Floral Paradise between Pages
Analyzing Botanical Decorations in the *Florentine Codex*

Un paraíso floral entre páginas
Análisis de las decoraciones botánicas en el Códice Florentino

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Abstract

The *Florentine Codex*, also known as the *Historia general de las cosas de la Nueva España*, is a collection of twelve books compiled by Bernardino de Sahagún in order to document and monitor Indigenous practices in central Mexico during the late sixteenth century. Often omitted from studies of the document are the more than 600 botanical and scroll decorations that can be found in small spaces between sections of text or after chapter titles throughout the three volumes. The present work is a re-evaluation of previous work on such decorations, with analysis of the botanical imagery in context with research on herbals, botanical illustration, and contemporary books. The decorations, which contain flowers and fruits salient to Pre-Columbian Nahua and Christian religious traditions, turn the *Codex* itself into a floral paradise by adorning its pages.

Keywords: *Florentine Codex*, colonial Mexico, book decorations, botanical imagery, paradise

Resumen

El Códice Florentino, *también conocido como* la Historia general de las cosas de Nueva España*, es una colección de doce libros compilada por Bernardino de Sahagún para documentar y observar las prácticas indígenas en el centro de México en la parte final del siglo XVI. Frecuentemente omitidas en los estudios del documento, en los pequeños espacios entre las columnas de texto a lo largo de los tres volúmenes existen más de 600 decoraciones botánicas y volutas. Este trabajo es una reevaluación de textos anteriores sobre dichas decoraciones, que presenta además un análisis de las imágenes botánicas en relación con investigaciones sobre herbarios, ilustraciones botánicas y obras contemporáneas. Las decoraciones consisten en flores y frutas significativas en las tradiciones religiosas precolombinas y cristianas, y hacen que el* Códice *se vuelva un paraíso floral.*

Palabras clave: *Códice Florentino*, México colonial, adornos de libros, imágenes botánicas, paraíso

Introduction

The *Florentine Codex*, also known as the *Historia general de las cosas de Nueva España,* is a collection of twelve books in three volumes, compiled by missionary Bernardino de Sahagún in the late sixteenth century during his time in central Mexico (Gimmel 2008). As the longer title suggests, the book is an attempt to document Indigenous practices and the natural world in Mexico (Peterson 2017, 192). As such, scholars have noted the complexity of motivations behind the work's creation (e.g., Peterson 2017, 192–94; León-Portilla 1999, 212–13), from the insidious gathering of information to facilitate the conversion of Indigenous peoples to Christianity, to an admiration of Indigenous knowledge and ways of life (e.g., Alcántara Rojas 2011, 107; Bröchler 2009; De Vos 2017; Gimmel 2008, 170; Hassig 1989; León-Portilla 1999, 212; Magaloni Kerpel 2004, 9). Sahagún's influence on the work has an air of "salvage anthropology," i.e., an attempt to capture an "authenticity" viewed as slipping away, even as one both overlooked and engaged in the very mechanisms of colonization (Starn 2011; see also Gimmel 2008, 170). It has been more recently emphasized that the *Codex* contains a complexity of narratives—that insight may come not from focusing individually on Spanish or Indigenous influences but rather on how varied ways of knowing were used together in this particular project (Peterson 2019; Terraciano 2019). Kevin Terraciano (2010, 2019) considers the *Codex* not a bilingual book with images but rather a manuscript of "three texts," highlighting the importance of image-text relations (see also Garone Gravier 2011).

   An understudied aspect of the document is the abundance of botanical and scroll decorations that appear in small spaces between sections of text or after chapter titles throughout the document. Some are floral and botanically detailed,[1] while others are more abstract representations of "grotesque" imagery. Many are colorful; others, along with large swaths of the images toward the middle of the *Codex*, were left unpainted. In the literature, the decorations mostly escape comment, with the majority of previous studies focusing on the larger images, text, or materiality of the book (e.g.,

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[1] The word "botanical" is used here to refer to plant imagery and to explicitly evoke botanical or realistic drawing styles, discussed below in the section *Herbals and Illustrations*. "Floral" is used to refer to imagery with flowers, while "herbal" is used here only to refer to the genre of books containing medicinal information about plants. Finally, "vegetal" is used only when quoting Garone Gravier (2011), who uses this category to refer to plant imagery.

Baglioni et al. 2011; Bassett and Peterson 2012; Bröchler 2009; Magaloni Kerpel 2011). An exception is a study by Marina Garone Gravier (2011), which includes a detailed examination of the decorations from a perspective of typology and formatting. More recently, Diana Magaloni Kerpel (2019, 158) has suggested that the colorful botanical decorations that appear in Book 1 act as god-like qualifiers for the text around them and can be interpreted as the "essence" of the gods themselves. Likewise, Berenice Alcántara Rojas (2011, 113) notes that the decorations constitute one of multiple presences of flowers in the *Florentine Codex*.

The current study is a re-evaluation of previous descriptions of these botanical and scroll decorations, with the end-goal of qualitative analysis that provides insight into their broader meaning within the context of evangelization and the creation of the *Codex*.

The *Florentine Codex*

The *Florentine Codex* was created by Indigenous scribes and artists associated with the Colegio de Santa Cruz in Tlatelolco, and under the direction of Sahagún (Magaloni Kerpel 2004, 10). Each book contains a continuous column of Nahuatl text, on the right of the page, and the Spanish translation, on the left. The volumes are filled with colorful images and unpainted line drawings—2686 in total (Magaloni Kerpel 2011, 47)—which Peterson (2017, 189) notes include those which "can be considered secondary or ornamental, consisting of floral, geometric, and ancillary figures." Though Sahagún most likely did not, aside from a small insertion, physically inscribe any of the text (Garone Gravier 2011, 188–89), his voice is, according to scholars, most apparent in the Spanish text, often creating "contradictions" in content, especially with respect to tone, "discourse," and devotion of attention to particular subjects (Gimmel 2008, 171–72). Book 11, which focuses on the natural world, is the longest (Gimmel 2008, 171). A common observation about the *Florentine Codex* is that the column in Spanish contains more images because the text is shorter than that in Nahuatl (e.g., Bröchler 2009, 48, n. 4; Gimmel 2008, 171; Magaloni Kerpel 2004, 12; Terraciano 2010, 58). Gimmel (2008, 171) notes that "[v]ery often Sahagún states that what is catalogued in the Nahuatl text is not worthy of translation and gives the space over either to pictures or to his own digressions" (see also Peterson 2017, 189). However, this seems an exaggeration of

Sahagún's control over the content, because the images contain information that one would not glean simply from reading an alphabetic script (Bröchler 2009, 69; Gimmel 2008, 172; Peterson 2003, 2017, see also 1993, 178; Magaloni Kerpel 2011; Terraciano 2010).

At least in Book 12, which is unfinished, the text was written before the drawings were added, a sequence shown by the spaces left for them (Bröchler 2009, 53). In many instances it seems that small gaps were left for decorations as well. Sure enough, Garone Gravier (2011, 190) suggests that the decorations were the final elements of the *Codex* to be included. These gaps exist because the document was recalled to Spain when governing bodies there began to fear its creation—they no longer wanted documents to be produced in Nahuatl (Bröchler 2009; Gimmel 2008, 169; Magaloni Kerpel 2004, 7–8). Another interruption had occurred during a catastrophic epidemic when paint was in short supply (Magaloni Kerpel 2011, 51). Diana Magaloni Kerpel (2011, 51) notes that, at this point, while the artists produced Book 11, they began necessarily to forgo paint and instead used glyphs to communicate color: despite what may seem a disconcerting shift, "the evocative counterpoint between the invisible world of color and the image of that color in black and white renders the lack of pigment irrelevant." This malleability between color as pigment and color communicated through signs—with the same result of a symbolic qualifier to an image—is important for understanding decorative elements throughout the *Codex*.

Decorations, Imagery, and Inspiration

The decorations of the *Florentine Codex* consist of bands of botanical and stylized scrolls that artists drew between blocks of text. The majority extend across the width of one column of text, including those gaps where the Spanish and Nahuatl columns lined up with each other, giving the impression that they float within one or the other body of text as a separate entity, even as they occupy an important role in the overall page layout (see also Garone Gravier 2016, 418–22). The illustrations range from colorful botanical decorations with detailed leaves and complex floral elements—frequently varying between images—to stylized leaf scrolls that were outlined but never painted (figure 1). A subset of the depicted flowers is so detailed as to invoke specific plant species. Some of the more stylized scrolls were painted with multiple colors, and a fraction of the decorations are enclosed

a)   b)

Figure 1. Botanical (in color) and scroll (unpainted) decorations from the *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 218, f. 14r, (b) ms. Med. Palat. 220, f. 129v. By permission of the MiC. Any further reproduction by any means is prohibited

within cartouches. Overall, the images defy strict categorization: though classification is useful initially, many of the decorations contain one or more overlapping features that complicate any effort to strictly assign them to groups. Categorization is employed in this study insofar as it allows access to meaning communicated by such decorations in the *Florentine Codex*.

