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Indigenous Stylistic & Conceptual Innovation in the Uppsala Map of Mexico City (c. 1540)

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Abstract
The only known map of Mexico City painted with the collaboration of indigenous artists, the Mapa Uppsala (c. 1540) depicts the city and surrounding Valley of Mexico. This essay counters previous characterizations of the map's formal composition as one that has fully espoused European cartographic modes. This essay contextualizes the Mapa Uppsala within the extant corpus of pre-Hispanic and early colonial cartographies to demonstrate that a closer analysis of pictorial conventions and structures can shed light on how and why the artists might have consciously selected particular pictorial strategies.

Resumen
El único mapa conocido de la ciudad de México pintado con la colaboración de artistas indígenas, el Mapa Uppsala (c. 1540) representa la ciudad y el valle de México que lo rodea. Este ensayo contrarresta las caracterizaciones previas de la composición formal del mapa como una que ha adoptado modos cartográficos europeos. Este ensayo contextualiza el Mapa Uppsala dentro del corpus existente de cartografías indígenas para demostrar que un análisis más detallado de las convenciones y estructuras pictóricas puede arrojar luz sobre cómo y por qué los artistas pueden haber seleccionado conscientemente estrategias pictóricas particulares.

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Introduction

Named for the city in Sweden where it resides today, the Mapa Uppsala is the earliest known map (c. 1540) of Mexico City painted by indigenous artists after Spanish Conquest.1 The map reveals the urban plan of the city, the former capital of the Mexica Empire, its neighboring altepetl (community) of Tlatelolco, and their environs, covering the area between the city and its surrounding mountain ranges, an average 40 km in all directions.2 The map is oriented with west at the top, and a cartouche in the lower right-hand corner dedicates the map to the Holy Roman Emperor Charles V from his royal cosmographer Alonso de Santa Cruz. In one of the first publications regarding the map, Erik W. Dahlgren initially attributed the map to Santa Cruz.3 Manuel Toussaint first argued for its indigenous authorship, highlighting the fact that Santa Cruz had never set foot in New Spain and that the map includes almost 200 pre-Hispanic glyphs for native place names, among other indigenous pictorial conventions.4 It is not clear why the map was made, but the dedicatory cartouche makes known that it was intended for the Spanish Crown. The cartouche and ornamental frame prompted Donald Robertson to characterize the map as a “presentation piece... an artistic tour de force possibly to be considered almost as an item of propaganda... before the eyes of important powers in the Court of Spain, who might be useful as patrons.”5

The mapmakers fastidiously depicted the urban plan of Mexico-Tenochtitlan and its adjacent altepetl Tlatelolco, labeling key institutions that comprised the sociopolitical backbone of the Spanish viceregal capital. Thus, the map, soon after its rediscovery in the late eighteenth-century, proved to be a treasure trove of information for scholars interested in the city’s early colonial urban history.6 The plan is remarkable for its accuracy. Most recently, Edward Calnek has corroborated the layout of roads, canals, and buildings with the plan of the historic center of Mexico City as it exists today, and Susan Toby-Evans’ analysis of the tecpan (indigenous ruler houses) and their distribution shed light on the city’s urban development at the time of the map’s creation.7 However, the information presented outside of the urban plan has proved more enigmatic, and this is partially because the perspective and formal features of the surrounding landscape dramatically depart from that of the urban plan.

A complex planimetric network of roads, waterways, and canals extends from the urban plan and stretches across the valley. In the interstices of this roadmap, however, the artists created the impression of verdant landscape with washes of green pigment and conventionalized trees. The trees generally have triangular, scallop-edged foliage, and their crosshatched shading was most likely copied from woodcut prints found in imported European books. In some places, altepetl served as the heart of sociopolitical organization for the indigenous population. The word comes from the Nahual language, the predominant language spoken by the indigenous population in Central Mexico at the time of Spanish Conquest. James Lockhart, The Nahua After the Conquest: A Social and Cultural History of the Indians of Central Mexico, Sixteenth through Eighteenth Centuries (Stanford, Calif.: Stanford University Press, 1992), 14.

2 Manuel Toussaint et al, Planos de la ciudad de Mexico: siglos XVI y XVII, estudio historico, urbanistico y bibliografico (Mexico: Impreso en los talleres de la editorial “Cvltvra”, 1938), 142.
4 Manuel Toussaint et al, Planos de la ciudad de Mexico: siglos XVI y XVII, estudio historico, urbanistico y bibliografico (Mexico: Impreso en los talleres de la editorial “Cvltvra”, 1938), 142.
5 In pre-Hispanic Central Mexico, the altepetl conceptually referred to a group of people who identified with and largely controlled a specific geographic territory. The altepetl served as the heart of sociopolitical organization for the indigenous population. The word comes from the Nahual language, the predominant language spoken by the indigenous population in Central Mexico at the time of Spanish Conquest. James Lockhart, The Nahua After the Conquest: A Social and Cultural History of the Indians of Central Mexico, Sixteenth through Eighteenth Centuries (Stanford, Calif.: Stanford University Press, 1992), 14. 
6 This is particularly the case for Toussaint et al, Planos de la ciudad de Mexico, a collaborative work focusing on the urban history of Mexico City as pieced together through a compilation of its extant maps...
however, the artists specified plant life indigenous to the area such as maguey plants and nopal cacti. Conventionalized and naturalistic forms are integrated to convey a more intentional and specific representation of the local landscape. For example, in the upper left-hand corner of the map, grey and green brushstrokes are intermingled to indicate the rocky volcanic terrain of the Pedregal lava fields caused by a millennia-old eruption from the nearby Xitle volcano. In the lower left-hand corner, a volcano emits puffs of smoke, marking it as a representation of Popocatepetl, an iconic feature of the landscape that is still active today.

