

Diagrammatic Thinking and the Division of Life into Ages

Andrea von Hülsen-Esch

This article discusses the concept of diagrammatic thinking and its role in the development of images and knowledge in the Middle Ages, specifically in relation to the representation of stages of life and aging. It focuses on the work of Francesco da Barberino, a jurist and poet, who created various diagrams in his writings and the first known female cycle of the stages of life in his *Officiolo*, a book of hours of about 1306. It highlights how these diagrams were used to visualize ideas related to aging and human life, and how they evolved alongside advancements in understanding the physical world, the cosmos and theological and juridical concepts. The text emphasizes how these diagrams were not only representations but also acted as complementary sources of information that could shape the viewer's interpretation. It also explores the context in which these diagrams were created, including various influential works and scholars. Furthermore, it examines the connection between diagrams and juridical thinking, as well as the role of visual representation in expressing legal and social norms. The text highlights the significance of picture invention in relation to intellectual achievements in Padova as a center for intellectual exchange during this period.

In the High Middle Ages, the study of the stages of life and their visualization, hand in hand with the question of when one is considered old or enters a certain stage of life, led to increasingly differentiated considerations of the stage models handed down from antiquity. As Darren Barber has recently shown, the duration of the individual stages of life became astonishingly specific in the works of Alcuin of York as early as the eighth century in terms of the terminology used to describe them, the years of life they spanned, and

the states associated with them (Porck and Soper 5). Alcuin defined six stages of life, subdividing old age into *gravitas* and *senectus* (Porck 22). But when, and in what contexts, were ideas about three, four, six, seven, ten, or twelve stages used?¹ What models of thought were behind them, and can we find moments in time or turning points, or even specific geographical regions, in which the stage models changed? These questions raise a number of other questions as to how age stratification may have functioned and how: based on how somebody progressed through life, they might have been considered part of a distinct group distinguished by physical and moral characteristics, and charged with particular responsibilities toward a community or members of other age groups (Porck and Soper 2).² This article examines whether these questions are equally relevant for the 13th century and whether further aspects arise in the late Middle Ages. The starting point is the assumption that the thirteenth century marks a break in chronology: on the one hand, age-related physical changes increasingly found their way into treatises such as *De retardatione accidentium senectutis*.³ On the other hand, the cyclical ideas associated with the stages of life, which borrowed from natural rhythms or human qualities became increasingly linked to moral values and social functions.⁴

In this article I examine an illuminated book of hours, the *Officiolum*, commissioned by Francesco da Barberino. It is one of the earliest of such books to be produced in Italy, and contains the first known cycle of female life stages within the framework of an Office of the Virgin Mary.⁵ Francesco da Barberino (1264–1348),⁶ jurist, scholar, political ambassador, and advisor to Bishop

¹ For the fundamental information to the stages of life see Agostino; Sears; Burrow and Wirag, the latter esp. 11–18.

² Thijs and Soper thus already raise questions for early and high medieval England that have so far only become relevant in continental research from the 13th/14th century onwards.

³ See Anderson 1288. She writes that Roger Bacon was always mistakenly assumed to be the author and cites Williams (1997), pp. 365–367, as the one who has refuted this authorship. See also Neumann 17 note 70 referring to Paravicini Bagliani 43–56.

⁴ Cyclical ideas associated with the stages of life are e.g. four ages: four seasons/four bodily states (humors); seven ages: seven planets/seven climates/seven days; twelve ages: twelve months. See for example Albertus Magnus and Pierre Bersuire; see Hübner 133–150, esp. 137–141.

⁵ See Manzari 24 f. However, regular book of hours production can only be observed in the north-east of Italy - at a later date (ibid. 26).

⁶ Originally Francesco di Neri da Ranuccio, but called 'da Barberino' after his place of origin near Valdelsa; see Jacobsen, *Francesco da Barberino Part I* 88.

Antonio dell'Orso in Florence, has received much attention in philological and art historical research, due to the relationship between images and text in his writings, especially in the *Documenti d'amore* and the *Officiolum* (Ciccuto 2021; Bischetti and Montefusco 8). He was in Padua between 1306 and 1309 while the *Officiolum* was being created. He mentions his familiarity with the recently completed frescoes in the Arena Chapel; the proximity of his allegorical figures to those of Giotto is unmistakable and has been widely discussed in research (Ciccuto 122).⁷ Terms such as “pictorial vision” might be used to approach his pictorial formulations, yet previous studies do not explain why Francesco includes a cycle of ages in his book of hours nor, later, why he limits the cycle in *Documenti d'amore* to six stages, nor why he uses diagrams to give it an adequate form of expression. In this article I seek to address these questions.

The book of hours marks the beginning of a development in which the age cycles were integrated into increasingly complex pictorial programs, such as those revealed in Guariento's fresco cycle in Padua's Eremitan church in 1364.⁸ Thus, in what follows I investigate the correlation between the life cycle Francesco depicts and existing rhythms (daily, seasonal, monthly, or cosmic times). What does the diagrammatic form of the representations in the *Officiolum* reveal about the possible underlying texts and pictorial formulations, and about the perception of time and the patterns of thought with which this novel pictorial form was created? Further, in what discursive context was this cycle of the ages of man created? And, last but not least, it will be necessary to ask what part the illuminator(s) played in these new pictorial creations.