Ornament and Typology

Ornament has been the subject of classic studies in art history which attempt to understand motifs as they relate to each other, to those things in the world which may have inspired them, to the artifacts or buildings on which they appear, and to the person who experiences them (e.g., Grabar 1992; Riegl 1992). Somewhat paradoxically, ornament has also been dismissed, at least in terms of containing meaning or as something of value (Díaz Cayeros 2012; Gruzinski 2002, 107; Kendrick 2006, 274–80). Patricia Díaz Cayeros (2012, 51) writes that the term "ornament" is often used in just this way, or, alternatively, as a way to place a motif or work within a particular tradition, sometimes with problematic results that substitute designs for groups of people (Díaz Cayeros 2012, 40–41; Grabar 1992, 38–39), somewhat analogous to scholarship of the culture-historical period in archaeology. She critiques Riegl's (1992) classic study of ornamental motifs for its "Darwinian" and "ahistorical" approach, noting that such work fails to consider the significance of a work in space and moment in

which it was employed (Díaz Cayeros 2012, 51, 215, my translation; see also Grabar 1992, 39). Riegl's study draws on such motifs out-of-context, tracing an evolutionary trajectory of imagery through time, with little interest in meaning. One of his main goals is to demonstrate that popular plant motifs (e.g., palmette, acanthus) are versions of each other, and can be recognized as such with close examination of their features from numerous, disconnected examples (Riegl 1992, 191–228).

In her study of the *Florentine Codex*, Garone Gravier (2011, 191) has defined ornament as "images that, although figurative, are not predominantly narrative or explicative in intent, nor do they attempt to provide informational content from the text." Within the context of a written page, ornament can have organizational as well as aesthetic function (Garone Gravier 2011, 191; 2016, 418–22). Alternatively, Oleg Grabar (1992, 5) interprets ornament as an "aspect of decoration" that ostensibly exists to modify the work or piece on which it exists, but he goes on to note that ornament has the ability to metamorphose a piece (Grabar 1992, 41). Díaz Cayeros's (2012) study of decorative elements within the choir of the Puebla Cathedral expands these views of ornament. She focuses not on the potential origins of the designs, but rather on the articulating contexts and meanings that may have inspired the artists and clergymen in Puebla to employ them (e.g., Christian beliefs, knot designs, use of such designs in gardening), demonstrating that it is embodied ornament, in fact, which allows the choir to become a reflecting pool bounding representations of the cosmos as well as a virtual (and in some ways, material, given the plethora of wood types employed in the designs) garden. The starting point for Díaz Cayeros's (2012, 29, my translation) study is that she aims "to go beyond the rescue of motifs or ornamental types and address the theme of ornament in its qualitative sense, as a historical concept," viewing "classificatory, essentialist, universalizing, [and] nationalist" aims as counterproductive and even incapable of accessing useful information.

Classification or stylistic typology, too, have played a longstanding though sometimes problematic role in archaeology and art history. Robert Bagley's (2008) comparison of work on Chinese bronzes done by Max Loehr and Bernhard Karlgren showcases the ways that such study can go awry, especially when a typology is constructed with the wrong sets of information. Bagley uses comparisons with biological taxonomy to compare Karlgren's use of "downward classification," or the selection of a particular attribute in order to create groups and then further break them down, to

Loehr's approach which, instead of fixating on minute attributes, examines the material as a whole, giving the researcher an overall view of groupings that make sense. Granted, "sorting has a price. Detail is sacrificed […]. Thus the investigator facing a particular body of material must always ask himself whether classification promises gains large enough to offset the cost in lost information" (Bagley 2008, 106).

Typology in archaeology is often associated with chronology, and changes in use of style over time (e.g., Bagley 2008, 15; Dethlefsen and Deetz 1966). Though organizing objects or ornament into conceptual boxes is at its core a problematic exercise, given that it is an imposition of a simplifying framework over a dataset, there can be utility in organizing artifacts or motifs for analytical purposes. Typology and classification were not the end goal of the present study. As Bagley and Díaz Cayeros warned, classification has limited the data that are possible to present here; however, the process served as an introductory mechanism for understanding the decorations in the *Florentine Codex*, and a means to become aware of their defining features which could eventually pave the way toward accessing deeper meaning.

Previous and Current Study

Garone Gravier (2011, 157) begins her analysis of the layout of the *Florentine Codex* with an explicit negation of "[t]he notion that calligraphy is 'ornamental or contingent'" and that "editorial design is a 'cosmetic or implemental' action." Her emphasis on the importance of the whole format of a textual work is analogous to an appreciation for the "[b]lots and smudged letters" on Emily Dickinson's original poems (Michaels 2004, 4), an analogy which illustrates the fluidity between text and image, and the realm in which a textual work is material (Michaels 2004, 2–4). More to the point, it encourages an approach to books as objects themselves, as well as an appreciation of the talent and knowledge for bookmaking and printing of its creators (Garone Gravier 2011, 159–63; 2013).

Garone Gravier's (2011) analysis of format is a broad and meticulous investigation of varied aspects of the *Florentine Codex* and related topics: page layout, scribal "hands," the Colegio de Santa Cruz's library, and the decorations that she calls "ornaments." She observes that the decorations mostly appear amidst the Spanish text, and especially in Books 10 and 11

(Garone Gravier 2011, 191). Her typology of the decorations includes three groups of twenty-six different types: "Vegetal and floral bands or strips," "Ornaments with human figures, animals, and objects," and "Ornaments in typographic style," with an overlapping category that includes decorations that are attached to images by a cartouche (Garone Gravier 2011, 192, fig. 7). Decorations in the "Vegetal" category are qualified with descriptors such as "simple," "exuberant," "stylized," "with realistic flowers," or "with flowers and fruit" (Garone Gravier 2011, 192, fig. 7). Citing Magaloni, Garone Gravier (2011, 194) denotes some decorative elements in Book 1 as Pre-Columbian, while she instead identifies "Europeanized ornaments" toward the end, cautiously suggesting that shift might have to do with subject matter.

Importantly, Garone Gravier (2011, 195) concludes that the "typographic," or woodcut inspired, decorations are modeled from the "Italian, French, or Flemish printing tradition," which as she notes would have been available as visual inspiration in the Tlatelolco library. Another crucial clue from her study is her mention of "grotesque mask[s]" (Garone Gravier 2011, 192, fig. 7), a common European device that in fact shows up in a larger quantity of the decorations. The identification of grotesque imagery provides insight into the production and meaning of the *Florentine Codex*.

The present study began by examining of the 629 botanical and scroll decorations as they appear throughout the three volumes (and twelve books) of the *Florentine Codex* (see Table 1).[2] The descriptive categories used in this study include the following: Botanical, in color; Scroll, unpainted; Scroll, single-color; Scroll, flattened outline; Multi-color scroll decoration; Botanical scroll; Modified scroll; Scroll with central medallion or figure; Botanical, unpainted; Paper scrolls; Alternative grotesque; and Leaf variation (see Table 2). Many of these categories partially or completely echo categories that Garone Gravier developed for her earlier study. The category of *Paper scroll* likely corresponds completely to her category of "Border with strips" (Garone Gravier 2011, 192, fig. 7). The category of *Scroll with central medallion or figure* corresponds with her categories "Vegetal band with medallion,"[3] "Vegetal band with human figure," and "Vegetal garland with grotesque mask," while *Alternative grotesque* encompasses the rest of the subcategories under her overall designation of "Ornaments

[2] Volume 1 contains Books 1-5, Volume 2 contains Books 6-9, and Volume 3, Books 10-12.

[3] Note that the circular elements were identified as medallions based on Garone Gravier's (2011) work.

with human figures, animals, and objects" (Garone Gravier 2011, 192, fig. 7). Garone Gravier was specific in separating these decorations into more categories than is done here. They are combined here because their analytical utility rests in reference to the grotesque tradition (see below).

Scroll decorations (including *Scroll, single color*) likely overlap somewhat with "Vegetal border," "Simple vegetal band," "Outline vegetal band (stencil type)," or "Stylized vegetal"; *Botanical scrolls* with "Stylized vegetal band" categories or "Exuberant stylized vegetal"; and *Botanical (in color and unpainted)* with "Vegetal band with realistic flowers" and "Vegetal band with flowers and fruit (normal and shaded)" (Garone Gravier 2011, 192–93, figs. 7–8). *Scrolls with flattened outlines* likely overlap with some of her designated "typographic" categories (and to be sure, were partially categorized based upon her work on these decorations),[4] and *Multi-color scroll decoration* with some of the "exuberant" decorations as well as some "typographic" ones (Garone Gravier 2011, 192–93, figs. 7–8). However, excepting the few sets of ornaments described above, it is likely that even overlapping categories from the previous and present work are not identical because of the diverse sets of defining features relied upon to distinguish them. This, of course, is a direct result of categorization itself (Grabar 1992, 200–02). Finally, as far as is clear, the *Leaf variation* and *Modified scroll* categories do not have equivalents in Garone Gravier's typology.

Unfortunately, in some cases it is difficult to discern the content or utility of Garone Gravier's categories because she does not provide examples or descriptions for all of them. However, it is evident that she developed more detailed categorizations than is done here, incorporating features such as style, symmetry or layout, and texture, as well as content (Garone Gravier 2011, 192, 195). Garone Gravier further distinguishes between some decorations that would here be included together in the same category. She also sometimes identifies backgrounds and framing (Gravier 2011, 192). A productive feature of her work is the use of subcategories to group similar types of decorations together. However, both Garone Gravier's and the present attempts to categorize motifs are technically incomplete because they do not entirely and simultaneously capture differences in color, texture, style, realism, and framing, in addition to form

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[4] As mentioned above, the typographic decorations in the *Florentine Codex* mimic woodcuts (Garone Gravier 2011, 195), which explains the flattened outlines used to define the category in the present typology.