In terms of the map’s style, Donald Robertson noted the pronounced influence of European visual culture on the artists of the Mapa Uppsala.8 Miguel León-Portilla and Carmen Aguilera believed the naturalistic landscape to be entirely due to European influence and that European friars who worked with the artists likely had the idea for the map’s composition.9 The mapmakers also included depictions of almost two hundred, mostly indigenous figures engaged in a wide, diverse array of activities. Some of the human figures display the artists’ attempt to render convincing musculature and knowledge of the human form, a characteristic of European pictorial tradition. León-Portilla and Aguilera observed that these vignettes of daily life were reminiscent of sixteenth-century Dutch genre and “map-landscapes” (“mapa-paisajes”).10 Indeed, some of the architecture displays linear perspective, Greco-Roman columns, and medieval turrets. These European visual traits often led scholars to explain the map’s style in dichotomous terms (that is, how much the mapmakers adhered to either European vs. indigenous convention), ascribing what they perceived as the map’s dominant naturalism to European influence.

Sigvald Linné first posited that the artists of the Mapa Uppsala might have originated from the scriptorium of the Colegio de Santa Cruz (henceforth referred to as the Colegio), a monastic school of higher education for indigenous students, for two main reasons: 1) the Colegio is the largest urban plan in the urban plan, a trait consistent with other indigenous maps in which the artists’ community (typically the map’s site of production) is emphasized, and 2) the map’s style, which many have concurred is similar to other documents known to have come from the Colegio.11 This essay reconsiders these two features of the map—that is, its representation of space as well as the map’s overall style—and argues that a closer analysis of the map’s conventions, composition, and historic context reveals a much more nuanced exchange of cartographic cultures between indigenous and European actors across the surface of the map. It argues that the unique circumstances of the Colegio, as a hotbed of cultural exchange between indigenous and European actors, informed the singularity of the map’s composition within the extant corpus of sixteenth-century maps of Mexico-Tenochtitlan and Tlatelolco. This essay serves to complicate past assertions that the map represents a teleological culmination of European stylistic influence on indigenous artistic production and foreground the contributions of its indigenous authors to sixteenth-century cartographic culture.

Building on previous assertions that the artists hailed from the Colegio de Santa Cruz in Tlatelolco, this essay argues that, owing to their unique position as cultural mediators within early colonial society, the Mapa Uppsala artists innovated cartographic culture by incorporating distinctly indigenous spatial engagements with European pictorial illusionism. It argues for a shift in how we view the aesthetics of the Mapa Uppsala, that is, as the product of the artists’ specific cultural formation in a collaborative monastic setting between colonial officials and native artists, and not as emblematic of complete acculturation or

8 Robertson, Mexican Manuscript Painting of the Early Colonial Period, 159–63.
10 León Portilla, Mapa de Mexico Tenochtitlan y sus contornos hacia 1550, 31.
11 Linné first observes how the Uppsala illustrations look similar to those found in Sahagún’s Florentine Codex. Sigvald Linné, El Valle y La Ciudad de Mexico En 1550; Relacion Historica Fundada Sobre Un Mapa Geografico, Que Se Conserva En La Biblioteca de La Universidad de Uppsala, Suecia, Series: Statens Etnografiska Museum (Sweden), Statens Etnografiska museum, Publications, No. 9. Stockholm: [Esselte], 201; León-Portilla and Aguilera even wonder if Fray Bernardino de Sahagún, the compiler of the Florentine Codex, might have been responsible for the Mapa Uppsala. León Portilla and Aguilera, Mapa de Mexico Tenochtitlan y sus contornos hacia 1550 (Mexico, D.F.: Celanese Mexicana, 1986), 34.
assimilation to European pictorial tradition. This essay highlights the sociocultural complexity of the map's site of production and its makers as an explanation for its singular composition amid a scant corpus of sixteenth-century maps of Mexico City in the early colonial period.

Indigenous Mapmakers and Artists in Pre-Hispanic and Early Colonial Central Mexico

In Nahuatl—the most widely spoken language in central Mexico at the time of Spanish conquest—the painter-scribe who possessed the knowledge of manuscript art and production was known as the tlahcuiloh (pl. tlahcuilohque). In pre-Hispanic society, the tlahcuilohque acquired profound knowledge of creation mythology, genealogy, and community history so they could represent these values on paper according to strict iconographic convention. Colonial accounts describe the tlahcuiloh simultaneously as an artist, craftsman, painter, and draftsman.12

Although Spanish conquest and colonization majorly disrupted indigenous scribal culture, aspects of pre-Hispanic pictorial tradition survived well into the colonial period. This occurred especially at monastic schools established by the first mendicant missionaries for the inculcation and Christianization of the children of indigenous nobility. The first of these schools included San José de los Naturales (1527) in Tenochtitlan and, subsequently, the Colegio de Santa Cruz (1536) in Tlatelolco, two areas of prominence in the urban plan of the Mapa Uppsala.13

Franciscan friar Pedro de Gante, one of the first missionaries to arrive in New Spain, first established San José de los Naturales in 1527. The Franciscan faculty there endeavored not only to raise their indigenous pupils as Christians, but also to impart a traditional monastic education that included the instruction of reading, writing, and mechanical arts such as carpentry and painting. Their aim in teaching these skills was to raise a class of faithful indigenous converts skilled in the production of religious art for the monasteries and churches prolifically constructed in the wake of Conquest.