Francesco's book of hours, which incorporates each stage of life into a diagram, is the earliest example of a reproduction of six stages of life related to the female sex.⁹ This prayer and devotional book for private use (Sutton 164;

⁷ *Hanc Padue in Arena optime pinsit Giottus*; Francesco da Barberino, *Documenti d'amore* / *Documenta Amoris*, edited by Marco Albertazzi, Lavis, 2011, vol. 2, Doc. V, Regula 66, p. 273; “hanc” refers to the allegory of *Invidia*.

⁸ Helffenstein (44) points out with good reason that there was no tradition of depicting planets and ages in this form before Guariento, although this pictorial invention had already been prepared fifty years earlier.

⁹ Sears (105) already pointed out that the representations of age in the *Documenti* probably had a counterpart in the *Officiolo*, which was still believed to be lost at the time; the dissertation by MacLaren 2007 has hardly been received in the context of the representation of ages.

MacLaren *Or guarda tu* 81 and 85),¹⁰ shows medallions displaying representations of female age within the framework of the Office of the Virgin Mary at the beginning of each canonical hour from Prime onward. The female figures are inscribed into graduated circular forms. Each is painted against a green and brown circular background, representing vegetation and the soil of the earth. The second circle, into which each figure projects, displays shades from light blue to deepest night blue, reproducing the position of the stars in the outermost circle. The distribution of the light blue is based on the position of the sun in the outer cosmic circle and depends on the time of day: when the radius of 360 degrees is complete, a new day begins. The dark blue-black areas in the same middle circle follow the arrangement of the golden stars and the white-blue moon at night in the outer circle; in this diagram, the sun and moon circle around the center of the inner circle, the Earth, according to the passage of time. The sun – in full red, surrounded by a jagged halo of rays in darker red – sends golden rays into the cosmos and onto the earth's circle (see Figure 3). The design of these medallions in several concentric circles alludes not only to the shape of diagrams, but also to that of planets. Both the color scheme—from rich green to earth brown to sky blue—and the stars, sun, and moon thus place the depicted elements in earthly and cosmic contexts; the position of the sun and stars also indicates the passage of time throughout the day.

THEOLOGICAL, MEDICAL, AND ASTRONOMICAL TRADITIONS

The connection between man, time, and the cosmos was already addressed by Isidore of Seville in the seventh century in his early diagrams of the seasons (Wittekind 227), as can be seen in Figure 1.

¹⁰ Parts of a calendar according to Roman custom (March, April, September, October) are followed by the Office of the Virgin Mary, the Office in honor of the Holy Cross, the Office of the Dead, seven penitential psalms, the beginning of the litany and the beginning of the Gospel of John. For the structure of books of hours intended for private use, as well as their function and decoration, see generally Wieck 27f. Although books of hours were conceived and intended for private use, they were also made accessible to the (private) public – and this is particularly true of the illuminated ones; see MacLaren *Or guarda tu* 94–96.



Figure 1: Isidor of Seville, *De natura rerum*, Munich, Bayerische Staatsbibl., Clm 16128, fol. 16r

As Figure 1 shows, the primary focus is on the concepts exemplified in the surrounding semicircles. For example, that of *annus* is divided into the four seasons, which, in turn, are each assigned two out of four possible qualities: moist, warm, dry, and cold. Man is brought together with the seasons and the four elements, to which the corresponding human qualities are in turn assigned (Blume *Körper und Kosmos* 225–227; see also Bogen and Thürlemann 5–8). These are abstract designs that operate with geometric figures and terms, and that, in this way, reveal a model-like structure. They do not have a depictive character, but refer to inner connections.

With regard to the cosmos, these relationships are depicted in the Carolingian *Aratea*.¹¹ At the end of the *Aratea*, there is a diagrammatic drawing of the planetary orbits, at the center of which the personification of *terra* rests, surrounded by the orbits of the seven planets, each marked by personifications in gold-framed medallions (Wittekind 206). An amalgamation of both concepts

¹¹ Leiden, Rijksuniversiteit, Ms. Voss. Lat. Q.79, dat. Aachen 816.

can be found in the late ninth century in the Ewaldi quilt with *annus* at the center, the seasons and elements in the first ring, and the zodiac signs in the second.¹² Then, from the tenth century onward, psalters are increasingly preceded by calendars, which, from the eleventh century, are illustrated with the Labors of the Months, the signs of the zodiac, and representations of saints, thus completely incorporating astronomical time into the liturgical calendar, though not in diagrammatic form (Wittekind 211–215). In the twelfth century, however, cosmographic diagrams underwent another development in Hildegard von Bingen's *Liber scivias* and in the *Chronicon Zvifaltense* (1142–1162), where the personifications of the four seasons are suddenly depicted in different life stages, as shown in Figure 2.¹³



Figure 2: Chronicon Zvifaltense. Stuttgart, Württembergische Landesbibl., Cod. Hist. Fol. 414, fol. 17v

¹² See Wittekind 216–218; cf. with better description and classification see Böse 7–27, esp. 10–14, 25 sg.

