



CODICES, EDUCATION AND EPISTEMOLOGICAL VIOLENCE: THE CASE OF MEXICAN HERBALISM

by ALBERTO ARENAS *

When the codices return home

In 2014, after nearly 200 years of absence, the Chimalpahin Codex, one of the founding documents of Mexican historiography, was returned to Mexico. The document was returned thanks to the intervention of the National Institute of Anthropology and History (INAH) of Mexico, which decided to buy it at Christie's in London before it was auctioned. INAH convinced Christie's to sell it to the Mexican government in a private purchase, and thus allowed the codex to once again become part of the cultural heritage of Mexico (INAH, 2014).

The codex, written in Spanish and Nahuatl, is one of the oldest and most complete texts to narrate the history and customs of pre-Hispanic Mexico. The codex was written in the seventeenth century (the exact number of years of preparation is unknown) by two of the Viceroyalty of New Spain's most representative indigenous historians, Domingo Chimalpahin and Fernando de Alva Ixtlilxochitl. The Codex tells the story of indigenous communities in central Mexico from the creation of the world until the arrival of the Spaniards, including customs, genealogies, calendars, signs of the zodiac, and the history of the rulers of Tenochtitlan and Tlatelolco (INAH, 2015).

Mexico lost the Chimalpahin Codex in 1827, when one of the founders of liberalism in Mexico, José María Luis Mora, exchanged it for Protestant Bibles with James Thomson of the British and Foreign Bible Society (now known as the Bible Society), to begin a national literacy campaign.¹ At that time, Mora was the main Librarian of the College of San Ildefonso and one of the most important intellectuals of Mexico. One question you might ask is: why Mora, who surely knew about the inestimable value of the Codex, allowed the document to leave Mexican territory? A kind interpretation of the facts suggests that because Mexico was still experiencing a turbulent and chaotic socio-political situation given that it was less than a decade old as an independent country.

However, a more realistic reading of Mora's work and achievements showed that Mora represented the best and

* University of Arizona, United States.

worst of intellectual liberalism of the time. On the positive side, Mora called for the development of individual freedoms and the establishment of a rule of law where all men were equal before the law. He also supported the separation of church and state and the secularization of education, and he rejected the monarchy's absolutism and the privileges afforded to the clergy and nobility (Magdaleno, 1935). On the negative side, Mora was die-hard nationalist who believed that indigenous peoples should be subject to the designs of the white man (Hale, 1999). Mora, like other liberals of the period, manifested his contempt for Mexico's indigenous past and considered that it was imperative for indigenous groups to relinquish their identity indigenous and adopt solely a supra-national Mexican mestizo identity.

In this article I present some historical facts that intertwined help explain the marginalization and exclusion of ancestral knowledge of great social, economic, environmental and cultural importance, using as a case study Mexican herbalism. I take as a point of departure Latin America's nineteenth century liberal thought, which helped to cement the spread of modern education as a fundamental right for the peoples of the continent but which was also highly racist in the way it ignored, shortchanged and despised indigenous peoples' histories, cosmologies, knowledges and skills that have taken centuries in the making.

Mexico was built against and above indigenous peoples and cultures

To understand the relationship between modern education and its contempt for, indifference and ignorance about knowledge indigenous, it is useful to go back to nineteenth-century liberalism. The real expansion and consolidation of public schools in Latin America took several decades to occur (until the mid-twentieth century), but its theoretical foundation is found in the efforts of nineteenth-century intellectuals and liberal politicians. These leaders considered themselves members of a Westernized, particularly European civilization that ought to be emulated. Although in most Latin American countries the population was predominantly rural, indigenous and peasant, and lived in relatively isolated and closed societies, that concentrated ancestral knowledge and extremely rich and varied worldviews, elites saw themselves as members of a modernist and beneficent force that sought to bring progress to what they considered were wild and backward peoples.

Through an egalitarian discourse, liberals like Mora saw themselves as highly progressive individuals who sought to protect the most marginalized in society, but in fact what they did was to impose a way of life that undermined indigenous cultures and in many cases brought indigenous groups to the brink of extinction.

