

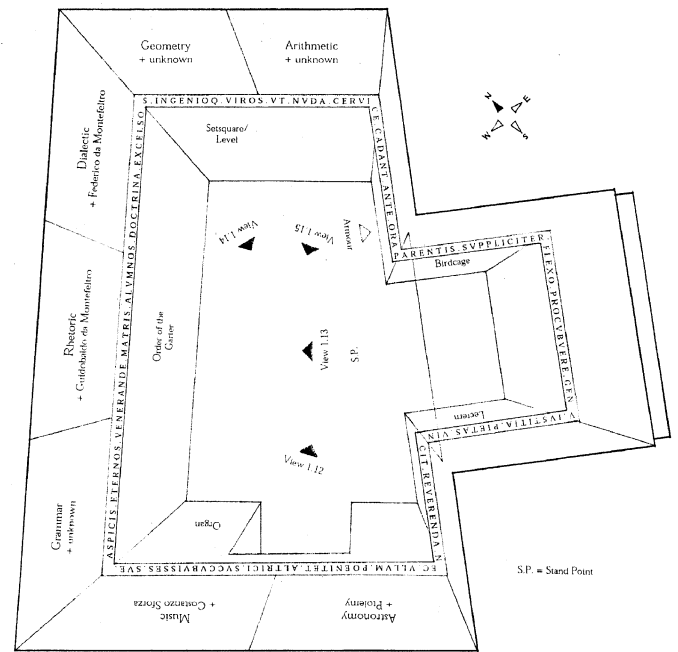
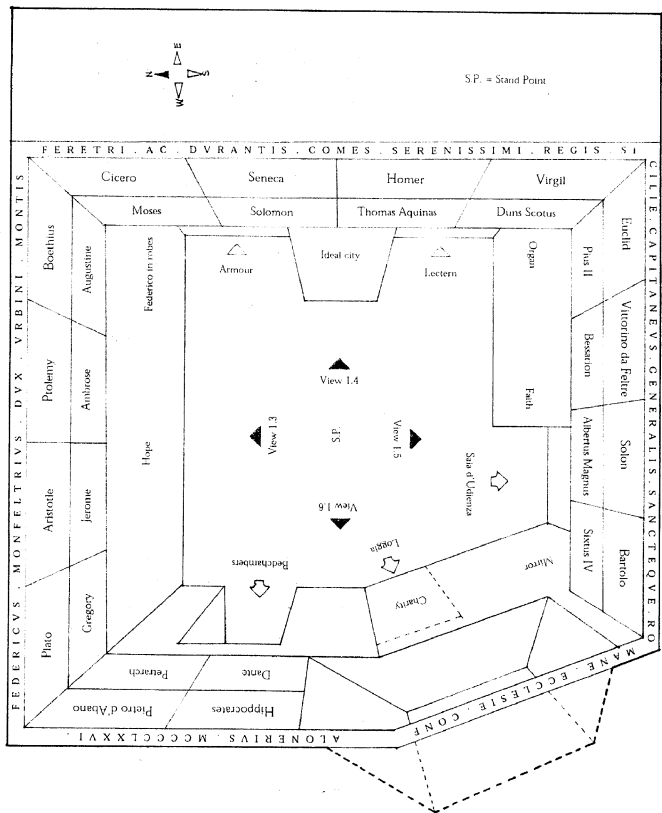
Architecture as a Model for Thought and Action

ROBERT KIRKBRIDE
Parsons School of Design

The studioli of the ducal palaces at Urbino and Gubbio offer elegant demonstrations of architecture's capacity to transact between the mental and physical realms of human experience. Constructed between 1474 and 1483 for the renowned military captain Federico da Montefeltro, duke of Urbino, and his young motherless son, prince Guidobaldo (1472-1508), the studioli may be described as treasuries of emblems: they contain not things but images of things, rendered with remarkable perspectival exactitude. Over the past five centuries, these chambers have themselves become emblems for

the intellectual milieu at the Urbino court, crystallizing a unique brand of humanism that spanned the mathematical and verbal as well as liberal and mechanical arts.