Table 1
ANALYTICAL DATA BY DECORATION TYPE.
NUMBER OF APPEARANCES IN A BOOK AT 15 OR ABOVE ARE HIGHLIGHTED

	Totals	Spanish	Nahuatl	Latin	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	Main	Appendix	After/in section	After title	New page
Scroll, unpainted	189	152	37	0	2	6	0	0	0	9	0	0	2	75	77	18	182	7	146	36	7
Botanical scroll	79	71	8	0	6	2	1	0	0	2	0	4	1	24	37	2	74	5	60	11	8
Scroll, flattened outline	49	47	2	0	0	25	6	8	0	0	0	0	0	8	2	0	22	27	31	15	3
Botanical, in color	48	28	17	3	23	24	0	1	0	0	0	0	0	0	0	0	26	22	41	7	0
Botanical, unpainted	47	44	2	1	0	0	0	0	0	30	0	0	0	6	10	0	46	0	39	5	3
Enclosed scroll	41	36	5	0	0	0	0	0	0	11	0	0	0	17	9	4	41	0	34	6	1
Multi-color scroll decoration	33	30	3	0	0	18	7	3	2	0	0	0	0	3	0	0	15	18	20	10	3
Scroll, single color	20	16	4	0	2	7	2	4	1	0	0	0	0	3	1	0	12	8	15	5	0
Paper scrolls	20	15	5	0	0	0	0	0	0	2	0	0	0	0	16	3	20	0	15	5	1
Scroll with central medallion or figure	20	13	6	1	0	0	0	0	0	2	0	0	0	4	6	7	19	0	16	4	0
Enclosed paper scrolls	12	11	1	0	0	0	0	0	0	8	0	0	0	2	1	1	12	0	7	3	2
Leaf variation	11	11	0	0	0	0	0	0	0	0	3	8	0	0	0	0	11	0	9	2	0
Enclosed botanical scroll	10	10	0	0	0	0	0	0	0	4	2	0	0	1	3	0	10	0	6	3	1
Enclosed botanical, no color	9	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	0	9	0	0
Modified scroll	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	9	8	1	0
Enclosed scroll with central medallion or figure	8	7	1	0	0	0	0	0	0	4	0	0	1	0	2	1	8	0	5	3	0
Alternative grotesque	6	3	3	0	0	0	0	0	0	2	0	0	0	0	1	3	6	0	3	2	1
Enclosed multi-color scroll	6	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	4	1	1
Enclosed alternative grotesque	4	3	1	0	0	0	0	0	0	3	0	0	0	0	0	1	4	0	3	1	0
Enclosed scroll, single color	3	3	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	2	1	0
Enclosed scroll, flattened outline	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	0
Enclosed multi-color scroll with central medallion or figure	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
Enclosed single-color paper scrolls	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0
Enclosed multi-color botanical scroll	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1

Table 2
DESCRIPTION OF DECORATIONS IN THE *FLORENTINE CODEX*

Botanical, in color	These decorations were vibrantly painted and demonstrate a deliberate intention to show detailed leaves. The floral element is often also complex and varies between different images. This category partially corresponds with Garone Gravier's (2011, 192, fig. 7) designation of "Vegetal band with realistic flowers."
Scroll, unpainted	This is a decorative element that looks semi-botanical but also feathery; most are acanthus leaves, which are common in European Renaissance decorative imagery (Peterson 1993, 57). The decorations in this category often look as though they were outlined but not filled in. The category also includes more stylized or minimalist elements that display minimal botanical characteristics as well as bouquets of acanthus bunches. (See also "enclosed scroll," which is the same but contained in a cartouche.)
Scroll, single-color	This category is similar to the acanthus scroll decorations described above but is defined by an outline of black ink filled in with a single color, often green or gold. Note that Garone Gravier (2011, 192, fig. 7) also defined categories based on "outline."
Scroll, flattened outline	These decorations are similar to the scrolls but were intentionally drawn with ink that formed both outline and fill, flattening the image—they are often red or blue, but toward the end of the *Codex* when there are no longer images in color, a few appear in black ink as well. Though this category was easy to define in Volume 1 of the *Codex*, when the artists used a lot of color, it became more difficult in Volumes 2 and 3. Garone Gravier's (2011) definition of "typographic" elements assisted in the determination of which elements fit in this category—note that she also described some decorations as "bichrome" (2011, 195).
Multi-color scroll decoration	These decorations are scroll elements that are filled in with multiple colors, and sometimes more abstract. (See also "enclosed multi-color scroll decoration").
Botanical scroll	These decorations follow the acanthus scroll morphology, but contain botanical elements like flowers, buds, fruit, or detailed leaves, or are defined by use of color. (See also "enclosed botanical scroll" and "enclosed multi-color botanical scroll").

Modified scroll	These decorations are formed by scrolls or botanical scrolls that were modified with color or additions that were not originally intended based on the outline of the form.
Scroll with central medallion or figure	These elements are scroll but contain either a person, face, angel, or medallion in the center. The identification of these circles as medallions was made following Garone Gravier (2011, 192, fig. 7), who defines "Vegetal band with medallion" as its own type. (See also "enclosed scroll with central medallion or figure" and "enclosed multi-color scroll with central medallion or figure"). This designation overlaps with Garone Gravier's (2011, 192 fig. 7) categories of "Vegetal band with medallion," "Vegetal band with human figure," and "Vegetal garland with grotesque mask."
Botanical, unpainted	These decorations follow the botanical category in everything except color. (See also "enclosed botanical, unpainted"). However, they are often drawn in the style of an engraving or etching. This category likely overlaps with Garone Gravier's (2011, 192, fig. 7) categories "Vegetal band with realistic flowers" and/or "Vegetal band with flowers and fruit (normal and shaded)."
Paper scrolls	This type includes acanthus-like decorations with paper scrolls, sometimes symmetrical. The use of symmetry in defining categories follows Garone Gravier (2011), whose typology of "typographic" decorations relies on this characteristic. (See also "enclosed paper scrolls" and "enclosed single-color paper scrolls"). This type likely corresponds completely with Garone Gravier's (2011, 192 fig. 7) designation of "Border with strips."
Alternative grotesque	This type of decoration has the same general form of many of the scrolls, but certain elements have been substituted for recognizable objects or figures such as animals or vases. (See also "enclosed alternative grotesque"). This category partially overlaps with Garone Gravier's (2011, 192, fig. 7) group "Ornaments with human figures, animals, and objects," which contains the categories of "Vegetal band with vase" and "Vegetal band with birds."
Leaf variation	This design is made up of a very dense bundle of leaves with a distinctive shape and forms a rectangular bush.

or content—to do so would fracture the categories in a way that would begin to make them difficult to manage for analytical purposes. Furthermore, the defining features of the classifications sometimes necessitated giving more weight to the presence of a particular motif (e.g., paper scrolls, fruit) when the decoration otherwise would have been given another name. The present work focuses on use of color, realism, content, and framing (enclosed versus not), features which become useful for discussing agency and the influence of book-printing, in addition to considering outline versus fill, an element drawn from Garone Gravier's study (2011). However, both classification systems fail when a decoration does not fall neatly into one category or another, visible in some of the examples Garone Gravier (2011) provides in her chapter and in the examples discussed below. This is especially the case because, in the current work, some categories differ by a matter of scale, thus making the categorization somewhat subjective. For example, since *Scrolls* and *Botanical scrolls* are still plants, the difference between these and *Botanical* decorations is sometimes one of stylization. At the end, a typology or classification system in itself may prove unfruitful but was an important step in getting to know the decorations (e.g., Bagley 2008) and understanding specific aspects of the decorations not pointed out before. Thus, I consider the present work to be a re-evaluation and modification of previous work, rather than a completely new schematic for understanding the decorations in the *Florentine Codex*, and do not propose to present the categorizations themselves as a contribution.

Two relevant features of the present work that differ from the previous study deserve mention. The first is the distinction between botanical decorations, which show detailed leaves and complex, colorful floral elements that vary between images, and what are more easily referred to as scroll decorations, which display feathery acanthus leaves common in Renaissance decorative imagery (see Peterson 1993, 57); these ornaments include more stylized elements that present minimal botanical characteristics (see Figure 1). The distinction between botanical features and scrolls is meaningful, but it is not complete or absolute. For example, within Book 1, there are five decorations, each with the same small reddish-petaled flower, either as a bud or a full bloom. However, the stems and leaves of the first four correspond to scroll-like forms of stylized acanthus leaves, whereas the fifth decoration has individual leaves along a vine (see Figure 2) (Sahagún 1576–77, Bk. 1: f. 40v-41v). In another example from Book 2, the artist decided to paint the leaf offshoots of a realistic botanical decoration with

Figure 2. Pages of *Florentine Codex*. Note the similar flowers on all five decorations, but the differences in leaves between the first four (Botanical scrolls) and the last (Botanical, in color). Source: Florence, The Biblioteca Medicea Laurenziana, ms. Med. Palat. 218, f. 52v-53v. By permission of the MiC. Any further reproduction by any means is prohibited

blue and pink, mimicking the volutes on Multi-color scroll decorations (Figure 3) (Sahagún 1576–77, Bk 2: f. 120r), whereas, in still another, the artist may have opted for a realistic rather than stylized depiction of acanthus leaves. The artists may have been selectively adopting differing motifs for their depictions of flowers and buds, which carried religious and paradisiac meaning in central Mexico (e.g., Alcántara Rojas 2011; Magaloni Kerpel 2019, 158) and broader Mesoamerica (Taube 2004).

