crow Dog no doubt spoke for many when she complained of "the sterile, cold atmosphere," of her school, the "unfamiliar routine, language problems, and above all the . . . damn clock - white man's time as opposed to Indian time, which is natural time. Like eating when you are hungry and sleeping when you are tired, not when that damn clock says you must" (Dog, 1990: 29). Despite Crow Dog's dream of a clock free world, clock-regulated bells tightly organized the school day by slicing time into regimented sections.

Students recognized the lesson. Navajo Frank Mitchell recalled that at his school, "[t]hey rang a big bell to tell us the time of day. We learned what the bell meant" (Mitchell, 1974: 63) and followed accordingly. Helen Sekaquaptewa, who attended the Phoenix Indian School, echoed Mitchell's sentiment, "[w]e arose to a bell and had a given time for making our beds, cleaning our rooms, and being ready for breakfast. Everything was done on schedule and there was no time for idleness" (Sekaquaptewa, 1969: 124-138). The 1903 schedule at the Navajo Boarding School at Fort Defiance, Arizona certainly reflected the increasingly tyrannical authority of clock-regulated bells and whistles typical of nineteenth and twentieth century Indian schools. The school functioned on a Monday to Saturday schedule, with Sunday reserved for clock-regulated worship. During the school week, clock-regulated bells and whistles called out 23 times dictating how Indian students spent their time. (Mitchell, 1978, 74). Such was also the case at the Round Valley Agency Day School in California from 1914 to 1917. There the

clock rigidly sliced the day into 17 task oriented sections and with it ordered student's time (Bureau of Indian Affairs).

Those students who resisted the command of institutional time faced strict discipline. Zitkala-Sa recalled that "[e]very time the bell rang [at her school,] it meant we had to get in line, or go to bed, or get up and get ready for breakfast, or dinner, or supper." When Zitkala-Sa altered the clock-scheduled meal time by sitting down at the first bell, she received disapproving stares (Zitkala-sa, 1900: 186). Rarely did such mild discipline result. "[P]addlings, standing on tip-toe with arms outstretched, or walking with a ball and chain" (Coleman, 1993: 86) often greeted Indian resistance to clock time. School officials often employed more violent methods to enforce the authority of the clock. In 1891, a teacher at a Kiowa school in Anadarko, Oklahoma noticed two of her students failed to arrive to class on time. Further inspection revealed they abandoned the authority of the clock and ran away. Officials returned the students to school but whipped them so savagely "that they ran away again only to perish in a winter storm" (Hagan, 100: 196). In 1928, a student at the Chilocco School named Barbara also considered running away from school. Instead of violating the clock by abandoning it, she secretly co-opted its meaning in a covert act of resistance. The clock, whose ticks had once been an aural reminder of her imprisonment, became a reminder of her impending freedom. Barbara recalled, "I was so homesick that there was a big clock on the wall, and I was looking at this clock and I'd say, how many minutes in an hour? And how many hours in a day? And how many days in a month? And how many months before I get to go home" (Lomawaima, 1994: 41)? Barbara resisted the meaning given to the clock by the school by infusing it with her own meaning.

While students actively resisted the meaning and direction of institutional time, the authority of clock-regulated bells and whistles remained absolute within the walls of Indian schools and impenetrable to acts of personal resistance. Such did not hold true outside of school grounds. Older Indian temporalities, intimately bound to the cycles of nature, forced school officials to adjust institutional times. Frank Mitchell noted that school offices adjusted the beginning of the school to accommodate the seasons and the accompanying Indian agricultural labor (Mitchell, 1978, 79). Consequently, in winter the 8:30 a.m. bell indicated taps while in spring and fall administrators adjusted the clock to indicate taps at 9 a.m. as demanded by the agricultural labor of Indian students (Mitchell, 1978, 79). In addition to adjusting the clocks, “[a]gricultural rhythms of harvest and the cultural rhythms of reservation fairs” (Riney, 1999: 137) forced administrators to push back the beginning of the semester at the Phoenix Indian School or face empty classrooms. Simply put, Indian students functioned in multiple times: sidereal times as proscribed by nature and clock and calendrical times as dictated by the schools. In this particular case, Indians students clung to the demands of natural time and forced institutional time to accommodate it making time simultaneously multiple, cyclical, and linear.

For some Indians, schools and missions forced clock time’s inculcation. For other Natives, inculcation occurred just as historian Mark M. Smith suggested, namely through participation in a capitalist system in the absence of free-wage labor. For slave holding Indians and Indian slaves, the capitalist nature of slavery facilitated clock time’s inclusion with older, multiple understandings of time. Clock time joined natural times, religious times, and personal times in organizing the lives of slaveholding Indians and

Indian slaves. As on southern plantations, clock-regulated bells and horns set by the master's timepiece called slaves to the fields on Native American plantations. Cherokee Johnson Thompson recalled that his "master had a bell to ring every morning at four o'clock for the folks to turn out," (Rawick, 1970, vol 13, 121) while Morris Shepard recalled that Cherokee Joe Sheppard required his slaves to be "[u]p at five o'clock" by the plantation bell (Rawick, 1970, vol 13, 286). In addition to scheduling the parameters of the work day, clock-regulated bells and horns scheduled meals. When asked about her slave experience during an interview in the 1930s, Lucinda Vann remembered that on the plantation "[t]here was a big dinner bell in the yard. When mealtime comes, someone ring the bell and all the slaves know it's time to eat and stop their work" (Rawick, 1970 vol 13: 346). The bell served a similar function on Isaac Love's plantation. His slave, Matilda Poe, stated, "when de bell rang dey was ready to eat" (Rawick, 1970 vol 13: 243).