San José de los Naturales facilitated the training of blacksmiths, carpenters, masons, tailors, and cobblers in addition to a group of painters, sculptors, and jewelers.14 Fray Toribio de Benavente (more commonly known as Motolinía) wrote in his chronicle that these indigenous artists learned to illuminate, bind, and engrave, and he lauded the skills of the indigenous painters, goldbeaters, leather workers, gold and silversmiths, and embroiderers.15 The students' quick adaptation of new artistic forms and styles impressed their European instructors. Many of these young Nahua students came from the ranks of the indigenous elite and were quite possibly descendants of members of the tlahcuilohque. They adapted what they learned of European visual culture into their pre-Hispanic pictorial vocabulary. As such, these Christianized indigenous pupils were invaluable cultural mediators.

The friars' glowing approval of their students' artistic talents coincided with a similar appreciation for their intellectual capabilities. Bishop Fray Juan de Zumárraga stated that he found the native students, “with great ability, liveliness of wit, and a ready power of memory” and that they “had the capacity to study grammar and other subjects.”16 In 1534, New Spain's most

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12 “The scribe: writings, ink, [are] his special skills. [He is] a craftsman, an artist, a user of charcoal, a drawer with charcoal; a painter who dissolves colors, grinds pigment, uses colors. The good scribe is honest, circumspect, far-sighted, pensive; a judge of colors, an applier of the colors, who makes shadows, forms feet, face, hair. He paints, applies colors; makes shadows, draws gardens, paints flowers, creates works of art.” English translation by Barbara Mundy, “Pictography, Writing, and Mapping in the Valley of Mexico and the Beinecke Map,” in Painting a Map of Sixteenth-Century Mexico City: Land, Writing, and Native Rule, ed. Mary Ellen Miller et al. (New Haven, Conn: Beinecke Rare Book & Manuscript Library, Yale University: Distributed by Yale University Press, 2012), 31. The original Spanish text can be found in Book 10, Chapter 8 of The General History of the Things of New Spain: Florentine Codex, 2nd. ed., Sahagún, Bernardino de, Arthur J. O. Anderson, and Charles E. Dibble, Monographs of the School of American Research, no. 14 (Santa Fe, N.M.: Salt Lake City, Utah: School of American Research, University of Utah, 1970).
14 Ricard, The Spiritual Conquest of Mexico, 212–213.
15 Ibid, 214.
16 Luis Nicolau D’Olwer, Fray Bernardino de Sahagún 1499–1599 (Salt Lake City: University of Utah Press, 1997), 14.
influential religious leaders, Sebastián Ramírez de Fuenleal, Bishop of Santo Domingo and president of the Second Audiencia; Juan de Zumárraga, first Bishop of Mexico; and Antonio de Mendoza, the first viceroy, together ordered the foundation of the Colegio de Santa Cruz in nearby Tlatelolco. Through the foundation of the Colegio, they sought to create an institution of higher education for the continuing advancement of their accomplished pupils and partially in the hopes of creating a class of indigenous clergymen.

The Representation of Space in the Mapa Uppsala—A Statement of the Artists’ Identity

In 1948, Sigvald Linné noted that the monastic site that housed the Colegio de Santa Cruz occupies an area on the map disproportionately larger than any other depicted on the island. The monastic complex stands at the center of the altepetl of Tlatelolco on the right half of the island. This enlargement of the monastic site follows a well-established tradition in indigenous mapmaking wherein the author would enlarge the community from which he or she hailed to emphasize its importance, leading Linné to posit that the artists likely came from the Colegio de Santa Cruz. This section reconsiders the treatment of space first discussed by Linné and further analyzes the compositional layout of the two altepetl that comprised the island city. It argues that the map’s artists adhered to certain indigenous traditions of mapping space as a statement of the importance of Tlatelolco to their cultural identity.

The Mapa Uppsala notably departs from a contemporaneous depiction of Mexico-Tenochtitlan. The well-known image, first printed in 1524 in Nuremberg, Germany, accompanied Hernan Cortes’s letters to Charles V and became a kind of prototype for subsequent representations of the city printed in Europe for centuries. The Cortés plan shows the island city in the center of a schematized circular lake surrounded by a narrow strip of its mainland shores (Fig. 1). The Mexica ritual precinct is significantly enlarged, creating a fish-eye view of the city and its surroundings. The map shows the multiple causeways that connected the city to the mainland. A series of buildings radiate outwards from the ritual precinct in concentric circles, with their foundations oriented towards the center.

Although a European artist most likely produced the woodcut, Barbara Mundy has compellingly argued that its composition was based on native sources. The spatial composition is consistent with other indigenous representations of Tenochtitlan as a city in the center of either a circle or square. Mundy, for example, compared it to the depiction of the Spanish and their indigenous allies marching to Tenochtitlan in 1521 that appears in the Lienzo de Tlaxcala. In the lienzo, the conventionalized temple in the center of the composition stands as a metonymic symbol for the city of Tenochtitlan. A lake inscribed with spirals and geometric patterns surrounds it. Framing the island, its four corners are denoted as the surrounding cities of Tecpatepec, Xochimilco, Tlacopan, and Coyoacan. The physical description of Tenochtitlan surrounded by these four cities follows a symbolic prototype that reinforces a cosmological belief in Tenochtitlan as the center of the universe. This visual tradition relates to pre-Hispanic depictions of the cosmos as a symmetrical quadripartite design, as conveyed in cosmograms like that found in the Codex Fejérváry-Mayer (Fig. 2).

