

Book of Harmonies: The Library of Julius II

"Through you and by my aid Rome is being rebuilt."

These words, written by Evangelista Maddaleni Fausto di Capodiferro, represent Apollo's message to Pope Julius II, the Renaissance pontiff who oversaw major building efforts at St. Peter's Basilica and the surrounding environs of Vatican hill. Julius II, who styled himself as the successor to Julius Caesar, was engaged in an attempt to assert papal authority over the entire Italian peninsula, long the playground of foreign interlopers like the Borgias of Aragon, the Imperial Habsburgs, and the Valois dynasty of France, in order to unite Christendom in a crusade against the ascendant Ottoman Empire. He concretized this political mission in elaborate commissions from some of the greatest artists of all time, including Bramante, Michelangelo, and Raphael. One such commission, Raphael's frescoes in the *Stanza della Segnatura*, reflects his personal view of Rome's role as the syncretic focal point of Western culture. This room housed the Pope's personal library, filled with tomes that spanned the breadth of Western knowledge at the time, including texts ranging from pagan antiquity to the humanistic theologians, poets, and philosophers of the Renaissance.

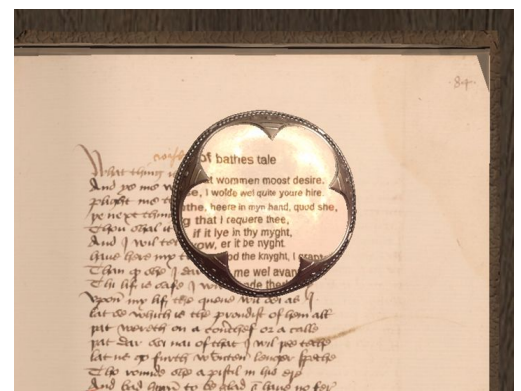
Thanks to the scholarship of Tracy Cosgriff, we now know that the subject matter depicted in Raphael's frescoes corresponds directly to the contents of Julius II's library, creating an intertextual dialogue that points to a sort of 16th century augmented reality experience. Now, thanks to digital technology, we are able to recreate this experience, so visitors may encounter the totality of Raphael's vision in a way that has not been possible for centuries. Pick up a VR headset and allow us to share with you a lost moment from 1513...

Technology Overview

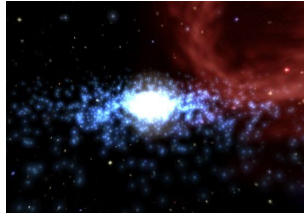
This is a virtual reality experience in which visitors will be transported to the distant past and see the *Stanza della Segnatura* as it was when Raphael was alive. In this first-person, open world experience, visitors will engage with a fictitious book, the *Book of Harmonies*, that will illuminate for the visitor the connections between various contents of Julius II's library and Raphael's frescoes on the walls of the room.

Utilizing an interface similar to the "Book of Fame" digital prototype created at the University of Toronto for the 2017 IIF Conference in Vatican City, this project will allow the visitor to handle a book in the virtual world that will serve as their guide for an interactive historical/educational experience. Scanned pages of various illuminated manuscripts will provide context and artistic commentary on the frescoes for the visitor.

We have used the Unity game engine to recreate the *Stanza della Segnatura* as it existed in the 16th century; as Julius II's personal library, the room will be lined with bookshelves and



filled with additional period furnishings: Renaissance era book presses (bookshelves), folding chairs, and globes, both celestial and terrestrial. The exterior environment, viewable through the window beneath Raphael's *Parnassus*, also reflects the historical period and will appear to the visitor as Bramante's *Cortile del Belvedere*.

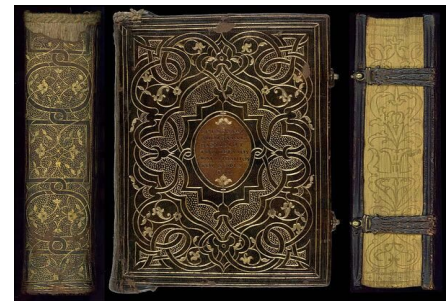


A “ribbon” mechanic will connect points of interest in the room, illuminating for the visitor the “divine harmony” between art and page. As the visitor flips through the pages of the book, a particle effect representing bolts of divine inspiration will travel from the text, across the room, and illuminate relevant portions of the frescoes.