The second part of the present work that stands out from the previous classification is the identification of modified scroll decorations that were altered with color or additions beyond the initial outline of the form, seen in a total of seven decorations, all within Book 2 of the *Codex*. A notable case is decoration number 84, which appears in Book 2 (see Figure 4) (Sahagún 1576–77, Bk 2: f. 124v). This example comprises a clearly outlined acanthus motif, but the artist has modified the outline with paint. To the right of the decoration, red pigment has been used to produce the illusion of a flower bud within the outline of the acanthus leaf. Toward the center of the decoration, the artist has added an additional flower that follows the design of flowers in other decorations. Significantly, Crane (1911 [1896], 20) defined the initial outline as an important step in the process of most European illuminations. A similar example comes

Figure 3. Botanical (in color) decoration from *Florentine Codex*.
Note additional features of a multi-color scroll. Source: Florence, The Biblioteca
Medicea Laurenziana, ms. Med. Palat. 218, f. 174r. By permission of the MiC.
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Figure 4. Modified scroll decoration from *Florentine Codex*. Source: Florence,
The Biblioteca Medicea Laurenziana, ms. Med. Palat. 218, f. 178v. By permission
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from decoration number 95, another modified scroll (see Figure 5) in
Book 2 (Sahagún 1576–77, Bk 2: f. 126v), where the artist has used blue
paint to modify the acanthus leaf into a blossoming flower. These are both
acts of aesthetic choice that subvert the original outline of the acanthus
motif (see also Peterson 1993, 178). The depiction of flowers was not un-

Figure 5. Modified scroll decoration from *Florentine Codex*.
Note the modification to the outline. Source: Florence, The Biblioteca Medicea
Laurenziana, ms. Med. Palat. 218, f. 180v. By permission of the MiC.
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common in European book illumination, but the modifications described above, in contrast with the intended outline, demonstrate the flexibility with which the painters of the *Florentine Codex* employed Renaissance motifs in the effort of incorporating more colorful designs and paradisiacal blooms (see also Gruzinski 2002, 119). They perhaps also demonstrate a timeline of reevaluation with respect to the ornamental aesthetics.

Another significant case involves looking not at the decorations of the *Codex* itself but delving into "the space" (Schapiro 1996, 119)—the three-dimensional world in a two-dimensional piece of art—of a set of images from Book 9 (Sahagún 1576–77, Bk 9: f. 64r). These examples were cited by Peterson (2003, 240–42) to demonstrate that the artists used glyphic forms to outline the artistic process of featherworking, supplementing the adjacent columns of text. Looking more closely at the aforementioned image, the featherworker's design is the same style of decoration used within the pages of the *Florentine Codex*. It is what in the present typology is classified as a multi-color scroll (see Figure 6). More descriptively, the design is constituted by acanthus leaves of multiple colors. This suggests two pos-

a)

b)

c)

Figura 6. Image and enclosed multi-color scroll decorations from *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 219, f. 372r, (b) ms. Med. Palat. 220, f. 234v, left, and (c) ms. Med. Palat. 220, f. 244r, right. By permission of the MiC. Any further reproduction by any means is prohibited

sibilities. Somewhat analogous to "what writing looks like" (Houston 2018a), the decorations could be interpreted as a representation of "what *imagery* looks like": a drawing of an image, a declaration of a depiction. Alternatively, the artists may have employed the feathery nature of stylized acanthus leaves to invoke featherworking, especially with the multi-color designs, thus adding visual brilliance and texture to the book.

Analytical Data and Insights

Table 1 presents analytical data demonstrating the frequencies of each decorative category in the Spanish or Nahuatl columns and each book, whether they appear in the main part of the text or in an appendix, and whether they appear after a section, after a chapter or paragraph title, or at the top of a new page. Supporting Garone Gravier's findings, the highest numbers of decorations are found in Books 10 and 11, but contrary to what she reported, the books with the lowest amounts of decorations are 5 (n=3) and 7 (n=5). A large majority of the decorations appear in the Spanish text (n=529), rather than the Nahuatl (n=95), which Garone Gravier (2011, 191) also noted. This study corroborates previous findings by documenting the higher concentrations of *Botanical, in color* decorations in Books 1 and 2, as opposed to higher concentrations of *Scroll*, *Botanical scroll*, and *Enclosed scroll decorations* in Books 10, 11, and 12. In particular, *Botanical in color* decorations are the only type of decoration in Book 1 that number more than six (n=23). The painted botanical decorations are more reminiscent of central Mexican plant imagery and artistic style (Garone Gravier 2011, 194, citing a communication with Diana Magaloni). However, the meaning of this pattern may not support an association of flowers with Pre-Columbian gods (cf. Magaloni Kerpel 2019, 158). In fact, the Appendix of Book 1, which contains Christian scripture and condemnation of Indigenous beliefs, contains similar botanical decorations to the rest of Book 1. As such, an association with the text and specifically with Pre-Columbian deities does not necessarily hold true. However, there is an intriguing possibility that the artists strategically employed these botanical decorations to suggest a similitude between the two cosmologies.

Another piece of evidence that perhaps suggests the decorations do not reflect content (at least directly) is that in the section of Book 11 that describes numerous different plants, in some cases it seems that the artists chose stylized scroll decorations on the basis that they would not be confused with the meticulous, realistic drawings of plants that *are* associated with the text, many of which display roots. Furthermore, throughout the three volumes, similar decorations often go in sequence, indicating that the decorations chosen may have depended more on who was decorating which sections and/or what they were inspired to paint at the time. As such, the decorations may have been meant to adorn the book as a material object itself, or, if embellishing the text, seem to reflect the text as a

whole. This idea that decorative motifs on pages within a book might more directly relate to the physicality of the book was proposed by Oleg Grabar (1992, 220) with respect to a copy of the epic *Shahnameh* created in the 1400s, for which "The natural ornament [...] served to enhance the book, not a page. It proposes the pleasure of holding, viewing, or owning a book [...] The texture of the ornament [...] emphasizes the book and not the text as a work of art."

One of the higher concentrations of a decoration type are the *Botanical, unpainted* decorations in Book 6. Some have flowers—potentially the same flowers depicted in Books 1 and 2—but many contain fruit such as grapes. Many of these decorations, with notable exceptions, were not simply left without pigment; they were drawn in the style of engravings or etchings and thus reflect a completely different aesthetic than the decorations in Books 1 and 2, which were often not outlined. Only a small fraction of decorations in Volumes 2 or 3 were painted in color, and they appear at the end of Book 10 and between folios 66v and 92r of Book 11. The lack of paint used in the decorations does not always line up with unpainted illustrations, supporting previous suggestions of a varied timeline for the completion of different elements of the work, or perhaps other influences on use of pigment.

The sizes of the decorations vary depending on the amount of space left between lines of text or sections; however, most are comparable in size. Garone Gravier (2011, 195) observed that "the usual size was one-eighth the height of the writing field." An approximate evaluation of the size of each decoration here yielded a similar conclusion—the average size of decorations throughout the *Florentine Codex* was approximately one-ninth the length of the column. The average for Volumes 1 and 2 combined was one-eighth, but the numerous smaller decorations in Volume 3 lowered that number. In general, the size of the decoration did not seem to affect the type or style the artist chose to make it—there are various types of decorations of the same size, and the same type of decoration was produced in different sizes. However, in Volume 1, flattened-outline and multi-color scroll decorations seem to have been used to fill up larger spaces between blocks of text, whereas the more fluid, botanical decorations could be woven around text that sat closer together. Furthermore, especially in Books 10 and 11, the amount of space the artist had to make the decoration may have affected its classification, simply because the unfurled leaves of *Botanical* decorations were compressed into *Botanical*

scrolls, or *Botanical scrolls* into *Scrolls*, though for the most part this was not the case. Some of these fluid shifts between decorations correspond to what Riegl (1992, 213, 220–28) divided into "full acanthus leaf," "acanthus half leaf," and "acanthus tendril" motifs.

Herbals and Illustrations

Within Book 11 of the *Codex* is a section describing the plants of Mexico, complete with detailed, diagnostic images. Though the present paper does not deal specifically with these images, that Book provides insight into traditions of representation of plants and the meaning with which they imbued imagery, especially in the botanical decorations of interest here. In Alcántara Rojas's (2011, 110) words, the artists of this section "adopted the botanic conventions of their time to create images that assisted recognition of the species in the 'real' world." These various conventions correspond to different styles designated by historian Brian Ogilvie (2003, 145, 146–49), as "naturalist" and "analytic."

The botanical section of Book Eleven, Paragraph V, which describes medicinal plants, has been referred to as the "herbal" (Ríos Castaño 2018). Victoria Ríos Castaño (2018), following a lead in the form of an observation made by Alfredo López Austin (1971), recently investigated the "features that demonstrate that [Paragraph V] is an autonomous herbal attached to the *Florentine Codex*, namely, its lack of lexicographical-doctrinal notes, its style of visual presentation, and its naming of the Nahua healers who supplied the data" (Ríos Castaño 2018, 465). According to López Austin (1971, 126), this section also reflects layers of input from various individuals, who sometimes contradicted previously recorded information about individual plants. This complexity affords a window into the complicated inception and execution of a document with multiple intentions and points of view. Sahagún's interest in plants may have stemmed from a different original goal, and partially ties into European interests in medicines and useful plants that drove the creation of other documents at this time (Lozoya 2006; Ríos Castaño 2018; see also De Vos 2003). Such compilations of botanical knowledge cannot be separated from colonialist practices of the Enlightenment age (De Vos 2003; Lozoya 2006). De Vos (2003, 117) dubs the subject of these practices an "herbal El Dorado," tying them into a history of empire, expansion, and quest for knowledge as capital.