18 Linné, El Valle y La Ciudad de Mexico En 1550; Relacion Historica Fundada Sobre Un Mapa Geografico, Que Se Conserva En La Biblioteca de La Universidad de Uppsala, Suecia 280.
19 For more in-depth analyses of the composition, see Elizabeth Hill Boone, “This New World Now Revealed: Hernan Cortes and the Presentation of Mexico to Europe,” Word & Image 27, no. 1 (2011): 31–46; Barbara E. Mundy, “Mapping the Artistic Styles and Discourse
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20 Boone, “This New World Now Revealed,” 36.
22 Mundy, “Mapping the Aztec Capital,” 15.
Figure 1. Woodcut map and plan of Tenochtitlan, in Praeclara de Nova maris Oceani Hispania Narratio (Nuremberg, F. Peypus, 1524). Courtesy of Edward E. Ayer Collection, The Newberry Library.
Figure 2. Cosmogram from the Codex Fejervary-Mayer, c. 1400-1521. Courtesy of National Museums Liverpool.
The Fejérváry–Mayer image diagrams the shape and layout of the universe. In this image, the world’s four cardinal directions—(counterclockwise from top) east, north, west, and south—each occupy one branch of a Formée cross.\(^{23}\) In between the four main branches are intercardinal loops that collectively form a St. Andrew’s cross. Outlining the diagram is a band of calendrical time, punctuated by glyphs of the twenty-day signs. The count starts at the lower right corner of the eastern branch with the symbol of Cipactli, or Crocodile. In the Aztec calendar, the year count was subdivided into 20 groups of 13 days called trecenas. Each day corresponded with one of thirteen symbols, and the trecena took the name of the first day. Thus, Cipactli marks the first trecena as well as the first day of the year. Simple dots, or spacers,\(^{24}\) mark the subsequent days of the trecena, and this calendrical count runs along each branch of the cardinal and intercardinal branches and loops to mark the entire 260-day calendrical year.

The Fejérváry–Mayer cosmogram demonstrates how each of the four directions pertained to a thirteen-year period. Miguel León-Portilla has explained:

> Then, not only in each year, but also in each day, the influence of one of the four spatial directions predominated. Space and time, combining and interpenetrating, made possible the harmony among the gods (the four cosmic forces) and, consequently, the movement of the sun and the existence of life.\(^{25}\)

Within each arm of the cross is each cardinal direction’s tree, one of the four trees in each corner of the world that supported the heavens. Each of the four world trees rests upon a different base that corresponds to each direction’s cosmological associations. As Mundy demonstrated in her analysis of the Cortés plan, indigenous mapmakers translated the divine symmetry and idealized quadripartite design of the cosmogram to depictions of the perceived center of the Mexica universe: Tenochtitlan. Although all extant representations of the Mexica capital were made after Conquest, many of them share striking similarities in compositional layout and depiction of space.

The Cortés plan also recalls indigenous cartographic presentations by the way in which the most important feature is situated, not only at the center of the composition, but at a much larger scale comparative to its peripheral features.\(^{26}\) The Mexica ritual precinct occupies a large square space in the center of the island that dwarfs its surrounding edifices. As the composition extends outward, space collapses, so that cities that were leagues away from Tenochtitlan are brought closer to the central square and island.

Space is similarly manipulated in the Mapa Uppsala to emphasize the city center at the expense of its environs. The island of Tenochtitlan in the moment of its rendering would have been dwarfed by the expanse of its surrounding lakes; however, in the Mapa Uppsala, the lakes occupy a significantly smaller area in relation to the island. The artists likely enlarged the island to accommodate the detailed representation of the urban plan and the altepetl of Tlatelolco.\(^{27}\) Because the island city occupies so much space within the map, the distances between the island and its outlying settlements are significantly compressed, much like the representation of Tenochtitlan and its environs in the Cortés plan. Thus, Otumba, a settlement in the lower right-hand corner that is approximately 60 km away, is rendered at the same scale as the width of the island, approximately 5 km.

The Mapa Uppsala differs markedly from the Cortés plan, however, in that it displays the island city as

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24 Boone, Cycles of Time and Meaning in the Mexican Books of Fate, 114.


27 In the 1540s, however, the population of Mexico-Tenochtitlan experienced a prolonged period of drought, thus, it is possible that the representation of water indicates the mapmakers’ attempts to capture the hydrographic situation of the city. Given the detailed rendering of the urban plan, its constituent edifices, and their careful labeling, however, I do think it is arguable that the lakes’ volume was minimized in order to accommodate the detail of the urban plan.
two adjoining *altepetl* (Mexico-Tenochtitlan and Tlatelolco) and not just Mexico-Tenochtitlan alone. While the Cortés plan’s artist depicted Mexico-Tenochtitlan, with its ritual precinct, as the physical center of the island, the artists of the Mapa Uppsala placed Mexico-Tenochtitlan towards the left of the center to make room for the geographic entity of Tlatelolco to its right. The representation of the two *altepetl* occurs on two separate pieces of parchment that are notably joined between their borders at the center of the map.

The composition of Mexico-Tenochtitlan, at left, follows the template of the divinely organized city revealed in Cortés’ plan. The capital is situated at the center of a symmetrical quadripartite division of space; however, Tlatelolco, too, follows certain indigenous conventions for representing social space that have been outlined. The monastery of Santiago Tlatelolco occupies the central space of the *altepetl* of Tlatelolco. The monastery’s *doctrinas* (secondary churches for conversion of the indigenous population) surround it in a symmetrical circle, like the spokes of a wheel. These *doctrinas* are all rendered to the same scale, that is, as secondary to the monastic complex of Santiago Tlatelolco they encircle.

Although all the buildings in this *altepetl* are depicted in either linear perspective or elevation, the area encompassed by the Santiago Tlatelolco monastery complex is rendered in plan, a recurring feature of indigenous made maps. In indigenous made maps, *calli* (houses), *tecpans* (palaces), and *teocalli* (temples) were most often rendered in elevation or profile view. Sometimes, however, mapmakers would represent the exterior of a building in elevation and the interior planimetrically to frame a narrative scene occurring inside.