¹³ Heidelberg, ULB, Cod. Salem X 16, fol. 2v; cf. Cohen, 53–60. In my opinion, the four ages of life are also depicted here, previously unrecognized - and in accordance with the doctrine of humours (not recognized by Cohen, but described as "climatic characteristics"). Stuttgart, Württemberg. Landesbibl., Cod. Hist. Fol. 415, fol. 17v (Chronicon Zvifaltense), shows an astonishing correspondence with wall paintings in SS. Quattro Coronati, Rome.

Subsequently, variants of the cosmic diagram established correspondences between the categories of time, space, and matter (Cohen 66sg). The four seasons (*tempora*) were juxtaposed with the cardinal points, elements, or winds (*the macrocosm*), and with the ages of man (*the microcosm*). The twelve months, i.e., the divisions of time, correspond to the signs of the zodiac or planets (*the macrocosm*) and to the parts of the body in the *microcosm*. The six days of Creation or the Ages of the World were compared to the qualities of the combined elements (matter) and to the Ages of Man in the cycles of the *microcosm*. All in all, human life was now ordered in the cosmos by the heavenly bodies and planets – to which the chronicle of learned jurist and notary Rolandino da Padua also testifies in the mid-thirteenth century (Siraisi, Arts and sciences 77–81).¹⁴

In the diagrams of Francesco da Barberino, the encyclopedic tradition of the original seasonal diagrams is combined with more developed diagrams in which the incorporated representations of the ages are understood as part of nature – as can be seen in his depiction of Adolescentia in Figure 3 – just as they had been in the diagrams a century earlier.¹⁵

¹⁴ On Rolandino, who taught at the University of Padua, see Zabbia 2017.

¹⁵ I see here a logical development of the 12th century diagrams of man as a microcosm, integrated into the elements, cardinal points, winds, i.e. into the natural world, see Blume *Körper und Kosmos* 231–236. On the diagrams in the 12th century cf. Meier.



Figure 3: Adolescentia. Francesco da Barberino, *Officium*, fol. 49r, 1302–1306, Private Collection.

Francesco's diagrams represent an intermediate stage between the diagrams created in the twelfth century, with their inscribed human bodies, and the body diagrams circulating in the fifteenth century in particular, in which the signs of the zodiac assigned to the body parts still symbolize the immediate connections with the course of the year (Blume 283–240). This intermediate stage became tangible for the first time in the crypt of Anagni Cathedral (dating back to 1255), where the figure of a human being is surrounded by four concentric circles that illustrate the connections between the four elements, the four ages, and the four seasons (Fig. 4).



Figure 4: Anagni Cathedral, crypt, vault painting

DIAGRAMMATIC THINKING

Diagrams underwent notable further development in the twelfth and thirteenth centuries. Jeffrey Hamburger has recently argued that diagrams constitute a critical marker in the development of new visualization techniques in that they were able to set down structures of order across all fields of knowledge; they became a part of the “mental toolbox” of every student and scholar that could be used to not only classify and generate knowledge but also to create images (9). He emphasizes that they had a spatial, temporal, and relational component as well as a dimension that set cognitive processes in motion (16f.). The rise of diagrams can be traced back to the increased awareness in the thirteenth century of the ideas of Aristotle, who showed in *De memoria et reminiscencia* (449b31–450a1) that a diagram is an analogous means of thinking: “For the same effect occurs in thinking as in drawing a diagram” (Hamburger 24). Sarah Griffin has recently looked at the example of Opicinus de Canistris, who was at the papal court in Avignon from 1331, showing that he used diagrams not only a means of visualizing cosmic ideas, but to develop

strategies for harmonizing various temporal forms and rhythms (canonical hours, days, weeks, months), as well as human life, with astronomical and astrological calendars and the divine (72–90). The diagram thus becomes not just a representation, but structures the patterns with which one thinks and actively shapes one's thoughts.¹⁶ As such, it could be described, following Steffen Bogen, as a third category between written and visual media (61), where it is crucial that “the diagrammatically arranged text [...] cannot simply be read aloud, but [...] [remains] bound to the graphic medium” (67). In this regard, interpretation and authorization are tied to the duality of writing and image, and to the newly created relation between the two. This relation can of course, in turn, be enriched in the mind of the viewer into an independent scientific statement (71). Diagrams visualize ideas that, by claiming to correspond to text in terms of scientific accuracy, constitute a rival medium to it. They were not merely visualizations subordinate to the text, but went further in creating something that was both complementary to the text and went beyond it (Ramírez-Weaver 31f.).¹⁷

One text from this period that is enriched with many diagrams, and which Francesco da Barberino also quotes widely in his *Documenti d'Amore*, is the dialogue *Dragmaticon philosophiae* by William of Conches (ca. 1085–1154).¹⁸ This text contained writings that had just been translated, and was therefore also of central importance for the transmission of knowledge, both in religious orders and in universities.¹⁹ William of Conches was the first in the Middle Ages to expound a complete theory of the composition of the earth, both macrocosm and microcosm, for which he relied mainly on the Arabic medical works that

¹⁶ Cf. Hamburger 24f., 28 and 32: “Diagrams are not only conceptual; they are also material. Process is part not only of their making but also of their meaning. Diagrams do not simply reflect or embody ideas: they shape them.”