Inevitably, these liberals considered themselves as eminently superior to peasants and indigenous groups. In fact, an intellectual like Mora justified the elimination of the category of "Indian" given that it had highly pejorative characteristics. At the dawn of the Mexican republic, Mora proposed that "outlawing the moniker of 'Indian' was justified because, in a vulgar sense, it was oprobrious to a large segment of our citizens" (Hale, 1999: 224). Mora felt that the proper classification in the new nation should only be rich and poor—not whites and Indians / mestizos. Through multiple institutions, including the education one, Mexican society could move towards the path of modernity and thus alleviate the poverty and "backwardness" of indigenous communities. So the delivery of the Chimalpahin Codex to England can be fully understood within a modern paradigm in which, in the best of cases, there was a disinterest and total ignorance towards the indigenous, and in the worst of cases indigenous genocides. As an indigenous scholar, Marcos Sandoval, once remarked: "Mexico was not made with us [the Triqui indigenous people of Oaxaca], but against us and above us" (in Ferrer and Bono, 1998: 248).

Other Latin American nations were also built with the cruel and systematic dispossession of indigenous *pueblos*. The best exponents of Latin American liberalism—such as Valentín Gómez Farias, also from Mexico; Andrés Bello of Venezuela; José Hilario López of Colombia; Juan Alderbi and Domingo Faustino Sarmiento of Argentina—they all disdained, some more, some less, indigenous cultures. Clearly, racism was a key element of this process. According to the racist ideology that permeated the nineteenth century, greedily accepted by many members of the Latin American cultural elite, indigenous peoples were considered racially inferior to the white descendants of Europeans. This view was spread even among the growing number of mestizos,

Among the Latin American intellectuals who called for the whitening of society—to allow for eventual progress—the Argentine President Sarmiento, considered at the time one of education's most important defenders, stood out for his racism. Two years after completing his presidential career, he published in the newspaper *El Nacional* the following (Sarmiento, 2007: 233):

Will we be able to exterminate the Indians? For the savages of America I feel an invincible repugnance which I cannot help. Those scoundrels are nothing but filthy Indians who I would hang up now if they were to reappear. Lautaro and Caupolicán [16th century indigenous leaders from Chile] were lousy Indians. Incapable of progress, its extermination is providential and useful, sublime and great. They should be exterminated without even forgiving the young ones, who instinctively hate the civilized man.

there is evidence showing that the codex was delivered by Mora to James Thomson, a Scottish distributor of Bibles in Latin America, working for the SBBC.

^{one} According to Martínez García (2014), José María Luis Mora did not exchange the codex for Protestant Bibles, but rather it was a simple gift from Mora to the British and Foreign Bible Society (SBBC). However, no concrete evidence exists to corroborate this version of events. Nonetheless,

Certainly not all intellectuals at the time expressed their views towards indigenous communities in such a violent, grotesque and cruel manner, but they all had in common the idea of "improving" the biological lineage of their peoples through a European and American white immigration. In this regard, Sarmiento wrote (2007: 408):

It is New England, North America that should serve as a model for Latin America if it really wants to keep up with the times, at the height of progress. No society can teach [Latin America] except North America ... I do not expect anything from Europe, which has nothing to do with our races. Something may come to us from the United States, where many of our institutions came from.

According to Sarmiento, America had the advantage of being a society that did not admit indigenous peoples as partners or as servants in the creation of the United States. For Sarmiento, that was the basis of its success because, unlike the colonization exercised by Spain, which has not left the Middle Ages when it colonized America, the US "did not absorb into its blood a prehistoric and servile race" (Sarmiento, 1977: 225) and that reality allowed for its material and social advancement.

Although in the above passages Sarmiento highlighted what he regarded as the superiority of the North American model over the European one, he was paradoxically one of the Argentinian leaders who opened the doors of his nation to European mass immigration. Its racist ideology suggested that the only way out for Latin American nations was to initiate a process of "whitening" of the population, as it was expected that European immigrants could bring technology, capital, skills and an entrepreneurial spirit and thus lead to subsequent progress (since the concept of "development" had not yet been coined) of these nations.

I devote these paragraphs to Sarmiento because in addition to being one of Latin America's most renowned nineteenth century politicians and intellectuals, his influence as an educator was such that, when the First Inter-American Conference on Education was organized in Panama in 1943, it declared September 11 as Pan-American's Teacher's Day, a tribute to Sarmiento who died on September 11, 1888. Today, most Latin American countries (except Argentina) no longer celebrate Teacher's Day on September 11 but his liberal legacy continues to a certain degree in its educational models.

Modern education's violence against ancestral knowledge

One aspect of the abovementioned liberal legacy was the repudiation and indifference to the vast indigenous historical knowledge, which was accumulated throughout the centuries and its content was found either in manuscripts as the Chimalpahin Codex or more obviously in the social and cultural practices extant among indigenous peoples of the Americas.