Additionally, the experience will include various period furnishings that the player will be able to rearrange to their liking. This is to accommodate the heated scholarly debate surrounding the function of the space and the precise arrangement of its furnishings. We envision that this mechanic can be used as a tool for speculative art history.

Experience Summary

You are an apprentice librarian who has travelled to Rome from Florence alongside the retinue of Giovanni di Lorenzo de' Medici, who has just been elected pope. The new pope, who has dubbed himself Leo X, has tasked you with clearing out the Papal apartments, previously occupied by his predecessor, Julius II. As he takes over the vacant papal throne, your liege is eager to make the space his own. You are particularly excited to explore Julius' personal library in the *Stanza della Segnatura*, which Raphael had just frescoed a few years prior. While the prospect of seeing brand new art from a rising star certainly interests you, the most intriguing aspect of the room is the fabled *Book of Harmonies*. You have heard rumors of this book, which many have claimed to have magical properties, and now have the chance to encounter this text for yourself.



As you enter the *Stanza*, you are immediately struck by the immense frescoes that fill your view. Their scale places you in the events they depict, and action spills outside of the frame, hinting at a world just beyond the proscenium of the wall. The room is somewhat dark; all of the window shutters are closed. You nearly bump into a mass of book presses haphazardly arranged in the center of the room. It appears as if a careless soul has already begun reorganizing the space. These presses are movable though, and a bit of narration explains that you may rearrange them in the room as you see fit. Noticing that the sections of wall directly beneath each of the frescoes

display obvious signs of tampering, you move each of the book presses back to their proper places.



As you explore the space more, you notice the lush soundscape surrounding you. Just beyond the western doors, you hear Raphael and his assistants hard at work in the *Stanza di Eliodoro*. From the door on the eastern side of the room, you hear the sound of various workmen moving furniture. Outside, to the south, you hear the muffled sound of birds chirping. You walk over to the northern window beneath Raphael's *Cardinal Virtues* and open the shutters to reveal a strange and exotic site: a courtyard, the *Cortile del Pappagallo*, that houses an aviary populated

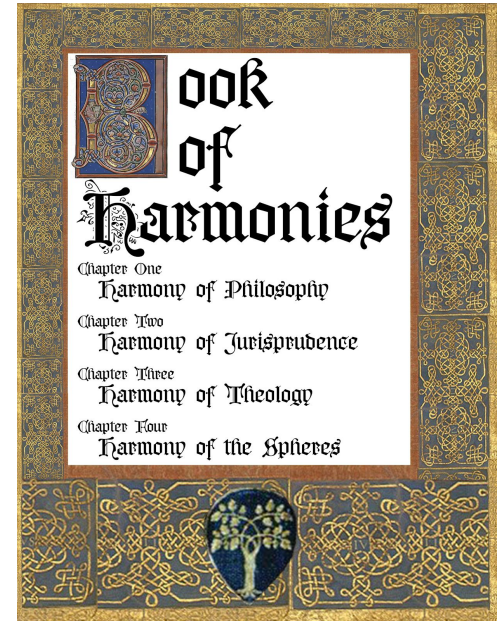


by various breeds of tropical parrots and other rare birds! Looking in the opposite direction, you decide to allow more light to enter the room. You walk to the window beneath Raphael's *Parnassus*, where you can hear sounds of construction, and throw open the shutters. A most striking view washes over you. Bramante's beautiful *Cortile del Belvedere* as it existed prior to its partition in the 1580s:

You notice a shaft of light pouring into the room from the window in front of you. You follow the trail left by the incoming light to find that it lands on a book propped up on a rotating lectern. This is the *Book of Harmonies* you have heard so much about! The book is beautiful; its cover is decorated with golden knots and coils in a pattern that looks similar to the front of the altar depicted in Raphael's *Disputa*. You open the book to find illuminated initials and tangled bianchi girari bordering the opening text.