¹⁷ See Ramírez-Weaver 32: “visual complements of their texts, or pictorial statements”.

¹⁸ Thus, for example, already in the Prohemium in a long section (Philosophia); he quotes from his *Dragmaticon* I,1 (ibid.) in the Prohemium to the Documenta VII (sub Prudentia), pp. 408–410, in the explanation of the course of the year (see above) 444sg. and so on. Longer passages are taken from the *Philosophia* (Books I and II) of William of Conches, but the *Dragmaticon philosophiae* and the *Moralium dogma philosophorum* are also quoted. I refer to Barberino vol. 2 21–23, 408–410, 444sg to name a few examples.

¹⁹ Barberino 24. On the function of diagrammatic designs in William of Conches see Ramírez-Weaver 1–41.

had been translated by Constantinus Africanus.²⁰ In particular, the *Dragmaticon philosophiae*, written between 1147 and 1149, contains numerous diagrams pertaining to the structure and composition of the earth and the cosmos, one example of which can be seen in Figure 5. It was with William of Conches that the connection between the representation of the Earth and the cosmos in the form of diagrams was first visualized, a memorable representation of complex spatial and temporal relationships.

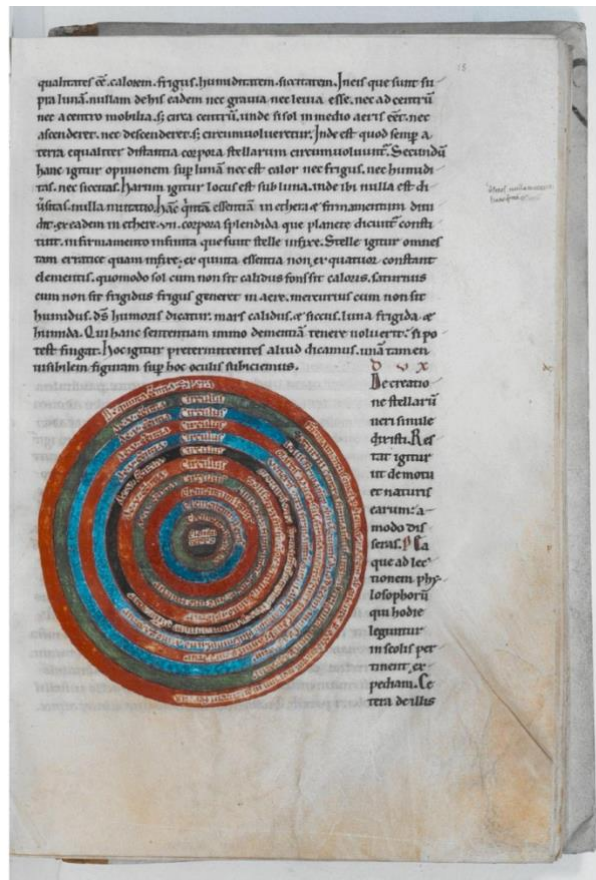


Figure 5: William of Conches, *Dragmaticon philosophiae*, lib. III cap. 5.4. Montpellier, Bibl. Interuniversitaire, H 145, fol. 15r.

DISCURSIVE CONTEXT AND LEGAL FORMS OF THOUGHT

However, the reading material of a man of law such as Francesco da Barbarino did not only include the philosophical treatises of William of Conches, which made the relationship between earthly and cosmic time

²⁰ See for this and for the following Obrist and Caiazzo XXf.

understandable and memorable in diagram form. Legal practitioners, such as he was, also had to deal with questions of age in their daily practice. These included, for example, the age of marriageability or legal capacity, and these differed from city to city or from territory to territory. To allow generally valid statements, guidelines were based on cycles of age stages. In the 13th century, these could comprise anything from three to twelve stages. In the present case, our interest lies in whether there were discourses at that time that preferred a specific number of stages. Boncompagno da Signa's tract *De malo senectutis et senii*, completed shortly before 1240, provides a more detailed definition of the stages of life. He briefly quotes Hippocrates' seven stages of life before turning to the ancient compiler Iohannitius, who describes five such stages, to which Boncompagno adds the oldest stage of life, *decrepitas*.²¹ In this way, he follows a classification of ages that goes back to Gregory the Great,²² being later taken up by Isidore of Seville,²³ and which Boncompagno then furnishes with concrete age specifications.

It seems, however, that Francesco follows Boncompagno on the one hand and the Italian lexicographers and jurists Uguccione da Pisa (twelfth century) and Giovanni Balbi da Genova (thirteenth century) on the other. Uguccione, in his *Derivationes*, which were translated into vernacular as early as at the beginning of the fourteenth century,²⁴ specifies some of the ages in terms of their length. Giovanni Balbi includes them in his widely used work *Catholicon* of 1286, and succinctly arranges them from the first age, *infantia* (up to seven years); through

²¹ Cf. Signa 6f. and the comment XLV–XLVI. For the biography and writings see Pini. Ioannizio (Hunayn ibn-Ishak, 809–873) translated Hippocrates, Galen, Dioscorides and wrote his own treatise based on Galen, *Isagoge*, which was handed down to us via Constantinus Africanus; cf. the doctoral thesis by Steri 20f., referring to Paravicini Bagliani (1991) 231.