If the mapmakers did indeed hail from the monastery of Santiago Tlatelolco, an assertion with which I agree, then the spatial layout of the urban plan adheres to traditions of representing social space in indigenous maps. The mapmakers’ emphasis on Tlatelolco as almost half of the island, a depiction that does not exist in the Cortés plan, could also be a testament to the importance of Tlatelolco to the artists. But why is this significant to our understanding of indigenous cartography in the early colonial period?

In pre-Hispanic times, Tlatelolco operated as an *altepetl* independent from Tenochtitlan. But in 1473, Tlatelolco capitulated to the imperial forces of Tenochtitlan and became subsumed within the Mexica Empire. The conquest of the Mexica by the Spanish reignited pre-Hispanic indigenous factionalisms, and formerly subjugated elites suddenly found new opportunities within the colonial system to gain power and prestige. The establishment of the Colegio de Santa Cruz in Tlatelolco proper, for example, likely added to the *altepetl*’s prestige.

In the Mapa Uppsala, it is not only the Colegio de Santa Cruz that has been enlarged and emphasized, but Tlatelolco as an *altepetl* is rendered at the center of the map *alongside* Mexico-Tenochtitlan. The two neighboring *altepetl* are equal in size and compositional importance, a spatial representation that is unprecedented in contemporaneous representations of the post-Conquest island city. Thus, the spatial representation does not only indicate that the map was produced at the Colegio de Santa Cruz, but it also provides compelling visual evidence of the importance of Tlatelolco to these artists more broadly. This depiction could be read as the artists’ attempt to not only visually elevate the status of Tlatelolco, but also to portray it as equal to that of Mexico-Tenochtitlan. From this analysis, it is evident that indigenous cartographic traditions for mapping social space and community informed the composition of the urban plan, a paramount feature of the map. The differences between the spatial representations of Mexico City in the Mapa Uppsala versus the Cortés plan indicate that cartography developed differently depending on specific sociopolitical circumstances of the site of production in Central Mexico at this time.

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28 “Elevation” is an architectural term used to denote a depiction of the face of a building (in contrast to a representation of a building in linear perspective.)
Because the map was made in the *altepetl* of Tlatelolco, it reveals a view of the island city that is distinct from maps that may have been made within Mexico-Tenochtitlan proper.

**Style and Artistic Production at the Colegio de Santa Cruz in Tlatelolco**

The Mapa Uppsala is also considered to be a product of the Colegio because of its pronounced European stylistic influence, a trait shared by other documents produced there including the Badianus Herbal, a compendium of illustrations of native plant life and pharmacopoeia and the Florentine Codex, an illustrated encyclopedia of indigenous culture and customs. In this section, I revisit past considerations of the map’s landscape, a feature that is frequently cited as evidence of the map’s pronounced Europeanized style. This analysis reconsider the mapmaker’s representation of landscape, not as a teleological culmination of European influence, but rather as a product of the map’s site of production at the Colegio, an institution that became a productive site of artistic collaboration between Franciscan friars and indigenous converts. By comparing the Mapa Uppsala’s landscape to the Codex Xolotl, a contemporaneous map made by indigenous authors, I demonstrate that the composition and perspective in the Mapa Uppsala adhere more to indigenous cartographic tradition than has been traditionally acknowledged in past scholarship. This section also includes a brief discussion of the glyphs incorporated into the landscape of the Mapa Uppsala. In various places throughout the map, the artists incorporated logographic and pictographic glyphs for indigenous place names that doubled as figural representations of features of the landscape. These instances complicate previous assertions that the mapmakers adhered predominantly to European representational techniques. This section demonstrates how indigenous cartographers served a fundamental role in the formation of a burgeoning visual language, emanating from the Colegio de Santa Cruz, in maps and a wide range of pictorial documents more broadly.

The Codex Xolotl belongs to a category of indigenous pictorial documents known as cartographic histories. Authors of cartographic histories endeavored to pictorially describe migrations of people from sacred points of origin to final homelands whilst explaining how they settled, defined their territory, and created an independent *altepetl*. These maps were not expressly intended to represent only the geographical scope of a given area, as we might expect of terrestrial maps in the European tradition, but rather, these documents served as a vehicle for a community’s history. Thus, a temporal element figured into their representation just as much as a geographic one, and their main point was to represent a historical narrative.

Although Donald Robertson argued that, “[t]hese maps are diagrams rather than indications of the spatial relationships of nature,” some extant indigenous made maps display representations of topography and the geographic features of the natural environment. This topographic specificity allowed the mapmaker to convey the cartographic dimensions of migrations and events in the pictorial history. In these instances, mapmakers depicted geographic setting to ground the narrative, and topography served as a secondary detail to the narrative action, like in the Codex Xolotl.

A document comprising ten pages, the Codex Xolotl’s first eight pages each reveal a map of the central Valley of Mexico. Maps 1, 2, and 5-7 show the whole valley (with East at the top) including the eastern Sierra Nevada mountain range and the

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30 For a thorough analysis of the structure and content of extant cartographic histories of Central Mexico, see “Stories of Migration, Conquest, and Consolidation in the Central Valleys.” Boone, 162–96.


valley’s lake system. The topographical elements of the valley are placed in relatively accurate geographical relation to one another, and they anchor the events that transpire throughout the narrative. The artist’s depiction of the lake system below displays an interest in the general shape and contours of the interconnected five-lake system. The loop at the far left indicates Lake Xaltocan (with its toponym inscribed within the circular band of water), Lake Texcoco occupies the central area, and Lake Xochimilco and Chalco form the curve to the right.