This systematic elimination is what the Portuguese sociologist Boaventura de Sousa Santos has called epistemicide or epistemological genocide. According to Santos (2014: 92): "unequal exchanges between cultures has always involved the death of the knowledge of the subordinate culture and may even lead to the death of the social group in question. In the most extreme of instances, as was the case with European expansion, epistemicide was one of the conditions of genocide".

What is the role of formal education in this scenario? It is precisely in the nineteenth century in Europe and North America, and later on in Latin America when schooling becomes massified and it starts to reach even the remotest corners of the new nation-states that are created in post-independence, at least in the case of Latin America. Nineteenth-century liberalism wanted to make into reality the prophetic phrase of the Moravian educator John Amos Comenius, considered the father of modern education, when he wrote in 1650 (in Dobinson, 1970: 55): "It is essential that we desire that even the most barbarian of peoples be enlightened and be freed from the darkness that is the lack of knowledge [or, lack of education] because they are still members of the human race."

These highly condescending ideas by Comenius took force in the Enlightenment of the eighteenth century, that period saw education as one of the most powerful forces to liberate the people from the yoke of the Church and the monarchy, so that by the nineteenth century modern education began to be massified, consisting of a triad between positivism-rationalism, neo-Greco-Roman classical education and the rising tide of nationalism. In the Mexican context, people like José María Luis Mora and Valentín Gómez Farias, liberal by conviction and children of the Enlightenment, helped put in place education reforms that eventually ended up establishing in Mexico a free, compulsory and secular public education.

The nineteenth century-positivist rationalism had a great influence on the study of herbal medicine in Mexico. The first edition of the Mexican Pharmacopoeia appeared in 1846 and the vast majority of the substances listed in this edition were of plant origin, and in 1888 Mexico's National Medical Institute was established, whose function was to collect and classify the medicinal flora of Mexico (Hersch Martinez, 2001). But still it was felt that the only authentic knowledge was scientific knowledge, and this knowledge could only result from a strict adherence to the scientific method. This positivism prevented ambiguity, uncertainty, subjectivity, the viewing of nature as a living being, all of which are fundamental aspects of a herbalism that is contextualized in particular worldviews and ecosystems. At the same time, this positivist approach encouraged anthropocentrism, which assumed that human communities were outside the natural world, so that a physical and epistemological separation between science and nature is established, and the natural environment becomes ranked as an alien external to its subjects, a space that must be conquered and exploited. And schools, especially at higher levels, insatiably collaborate with this alienation.

Herbalism as the wealth of marginalized peoples

To clearly show the alienation towards vernacular knowledge and to the natural world, herbalism offers a good example. Mexico ranks second worldwide in wealth of medicinal plants, with about 4 500 species of medicinal plants registered (Muñetón Pérez, 2009). Of those, only 11 percent have been studied in a pharmacological manner, i.e. validated in an experimental way. This low percentage shows that despite the enormous wealth of Mexico's herbalism—which along with China, Colombia and India, it possesses the world's richest medicinal plants—the knowledge that modern pharmacology has of these plants is considered quite limited.

In the same way that we started this article by talking about the importance of the Chimalpahin Codex, this section includes the Codex de la Cruz-Badiano, the first text of indigenous medicinal herbs of the Americas and that preceded the Chimalpahin Codex by several decades. The text, whose formal name in Latin is *Libellus of medicinalibus indorum herbis* ("Book on medicinal herbs of indigenous peoples"), was originally written in Nahuatl by Tlatelolco doctor Martín de la Cruz and translated into Latin by another indigenous, the Xochimilca Juan Badiano. This herbalist codex, who finished writing in 1552, cites 227 American plants with their medicinal uses and most plants are accompanied by a drawing of the highly developed plant (Cruz and Badiano, 1991; Viesca, 1995).

Just as the repatriation to Mexican territory of the Chimalpahin Codex was long in the making, so was the wait for the Codex de la Cruz-Badiano. The manuscript was sent to the Royal Library of Spain in the sixteenth century and it likely remained there until the seventeenth century. Then it was sent to Italy to the Cardinal Francesco Barberini's Library—hence, the Cruz-Badiano Codex is also known as the Codex Barberini—and in turn this library was absorbed at the beginning of the twentieth century by the Vatican Library. Thus, as the Codex Chimalpahin finally returned to Mexico in 2014, the Codex de la Cruz-Badiano returned to Mexico in 1990, and the two codices are preserved in the National Museum of Anthropology and History in Mexico City.