²² Cf. Signa XLVI annot. 87; cf. Sears 83–88; Burrow 61–68.

²³ Augustinus, *De Diversis Quaestionibus* LX X XII, Bk. 1, Qu. Lymm; cf. Burrow 199f. and Isidor von Sevilla, *Etymologiae*, Book X.1, Ch. 2, cit. *ibid.*, 200sg. Cf. also Paravicini Bagliani 391 and Sears 54–66.

²⁴ On Papia di Pavia and his extensive article *aetas* in his work *Elementarium doctrinae rudimentum* see Antonia Martina Papia; for Uguccione da Pisa cf. Bisanti and Sol. Uguccione taught canon law in Bologna, and between 1180 and 1188 he not only wrote a *Summa Decretorum* as a commentary on the *Decretum Gratiani* but also his *Derivationes*, a lexicographical work that was also used by Dante and Boccaccio; from 1190 to 1210 he was Bishop of Ferrara. Giovanni Balbi da Genova used Uguccione's *Derivationes* in his *Catholicon* and seems to have explanations for many of Dante's linguistic peculiarities, but conversely Dante does not quote him. See Antonio Martina *Giovanni Balbi da Genova*.

pueritia (up to fourteen years), in which childbearing capacity had not yet been reached;²⁵ to *adolescentia*, which lasted until the age of twenty-eight, emphasizing that this stage of life is accompanied by childbearing capacity.²⁶ The subsequent fourth stage, *iuventus*, lasts until the age of 50,²⁷ and then *senioris* begins, the fifth stage of life, also called *gravitas* because it encompasses the downward trajectory from *iuventus* to old age, not yet old, but also no longer youthful.²⁸ Concluding the stages of life from the age of seventy is *senectus*, the sixth age (Paravicini Bagliani 391 and Sears 60–62). Francesco takes on this division, visually accentuating childbearing (and the beginning of *adolescentia*) with a nuptial crown (see Figure 3 above), and referring to the last age as *decrepitas* (rather than *senectus*), following Boncompagno da Signa (Fig. 6).

²⁵ Ugucione da Pisa, vol. II, F 50 [11], 450 and P 124 [24], 977: *pueritia -e, secunda etas, quasi pura et nondum ad gignendum apta, et durat a septennio usque ad XIII annos, sed pubertas est etas adulta, que iam gignere potest, et incipit a XIII anno.*

²⁶ Ugucione da Pisa, vol. II, O 18 [13], p. 867: *et dicitur adolescentia quasi ad gignendum apta et adulta.*

²⁷ Ugucione da Pisa, vol. II, I 120 [8], p. 631: *... collectio iuvenum et etas plurimorum iuvenum, iuventa est etas unius iuvenis, et est iuventus vel iuventa a vigesimo octavo anno usque ad quinquagesimum.*

²⁸ Ugucione da Pisa, vol. II, G 86 [10], p. 542: *Item quinta etas dicitur gravitas, que est declinatio a iuventute in senectutem, nondum senectus sed iam non iuventus.* Unter G 86 [9], S. 542 findet sich *hec gravitas, -tis, firmitas, venerabilitas, maiestas.*



Figure 6: Decrepitas. Francesco da Barberino, *Officium*, fol. 65r, 1302–1306, Private Collection.

As I have argued elsewhere, the way Francesco designed the ages of life also visually reflects juridical status within urban society (Hülsen-Esch 369–391). The biological stages of life, the durations of which could vary, were thus overwritten by different legal condition, such as the age of marriageability as determined by ecclesiastical or secular law or social norms, the legal status of married women, and that of widows. One thing is certain: Francesco da Barberino preferred an early age of marriage, possibly due to the surplus of men in Florence at the time.²⁹ It remains unclear whether this differentiated perception of socially relevant stages of life is also reflected in the legal and everyday sources of the time. That Francesco's thinking as a whole is juridical is revealed not only by the formal structure of his *Documenti d'Amore*, which imitate the page division of a juridical codex, having the poem in *volgare* at its

²⁹ Giallongo 11–13. Herlihy and Klapisch-Zuber 203–207, on the other hand, filter from their sources for Florence and Tuscany a female marriage age of between 18 and 21, which is rather late at that time.

core, surrounded by a commentary in Latin and framed by a gloss with personal remarks (MacLaren *Or guarda tu* 160). Moreover, his praise of Giotto and Cimabue in the *Documenti d'Amore*, which has been widely cited by contemporary scholars, goes back to a sentence from the *Institutiones* of Justinian (II.I.34, *De rerum divisione*), in which he replaces the names Apelles and Parrhasius with Giotto and Cimabue (Jacobsen *Francesco Part I* 97).