Owing to their comprehensive iconographic programs, the studioli are often described as encyclopedic containers of universal knowledge: their imagery encompasses the seven liberal arts, the muses and virtues, the heraldic imagery of the Montefeltro and Federico's personal accomplishments. Yet careful review of these emblems and their perspectival arrangement reveals



Figs. 1 & 2. Overviews of the Urbino (l) and Gubbio (r) studioli, drawn by author.

that the studioli might have served more as a rhetorical medium for stimulating thought than as representations of a “complete” body of knowledge. Considered alongside recent scholarship in earlier and subsequent pedagogical traditions—specifically that of Bolzoni, Carruthers and Illich¹—these chambers are associative engines whose marvelous visual character assists an occupant to forge new constellations of meaning from a set of carefully selected figures. As such, the studioli extend an ancient legacy of open-ended architectonic models, conceived to activate the imagination and exercise the memory as an inventive agency for knowing.

Architecturally, the studioli are capstones to the ambitious building program sponsored by the duke from the 1460’s to beyond his own death. Federico enlisted two architects, first Luciano Laurana and later Francesco di Giorgio Martini, to redesign the numerous palaces and fortifications of his expanding dukedom. Completed during di Giorgio’s tenure—Urbino in 1476 and Gubbio in 1483—the studioli reflect an intense collaboration among the many scholars and artists that the Montefeltro gathered to their court. Although various artists have alternately been championed as their progenitor, definitive attribution for the studioli is highly contestable and somewhat beside the point. The studioli offer testament to the syncretic and convivial atmosphere cultivated at Urbino, which imbued as well the works of Piero della Francesca, Fra Luca Pacioli and Baldassare Castiglione.

In recent years, scholars have positioned the studioli and contemporary rooms of their kind at the origins of the modern museum, as spaces of inquiry and leisure newly emerged between the private and public realms.² It is tempting to compare the visual character of the studioli, regarded in their time as marvelous works, with the “cabinets of curiosities” of the sixteenth and seventeenth centuries, filled as they were with a new world of things and ontological uncertainties prompted by Columbus’ westward voyage in 1492. While not entirely inaccurate, since the effectiveness of the studioli was predicated on their capacity to induce wonder, direct comparisons should be tempered. Columbus had not yet set sail. Although the perspectival composition of the studioli reflects a new organizational status accorded the eye, foreshadowing the empirical interdependence of witnessing and believing, it was not yet the world of Vesalius’ anatomical theatre, or of Giulio Camillo, who in a mid-sixteenth century treatise on memory exclaimed, “Let’s turn scholars into spectators.”³

In the studioli, practices of visualizing knowledge were influenced but not yet commanded by the corporeal eye. Knowing was still conceived as the cultivation of wisdom in the mind’s eye, nourished by a well-trained memory. Icons and emblems were believed to convey one’s thoughts directly between the inner seat of emotional witness and the outward aspirations of community, with the architecture of memory facilitating intercourse between thought and matter. In a 1451 treatise on meditation, Federico’s colleague Nicholas of Cusa asserts that “the human intellect, if it is to find expression in action, require[s] images (phantasmata), and images cannot be had without the senses, and senses subsist not without a body.”⁴ Images also conducted the mind beyond the world of things and appearances, a neoplatonist notion that held particular interest for the court of Urbino. Iamblichus, whose works were translated by Marsilio Ficino, writes, “things more excellent than every image are expressed through images.”⁵

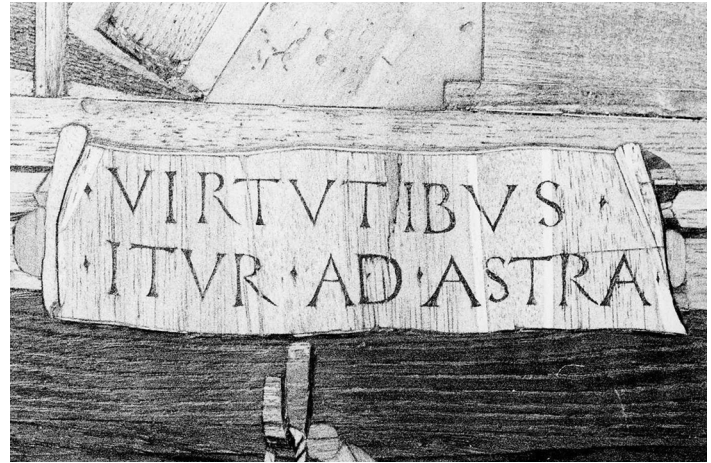


Fig. 3.