It is worth emphasizing that even though these two documents contain valuable information about the Mexican pre-Columbian past, and in the case of the Codex de la Cruz-Badiano a vein of large-scale information to learn more about the healing properties of plants in central Mexico, the significance of these documents transcends the world of archeology. However, its content and even less its application are relevant in the daily lives of Mexicans, and unless fundamental changes at different levels are made, including pedagogical work at schools and universities, this ignorance will remain.

In the case of the Codex de la Cruz-Badiano it should be noted that despite the richness of its content, it still represents only a small sample of the universe of

Mexican herbalism, that found in central Mexico in the sixteenth century (Ramos Viesca Viesca, 2012). But undoubtedly Mexican herbalism was and still is incredibly varied and rich. Mexico currently has 62 different indigenous ethno-linguistic groups, with a population of approximately 10 million people (CDI, 2006), and each group has its own herbalism based on native plants found in the ecosystems they inhabit.

Obviously more remarkable than the codices and collections of herbalism, it is more important that the general population regularly use local plants. According to the expert in Mexican ethnobotany, Erick Estrada Lugo, 90 percent of the Mexican population uses medicinal plants, and of that population, 45 percent uses exclusively medicinal plants for health and the other 45 percent combines plants with allopathic medicines (Muñetón Pérez, 2009). Despite this high percentage, it is important to point out three caveats: 1) the more urban and higher socio-economic status of the family, the lower use of herbalism on a daily basis; 2) a high percentage of medicinal plants used are not native to Mexico. Most people use plants that were brought from other continents, such as parsley, thyme, chamomile, rosemary, basil, marjoram, cloves, peppermint, eucalyptus and aloe vera. Among the native Mexican plants, the most widely used are gordolobo, arnica, capitaneja, annatto, nopal and copal (Taddei-Bringas et al., 1999; Santana Moreno, 2015); 3). Among people using plants therapeutically, a high percentage of the population does not consume them responsibly. According to Estrada Lugo (in Muñetón Pérez, 2009: 7):

I've noticed hundreds of times housewives who do not distinguish a concoction from an infusion; They do not know that herbs should not be boiled, do not know that the chamomile flowers are the only parts of the plant that should be used, and that it should only be prepared as an infusion. They also do not know that teas should not be saved as the tannins can become toxic to the liver, especially for children. Nor do they know that very common plants like epazote should not be given to children under 6 years because it can cause seizures.

Consequently, there are three urgent pedagogical tasks: the first is to expand the use of herbal medicine to all socio-economic levels and rural and urban sectors; the second is to expand the use of medicinal plants to include both native species and those from other continents; and third is to teach people to use plants as correctly and responsibly as possible.

Herbalism contradicts the tenets of modern education

We must begin by recognizing that the knowledge and practice of herbalism are negatively correlated with the number of years of schooling. That is, the longer a child goes to (modern) school, the lower is his or her knowledge of herbal medicine. In this regard, an important work was carried out by the anthropologist Laura Rival (2002), who surveyed two groups of indigenous Huaorani children of Ecuador, one group attended school while the other group did not. This study revealed that even though both groups of children could correctly identify the same number of local plants when shown pictures of those plants,

It is not the result of an isolated individual who heroically performs discoveries and uses nature at will regardless of how his or her actions affect the environment.

Having this in mind, modern education contains fundamental flaws that go against the oral transmission of vernacular and collective knowledge that is considered of low status. In the case of herbalism, it represents an inter-generational collaboration in which numerous in situ testing and errors committed eventually result in a detailed catalog of medicinal plants. Also, and this cannot be stated often enough, it is a relationship whereby nature is treated as a living being, often as a family member. By contrast, modern education favors knowledge generated in universities and laboratories, codified in books, transmitted and generated individually in classrooms in a decontextualized manner and separate from nature. Inevitably, this leads to the marginalization and neglect of ancestral knowledge and skills that are passed down from generation to generation through non-formal means.