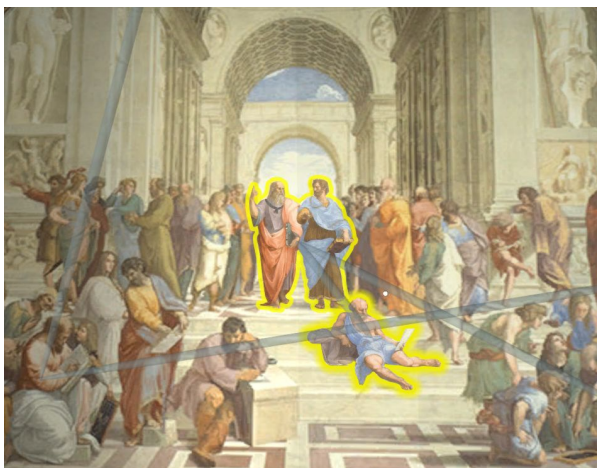
The book seems to be divided into various sections detailing harmonies in different areas of knowledge. You take note of the four principal section headings:

1. *Harmony of Philosophy*
2. *Harmony of Jurisprudence*
3. *Harmony of Theology*
4. *Harmony of the Spheres*



You gesture towards the section on philosophy and the page flips to an explanation of Neoplatonism in Renaissance philosophy. You read about Argyropoulos, Ficino, and Pico's attempts to establish a *Concordia* between the distinct philosophical worldviews of Plato and Aristotle. As you read, the page begins to glow with a golden light. Suddenly, a burst of glowing particles jumps out of the book and flies across the room to the *School of Athens* fresco! They dance around the center of the mural before sinking into the painting and illuminating the figures of Plato and Aristotle. The sparkling particles again burst out of the fresco and continue their journey across the room towards one of the book presses. One of the books begins to glow and floats off of the shelf. You are amazed as the sight before you: translucent ribbons winds across the room, connecting the *Book of Harmonies* in your hand with the fresco on the wall and the book floating near the press. You decide to look at the painting first.

You walk over to the *School of Athens* and look at Plato and Aristotle's illuminated



figures. A bit of narration explains the difference between Plato and Aristotle's philosophical viewpoints as expressed in Raphael's painting. Plato, holding a copy of *Timaeus*, points towards the sky, representing his belief in a perfect realm of "Forms," where the true nature of all objects lies. On the other hand, Aristotle holds his *Nicomachean Ethics*, and holds his hand out in front of him to

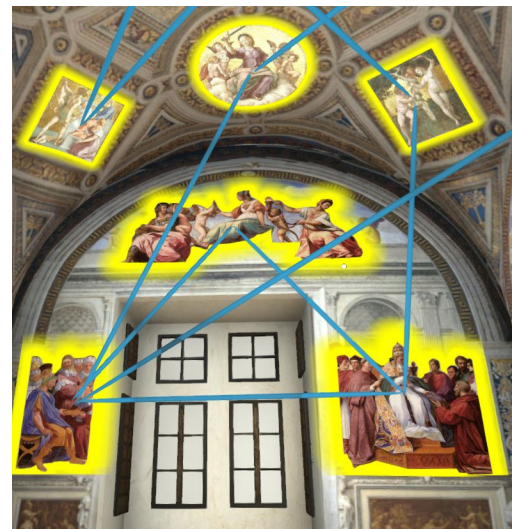
symbolize his philosophical focus on material reality. As you look closer at the image, you notice that the book in Aristotle's hands is pulsating with a glow and is the source of the additional trail of light, leading to the book press. You follow this trail and note that the copy of *Ethics* in Julius II's library, a Latin translation by John Argyropoulos, is the same book that Aristotle is holding in the painting!