Literature on relationships between image and text in European scientific writings from the period, which include both herbals and anatomy books, is useful for understanding the potential influences on the style, compilation, and purpose of the *Florentine Codex*. Such literature also situates it and related documents contextually. For example, Peterson (1993, 75–77) also suggests that European herbals may have been cited by painters at Malinalco through use of illustrative stylistic features common in those texts. Leonhard Fuchs, author of the 1542 herbal *De Historia Stirpium* (Anderson 1977, 137–47) was one of the first European botanists to stress the importance of identifiable images in botanical manuscripts (Kusukawa 2000, 100–01, see also Anderson 1977, 137–38). To be sure, far earlier, the Greek physician Krateuas made a name for himself as "the father of plant illustration" (Singer 1927, 5). Before this emphasis on illustration, there was the potential for deadly confusion of plants in medical treatment (Anderson 1977, 137), and many herbals used "generic" plant images, or simply depicted homogenous material sitting in an herbarium jar (Kusukawa 2000, 99–100). By implication, rather than being unimportant, images were necessary to include, regardless of whether they added any information or level of understanding to the document. In some ways, less specific images indicated a more fluid relation between image and text in that the images "served as a juncture for a multitude of meanings associated with" whatever the object happened to be (Kusukawa 2000, 101).

The relations of image and text in European herbals were also affected by changes in printing technology. As Ogilvie (2003, 158) notes, "Woodcuts could be printed on the same page as text with only one run through the press, but combining letterpress and copperplate required two runs and careful alignment. It was easier to print plates and text separately; and, in turn, to concentrate on plates." In other words, woodcuts made it easy to put image and text on the same page (Ogilvie 2003, 158; see also Crane 1911[1896], 116; Kusukawa 2000, 91), whereas uniting engraved metal plates with type required passing the page through the printing press twice (Ogilvie 2003, 158). Ogilvie (2003) examines the relationship between pictures and text in early European herbals, finding that in botany, there was a trend toward less juxtaposition of image and text over time. Botanical imagery went through phases of "naturalist" style, where multiple phases of the plant's life cycle were shown occurring together on the same plant (Ogilvie 2003, 145; see also Kusukawa 2000, 92). An "analytic" style arose in which the plant was seen as an amalgamation of "distinct elements"

(Ogilvie 2003, 146–49), and plant imagery even reached a stage of obsolescence, relegated to books of botanical drawings and prints that during the 1600s were more often perused for enjoyment than scholarly references (see Ogilvie 2003, 157).

Artists in central Mexico used similar tactics: in the *De la Cruz-Badiano Codex*, which is often compared to the "herbal" section of the *Florentine Codex* and was also produced at the Colegio de Santa Cruz in Tlatelolco, "[s]ome images ... were configured by a synthesis of the principal characteristics of a species" (Zetina et al. 2011, 248). Likewise, artists of the *Florentine Codex* portrayed plants at multiple moments in their life cycles (Alcántara Rojas 2011, 111). Botanical drawings tend to have an oddly analogous relationship to ideas of "what writing looks like," returning to a concept cited above (Houston 2018a; see also de Ávila Blomberg 2012, 494). Like "pseudo-scripts," they must capture an "essence" without being that thing they aim to represent (Houston 2018b, throughout; Ogilvie 2003, 145; cf. Kusukawa 2000, 107). Much like archaeological drawing, botanical drawing involves choices about depiction (Houston 2012, 391). As de Ávila Blomberg (2012, 494, my translation) notes, attention to "artistic conventions" is a necessary step in finding clues toward the ideas being expressed.

European and Christian Artistic Inspiration for Imagery

In her study of the Augustinian botanical murals at Malinalco, Jeannette Favrot Peterson (1993) analyzed possible inspirations for the subject matter. Notably, the artists involved in the production of the *Florentine Codex* may have participated in the creation of these murals (Alcántara Rojas 2011, 111–12; Peterson 1993, 50–56). Peterson (1993, 50–56) makes this argument on the basis of logistics, style, and content, but does not discuss the decorative elements in the *Florentine Codex*. The artists at Malinalco (and by this interpretation, at the Colegio de Santa Cruz) would have had access to a variety of books, paintings, prints, herbals, and religious documents (Peterson 1993, 2017; Garone Gravier 2011), and botanical decorations were common in European manuscripts (Armstrong 1983; Crane 1911 [1896]; Fisher 2004; Kauffman 2018). Peterson's discussion of the aforementioned "grotesque" decorations speaks to this directly:

> An ornamental design made up of Renaissance motifs such as angel heads, dolphins, acanthus leaves, and vases, which together are referred to as "grotesque" (*grutesco* or *de romano*) in style (Peterson 1993, 57).

> Colonial muralists closely followed European illustrated books and graphics for the painted ornamental borders and friezes known as "grotesque" (*grutesco*). Grotesque designs utilized a playful and sometimes bizarre combination of antique motifs including candelabra, festoons, small naked figures, and hybrid creatures that were often composite creations with plant, animal, and human attributes (Peterson 1993, 70).

Many of the scroll decorations defined in the present work are clearly acanthus motifs (see Figure 7). By the 1400s in Europe, *Acanthus* sp. had become the "dominant leaf in manuscript borders" (Fisher 2004, 5–6), and Armstrong (1983, 31) has described acanthus leaves in an edition from that period of Pliny's *Historia naturalis*. The grotesque tradition was taken up and adapted by artists in the Americas by the 1540s, which was quite soon after it became popular in Spain (Gruzinski 2002, 111–12), meaning it was a relatively new type of approach with which to communicate an artistic message in both regions. Furthermore, the presence of "angel heads," "vases," and "small naked figures" (see above) is also evident throughout many of the decorations in the *Florentine Codex*, as noted by Garone Gravier (2011), and the similarity to images from Malinalco is striking (see Figure 8). The artists working on the *Florentine Codex* were inspired by grotesque motifs in the creation of a significant number of their decorations, including scrolls, botanical scrolls, single-color scroll decorations, multi-color scroll decorations, modified scrolls, scrolls with a central medallion or figure, and alternative grotesque decorations, most of which begin with a base of acanthus leaves, though sometimes scrolls and botanical scrolls more likely portray grape leaves or ivy. Many of the decorations in Books 1 and 2 are "floral motifs," as Garone Gravier (2011, 194) notes, but specifically acanthus leaves—a motif with history throughout Europe. This subtlety highlights the need to delve into the specifics of the decorations in order to engage with plant taxa as well as to understand the ways in which motifs were being employed in different contexts. Serge Gruzinski (2002, 111, 119–25) has argued that grotesque motifs served as an ostensibly repetitive but fluid, malleable outline that allowed Nahua artists to counter Spanish religious narratives and imbue images with locally salient messages. He suggests that "the falsely reassuring register of ornament and embellishment" hid these other meanings, such that on the murals at

Figure 7. Multi-color scroll decoration from *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, ms. Med. Palat. 220, f. 136r. By permission of the MiC. Any further reproduction by any means is prohibited

a)

b)

c)

d)

Figure 8. (a, b, c) Enclosed scroll with central medallion or figure, Alternative grotesque, and Enclosed alternative grotesque decorations from the *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 219, f. 78v, (b) ms. Med. Palat. 219, f. 189r, (c) ms. Med. Palat. 219, f. 120v. By permission of the MiC. Any further reproduction by any means is prohibited. (d) mural detail at Malinalco. Source: Drawing by the author after Peterson 1993, 74, Fig. 56

Ixmiquilpan, for example, "the undulating garlands on the walls ... provided a clear and superb staging of pre-Hispanic belief in the gyrating movement of universal forces" (Gruzinski 2002, 125).

As mentioned above, Garone Gravier was correct that the decorations more directly reflecting Pre-Columbian motifs and artistic style are more common in Books 1 and 2, though some do appear in Book 6. But the question remains whether the separation of these motifs into distinct groups is a fruitful line of thought. Nonetheless, these trends could relate, perhaps not to content, but to the sequence of production and artists involved with the project at different times over the course of its long completion (e.g., Gimmel 2008; Magaloni Kerpel 2011; cf. Garone Gravier 2011, 194). Alternatively, the increasing use of European stylistic elements may in fact have to do with increased access to printed books from overseas, through growing college libraries (Mathes 1982; Stephen Houston, personal communication, 2019). This is not to dismiss the decorations, as scholars have tended to do with decorative imagery in various contexts (Díaz Cayeros 2012; Gruzinski 2002, 107; Kendrick 2006, 274–80), and which may be, Gruzinski (2002, 125) argues, what allowed artists to get away with using these spaces in ways that would have been unsanctioned by Spanish colonists. Borders and decorative imagery can serve as a window into understanding cultural context and worldview (Crane 1911 [1896]; see also Fisher 2004, 16). Just as both Terraciano (2019) and Peterson (2019) have argued for the *Florentine Codex*, separating the motifs by artistic tradition or origin may not be the most productive end goal, especially since, in their current employ, they became something entirely new (Díaz Cayeros 2012, 213–17; Gruzinski 2002, 86, 128–29, 178). Within the *Codex*, sometimes a sequence of decorations flows from tightly scrolled acanthus leaves to more fluid branches that may depict the same type of leaf, but which diverts from the recognizable motif, highlighting the ease with which an ornament could be taken and unpacked for a new purpose. And, in fact, the decorations follow similar (though not completely mirrored) patterns of painting that Magaloni (2011, 55) sees in the enclosed images—"diluted, watery colors" in some places, and "black-and-white drawings that resemble prints" in others. Although Magaloni Kerpel (2011, 54–55) presents these as deliberate attempts to maintain cohesive book styles, some of these features most likely relate to the artistic "hands" she discusses elsewhere in the chapter (Magaloni Kerpel 2011; see also Houston, Fash, and Stuart 2014/2015).