Despite this reality, educators from different latitudes do try to include within their school setting different manifestations of 'otherness' related to herbalism to counter the negative aspects of modern education. These manifestations include ethnobotanical gardens within the academic campus; field trips to nature where professors, community members and students identify and collect medicinal plants and then prepare and administrate them; Interdisciplinary studies on herbalism, including socio-cultural, political and economic studies; chemical analysis of the various properties of different plants; interviews with community members, especially the elderly who tend to be the most knowledgeable of the therapeutic properties of plants; texts written by children and youth who narrate their experience with medicinal plants; and art works, like the magnificent paintings of medicinal plants contained in the Codex de la Cruz-Badiano (Arenas and Cairo, 2009).

I must admit that I am not convinced that even with these changes the modern school may be a suitable space to accept in a respectful and responsible manner minority epistemologies. The colonial baggage of the modern school is so strong that it tends to submerge and subvert alternative pedagogical approaches that go against modern epistemologies. Nonetheless, even if the modern school is not replaced with radical pedagogical alternatives, it is still possible to establish an epistemological pluralization through a 'Dialogue of Knowledges', as defended by Enrique Leff (2006), Mexican sociologist. According to Leff, the Dialogue of Knowledges seeks a renewal process in the world, a deconstruction of the foundations of Western civilization and of fallacies of economic globalization; it seeks a respectful encounter with 'otherness', with diversity and with difference; it seeks to flatten hierarchies and asymmetries of power; and it seeks to incorporate epistemologies that support social and environmental justice. It is a basically a political exercise whereby hegemonic and dominant knowledges are made humble and limited. The Dialogue of Knowledges takes as point of departure a more flexible conception of epistemologies that recognizes the condition of

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only the unschooled children could identify those plants in their natural environment. Also, none of the children who went to school knew how to prepare curare poison, while most of the unschooled children knew how to prepare it. And this example is not isolated. In Mexico, exposure to formal education—alongside changes in the livelihoods of indigenous and peasant groups, environmental degradation, and loss of native tongue—constitutes one of the greatest threats to the protection and recovery of ethnobotanical knowledge that is rooted in the earth as and specifically herbalism.

An analysis of the cultural meaning and form of transmission of herbalism by indigenous peoples and other marginalized groups, it becomes clear why there is such incompatibility between ancient knowledge and the modern school. Ethnobotanical knowledge arises from an interaction with nature has taken centuries to mature.

equivalence between science and other alternative forms of knowledge. What I am proposing is not just an acritical equivalence of knowledges, but instead a fundamentally two-way street that recognizes the importance of a traditional corpus that can, and should, invigorate and nourish epistemologically the knowledge of modern science, and vice versa.

And despite everything, herbalism remains vital

The epistemic violence that herbalism and other forms of knowledge considered by hegemonic groups of having low status must stop if we are to reverse the processes of social, cultural and environmental alienation so pervasive in modern societies. Among the many advantages of maintaining herbalism alive is the possibility of enhancing the role of Elders in society, because it is they who are the main holders of knowledge; it also brings together various generations, given that therapeutic knowledge is transmitted orally from grandparents to children to grandchildren; herbalism also gives great importance to non-commodified relations and products because the plants can be grown within each household or collected by natural means, allowing substantial savings for poor families; it also enables greater self-sufficiency since it is estimated that medicinal plants can help prevent and cure about 80 percent of the diseases affecting the population (Santana Moreno, 2015); herbalism also promotes mutual support and solidarity at the community level as it is part of the cultural wealth of marginalized communities; and finally, it helps to know, appreciate and protect the environment.

My ambivalence regarding the possibility of including respectfully the knowledge of the otherness within the school is tempered by attempts by educators in Mexico and elsewhere who seek to responsibly and critically relativize the epistemological hegemony exercised by the modern school. It is an attempt to subvert the power relations that the modern school employs to condemn to the margins and in some cases even to extinction alternative knowledges. Undoubtedly, herbalism, which has been perpetuated through the centuries in the social practices of indigenous groups, farmers and other communities rooted to the land, and also notably in documents such as the Codices of Chimalpahin and de la Cruz-Badiano, represents a fundamental aspect to support social and ecological sustainability.

And we must recognize the extraordinary resilience that a knowledge such as herbalism possesses, given that despite the historical marginalization to which it has been subject to by modern education; despite the racism and classism suffered by indigenous and rural populations; despite the coloniality that has undermined the vernacular knowledge built by individuals without schooling or college degrees such as healers, herbalists, *sobadores*, *hueseros* and midwives; and despite capitalism that disdains non-monetary relations that support the common good, the millenary knowledge of herbalism has endured to this day with a relative degree of vitality. **m**

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