You gesture towards the book and it opens, revealing a beautiful illuminated manuscript. On the page is a depiction of Aristotle that pulsates with the same golden glow. You point at the picture and more narration explains that Raphael was likely inspired by Aristotle's hand gesture in this image for his larger depiction of the philosopher on the wall, creating a direct relationship between the book and the fresco. You look back at the page and notice the pulsating glow is now surrounding the crest at the bottom of the page. A bit of narration explains that this is the crest of Julius II's family, the Della Rovere, who are represented by the oak tree. You gesture towards this and the particles once again travel from book to wall, this time landing on the Della Rovere oak trees framing each corner of the room. Having learned a sufficient amount about philosophy, you swipe across the face of the page and the book returns to its place in the press. All of the glowing connections that once filled the room dim and the *Book of Harmonies* in your hand returns to the index page.

You decide to look next at the Judicial harmony section. You make a gesture and the page changes again, this time providing a description of Julius II's interest in jurisprudence and his attempts to unite both civil and canon law under his authority. The page once again begins to glow and a trail of light flows from your book to the wall housing Raphael's *Cardinal and Theological Virtues*.

The figure of Pope Gregory IX illuminates and then bursts forth with multiple ribbons of light, criss-crossing

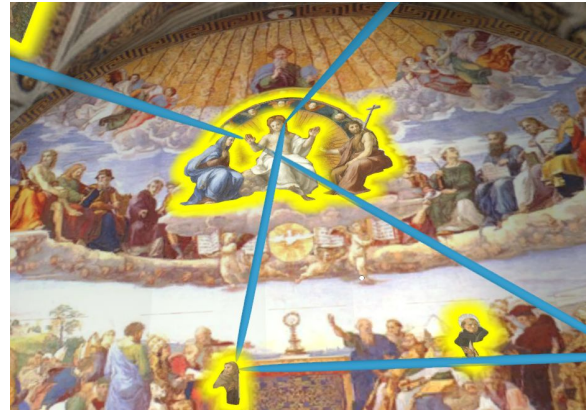
the room with a multitude of references. Intrigued by this development, you walk over to the image and begin to hear more narration. This time, the narration explains that Raphael used the appearance of Julius II for his depiction of Gregory IX receiving the *Decretals* from Raymond of Penyafort in 1230. As you hear this narration, you cannot help but take note of the ribbon of light connecting Gregory IX to the image of Fortitude grasping the oak tree, the symbol of the Della Rovere family.



Stepping back for a moment, you notice that the most prominent ribbons of light connect the image of Gregory IX with that of Emperor Justinian receiving the *Corpus Juris Civilis*, and the medallion depicting Justice, with her sword and scales, above the painting of the Virtues. These

connections form a triangle of significant meaning, representing a synthesis of the secular and holy (in the form of civil and canon law, respectively) in subordination to the abstract principle of Justice.

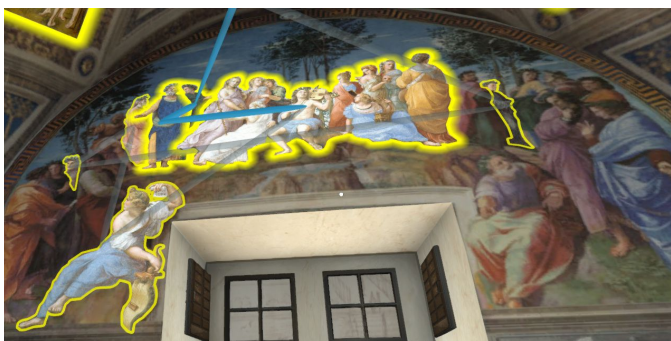
You gaze back at the singular figure of Gregory IX and notice that the book in his hand is pulsating with the same glow that surrounded Aristotle's *Ethics*. You gesture towards the book and another ribbon shoots across the room towards a book that once again floats off of the shelf and remains suspended in midair. You walk towards the book and see that it is Julius II's own personal copy of the *Decretals*. You gesture and the book opens to reveal another beautiful illuminated manuscript, this one depicting Christ enthroned surrounded by Mary, John the Baptist, and his Apostles. Narration explains that this text describes the division of spiritual and temporal authorities. The image of Christ glows and as you gesture towards it, a ribbon forms between the book and Raphael's *Disputa*.