Francesco thus follows the juridical literature with his six-stage age cycle rather than the medical tradition of Hippocrates, or the canonical hours, which would require a seven-stage cycle in the Psalter tradition, and which one would expect in a book of hours (MacLaren 34sg.). However, he interestingly provides a poetic explanation for the missing diagram of the seventh canonical hour in his commentary on the *Documenti d'amore* (IX, sub Prudentia). First, he explains the division and qualities of the winds, and the division of the path of the sun and the passage of the day according to the doctrine of the humors. He then asks, "But before we come to other things, I ask you: Suppose we wanted to represent (*figurare*) these zones in a book, why should we not be able to?"³⁰ The fictional interlocutor answers that there is no need to do so, except to represent the canonical hours of prayer. Francesco continues his imaginary dialog by explaining that he has created exactly such a *forma* in his *Officiolo*, and that he can imagine something similar for each and every solar hour. He then explains his *forma*, and describes it again in his commentary: "You see also, so that this treatise may seem more beautiful to you, that at the same time as the hours, the ages are depicted, which are also shown with their own narrative (*ystoria*) in the *Officiolo*."³¹ And, he continues, at Compline the Virgin is dead, the ages are

³⁰ *Sed antequam ad alia veniamus, quero a te: "posito quod vellemus oras istas in aliquo libro figurare nunquid possemus?"*, et dicas quod sic, quia tamen non occurrit necessitas nisi de matutina prima tertia VI nona vespera et completorium. Igitur de aliis presentialiter non laboro, de istis vero tibi formas ut in quodam Officiolo meo feci actenus presentari vide eas: hic sunt et per similes posses de horis singulis sole in suis locis posito componere figuras. Vide etiam ut tibi pulcrior appareat hic tractatus, quod insimul cum horis representan[445]tur etates ita etiam per se ipso Officiolo presentabantur ystorie, ut in completorio decesserit Virgo Beata et complete sint etates et completus sit dies; et actente quod in matutine non presentatur etas sed nox, in prima autem etas incipit ut Aurora de qua hic mentio adhibetur. Barberino vol. 2, doc. IX, p. 444.

³¹ *Vide etiam ut tibi pulcrior appareat hic tractatus, quod insimul cum horis representan[445]tur etates ita etiam per se ipso Officiolo presentabantur ystorie, ut in completorio decesserit Virgo Beata et complete sint etates et completus sit dies; et actente quod in matutine non presentatur etas sed nox, in prima autem etas incipit ut Aurora de qua hic mentio adhibetur.* Barberino, vol. 2, doc. IX, pp. 444sg. To examine the aesthetic and semantic differences between *figura* and *forma* would take us too far afield at this point. However,

complete, and the day has ended. He has reduced the number of ages to six, Francesco says, because the cycle of life begins with the *prim*, so that it can be directed toward the dawn, and is brought to a close with the *matutin*, in which no age is represented but the night.

PICTORIAL INVENTION IN CONTEXT

With this explanation, Francesco also provides insight into the concept of pictorial invention. Although Hamburger notes that diagrams are usually referred to as *figura* (31), Francesco repeatedly uses the term *forma* to describe the creation of his image. Iris Helffenstein explains that *figura* can stand for “figure” and “figurativeness” in the modern sense, “as well as being used for complex representations in their entirety” (38). For Francesco da Barberino, however, the impression is that he uses *figura* to denote the diagram itself, while *forma* is used to designate that for which he has found a new form of expression, such as the representation of ages. The fact that he inscribes them into a circle resembling a diagram corresponds to his juristically trained thinking, and yet with his pictorial invention he creates a new representation of temporal stages: the temporalities of the ages of life based on both the path of the sun, and social norms and proper times.

However, Francesco clearly left the implementation of the diagram – and thus also the very detailed creation of images, down to the details of clothing that document legal status – to professional miniators. He justifies the necessity for illustrating the text in his commentary, saying that the painter possesses a greater sensitivity to form subtle things from within himself, while the writer, by giving examples, presents (known) doctrines.³² This statement, which Jacobsen already identified in 1886 as a legal doctrine from the *Institutiones* of the Corpus Iuris Civilis, sheds light on the high esteem in which pictorial inventions were held. On the one hand, it touches on what might be called *invenzione*, which in this case grants painters a higher degree of intellectual

they are connected with the process of image creation, which is particularly exciting for this cycle from an art-historical point of view, because there are no concrete models. See most recently on this topic Krüger 24–41.

³² ...*quod maior subtilitas est in picture qui de iure suo subtilia format, quam in scriptore qui scipita exemplando transummit*. Barberino, vol. 1, doc. VI, p. 59 (v. 353).

accomplishment than writers; on the other, the statement reflects the structure of Francesco's thought, as he uses his writing to apply knowledge acquired from the authorities of the past (Jacobsen, *passim*). However, by claiming the *forma* of the diagrams for himself, he also claims at least one part of the *invenzione* for himself. But is this believable?