The wide geographic scope of the cartographic histories and their depiction of topographic features make them an obvious comparison for the Mapa Uppsala. However, the Uppsala’s striking differences—mainly the mapmakers’ naturalistic representation of landscape—prompted Robertson to regard the Mapa Uppsala as a document that displayed the artists’ complete embrace of Western pictorial illusionism. In his analysis “Cartography and Landscape,” Robertson defined the Codex Xolotl’s maps as a “protolandscape painted as though seen from a height” and the Mapa Uppsala as a landscape. He wrote:

One feels immediately that the artist of the Mapa de Santa Cruz [the Mapa Uppsala] was a landscapist of genius. His ability to paint a continuity of space from foreground to background puts him in the class with the landscapists of Northern Europe in the sixteenth century. In the Mexican context we can consider the Mapa de Santa Cruz the latest stage of sequence running from the rectangular formalized maps of the Historia Tolteca-Chichimeca, the maps of Codex Xolotl where protolandscape begins in the central area of the composition, the Mapa de Teozacoalco where the landscape qualities of the central area are more marked than they are in Codex Xolotl, and the Mapa de Santa Cruz marking the point where true landscape appears.

Although the Mapa Uppsala displays a map of the valley’s networks anchored into a bucolic representation of landscape, the map does not exactly convey “a continuity of landscape from foreground to background,” as Robertson described. There is no clear foreground or background in the Mapa Uppsala’s representation of landscape. The buildings, churches, people, and even flora and fauna are rendered at exactly the same scale and from the same perspective from top to bottom (generally in elevation with the exception of a few buildings in linear perspective). The viewer does not have the impression of being any closer to the eastern edge of Lake Texcoco than to the western edge, as they technically should in true bird’s eye view, since the viewer is regarding the valley from the east.

The mapmakers’ view of the entire valley is still planimetric, similarly to the representation of landscape displayed on the Codex Xolotl. What causes the viewer to believe that the perspective is a bird’s eye view, is that the mapmakers have drawn and painted many of the valley’s surrounding features with carefully placed brushstrokes that give the appearance of volume and depth. For example, the artists alternated brown and gray brushstrokes to make the southern mountain range appear rocky. Human figures walk through the hilly terrain directly north of Tlatelolco, however, the range itself is constituted by a series of duplicated hill forms crowned with conventionalized shrubs. The continuity of the various mountain ranges across large areas gives the impression of an integrated landscape across the map’s surface. To reinforce this continuity, the artists filled blank spaces between roads and vignettes with washes of green pigment. The representation of mountain ranges and the limits of certain natural features (like the lakes) more closely approximate the artists’ treatment of

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34 A digital facsimile of the Codex Xolotl can be found in the Gallica Digital Library made available by the Bibliothèque Nationale de France
https://gallica.bnf.fr/ark:/12148/btv1b10303816n/f1.imag

35 It is worth noting, however, that although the geographic form symbolizes an actual mountain range located east of Texcoco, the mapmaker also embodied the mountains’ cosmological associations in its representation. On sheet 1 of the Codex Xolotl, the artist overlaid a diagonal checkerboard pattern inscribed with dots. This pattern recalls the reptilian skin of the crocodile associated with the earth in Mesoamerican cosmology. The artist’s use of this pattern reveals the indigenous artist’s intrinsic cosmological associations with his or her surrounding natural environment. Boone, Stories in Red and Black, 50.


37 Before Toussaint argued that the Mapa Uppsala’s artists must have been indigenous, the Mapa Uppsala was largely referred to as the Mapa de Santa Cruz, or the Santa Cruz Map. It is interesting to note that although Robertson acknowledged that the artists were likely indigenous, he continued to refer to the map as the Mapa de Santa Cruz. Ibid., 183–84.
geography in the Codex Xolotl maps. What differentiates them is style. The mapmakers of the Mapa Uppsala used painterly brushstrokes to create illusionistic texture.

The Codex Xolotl provides a useful point of comparison in my analysis of the representation of landscape in the Mapa Uppsala. If we discard the notion that the artists have surpassed those of the Codex Xolotl by more skillfully emulating European perspective and instead closely analyze the artists’ representation of the Valley, it is clear that the artists created the illusion of naturalism through style—using impressionistic brushstrokes—a technique uncharacteristic of pre-Hispanic artistic tradition. The perspective represented by the mapmakers in the Codex Xolotl and the Mapa Uppsala is largely the same. This is an important distinction for it allows us to consider how indigenous mapmaking traditions developed and diverged in the Valley of Mexico contemporaneously in the mid-sixteenth-century. The Codex Xolotl came from the Texcoco region east of Lake Texcoco, while the Mapa Uppsala was likely produced within the confines of the Colegio de Santa Cruz, an artistic and intellectual center with a specific pedagogy, library, and climate of cultural exchange and collaboration. In effect, the artists’ formation within the Colegio de Santa Cruz at Tlatelolco fostered a style quite distinct from other centers of indigenous artistic production whilst retaining aspects of pre-Hispanic pictorial tradition. This assertion can be further supported through a comparative analysis with images of landscape from the Florentine Codex.