Kevin Terraciano (2019, 11, Table 1.3) lists the texts *Naturalis historia* (Pliny), *Etymologiae* (Isidore of Seville), *De Proprietatibus rerum* (Bartholomeus Anglicus), *De civitate dei* (Augustine), and *General estoria* (Alfonso X) as five potential sources for the organization of the *Florentine Codex*. Pliny the Elder's text is often the most emphasized (e.g., Magaloni Kerpel 2014; Ríos Castaño 2018) but curiously does not appear in Mathes's (1982) reconstruction of the library in the Colegio de Santa Cruz. Of course, scribes and artists might still have had access to the book. Along with the reconstruction of the library's holdings based on a surviving subset of the Colegio's books, Mathes (1982) included a list of books printed in Mexico during the sixteenth century that most likely would have either ended up in the library or at least been readily available at the college. These include religious texts that were printed by early presses in Mexico, especially those of Juan Cromberger and Pedro Balli in the mid- to late 1500s. The proliferation of printing presses across Europe and the Americas changed the way people accessed and shared books and thus the information and images therein (Mathes 1982, 13; 1996, 412; see also Garone Gravier 2016). It is thus useful to consider the types of decorations included within the pages of books created in this context. These volumes were printed while the *Florentine Codex* was painted and inscribed by hand. As previously mentioned, Garone Gravier (2011, 191–95) has cited the influence of European typographic style on the decorations of the *Codex* (see also Peterson 2017). Less certain is the precise feedback between books that were coming out of the same point in space and time (sixteenth-century central Mexico) and which would have been readily available in the library of the Colegio de Santa Cruz (Stephen Houston, personal communication, 2019).

Garone Gravier (2016, 417; my translation) notes that "since Gutenberg the space of manual ornamentation was shrinking until it arrived at a fate of 'standardization of models'"—in other words, the mechanization of book decoration. These decorations included marks that sometimes served as text or punctuation, as well as more decorative crosses or botanical elements that denoted sections, frames, or emphasis within a book (Garone Gravier 2016, 418–22). A copy of Juan de Zumárraga's *Dotrina breue* was printed by Juan Cromberger/Juan Pablos in Mexico in 1544, and its cover page displays border motifs that recall many of the decorations in the *Florentine Codex* (see Figure 9). In particular, the winged angel flanked by acanthus scroll decorations, identified and catalogued as a woodcut by María Isabel Grañén Porrúa (2010, 18–19, 170), is similar to both images

Figure 9. Cover page from Juan de Zumárraga's *Dotrina breue muy p[ro]uechosa delas cosas q[ue] p[er]tenecen ala fe catholica y a n[uest]ra cristiandad en estilo llano p[ar]a comu[n] intelige[n]cia*, Mexico, Juan Cromberger (Juan Pablos), 1544. Source: Courtesy of the John Carter Brown Library

in the *Codex* and at Malinalco (see Figures 8a, 8c). Also of relevance is the left border of the page, which contains vases and plants (Grañén Porrúa 2010, 18, 170). In fact, Juan Pablos made a habit of including grotesque imagery on his cover pages (Grañén Porrúa 2010, 19), so it comes as no surprise that there is overlap in subject matter between these motifs and the decorations in the *Codex*. Importantly, Garone Gravier (2016, 424–25) also discusses the significance of grotesque imagery in association with the development and spread of printing presses in Europe. In sum, the artists of the *Codex* relied on various traditions, even while practices of drawing and printing changed rapidly. It is significant that Pablos was using these particular woodcuts as early as 1543 (Grañén Porrúa 2010, 17), meaning they had been around long enough to serve as inspiration to the artists at Tlatelolco.

Garone Gravier (2016, 428; my translation) discusses the prominent use of leaves as decorative elements, as the "vegetal structure many times was geometric and permitted the formation of combinations of interwoven elements and units of regular repetition." For example, the cover page of both *Dotrina breue* and Juan Gerson's *Tripartito*, versions printed in the publishing house of Juan Cromberger/Juan Pablos in 1544, display a border constructed of the repeated use of a single typographic botanical element that alternates to create the illusion of a continuous flowing line (Grañén Porrúa 2010, 19; Figure 10). This element can be identified as a member of the early series A employed by Juan Pablos in Cromberger's press (along with the cross which also appears on the cover page of this volume) (Garone Gravier 2016, 431, fig. 3). Grañén Porrúa (2010, 19–20) identified six woodcuts on this cover page; of particular interest is the right border, which depicts tightly scrolled acanthus leaves. Various decorations throughout the *Florentine Codex* are highly reminiscent of this border—especially certain *Enclosed scroll* decorations (see Figure 11).

The cover page of a copy of Pedro de Córdoba's *Dotrina [christ]iana p[ar]a instrucion [et] información[n] de los indios: por manera de hystoria*, printed by Cromberger's press in the same year, is enclosed by a rearrangement of the decorations on the cover page of *Tripartito*, excepting the small type elements (see Figure 12). It was common for engraved images to be used multiple times in one or various books (Garone Gravier 2019). Furthermore, altered mirror images of engravings were common when artists based their work off another image (Garone Gravier 2019, 170), likely because the artist copied the previous image into the carving, which would then be printed as opposite. While the above example is less a mirror image than an opposite rearrangement of decorative borders (since the images are not flipped), one could go so far as to appreciate the composition of mirrored page layouts as an aesthetic device. As Crane (1911 [1896], 57–58) notes, "a design, especially if on ornamental borderings of a page, often repeated several times throughout a book. These borderings and ornaments […] could easily be shifted and a certain variety obtained by being differently made up." The enclosed decorations that border the two cover pages contain botanical decorations as well as human figures, angels, and zoomorphic creatures. The format of these borders provides insight into the inspiration behind a number of the decorations in the *Florentine Codex*—mainly those influenced by grotesque and Renaissance imagery—which are enclosed in boxes and thus follow a tradition employed in printed books (see Figure 13,
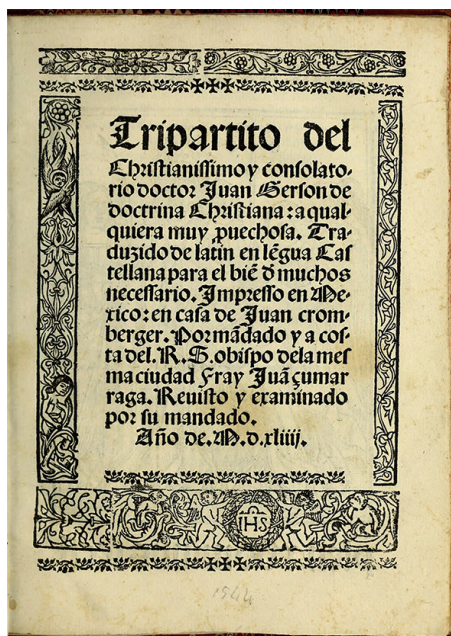
Figure 10. Cover page of Juan Gerson's *Tripartito del christianissimo y consolatorio doctor Juan Gerson de doctrina christiana: a qualquiera muy p[ro]uechosa,* Mexico, Juan Cromberger, 1544. Source: Courtesy of the John Carter Brown Library

Figure 11. Enclosed scroll decorations from the *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 220, f. 18v, (b) ms. Med. Palat. 220, f. 36r. By permission of the MiC. Any further reproduction by any means is prohibited
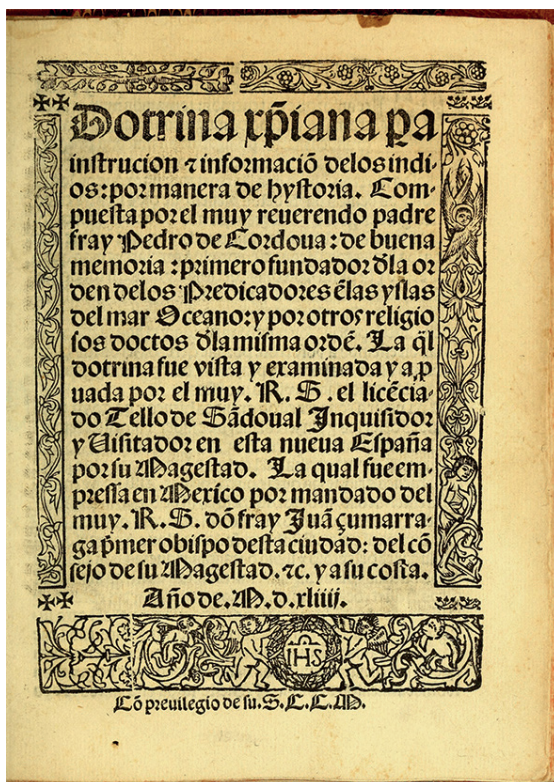
Figure 12. Cover page of Pedro de Córdoba's *Dotrina [christ]iana p[ar]a instrucion [et] informacio[n] de los indios: por manera de hystoria*, Mexico, Juan Cromberger, 1544. Source: Courtesy of the John Carter Brown Library

Figure 13. Enclosed alternative grotesque decoration from the *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, ms. Med. Palat. 220, f. 417v. By permission of the MiC. Any further reproduction by any means is prohibited

see also Figure 11). Further suggestion of a deep connection between print-ed books and the imagery employed in the *Codex* comes in the form of the paragraph signs that appear in all three volumes and mimic those used by book printers (see, for example, Garone Gravier 2016; Grañén Porrúa 2010, 159). On two separate instances, both in Book 10, a row of three typo-graphic crosses is employed as decoration (Sahagún 1576-77, Bk 10: Table of Contents, f. 70v), which may be modeled after the cross used by Juan Pablos beginning in 1548 (see catalogue in Grañén Porrúa 2010, 159). Fi-nally, in Book 6 of the *Codex*, an artist drew a pointing hand (Sahagún 1576-77, Bk 6: f. 204v), reminiscent of both manicules in catechisms (Pardo 2015, 9) and typographic designs used by Pedro Balli (see catalogue in Garone Gravier 2016, 437, fig. 10). Osvaldo Pardo recognized that this sign is a particularly salient example of the interplay between book printing and il-lustration: "First migrating from manuscripts to the printed page, and then enjoying a double life as handwritten sign and movable type, the manicule came to be used in Mexican pictorial catechisms as a conjunction, emphat-ic particle, and deictic sign that stood for the authoritative hand of the teacher/friar" (Pardo 2015, 9). Though not counted in the catalogue of decorations investigated here, these three examples suggest the extent to which the artists creating the *Florentine Codex* were influenced by contem-porary book printing traditions.