Fig. 3. In the Urbino studiolo a small note, nailed to a shelf like a reminder, bears the Virgilian phrase “virtutibus itur ad astra” (with virtue one scales the stars). In addition to the cardinal and theological Virtues (Hope, Faith and Charity are personified in the Urbino studiolo), the term *virtu* encompassed militaristic valour. Works of art were also considered *virtu*, by their capacity to guide contemplation heavenward. The architect’s *machina*, like the lift machinery depicted in the sketchbooks of di Giorgio and da Vinci, symbolically facilitated contemplation (such as the medieval practice of *sancta memoria*) due to its pivotal role in the construction of cathedrals and monasteries, and to the overarching notion that God the Architect would have used such a mechanism while fabricating the universe.⁶ In *Etymologiae*, Isidore of Seville extracts the word *maciones* (mason) from the Latin *machina*, citing the tradition of the architect-inventor who, like Daedalus,

designs the walls of buildings and the machines that facilitate their fabrication.⁷ For Gregory the Great the *machina* symbolized the act of contemplation, energized by love, which builds the fabric of the mind. As a mechanism of self-edification, contemplation facilitated the discovery or fabrication of a universe within the memory, empowering one to emulate in small compass the labors of God the Architect. (Photo by author)

The *studioli* nonetheless represent a significant turning point in the role of sight in verifying experience. In particular, the chambers manifest a transformation in practices of envisioning knowledge, from an inward habit of mnemonic composition toward a more extroverted mediation of the world as a theatre for the corporeal eye and its prosthetic instruments. By their visual arrangement, the *studioli* demonstrate the emergence of a quantitative methodology for representing reality, centered on the belief that humans might participate directly in the workings of the universe. "Heavenly things are present in the hidden life of the world," writes Ficino, "and in the mind, the queen of the world, where they are its vital and intellectual property, its excellence."⁸ With increasing breadth, the principles of perspective offered a proportional harness for the field of experience, promising consonance—or *concinnitas*—between the music of the spheres and the realm of human affairs.⁹

In the *studioli* this transformation in visuality may be characterized as a polithetic overlap rather than an abrupt departure. Mechanical practices such as perspective recalibrated rather than replaced earlier rhetorical traditions. Drawing extensively from Cicero, Pliny, Quintilian and Virgil, Alberti's treatise on the subject is not circumscribed by Euclid or Ptolemy. In *De pictura*, Alberti is as concerned with what should be depicted in a work, its subject or *historia*, as with its instrumental execution. Alberti's treatise, in fact, served his contemporaries more as a discursive explanation of perspective than as a practical manual. Most quattrocento perspectives, including such architectonic, in-the-round compositions as Andrea Mantegna's *Camera degli Sposi* at Mantova, the *Sala dei Mesi* at Ferrara and the Montefeltro *studioli*, did not follow Alberti's prescriptions literally but were assembled according to methods conceived in the artisan's workshop.¹⁰

From a post-daguerreotype point of view, one might presume that the appearances of the *studioli* underscore a desire for "realistic" imitation in representation. Compositional discontinuities would be dismissed, under such a premise, as small bumps in the road toward seamless verisimilitude. For the quattrocento mind, however, space was heterogeneously conceived, with

thought emerging precisely from within its discontinuities. Alberti's recommendation that painters imitate directly from nature also urges them to "leave more for the mind to discover than is actually apparent to the eye."¹¹ The influence of artistic works and mechanical processes on habits of late quattrocento thought—from the jigsaw puzzle assembly of intarsia panels to the comprehensive planning of palaces and cities—is complex and subtle. Even those instruments that magically reflected or amplified the appearance of the world, including such technical marvels as the mirrors and lenses found in each *studiolo*, expanded upon well-established metaphors for prudence and memory. When considering these items, we must recognize that they were used to different (or further) ends than might be expected from hindsight. Along with emblems, paintings, poems and architectural ornament, they provided the materials of thought. The gravitating concern in the *studioli*, it is argued here, was not optical realism but ethical preparation.¹²