As briefly mentioned, the Florentine Codex, also known as the Historia general de las cosas de la Nueva España (The General History of Things of New Spain), is a compendium of information regarding indigenous daily life, customs, and knowledge produced partially at the Colegio de Santa Cruz by Fray Bernardino de Sahagún and a team of indigenous collaborators. In 1557, elected Provincial of the Franciscan Order Fray Francisco de Toral ordered Sahagún to create a compendium of indigenous culture for the instruction of the missionaries, ultimately, to aid in the task of conversion. In response, Sahagún created the Florentine Codex in stages over a series of decades. He and his team of native collaborators first interviewed community elders and informants in the village of Tepeapulco who answered their questions by drawing pictures. Then, his assistants recorded the elders’ interpretations of these pictures and transcribed them in Nahuatl and Spanish. The final copy of the text and images resulted in what we know of today as the Florentine Codex, and its artists transcribed its text and created its illustrations over many years ranging from 1566 to 1585. Illustrations from the Florentine Codex make a fruitful point of comparison because they exhibit stylistic continuities with the Mapa Uppsala.

Book 11 of the Florentine Codex entitled “Earthly Things,” which Robertson dates to an approximate range of 1566 – 1577, consists of text and images regarding the natural environment and daily life of Nahua inhabitants. Included in the volume are descriptions of the fishermen of Lake Texcoco, their pictorial depiction strikingly like the scenes of fisherman in the Mapa Uppsala. Another image shows a couple of farmers, tilling the earth and harvesting maguey (Fig. 3). The figure in the foreground of figure 4 wears a tumpline that holds his bundle in place. These figures are staggered along a series of zigzagging planes that recedes into space, creating the impression of a vanishing point; however, the figure in the background appears slightly larger, revealing the artist’s struggle with the concept of linear perspective. If the second figure were standing in the background, as implied by the illusionistic receding space, then he should be smaller than the person in the foreground. The artists of the Mapa Uppsala represented the relationship between landscape and human figures similarly. All of the human figures are roughly the same height, regardless of their position in the map.

38 Ibid., 173.
39 Ibid.
40 Linné first pointed out the stylistic similarities between the Florentine Codex and the Mapa Uppsala. Linné, El Valle y La Ciudad de Mexico En 1550, 201.
Towards the end of Sahagún’s Book 11, the artists depicted scenes of inhabitants in a natural environment with illusionistic depth (Fig. 4). In these scenes, the figures are miniscule, scaled down in size to appear proportional with the mountains in the distant background. The vignettes of human activity and the general impression of landscape in the Mapa Uppsala bears strong visual resemblance to the Florentine Codex, a document whose illustrations were at least partially based on printed and illuminated manuscript images.41

There are many examples in the Florentine Codex where the representation of landscape parallels that of the Mapa Uppsala. In much of the Florentine Codex imagery, scenes set outside are indicated by washes of pigment that give the impression of flat land and rolling hills. In these scenes, the depiction of landscape anchors the narrative in the foreground. In Book 9, for example, many of the scenes occur on greenish brown earth with rolling hills painted in the distance. The artists do not seem to indicate a specific setting, but rather a generic landscape. In the Mapa Uppsala, although there are instances where the depiction of landscape is site-specific (such as, the depiction of the volcano Popocatépetl in the lower left corner), most of the hills and broad washes of green color appear to be decorative gestures of landscape that anchor the vignettes of human activity and create the illusion of the Valley of Mexico.

Both the artists of the Florentine Codex and the Mapa Uppsala demonstrate an interest in depicting a generalized landscape created through strokes of vibrant paint. In both documents, the landscape serves to anchor depictions of human activity. Formally, the representation of landscape between the two documents is similar in that the artist represented either a series of zigzagging planes or undulating hills to give the general impression of the natural environment. Stylistically, both documents reveal broad washes of pigment and impressionistic strokes. In addition, these artists used shading, contouring, and cross-hatching to indicate depth and volume.

The formal and stylistic similarities between the Mapa Uppsala and the Florentine Codex indicate that the map was most likely made under similar auspices, that is, with a collaborative team of multiple indigenous artists and Franciscan supervisors. Moreover, the miniaturization of the human figures and the artists’ treatment of landscape in the Mapa Uppsala seems analogous with the visual imagery of the Florentine Codex produced at the Colegio years later. This analysis of the mapmakers’ treatment of landscape and depiction of human figures illuminates the map’s divergence from indigenous cartographic histories and its visual connections to monastic artistic production.

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41 Robertson, Mexican Manuscript Painting of the Early Colonial Period, 40–42.
The similarities between the representation of landscape in both documents are also significant if we consider the attributed dates of both. The Mapa Uppsala’s attributed date of production ranges from c. 1540 – 1555 and Book 11 of the Florentine Codex about a decade or two later. This means that the artists of the Mapa Uppsala were not only innovating cartographic production but also fomenting a distinct visual culture coalescing specifically at the Colegio de Santa Cruz. This fact reinforces a need to reconsider the style of the Mapa Uppsala not as one of mere emulation or acculturation but of innovation and experimentation, with long-lasting influences on the visual culture of the Colegio.

**Problemataizing the Notion of “Landscape” in the Mapa Uppsala**

Past art historians compared the Mapa Uppsala to what they viewed as similar examples produced across the ocean (albeit decades later) including Dutch landscapes and “landscape-maps” (such as those found in the late sixteenth-century atlas *Civitates Orbis Terrarum* by Georg Braun and Frans Hogenberg.) However, these comparisons tended to diminish the fact that the artists rendered almost two hundred indigenous glyphs for place names and sites that embody the indigenous community’s cultural associations with sites established long before the arrival of the Spanish. In addition, these descriptions of the map’s pictorial style position it at the end of an artistic spectrum in which indigenous artists fully assimilated European representational techniques, neglecting a consideration of how the artists’ integration of glyphs into the naturalistic landscape innovated artistic and cartographic production in early colonial Mexico City. In this section, I demonstrate how in several instances, the artists creatively wielded glyphic representation to double as figural imagery, blurring the distinction between figural

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Figure 4. Landscape scenes (details), La Historia Universal de las Cosas de la Nueva España, c. 1570. Ink on paper. Florence, Biblioteca Medicea Laurenziana, Ms. Med. Palat. 220, ff. 388r. Courtesy of MiBAC. Any further reproduction by any means is forbidden.
representation and writing on the surface of the Mapa Uppsala.