A final example from sixteenth-century printed books in Mexico is a discrete image rather than a border: an elaborate design in Alonso de Mo-lina's *Arte de la lengua mexicana y castellana*, printed by Pedro Balli in 1576 (see Figure 14) (Molina 1576, f. 78v). This design has some similarities to the decorations in the *Florentine Codex* labeled by Garone Gravier (2011, 195) as typographic, which she identified as influenced by traditions of European book-printing using woodcuts. The presence of such a design in a book printed in 1576 in Mexico again suggests that the designs in the *Florentine Codex* may have been influenced by contemporary practices in Mexico as well as European book hand-illustration and printing. The "ty-pographic" decorations in the *Codex* are hand-drawn illustrations inspired by prints (Garone Gravier 2011, 195), in turn inspired by more fluid hand-made illustrations in older manuscripts (Garone Gravier 2016, 417). Thus, the decorations in the *Florentine Codex* resemble a skeuomorph, "a thing that looks like one material but is, in fact, another" (Houston 2014, 52)—in this case not in material but in production (Stephen Houston, personal communication, 2019). Skeuomorphs are concisely defined as "cross-media
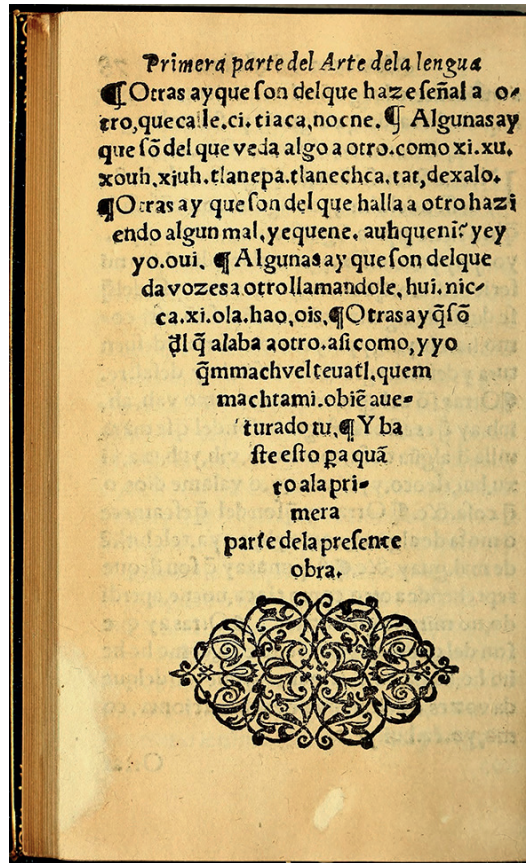
Figure 14. F. 78v of Alonso de Molina's *Arte de la lengua mexicana y castellana*, Mexico, Pedro Balli, 1576. Source: Courtesy of the John Carter Brown Library

transfer," where "[f]unctional features, or ones intrinsic to an original material, were replaced by imitations that preserved formal or depictive traces of the original" (Houston 2014, 52). Examples commonly given include ceramic containers that evoke gourds (Houston 2014, 40–41) or woven basketry (Blitz 2015, 666). Skeuomorphs have been studied in terms of functionality and how their features affect decisions to try new technology (Blitz 2015). Blitz (2015, 668) has noted that "shape skeuomorphs," like the containers mentioned above, while made of different material, occupy the same role. In the two-dimensional space of a page, the equivalent concept might be the place a decoration occupies in the page layout. Though not in the traditional way, the concept of skeuomorphs especially applies

to hand-drawn decorations in the *Florentine Codex* that deploy cross-hatching to mimic woodcuts or engravings. These decorations were drawn by hand but evoke a more mechanical technology. Though Houston (2014, 57–58) has cautioned against attempts to explain all skeuomorphs through one line of reasoning without consideration of the local context, he notes that one "explanation […] is that they express jointly practiced technologies in tandem development" (Houston 2014, 59). This is possibly what feedback between printing and illustration may have looked like in early colonial Mexico.[5]

Various researchers have also pursued more specific leads relating to sources and inspiration for individual images in the *Florentine Codex*. For example, Escalante Gonzalbo (2003, 2008, 2014, 2019) has traced images of cargo ships, snowfall, and women that Sahagún (1576–77, Bk 10: f. 39v–f. 40r, my translation) describes as "looking for vices … sleeping with some, and with others … making eyes at men" to their potential European sources. The depiction of snowfall in particular may have been inspired by a woodcut in a book compiled by Olaf Magnus (Escalante Gonzalbo 2019, 72). A version of Pliny's *Historia naturalis* from around 1300 also depicts "falling rain or snow" (Armstrong 1983, 25), although it is unclear whether the style in this image matches that employed in the *Florentine Codex*, which has been deemed "the European printed model" by Escalante Gonzalbo (2019, 72). Escalante Gonzalbo (2014, 165) proposes that the depictions of women he refers to as prostitutes in the *Florentine Codex* are inspired by images of the ancient Greek Graces, or goddesses related to beauty and fertility (Smith 2012). Though in this case he argues that the content is unrelated to the source image (Escalante Gonzalbo 2014, 167), perhaps it would be useful to challenge this assumption and accept the possibility that such emulation was a cloaked act of defiance, a defense against a skewed interpretation of women's sexuality likely heavily influenced by the Church. To be sure, Sahagún's language has more to do with external judgment than identification of the women's occupation. There are other cases where, as Escalante Gonzalbo (2003, 180) writes, "the meaning of a scene acquires peculiarities due to the theme of the engraving used as a model," particularly when the source was a Christian religious image.

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[5] See also Gruzinski (2002, 116) for a similar discussion of simultaneous feedback and exchange of designs between Europe and Mesoamerica.

Christian imagery produced another layer of meaning that the Nahua artists of the *Florentine Codex* could call upon in the form of pictorial allusion or even allegory (Escalante Gonzalbo 2003; Peterson 2017). For example, Peterson (2017, 205–06) has identified that a doctor and patient shown in Book 11 invoke the Pietà, images of Mary holding Jesus's body after his crucifixion, both to represent the gravity of the disease and to qualify the power of the medicine. Peterson (2017, 208) notes that "some adoption of biblical narratives by the *Florentine Codex* artists worked in reverse, subverting the original Christian intent"—for example, allusions to the Three Magi in images of worshippers in front of a deity-effigy (Peterson 2017, 208). As with the modified scrolls described above, Peterson (2017, 199) argues that through the agency of Nahua artists drawing on Christian imagery for the paintings in the *Florentine Codex*, "a familiar scene is recast, even disrupted." Friars often found that biblical stories could be interpreted in, from their point of view, unintended ways. Consider the story of the (near-) sacrifice of Isaac as viewed through the lens of a religion that incorporated corporeal sacrifice—the lesson becomes ambiguous (Díaz Balsera 2001).

A final element of Christian imagery involves the depiction of plants. Escalante Gonzalbo (2003, 181–82) identified palm trees in an image from the *Codex Azcatitlan* that shows the Mexica journeying after leaving their homeland, linking this image to common biblical images of the Exodus, which often display the same palm trees as members of oasis vegetation communities. Escalante Gonzalbo (2003, 182) concludes that the artists "wished to establish a link between the biblical episode and Mexica history."

Botanical Evocations and "Paradise"

A prayer-book was not only a prayer-book, but a picture-book, a shrine, a little mirror of the world, a sanctuary in a garden of flowers (Crane 1911 [1896], 26)

Berenice Alcántara Rojas's (2011) analysis of flowers in the *Florentine Codex,* and in colonial central Mexico more generally, elucidates the facility of melding between the Nahua "flower world" and the European Christian idea of a garden paradise, citing the murals at Malinalco as an embodiment of such syncretism (see also Peterson 1993, 127). Though

Alcántara Rojas (2011, 113) briefly mentions the flowers that appear as decorations throughout the *Codex*, the analysis focuses on the "main" images. Alcántara Rojas (2011, 131) lists eight plant species associated with the "flower world," largely for their "quality of producing sweet fragrances with the capacity to affect the human nervous system and create altered states of consciousness" (Alcántara Rojas 2011, 130–31). Some appear in Book 11 of the *Florentine Codex*: "*Plumeria rubra* [...] *Talauma mexicana* [...] *Magnolia schiedanae* [...] *Solandra maxima* [...] *Pseudobombax ellipticum* [...] *Philodendrun mexicanum* [...] *Quararibea funebris* [...] [and] *Beureria* [*Bourreria*] *huanita*" (Alcántara Rojas 2011, 131). These flowers also possess a lushness to their petals and an extravagance to their visual cues for pollinators. Similarly, the murals at Malinalco, in imaging another "paradise," depict, among others, *Talauma mexicana*, *Bombax ceiba*, *Solandra* sp., *Vitis* sp., *Acanthus* sp., and *Punica granatum* (Peterson 1993, 85–98), some of which Peterson identified by reference to Book 11 of the *Florentine Codex* (Peterson 1993, 84).