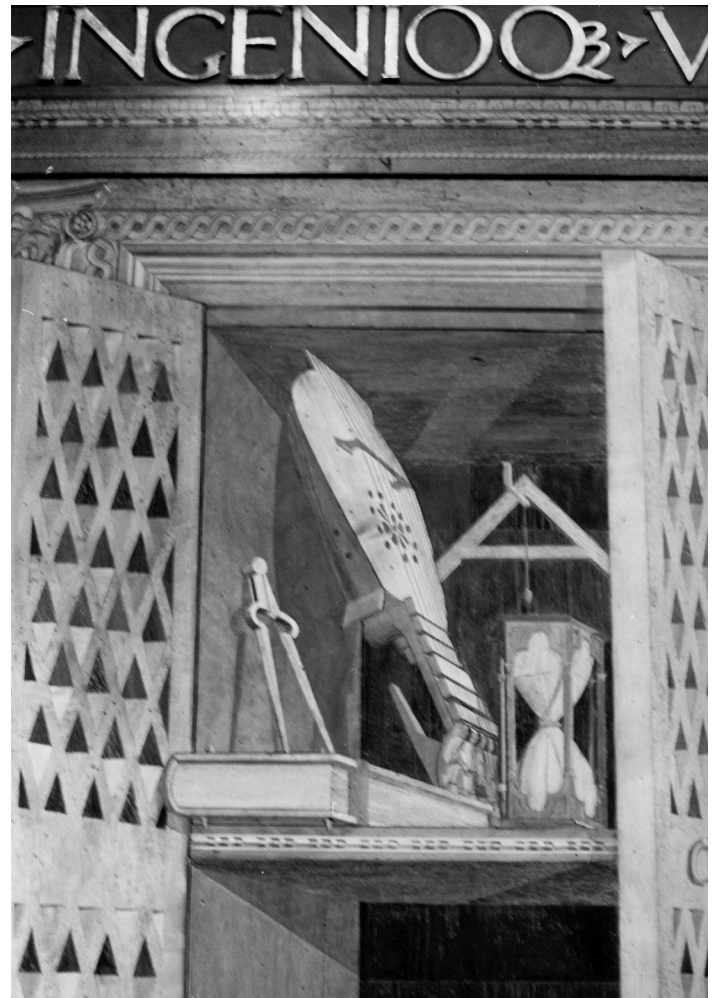


Fig. 4.

Fig. 4. In the Gubbio studiolo, the term *Ingenioq* is located directly above a cabinet “containing” an architect’s set square/level, a compositional detail that reflects deeper significances. Defined as natural talent or “prerational” genius, *ingenium* was held in contrast to the wisdom gained from practice and experience, and considered a divined stamp on the soul delivered at the instant of one’s birth. Innate talent was as mysterious to the quattrocento as it was for Vitruvius, who describes it as “hidden in the breast.” A teacher’s methods were tuned to reveal and cultivate the unique character hidden within each student, while impressing those habits of uprightness that would guide his or her *ingenium* to the common good. Instruments of the architect assisted in this process, supplying symbols of justice and moral rectitude. Castiglione, a central figure in Duke Guidobaldo’s court, writes: “the prince ought not only to be good, but also to make others good, like that square used by architects, which not only is straight and true itself, but also makes straight and true all things to which it is applied.”¹³ (Photo by author)

Federico and his colleagues embraced the mathematical arts with a passion imbued with a deep appreciation of the spoken and written word. If Alberti’s veil of intersected lines supplied the artisan and observer with a new proportional harness for visualizing experience, the architectonics of memory sustained accord between the senses and intellect through mathematical, literary and visual figures. Quintessentially, the studioli are “visual panegyrics,” akin to and yet distinctly removed from such historical precedents and antecedents as the Roman cubiculum and medieval reliquary.¹⁴ The spatial arrangements and ornament of the Montefeltro studioli prepared a quattrocento mind with visual tropes that literally fed the imagination with materials for cogitation. The studioli embody an amalgam of classical and medieval attitudes toward cognitive architecture, in which practice(s) of cogitation called for physical settings that could move an observer, physically and emotionally.