The period between 1300 and 1310 was an age in which Padua flourished as an autonomous municipality and as a scientific center (Gallo 19sg.),³³ where the most famous jurists taught, such as Giovanni d'Andrea, as did people like Pietro d'Abano, a physician, philosopher, and astrologer, (Ongaro 153sg.).³⁴ The period around 1300 saw the peak of the discussion about a moist substance in the body, the *humidum radicale* (withering), which was intrinsically linked to body heat. The discussion was linked to the question of what keeps the body alive, and what makes it age. This issue, advanced by Pietro d'Abano, attracted such debate that even Dante and Boccaccio, and later Cervantes, brought it up in their poetry (Ferrari 107–109, note 3).³⁵ It is therefore all the more surprising that Francesco da Barbarino does not include any such topical discussions in his writings. However, the illuminators of Padua, heavily influenced by Giotto, and constantly exchanging ideas with those of Bologna,³⁶ were at the cutting edge of their times. The miniator of Francesco's book of hours was obviously not only familiar with juridical matters, but also implemented the phases of the sun and moon in the diagrams based on the latest treatises, according to which these two bodies, especially the latter, influenced human life. Different zones

³³ This also includes the fact that the University of Padua benefited considerably from the exodus of students from Bologna (e.g. in 1306 and 1321), while at the time it did not have to fear competition in the surrounding area (Treviso, Verona and Cividale dei Friuli were unable to succeed).

³⁴ However, the date of his appointment is given as 1306. In sources he can be traced back to 1307; cf. Ventura; Posenato, p. 48sg. doc. no. 19 dating April 23, 1307. He was a publicly paid professor, on this and his salary see Siraisi *Arts and Sciences* 27f. and note 72.

³⁵ On the preceding reception of Aristotle's treatise *De longitudine et brevitate vitae* since the 1250s, in the context of which the concept of *humidum radicale* first appears in Petrus Juliani, the later Pope John XXI (1222–1277), cf. Dunne 121–135. One of Pietro d'Abano's aims in systematically investigating this substance was to find out whether it was possible to prolong human life with medical effects on this substance. Pietro presented the *humidum radicale* as one of the cornerstones of medicine, which served to preserve life, and also discussed the relationship between medicine and astrology in this context.

³⁶ Cf. Canova 164–176; for the beginning of the Trecento esp. 164–166.

of the body were attributed to each: while the sun, as the source of all light and all warmth, determined the seasons, the moon defined the months (Jacquart *Le Soleil* 239–242, 253f.). Female menstruation was also linked to the lunar cycle, namely to the new moon for young girls (*puellae*), the second quarter of the moon for young women (*iuvenibus*), the third quarter for the elderly (*illis quae magis processerunt in aetate in tertia quadra*), and the last quarter of the lunar cycle for the remainder. Each of these was translated into the diagrams in the book of hours (Fig. 7, 8, 3, 9, 10, 6).³⁷



Figure 7: Infantia. Francesco da Barberino, *Officium*, fol. 32v, 1302–1306, Private Collection.

³⁷ Cf. Jacquart *Le soleil* 244, note 15: *Fluunt ergo menstrua secundum aetates lunae, puellis enim in prima quadra et iuvenibus in secunda et illis quae magis processerunt in aetate in tertia quadra, aliis in ultima quadra, ex hoc possumus elicere quod iuvenes debent phlebotomari in nova luna, senes in antiqua, quoniam ars est imitatrix naturae, bene dicitur igitur Luna vetus veteres, iuvenes nova luna requirit* (Bernard de Gordon, *Lilium medicine*, ed. Lyon 1551). The treatise *Lilium medicine* was completed by Bernard de Gordon in 1305 (ibid. 245).



Figure 8: Pueritia. Francesco da Barberino, *Officium*, fol. 44v, 1302–1306, Private Collection.



Figure 9: Iuventus. Francesco da Barberino, *Officiolum*, fol. 53r, 1302–1306, Private Collection.



Figure 10: Senectus. Francesco da Barberino, *Officium*, fol. 57r, 1302–1306, Private Collection.

The correlation between the stages of life, and the position of the sun and the monthly cycle of a woman is established by the visual depiction rather than the text, and is just as novel as the representation in a temporospatial diagram itself.³⁸ It is remarkable how the different dimensions come into play here: the diagram already addresses the temporal dimension, with the passage of the sun in the rhythm of the day representing the smallest temporal unit, and the visualized positions of the sun coincide with the hours of prayer. At the same time, these rhythms are only set in relation to the course of life through the visual representation, so that when the sun is at its zenith, one metaphorically equates the age associated with it with the highlight of life, namely marriage (Fig. 3). This transferred meaning is produced in the diagram only, making it clear that a diagram can serve both to explain but also to establish new facts. The circular shape simultaneously brings to mind the widespread depiction of the orbits of the planets, an association that conjures up the cosmological dimension.

³⁸ Blume *Francesco* (174) already pointed out that equating the life cycle with the course of the sun is a poetic metaphor. The greater novelty, however, is the visualization in a diagram.

