

Tens, Sevens, Fives: The Power of a List's Cardinality

“Keep well ten and flee from seven / Spend well five and come to heaven” (*IMEV* 1817).¹ Such is the advice of a catchy pair of verses concerning pious living preserved in several late-medieval English miscellanies. Any late-medieval English layperson would know that the three numbers in this adage refer to the “titles” of three very important lists: the ten commandments, the seven deadly sins, and the five wits--both bodily and ghostly. In reciting the contents of each of those lists, which most laypeople would also be able to do, they would demonstrate not only their knowledge of these doctrinal points but also a basic mnemonic principal: that if one wants to remember the items in a list it is very helpful to know how many items it contains. From the point of view of mathematics, a number that answers the question “how many?” is a cardinal number and expresses the cardinality of a set: in the case of a list, the set of items it contains. Knowing the cardinality of a set--or of a list--one may perform a basic yet elegant mathematical operation: one can arrive at a second set with the same cardinality simply by placing each item in the new set in a one-to-one correspondence with each item in the original set. For recalling the five wits, for instance, our medieval layperson would have readily available a set whose cardinality he would know to be five: the five fingers of one of his hands. If he were able to assign one wit to each finger, he would know he had recounted them all.

Especially for lists pertaining to the fundamentals of the Christian faith, which medieval Christians were to know by heart, the custom of including the number of their contents in their titles reflects the usefulness of knowing a list's cardinality in order to memorize and recite it. But

¹ Versions of the adage appear in Cambridge, University Library MSS Ee.4.37, a copy of *Sir Peter Idley's Instructions to his Son* (s. xv²) and Ee.4.35 (s. xvi^{inc}); Oxford, Bodleian Library MSS Rawlinson poet. 32 (s. xv¹), Balliol 354 (Richard Hill's commonplace book, s. xvi^{1/3}); and London, British Library MS Harley 2252 (John Colyn's commonplace book, s. xv^{ex}-xvi^{inc}), 2391 (Northern Homily Cycle, s. xv^{mid}).

I argue that the very mnemonic technique whose use this naming convention prompts also reveals a fundamental characteristic of the list form: that is, that items in a list are possessed of a notional materiality and therefore both support and call upon mental skills associated not only with literacy but also with numeracy, skills associated not only with language but also with objects and pictures. In lists whose cardinality is known, that notional materiality is called forth by the mnemonic procedure of placing each of them in a one-to-one correspondence with physical objects in a set with the same cardinality, such as the five fingers of one hand in the case of the hypothetical layperson reciting the list of the five senses. In being matched to a set of concrete objects, the members of the set are treated as if they were objects as well: if not actual material objects, then at least discrete countable and manipulable mental objects. Indeed, the adage I just now quoted suggests that the mere reference to a list in terms of its cardinality may evoke its contents' quasi materiality, for the verbs "to keep," "to flee," and to "spend" may all connote countable material entities: from coins--to be kept and spent wisely--to menacing creatures to avoid at all cost.

This virtual materiality of list items also makes them amenable to being put in one-to-one correspondence with items of other lists of the same cardinality, a process that has the further effect of weakening the impulse to count them (that is, using the sequence of numbers, one, two, three ...) in favor of the pleasing activity of finding equivalent sets (a method of counting without numbers): that is, other lists with the same cardinality, lists with the same numbers in their titles. While scholars have long noticed a medieval preoccupation with such correspondences, they have tended to treat it as a peculiar outgrowth of medieval numerology. For instance, writing in 1958, Maurice Hussey observed, "the attributes of the dominating and symbolic number seven were made the vehicle of almost the whole religious training that the