While clock time scheduled the workweek and backed by the whip encouraged punctuality and time-discipline, God's time regulated the Sabbath. In most cases, slaves and masters suspended labor and turned their attention to worshipping God. As with southern plantations, the cycles of nature dictated the type of work that could be done as well as the timing, which often resulted in alterations to the clock-regulated schedule of plantation life. During harvest time, for example, slaves worked beyond their normal clock-defined hours and employed the task system in order to ensure the timely completion of the harvest. James Boyd recalled that "[u]s work all week and sometimes Sunday, iffen de crops in a rush" (Rawick, 1970, vol 16: 117). Native American masters

and slaves inculcated clock time in ways startlingly similar to the ways in which African Americans and white southerners learned to use the clock.

Some Native Americans abandoned the clock once they left missions, schools, or plantations and some Indians did find clock time, as some slaves did, "mainly irrelevant, if not antithetical, to their world view" (Smith, 1996: 1467). Others however, embraced clock time and added it to their traditional understandings of time. Juanita, a Cherokee student at the Chilocco Indian School no doubt spoke for many when she recalled

[t]here were schedules all *over* the place. You had to have a schedule or you never would know where you belonged. It was very hard when I left there because there were no schedules, there were no bells ringing and whistles blowing, I didn't know what to do . . . That was one of the big complaints that I heard from kids who left Chilocco, especially if they spent a lot of time there (Quoted in Lomawaima, 1994, 28).

Juanita's distress over the irrelevance of clock time in her home community clearly indicated that she had inculcated a sense of clock time while at school. The Superintendent of a Sioux reservation, an Indian himself, also experienced the disconnect between his sense of clock time and the sense of time that the Sioux possessed. "What would you think of people," he asked

who had no word for time? My people have no word for "late" or for "waiting," for that matter. They don't know what it is to wait or to be late. I decide that until they could tell time and knew what time was they could never adjust themselves to white culture. So I set about to teach them time. There wasn't a clock that was running in any of the reservation classrooms. So I first bought some decent clocks. Then I made the school buses start on time, and if an Indian was two minutes late, that was just too bad. The bus started at eight forty-two and he had to be there (Hall, 1959, 25).

The concern elicited by Juanita and the Superintendence over the absence of clock time revealed that some Natives maintained their commitment to clock time while others rejected it outright.

The lack of clock time amongst the Hopi concerned Poligaysi

Quyawayma. She realized

[f]or centuries [clock] time had been of no importance to the [Hopi]. The sun rose, the sun set. The Indian worked or hunted, danced or played, while there was light; when darkness came, he slept. No clocks had ticked in the rock homes of [the Hopi]. They lacked the white man's conception of time. There were changes of the moon, changes of the seasons; but no one counted the hours. Now the Hopi must learn to respect the busy clock and be controlled by the circuiting hands. Not to conform was to be thrown off balance. The old days were gone forever. One must face the new (Quawayma, 1999, 176).

By the turn of the twentieth century, photographs suggest that some Native Americans embraced the new days even if whites refused to acknowledge it. In 1911, Edward Curtis photographed Little Plume and Yellow Kidney in their Montana lodge surrounded by their belongings. Originally, their belongings included a pipe, tobacco board, feathers, ropes, medicine bundle, and an alarm clock. When the negative went to print, however, Curtis erased the alarm clock from the photograph he titled "In a Piegan Lodge." The omission was deliberate. The clock signaled to Curtis, and whites of his era, a modernity, an independence, and a sophistication incompatible with the assumed savageness of Native Americans.

Despite Curtis' attempt to erase modern clock time from Indian constituencies, Natives understood and used clock time. It was, however, merely one time in a world governed by multiple times. The Utes, for example, traditionally held a Bear Dance to celebrate their emergence from winter. This was generally held in early spring. The *Wyoming State Tribune* reveals the collision of Indian time, clock time, and European calendrical time. Held on May 26, 1950 at 8 o'clock p.m, the Bear Dance revealed Native Americans incorporation of the clock into old sidereal understandings of time (Tribune, 1950).

Clock-consciousness came to indigenous peoples at various times, in various places, and in various ways contingent on interactions between Natives, Europeans, and Americans in institutions like missions, schools, and the capitalist plantation. Consequently, Indians were simultaneously clock-conscious and ignorant of the clock and thus simultaneously modern and pre-modern at the turn of the twentieth century. The clock did not replace older temporal understandings but merely came to be one of many ways in which indigenous peoples understood time. Time remained, despite the best efforts of assimilationists, simultaneously linear, multiple, cyclical, natural, and finally mechanical.