Here, as in the book, Christ is depicted flanked by Mary and John the Baptist while a council of various Biblical figures sits in the clouds. Below them, in the earthly realm, a number of ancient Church Fathers as well as contemporary Italian figures are engaged in a debate over the nature of Transubstantiation. In the center of the image, you notice that the monstrance is also connected by a ribbon to the figure of Gregory IX on the *Jurisprudence* wall. The narration instructs you that Gregory IX is painted facing in the direction of the *Disputa*, symbolizing the divine authority conferred upon him and the church by the Holy Sacrament.

Since you are now focused on the *Disputa*, you decide to explore theology next. You wave away the *Decretals*, which returns to its place in the press, and once again the room is cleared of connections. Going back to the index of the *Book of Harmonies*, you gesture towards the section on theological harmony. The book now shows a page that details the unique mixture of Christian and pagan influences on Renaissance humanism and theological thinking. The book once again glows and, to your surprise, the glowing particles do not travel to the *Disputa*, but instead find their home in Raphael's *Parnassus*!

The figure of Apollo begins to glow and a ribbon points outside the window beneath the fresco. As you gaze out of the window at the *Cortile del Belvedere*, more narration explains to



you the continuity between Mount Parnassus, the Greek mountain sacred to Apollo that overlooked the oracle at Delphi, and Vatican Hill, also believed in antiquity to be sacred to the sun god. As you look across the magnificent *Cortile* at the *Belvedere* situated on the peak of the

hill, the narration explains that a famous statue of Apollo from antiquity, the *Apollo Belvedere*, was housed in this building. In light of Julius II's accomplishments on the battlefield and deference to ancient Roman customs, Evangelista Maddaleni Fausto di Capodiferro wrote a poem in which the statue speaks directly to the Pope:

*"I am Apollo ever the defender of Julius and the
Julian line
Who rescued you,—never undone—from so many
perils,
And descending from heaven I bore you beyond the
stars.
It isn't the marble me you look upon—
but behold!
My true form*

*as I am seen atop lofty Olympus!...
Through you the people pluck up courage,
Through you and by my aid Rome is being
rebuilt....
Your future feats lurk not in obscurity
But are plain as day, and, once fulfilled, will make
the world
Burst with such brilliance that we'll suppose it had
just been created..."*

After the recitation of this poem, the narration explains that Julius II's prowess on the battlefield made him a popular subject for heroic poetry. Lorenzo Parmenio, the current custodian of the Vatican Library, wrote a volume of encomiastic verse dedicated to Julius II. The book floats off of the shelf for perusal but you have other priorities at this time. In the *Parnassus*, you can see the figure of Dante Alighieri is illuminated. You gesture towards him and the narration further explains the significance of Dante's *Commedia Divina* on the theological landscape of the Renaissance imagination, as well as Julius II's personal infatuation with his poetry. He is depicted alongside Virgil, who was his guide through the depths of Hell in the *Inferno*. Here, Virgil guides the stone-faced poet through the revelries of the pre-Christian theological imagination.

The glow around Dante expands as a ribbon crosses the room to the depiction of the poet in the *Disputa*. Here, Dante is pictured on the right side of the fresco, behind Sixtus IV. A ribbon forms between Dante and St. Thomas Aquinas and the narration explains that the worldview



espoused by the *Commedia Divina* was inspired by the *Summa Theologica*. Because of the eclectic sources cited in the *Summa*, Aquinas turns out to be a vector for a number of ribbons, which spring forth from his image and connect to such personages as Paul the Apostle and St. Augustine in the *Disputa*, as well as Plato and Averroes in the *School of Athens*. Satisfied at this point with the exploration of theology, you wave away the ribbons and turn back to the *Book of Harmonies*.