Until well into the Renaissance, the memory was fashioned as a storage place (an ark) for experience and as an engine for its interpretation and reconstitution. “You were trained to furnish the rooms of the mind,” Carruthers observes, “because you cannot think if you do not have something to think with.”¹⁵ Demonstration of a well-furnished memory, on the battlefield or in matters of diplomacy, conveyed one’s capacity for crafting thought. Subsequently, the perception that we *make* our own thoughts, from any and all available materials, has gradually given way to the more passive notion that thoughts are things we simply absorb and *have*.

How did Federico and his colleagues fabricate their thoughts? Freshly infused with Greek and Persian notions of micro- and macrocosm, a quattrocento mind was preoccupied with *harmoniai*—modes of fastening that supplied architectural, musical and humoral connotations. For Homer and Hippocrates, both of whom are portrayed in the Urbino studiolo, a properly built boat and a virtuous human were considered to be “well-balanced” in construction.¹⁶ Healthful symmetry was the objective for politics as well. Themes of reconciliation and universal harmony, such as Alberti’s *concinnitas* and Nicholas of Cusa’s *coincidentia oppositorum*, were counterposed to a litany of crises in faith, politics and scholarship. The decay of Byzantium brought to Italy an influx of Greek scholars whose direct familiarity with Plato, Plotinus, Euclid, Ptolemy and the *Corpus hermeticum* introduced a fresh set of considerations for western thought. The meeting of oriental and occidental wisdom problematized (and impregnated) the mind with new possibilities, from meditation and health to accounting, the architecture of time and the cosmos.

According to the ancient tradition of humoral medicine, extending back through Avicenna and Galen, a balanced character could be maintained by carefully tempering the body’s internal humours. With the absorption of Greek and Arab scholarship during Federico’s life, this tradition found new purchase in the writings of Bartolomeo Platina and his student Ficino.¹⁷ Humours were not hermetically contained within the body but were subject, it was believed, to the shifting influences of terrestrial climate and celestial bodies. Consequently, the salubrity of one’s physical environment was a fundamental concern to Vitruvius and Alberti, who supported the “traditional” practice of haruspices to determine the healthfulness of a site before constructing a private residence or city. In the *Art of Building*, Alberti attends to those aspects of climate that are explicit and obscured, referring to Hippocrates and the need to accumulate historic accounts (symptoms) of “hidden properties” bestowed by nature to a given locale. “When selecting the locality, it is not enough to consider only those indications which are obvious and plain to see, but the less evident should also be noted, and every factor taken into account.”¹⁸ At Urbino, Alberti notes, “water is found as soon as you dig,” providing an architect-hydraulic engineer such as Francesco di Giorgio with ample opportunity to convey his ingegno to such humourous inventions as thermal baths and Heroic fountains, conceived to benefit the health of Duke Federico and life in the palace in general.

Such a thermal bath is found in the Urbino palace at the base of a vertical sequence of chambers joined by a



Fig. 5. Western façade of Urbino's ducal palace. (Photo by author)

spiral stairtower: directly above the bath, the series continues through twin chapels (dedicated to God and the muses) to the studiolo and a rooftop observatory. The program of this spine reveals that the duke and his architects conceived the palace as an oversized model of the human body and a small-scale model of the universe, expressing an ancient yet unprecedented approach to physiological and spiritual science. In this world-view, shared by Cusa and Ficino, architecture and its ornament served as a conduit for an unceasing flow of influences between the heavens and the human soul, located by Leonardo's anatomical drawings in the heart of the mind. By correspondence, the Urbino studiolo served as a theatre of memory in the palace-brain, as a recombinatorium for thought with which to govern wisely. This remarkable arrangement represents a nested relationship of mind and world—one within the other—enlacing Christian, Jewish and Muslim teachings while foreshadowing the memory theatre of Giulio Camillo in the following century.