However, a spatial component is not only provided by the various circular forms, the positioning of the diagram on the page, and the juxtaposition with other pictorial elements. The mound of meadow and the increasingly brown earth where the personifications of the ages are located, make use of real space, of the earth as part of the cosmic whole (Müller 2008) (Fig. 7, 3, 8, 9, 6).³⁹ Finally, the entire cycle not only reflects the divine order of cosmic progression, but, due to its specific juxtaposition with individual scenes from the life of Mary, and because it is inscribed into a book of hours, it becomes part of divine providence and the spiritual anchoring of human life. Perhaps Francesco da Barberino as a conceptual artist had this kind of sophistication in mind, though it may only have arisen in the mind of the viewer.

The diagrams render visible the idea that the temporally ordered rhythm is a construct of human civilization, one that is arranged into a meaningful narrative in the sense that it relates the course of the year to both the ages of the world and the ages of man. This narrative was perfected with the invention of the mechanical clock in Padua in the thirteenth century (Pigatto 10).⁴⁰ This highly complex clock – which displayed not only the orbits of the seven planets but also the solar cycle, lunar cycle, and Roman calendar, as well as two different ecclesiastical feast day calendars – was constructed by Giovanni de' Dondi in Padua in 1344.⁴¹ The diagrams are visual evidence that, with the more precise perception of different temporal sequences, new meaning was ascribed to how people perceived the ages of life,⁴² the division of which was integrated into the diagrammatic design, becoming increasingly differentiated over time.

³⁹ On the diagrammatic structure per se of representations of the world in the Middle Ages see Müller.

⁴⁰ Cf. Helffenstein 221f.; on the change due to mechanical time measurement *ibid.* 310f. Carlo Cipolla explained: "Philosophers came to regard the universe as a great piece of clockwork, the human body as a piece of machinery, and God as an outstanding 'clock-maker'." (*Ibid.* 52).

⁴¹ On medicine, astronomy/astrology and the mechanical sciences in Padua in the 14th century see Massimo Rinaldi and Rippa Bonati, about Dondi 158–160. Jacopo Dondi was a pupil of Pietro d'Abano, cf. Ongaro, 155. On October 10, 1349, Jacopo Dondi and Guariento are listed together as witnesses in legal proceedings, which proves that the astronomer and the painter knew each other. See for this Murat 28.

⁴² It is beyond the limits of this paper to further investigate the fact that physiognomy, with the addition of the pseudo-Aristotelian treatise, was awarded a new importance. With the correlation of the temperaments, a typology of physiognomy was created, which caused a significant change in the perception of external character traits, because the physical dispositions were thought to be

CONCLUSION

This article has discussed the earliest female life cycle known depicted in the form of a diagram. Particular attention has been paid to the intellectual context, the author's legal training and the method of illustrating relationships between complex facts in diagrams, which was common at the time, and how these relate to the form of visual expression. In a book of hours, one would normally expect a seven-stage cycle of the ages corresponding to the religious division of the day into prayers of the hours. However, the author deliberately chose a six-stage cycle, a choice that can be traced back to legal writings of the time. Medical discourses, in contrast, cannot be sorted out in a comparable way. Whether the legal status of women at that time, which corresponded with the stages of their life, also played a role in everyday practice, for example by defining age limits, rights or privileges in communal ordinances, remains to be investigated.

The way in which Francesco's age cycle is designed is completely innovative, testifying to a way of thinking influenced by scientific forms of visualization. This form of representation is only preserved in one other manuscript, the prayer-book for Taddea Visconti, preserved in the Bavarian State Library.⁴³ It reflects the effort to create a pictorial form of expression that goes beyond chronological classifications of the ages, and for which there is no text source. Both the place and time of its origin, Padua in the first decade of the 14th century, make it clear that a preoccupation with the idea of time, as made visible to all by the first mechanical clocks, also stimulated innovation in the conceptualization and pictorial design of life-stage cycles. Through the analysis of Francesco's work, we can see how such a pictorial cycle conveys much more information about the perception and social categorization of different stages of women's lives than any textual source did at that time.

connected to the soul. Pietro d'Abano included these texts in his *Compilatio physiologiae*. For further discussion, see Jacquart *La compilation* 233–239.

⁴³ Munich, Bavarian State Library, Clm 6116, between 1325 and 1330, painted in Padua. Cf. Bauer-Eberhardt and Gullath.

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Andrea von Hülsen-Esch (Prof. Dr. phil.) is Professor of Art History at Heinrich Heine University in Düsseldorf since 2001. From 2012 to 2018 she was director of the research training group "Materiality and Production" (GRK 1678), from 2014 to 2019 Vice-President for International Relations at the HHU and 2022-23 she held the Krautheimer

Professorship at the Bibliotheca Hertziana, Rome. Since January 2026 she is Vice-President of the Franco-German University, Saarbrücken. Her fields of research include medieval iconology, materiality and production in art, representations of "age" in art, stage design from the sixteenth to nineteenth century and the history of the art market. Since 2005, she has been focusing on transdisciplinary research into representations of age(ing) in medieval and modern art. In addition, she has published on the methodological issues of age(ing) research. Since 2010, she has worked on actively establishing research on aging at the HHU, was the founding speaker of the internal research training group „Alter(n) als kulturelle Konzeption und Praxis“ (2012–2015), co-founded the series *Alternskulturen* and is focusing on cultural perspectives on age and aging. She can be reached at huelsen-esch@phil.hhu.de