In the upper left corner of the map (the southwestern region of the valley), three figures in white tunics energetically wield axes above their heads as they approach the schematized trees of the grove (Fig. 5). Although this appears to be another example of the many vignettes that illustrate scenes of everyday life, Miguel León-Portilla and Carmen Aguilera have argued that this might be the artist's innovative way of representing Cuauhximalpan, meaning "The place where wood is worked." In the detail, the axe in motion is a salient identifier of Cuauhimalpan. In the etymology of the place name, the root 'Cuauxim(a)' is a verb meaning, 'to do carpentry, to work wood.' Since the place name implicitly embodied a verb, the artist might have adapted the glyph into a narrative scene that would create more visual coherence within the representation. The settlement of present-day Cuauhimalpan can be generally correlated to its approximate location in the Mapa Uppsala.

In the lower left-hand corner, the artists also rendered the great volcano of Popocatepetl with its characteristic smoking peak rendered as bulbous puffs of smoke shaded with a light gray wash. Popocatepetl derives its name from two Nahuatl words popoca and tepetl, collectively signifying "The mountain which continually smokes." Even today, Popocatepetl can be distinguished from its neighboring peak Iztaccihuatl by its ever-present stream of smoke that emerges from its active volcanic vent. The map's artists capitalized on the glyph's linguistic connotations along with its pictorial representation to both identify the site by its name and visually describe its characteristic physical features.

A final example of this pictorial doubling can be observed in the left side of the map in the volcanic region of the Pedregal lava fields just south of Coyoacan. The landscape is pictorially described with maguey plants and nopal cacti. In addition, a series of grass blades, marked with short, staccato-like pen strokes, are sketched in a break in the range.

Unlike the maguey and cacti that emerge more illusionistically from the crevices of the mountains, these grass blades are unanchored to the surrounding landscape. Some blades of grass are depicted outside of the range on white background. Although it may seem that the artist disregarded Western conventions of illusionistic landscape, grass blades glyphically identify Zacatepec, or "grass-hill," which we can identify on a modern map of the region. In pre-Hispanic times, Zacatepec served as a hunting preserve for Aztec rulers, a notable feature on the Cortés plan. In indigenous pictorial tradition, the tecpan, or ruler house, was demarcated with a concentric circle lintel (alluding to jade, a symbol of preciousness and authority). Notably, a tecpan is rendered close to Zacatepec, likely alluding to the pre-Hispanic hunting lodge of the Aztec rulers.

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43 Alonso de Santa Cruz et al., Mapa de México Tenochtitlán y Sus Contornos Hacia 1550 (México, D.F: Celanese Mexicana, S.A, 1986), 64.
45 For further analysis on the role of the tecpan in the Mapa Uppsala, see Evans, "The Aztec Palace under Spanish Rule."
46 I thank Elizabeth Boone for pointing this out to me.
Conclusion

This essay has aimed to complicate past characterizations of the Mapa Uppsala as displaying features more influenced by European stylistic and cartographic tradition than indigenous through an analysis of spatial representation, composition, style, and pictorial conventions. The first section revealed how the artists' rendering of Tlatelolco presented its equal status to the neighboring altepetl of Mexico-Tenochtitlan through indigenous pictorial conventions. These included de-centering Mexico-Tenochtitlan to the left and depicting the island as comprised of both altepetl, joined at the center of the map. The mapmakers also emphasized the Colegio de Santa Cruz through scale and by centering it within Tlatelolco. Finally, the artists rendered the monastic complex in a manner consistent with other contemporary indigenous made maps, that is, with a combination of perspectives including a planimetric outline for the limits of the complex. These choices served to amplify the importance of Tlatelolco relative to its neighboring altepetl and present it as equal in status in early colonial Mexico City.

The second section revisited previous characterizations of the map's style as predominantly European, particularly regarding the representation of the landscape that surrounds the urban plan. A comparison of the mapmakers' view of the central valley of Mexico with that in the Codex Xolotl demonstrated that the perspectival presentation in both maps was similar, that is, planimetric. What differs between them, as many scholars have highlighted, is the naturalistic style of the landscape in the Mapa Uppsala. By connecting this style to other representations of landscape found in documents also produced at the Colegio de Santa Cruz, such as the Florentine Codex, I argue for a reconsideration of how we view the aesthetics of the Mapa Uppsala, not as a teleological endpoint to native artists' adaptation of European representational style, but rather as an indication of a coalescing visual style and language fomenting at the Colegio itself. In addition, my presentation of a few cases in which glyphs double as figural representation also complicate the argument that the artists were influenced entirely by European modes of representation since the incorporation of glyphs reflects an understanding of both European and indigenous visual traditions and a desire to creatively blend the two.

This essay has focused on the unique collaborative artistic and intellectual climate of the Colegio de Santa Cruz to contextualize the aesthetic and cartographic choices made by the map's indigenous artists. It argues for viewing the stylistic choices made by the artists as indicative of a new visual style and vocabulary coalescing specifically at the Colegio that would go on to influence other well-known products produced there (like the Florentine Codex.) These multiple instances in which the artists selected indigenous pictorial conventions and intermingled them with European influences gleaned from their monastic setting demonstrates the intellectual savvy of the artists and rightly recognizes and amplifies their contributions to cartographic production in early colonial Mexico City.