To prepare an occupant to enter communal memory as a star among the heavens, the architecture of the studioli was tailored to filter vices from the soul and to mediate beneficial and harmful stellar rays. In a chapter dedicated to making a figure of the universe, Ficino recommends that his readers set up, deep inside their houses, a little room decorated with figures and colors that evoke the generative and protective influences of the heavens. Green, he writes, represents Venus and the Moon, whose moist natures are "appropriate to things of birth," such as thoughts. The Apollonian sun is represented by gold, and the jovial influence of Jupiter—vital, Ficino emphasizes, to counteract Saturn's melancholy—is captured by sapphire, the color of lapis lazuli and ultramarine. Also effective against Saturn's black bile are coral (red) and chalcedony (milky grey). Elsewhere in the *Book of Life*, Ficino associates purple with a safer, diluted form of Saturn's humour that, like the influence of Mars, may be used as a homeopathic *pharmakon*. To assist contemplation and judgement, Ficino recommends that these colors be worn as clothing and applied in architectural ornament.¹⁹ Each of these colors—gold, green, blue, red, purple and grey—is found in the ceiling of the Gubbio studiolo, whose interlocking geometries evoked for its quattrocento occupants a well-tempered distribution of divine influences. While filtering the deleterious aspects of the heavens and one's own character, the Gubbio studiolo embodied a garden of earthly experience and an astrobiomechanism for contemplation.

Virtuous images and maxims inlaid in the studioli offer tracks for the observer's gaze, supplying innumerable routes for contemplation, lifting the mind's eye through the sensual world toward the heavens by select examples of heroes, edifying phrases and icons. At Urbino, the arrangement of these tracks guides the viewer to the central image of the east wall—a distant hilltown viewed through the arcade of a piazza. Is the distant city Urbino? Why is the piazza empty?

While the studiolo as a whole provided a quarry for thought, the piazza offered the Montefeltro dukes a civic theatre in small compass in which to envision consequences of policy and rehearse rhetorical deliberations.²⁰ The emptiness of this setting also reflects the impossibility of realizing the ideal in the tangle of human affairs. Even if the city viewed in the distance were intended to evoke Urbino, the similitude presents Urbino as an allusion to the New Jerusalem and not as the ideal city in and of itself. This is a critical distinction. While the notion of an ideal state has fascinated philosophers and politicians for over two millennia, it remained for the quattrocento a dream as inaccessible in this world as Plato's Republic or Augustine's City of