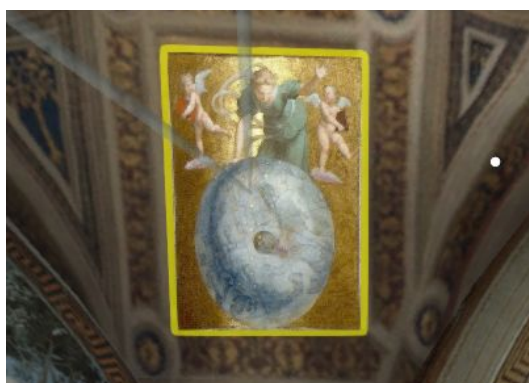
Finally, you gesture at the section on the Harmony of the Spheres and the page flips to an explanation of resonances between mathematics and music. The book explains that Western

music is based upon mathematical intervals first established by Pythagoras. Again, the book glows and a burst of light flies towards *The School of Athens*, this time illuminating the figure of Pythagoras, who is pictured alongside Archimedes revealing a diagram that resembles a lyre. Archimedes' slate begins to glow and a ribbon shoots across the room to Apollo's lyre in the *Parnassus*. A ribbon connects this lyre with the image of Pope Gregory I in the *Disputa*. At his feet lies a copy of his *Magna Moralia*, which glows and makes a connection with the physical copy in the library, which floats up from its place in the book press. When you gesture towards the book, a quotation from "On Musical Harmonies, Tuning, and Resonance" is read: "Those who tune the harmony of stringed instruments have such skill that often they can pluck one string and another one, placed far away with many intervening strings, resonates in harmony. When the one gives sound, the other, in tune to the same melody, echoes back at the same time with the others silent."

Looking back at the *School of Athens*, you can see an additional ribbon forming between Pythagoras and Euclid, whose appearance, the narration explains, is based on Donato Bramante, Raphael's mentor and the designer of the *Cortile del Belvedere*. Euclid's slate glows and another stream of light connects it with the figure of St. Bonaventure in the *Disputa*. As you walk over to the fresco, the narration explains that Bonaventure's theological work inspired Marco Vigerio della Rovere, a contemporary of Raphael's whose appearance may have been used as a type for the painter's depiction of the medieval cardinal.



The image of Bonaventure sprouts a ribbon that connects it with a book, Vigerio's *Decachordum*. You make your way to the book while the narration explains that Vigerio postulated a geometry-based metaphysics in which the universe is made up of a series of spheres. In Vigerio's model, God is the central sphere, whose center is everywhere and whose circumference is nowhere. This hierarchy of spheres is represented by Raphael as the tiered appearance of the earthly and divine realms in the *Disputa*, which a ribbon connects to the *Decachordum* manuscript. God, alone, occupies the uppermost sphere, where he wields a celestial globe and wears a geometer's cap. This globe is connected by a ribbon to the globes held by Ptolemy and Strabo in *The School of Athens*. The globes in their hands pulsate and, with a gesture, sprout ribbons to connect with the various globes in the room as well as another book,



Strabo's *Cosmography*. The narration explains the various understandings of the physical shape of the world that have developed over the centuries and quotes Strabo's assertion that "the geographer must rely upon the geometers...and in their turn the geometers must rely upon the astronomers." The narration continues by extolling the recent advances

in astronomy and navigation that have allowed for new discoveries across the globe, including an entirely new continent across the Atlantic! The astronomer Johannes Ruysch, an acquaintance of Raphael, recently published a new version of Ptolemy's map of the world, incorporating the new knowledge of America provided by Spanish expeditions and Asia provided by the account of Marco Polo's travels.

Overwhelmed with the surge of knowledge you have just received, you wave away the books and the ribbons once again fade away. You can see now that the sun has begun to set, rays of dim, orange light filter in through the window. You reflect on the experience you just had, and laugh to yourself when you realize no one will believe you when you try to explain it...