Of the plants listed above, four (not including *Acanthus* sp., which appears throughout) are evoked in the *decorations* of the Florentine Codex. It is important to rely on the concept of evocation rather than identification. At various instances, the same flowers can be found on plants with differing leaves (compare Figures 1a and 15a), implying that the meaning may rest in the floral elements regardless of whether or not the plant was depicted naturalistically.[6] Furthermore, strict taxonomic identification may push beyond the diagnostic potential of the images themselves. Nonetheless, there are strong possibilities: *Solandra maxima* (see Figure 15, see also Figure 1a), either *Pseudobombax* sp. or *Bombax* sp. (see Figure 16), *Vitis* sp. (grapes; see Figure 17), and *Punica granatum* (pomegranate, identified based on Peterson 1993, 49, fig. 25; see Figure 18). The first three taxa had (and have) divine significance in central Mexico, and the latter two convey Christian meaning (Alcántara Rojas 2011; Ebacher 2016, 61, 68; Peterson 1993, 85–98). It is important to emphasize that combinations of some of these plants have been found in other contemporary pieces of art. Colleen Ebacher (2016, 69–70) has called attention to the presence of local and non-local plant species in the murals of Malinalco, interpreting them as a type of "heterotopia." It is not novel to recognize that these plants

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[6] See Ávila Blomberg (2012, 494) for a similar discussion regarding the *De la Cruz-Badiano Codex*.

a)   b)

Figure 15. a) Botanical (in color) decoration from the *Florentine Codex*. Source:
Florence, The Biblioteca Medicea Laurenziana, ms. Med. Palat. 218, f. 25r.
By permission of the MiC. Any further reproduction by any means is prohibited.
b) *Solandra maxima* flower; ©Forest & Kim Starr, CC BY 3.0,
https://commons.wikimedia.org/w/index.php?curid=6106149

a)

b)   c)

Figure 16. a) Botanical (in color) decoration from the *Florentine Codex*.
Source: Florence, The Biblioteca Medicea Laurenziana, ms. Med. Palat. 218,
f. 48r. By permission of the MiC. Any further reproduction by any means is
prohibited. b) *Pseudobombax ellipticum* flower; © Tatters ✿, CC BY 2.0,
https://www.flickr.com/photos/62938898@N00/5096233207;
c) *Bombax ceiba* flower; ©Forest & Kim Starr, CC BY 3.0,
https://commons.wikimedia.org/w/index.php?curid=6182072

Figure 17. Botanical (painted and unpainted) decorations from the *Florentine Codex*. Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 218, f. 46r, (b) ms. Med. Palat. 219, f. 84v. By permission of the MiC. Any further reproduction by any means is prohibited

Figure 18. Enclosed scroll and enclosed botanical (unpainted) decorations from the *Florentine Codex*. Note detailed depiction of pomegranate seeds.
Source: Florence, The Biblioteca Medicea Laurenziana, (a) ms. Med. Palat. 219, f. 50r, (b) ms. Med. Palat. 219, f. 198r. By permission of the MiC. Any further reproduction by any means is prohibited

were painted or drawn together; rather, the goal is to draw attention to the fact that one of the spaces in which this was done was within the pages of the *Florentine Codex*, in decorations which have largely been overlooked.

Pomegranates are highly symbolic in various cultural and religious contexts, and historical representations have come to imbue them with multifaceted, and sometimes seemingly contradictory, meanings (Goor 1967; Ruis 2015). Ruis (2015) has written about the symbolic role of pomegranates as keepers of equilibrium between various forces, representing fertility and virginity, acting as both aphrodisiac and contraceptive, and standing for life and death. In ancient Greece, pomegranates played a major role in the myth of Persephone, preventing her from leaving the underworld and thus embodying both death and cycles of agricultural fertility (Giesecke 2014, 42–47; see also Ruis 2015, 25). Though pomegranates were also present in Renaissance art (Gruzinski 2002, 85), it is useful to note that Indigenous artists often painted scenes from Ovid's work on Greek mythology (Gruzinski 2002, 91–106), suggesting multiple simultaneous avenues of influence that could have inspired artists to include these fruits in the *Florentine Codex*. In fact, Gruzinski (2002, 103) has pointed out that the scribes of the *Codex* chose to compare Pre-Columbian gods with members of the Greek pantheon, and in another section, they included reference to the Trojans (Sahagún 1576–77, Bk 10: f. 114r). In Christianity, "The pomegranate connects Mary to the ancient mother goddesses as an icon of divine fertility, but paradoxically it also represents her chastity" (Ruis 2015, 25). Furthermore, the blood-like juices of the pomegranate invoke Jesus's suffering (Ruis 2015, 25). Grapes are also associated with the blood of Christ—recall the Christian ritual of Communion (Peterson 1993, 96; Fisher 2004, 5)—and in broader contexts have invoked "the cycle of death and rebirth" (Giesecke 2014, 68). Both of these fruits are red, an important color in central Mexico associated with deities and creation, and perhaps strategically added to Christian imagery to imbue them with new meaning (Bassett and Peterson 2012, 49–52). It is possible, then, that these fruits took on the role of flowers or color glyphs by providing color and meaning without the use of pigment (cf. Magaloni Kerpel 2011, 51), with "the emphasis on the red and black respond[ing] to a double or bicultural reading of sacred knowledge" (Bassett and Peterson 2012, 50).

Peterson (1993, 130) suggests that through projects like the murals of Malinalco, "not only the cloister garden but the entire monastic complex and even the Christian church as a whole came to be thought of as

representing the 'earthly paradise'." A similar phenomenon may occur within the microcosm of the *Codex* itself. Diana Magaloni Kerpel (2019, 158) has described the decorations as god "essence" present to "qualify" the text (see also López Austin 1974, 144). Taking this a step further, the *Codex* becomes "a little mirror of the world," as Crane (1911 [1896], 26) argues of botanical decorations in European prayer books (see also Tosi 2016), or as Díaz Cayeros (2012) finds in the choir of the Puebla Cathedral. Not only in Book 1, but throughout, the decorations in the *Florentine Codex* invoke paradise. The artists may have used these decorations, including the depictions of non-local plants like pomegranates, in the similar agentive ways they added color to religious murals (Bassett and Peterson 2012, 49–52): "colors and colorful things functioned within vast conceptual matrices so that a flower was at once a part of the natural world, a source for pigment, a metaphor for poetic and priestly speech, and a glyphic prompt in a synesthetic experience (Bassett and Peterson 2012, 58)".

This inference buttresses the claim that plants were "used as a referring agent to chromatically classify the whole environment perceived by the Nahua" (Reyes Equiguas 2011, 154). The inclusion of these plants in the decorations of the *Codex* is also another example of the artists' agency (Peterson 1993; 2017; see also Ebacher 2016; Gruzinski 2002, 114–25 for discussions of Indigenous artists' agentive uses of motifs in murals). Just as they used the larger, illustrative images to complicate narratives in the Spanish text, sometimes with layers of subtlety difficult to unpack without knowledge of the original referent (e.g., Escalante Gonzalbo 2003; Peterson 2017), the artists made decisions about what to include in the small spaces left between blocks of text. Knowledgeable about bookmaking, painting, and European illustrated manuscripts, the artists called upon these traditions to turn the pages of the *Florentine Codex* into a reflection of the flower paradise so salient in Pre-Columbian religious practice. But they also deliberately included imagery of luscious red fruits that are not native to the Americas, not as a parallel but rather an intersecting invocation of Christianity to augment, or underscore, the multi-faceted project that was imbuing the pages of the *Codex* with sensual reflections of vitality, paradise, and a deep understanding of peoples' place in the natural world (see also Mundy 2019). In this way, the artists turned the encyclopedic *Florentine Codex* into a work of art similar to those deemed worthy of sacred spaces (e.g., Díaz Cayeros 2012; Ebacher 2016; Peterson 1993).

Conclusions

This project began with a description and categorization of decorative elements in the *Florentine Codex.* Typological categorization can elucidate patterns and sources of inspiration for artwork, but also illuminates instances of defiance to categories. Ultimately, this work was a step toward finding meaning in the nuances of individual decorations. The classification employed here differed from previous research in its focus on botanical differences between decorations as well as a focus on the use of color. Though it could be argued that lack of color was *not* deliberate, considering the conditions under which the artists were working, the opposite is not true—pigment was used strategically and meaningfully. This point highlights another novel aspect of the present study, which is the identification of modified scrolls, defined by a use of paint that subverted the initial design outline. This analysis facilitated a deeper investigation of the meaning behind botanical elements of the decorations as well as their connections to contemporary projects. A productive next step would be returning to some of the work Garone Gravier (2011) began in separating style from content and conducting an in-depth comparison to nearby images within the *Codex,* re-integrating the decorations within the space of the book.

The decorations under consideration, images often ignored in analyses of the *Codex* with one notable exception, were analyzed here through various lenses related to traditions of botanical illustration, herbals, books, and artistic materials from the same period. The decorations are not superficial referents to a single tradition or meaning; they simultaneously contain multiple registers of significance. As various scholars have attested, images in the *Codex* cannot be written off as mere support of the text—in fact, images often contained layers of meaning that complicated and even questioned Sahagún's mission. What began as a project of simultaneous documentation and colonization was redirected by the Indigenous artists and scribes (see also Escalante Gonzalbo 2003; Peterson 2017).

Decorations closely accompanied the artistic style of larger images, and some brightly colored scroll decorations may have evoked featherworking. European sources heavily influenced the content of some decorations, but regardless of the specific source, a common theme is that botanical elements—and especially flowers and fruits—played an important role in denoting inspiration and meaning behind the decorative elements. The paradisal religious significance evoked in motifs of both Pre-Columbian and

European tradition, as well as the varied sources of inspiration resulting in skeuomorphic designs and grotesque acanthus leaves modified with brightly colored paint to produce flower blooms, highlight the complexity, contradiction, and ingeniousness that permeate the *Codex*. A set of material objects evoking paradise within their pages, the *Florentine Codex* contains multitudes, courtesy of the Indigenous scribes and artists who created it.

Acknowledgments

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