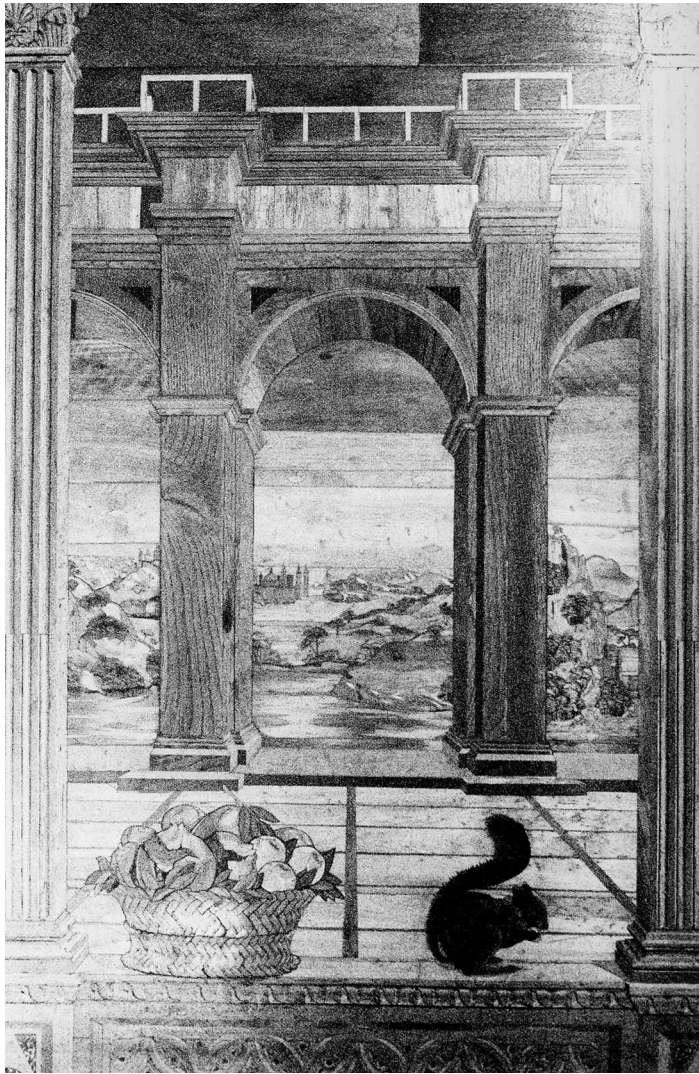


Fig. 6. Central panel of the east wall, Urbino studiolo. (Photo by author)

God. Federico and his cohorts considered an ideal state oxymoronic to the human condition, a vision to be contemplated and aspired to, yet never “actualized.”²¹ The ideal city offered a destination attained after the end of time by living according to virtuous principles *in earthly life*. The future state remained tantalizingly beyond (or just to the side of) the vanishing point of the human horizon. As a rebus for contemplation, the ideal city represented an image of concord drawn through the macro- and micro-architecture of the cosmos, aligning the music of the spheres with the city, one’s home, private study and the ark of memory preserved in the heart of the mind. Amid this sequence of nested vessels, an occupant of the Urbino studiolo is simultaneously contained within and a container of divine wisdom, embodying the erotic tension of created and creator described by Plato in *Timaeus*.²²

Consequently, the architecture of the studioli did not represent an imposition of reason *onto* nature, but rather a belief in an underlying order that might rectify *human nature* and sustain a productive balance in human affairs. It was the prerogative of the ideal prince, Castiglione emphasizes, to establish just laws; the role of the ideal courtier was to uphold these laws. Mechanisms such as those designed by Brunelleschi, di Giorgio and da Vinci were believed to operate according to universal laws, and by long tradition metaphorically facilitated the fabrication of thoughts. As expressions of this tradition, the studioli offered armatures for integrated thought and action, enabling the Montefeltro dukes to compose themselves and their thoughts for governance.

NOTES

¹ Lina Bolzoni, *The Gallery of Memory*; Mary Carruthers, *The Book of Memory and The Craft of Thought*; Ivan Illich, *In the Vineyard of the Text*.

² Paula Findlen, *Possessing Nature* (Los Angeles: University of California Press, 1994), 112-13; Dora Thornton, *The Scholar in His Study* (New Haven: Yale University Press, 1997), 120-23.

³ Camillo, *Opere*, Vol. 1 (Venice, 1560), 66-67. For a discussion of the virtual witnessing practiced by Sir Francis Bacon and the Royal Society see William Eamon, *Science and the Secrets of Nature* (Princeton, N.J.: Princeton University Press, 1994), 338-39.

⁴ Nicholas of Cusa, *The Vision of God*, trans. Emma Gurney Salter (New York: J. M. Dent, 1978), 43.

⁵ As cited by Emerson in “The Poet.” Ralph Waldo Emerson, *Essays* (Philadelphia: Henry Altemus, 1892), 15. Iamblichus was a follower of Porphyry, a student of Plotinus.

⁶ Augustine, *Confessions*, trans. Pine-Coffin (New York: Viking Penguin, 1961), 11.5. See Chapter 1 of Carruthers, *Craft of Thought*.

⁷ Isidore of Seville, *Etymologiae*, 19.8.1-2. Etymologically, then, the master-mason was not only the chief stonemason, but also the “master of machines.”

⁸ Marsilio Ficino, *Book of Life*, trans. Charles Boer (Woodstock, Conn.: Spring Publications, 1980), 3.15.135.

⁹ For a discussion of *concinnitas* see Alberti, *Art of Building* (9.5.305), as well as Rykwert’s gloss (421-22), trans. Rykwert, Leach & Tavernor (Cambridge, MA: MIT Press, 1988). For the transition from *perspectiva naturalis* (medieval optics) toward *perspectiva artificialis*, see Perez-Gomez and Pelletier, *Architectural Representation and the Perspective Hinge* (Cambridge, MA: MIT Press, 1997), 16-29.

¹⁰ James Elkins, *Poetics of Perspective* (Ithaca: Cornell University Press, 1994), 84-89.

¹¹ Alberti, *On Painting*, trans. Cecil Grayson (New York: Penguin Books, 1972), 2.42.77.

¹² David Hockney recently argued that artists used optical devices such as mirrors to achieve optical correctness in representation (*Secret Knowledge*, New York: Viking Studio, 2001). His error lies not in how they were used, but in *why* they were used. Dora Thornton has more thoroughly analyzed the practical uses for mirrors and lenses in the Renaissance study (*Scholar in His Study*, 141-42, 167-74), and with Luciano Cheles and others, has pointed out their iconographic correlation to prudence as a virtue of self-reflection. There are further associations. The Gubbio studiolo offered prince Guidobaldo a three-dimensional manual for conditioning his memory for ethical judgement, producing a new “wrinkle” in pedagogical traditions.

See Kirkbride, "The Renaissance Studioli of Federico da Montefeltro and the Architecture of Memory," in *Chora 4: Intervals in the Philosophy of Architecture*, ed. S. Parcell and A. Perez-Gomez (Montreal: McGill-Queens' Press, 2003), 127-76.

- ¹³ Baldassare Castiglione, *The Book of the Courtier*, trans. Leonard Eckstein Opdycke. (New York: Horace Liveright, 1929), 261.
- ¹⁴ In a fall 2000 lecture at New York University, Lina Bolzoni used this phrase in discussing the tradition of *ut pictura poesis*. The historical interdependence of linguistic and visual figures, articulated in Horace's *Art of Poetry*, thrives in Alberti's definition of *istoria* in *De pictura* and in Castiglione's self-deprecating description of the *Book of the Courtier* as a "picture" by a "humble painter." For more on this subject, see Lee, *Ut Pictura Poesis*.
- ¹⁵ Mary Carruthers, "The City in Our Minds: Memory Makes Poetry at the Met," *Poetry Calendar* 23, no. 1 (1999), 11.
- ¹⁶ Maria Karvouni, "Demas: The Human Body as a Tectonic Construct," *Chora 3: Intervals in the Philosophy of Architecture*, ed. S. Parcell and A. Perez-Gomez (Montreal: McGill-Queen's Press, 1999), 116.
- ¹⁷ Bartolomeo Platina, *On Right Pleasure and Good Health*, trans. Mary Ella Milham (Asheville, N.C.: Pegasus Press, 1999), 1.10.13; Marsilio Ficino, *Book of Life*.
- ¹⁸ Alberti, *Art of Building*, 1.5.15. On divination, see Vitruvius, *De architectura*, 1.4.9, as well as Ruth Padel, *In and Out of Mind*; Ivan Illich, *H2O or the Waters of Forgetfulness*; Joseph Rykwert, *Idea of a Town*.
- ¹⁹ Ficino's comments on colors reflect interests shared with the Urbino court and suggest his familiarity with the studioli. They are culled from 1.6.10, 3.12.123 and 3.19.153 of the *Book of Life*.
- ²⁰ This setting is akin to the tradition of the "mirror of princes." In the following century, through the writings of Serlio and fabrications of Palladio and Scamozzi, the ideal city would be literalized as a civic setting for theatrical performance.
- ²¹ Perez-Gomez, "Villalpando's Divine Model," *Chora 3: Intervals in the Philosophy of Architecture*, ed. S. Parcell and A. Perez-Gomez (Montreal: McGill-Queen's Press, 1999), 125-56.
- ²² Plato, *Timaeus*, trans. Desmond Lee (New York: Penguin Books, 1977), 42.