laity were given or needed to assimilate.”² As this paper will attest, the number seven was indeed the workhorse for lay religious education; certainly, as well, the number carried enormous symbolic weight. According to Augustine, it means “perfect completeness” since it is the sum of the first odd and even numbers (in Pythagorean theory, three is the first real number).³ As for the other two numbers in my title, five was the number of the flesh, reflecting the five senses while ten symbolized unity because, as Augustine observes, it is the sum of the “Trinity of the Creator and the hebdomad of the created.”⁴ Quite apart from medieval number symbolism, modern cognitive science has also recognized the number seven--as well as five, and at a stretch ten--as significant--even “magical”--ever since George A. Miller demonstrated that seven bits of information--plus or minus two--marks the limit of the capacity of human working memory.⁵ But my interest in compilations of equinumerous lists has less to do with either the symbolic attractiveness of a given number or even with its mnemonic value than with the instrumentality of such compilations as systems that support a range of cognitive activities apart from those supported by declarative sentences, including counting, measuring, ordering and categorizing.

The sevenfold sevens explicated in the *Breviloquium* of Italian theologian Bonaventure (1221-1274) may serve as a first case for thinking about the potentials a set of such equivalent

² Maurice Hussey, “The Petitions of the Paternoster in Medæval English Literature,” *Medium Ævum* 27 (1958): 8-16 (8). Similarly, Morton W. Bloomfield notes, “[t]here was a general desire in medieval times to find parallels, and particularly sevens, in the universe.” See his *The Seven Deadly Sins: An Introduction to the History of a Religious Concept, with Special Reference to Medieval English Literature* (East Lansing: Michigan State College Press, 1952), 84.

³ Vincent Foster Hopper, *Medieval Number Symbolism: Its Sources, Meaning, and Influence on Thought and Expression* (New York: Columbia University Press, 1938), 79 quoting from City of God XI.31. In Hopper’s view, Augustine was the most authoritative early Christian writer on number symbolism.

⁴ Hopper, 85 quoting from *Against the Epistle of Manichæus Called Fundamental* X.11; and 86 from *On John*, XV.21. On 3 as the first real number, see p. 41.

⁵ George A. Miller, “The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information,” *Psychological Review* 63 (1956): 81-97.

lists may hold for this list-based mode of thinking.⁶ These seven sevens include the seven deadly sins, the seven sacraments, the seven virtues, the seven gifts of the Holy Spirit, the seven beatitudes, the seven petitions of the Lord's prayer, and the seven endowments of glory--three of the soul and four of the body. In addition, in concluding his discussion of these lists of seven, Bonaventure alludes to one more--the seven canonical hours--by advising his readers to pray seven times a day.⁷ Who were those readers? Bonaventure wrote his "brief discourse" in 1257 for an audience of friars just beginning their study of theology. As Dominic Monti explains, these students were often in need of a crash course in the elements of the faith, having entered the Order knowing as little as the Apostle's Creed.⁸ For them, the *Breviloquium* would have supplied such a course in a very manageable dossier, for as Marianne Schlosser observes, the work is both lucid and eloquent: "in the construction of every single sentence his language is vivid--[Bonaventure] is a master of Latin syntax."⁹

His summary remarks on his seven lists of seven make an excellent example of that mastery even as they reflect the generative possibilities of a set of equinumerous lists:

Propter quod notandum, quod septiformem septenarium proponit nobis sacra
Scriptura considerandum ... septenarium *vitiorum* tanquam primum, a quo
debemus recedere; septenarium *Sacramentorum* secundum, per quem debemus

⁶ Bonaventure, *Breviloquium*, in *Doctoris seraphici S. Bonaventurae opera omnia* (Quaracchi: Ex typographia Collegii S. Bonaventurae, 1882-1902), vol. 5, pp. 199-291. Trans. Dominic Monti (St. Bonaventure NY: Franciscan Institute Publications, 2005). Bonaventure discusses these lists in Part 5, "*De gratia Spiritus sancti*," one of the seven topics of theology that structure the work as a whole. For further discussion of the *Breviloquium*'s numerological organization, see Marianne Schlosser, "Bonaventure: Life and Works," trans. Angelica Kliem, in *A Companion to Bonaventure*, ed. Jay M. Hammond, J. A. Wayne Hellmann, and Jared Goff (Leiden: Brill, 2014), pp. 24-26 [9-59].

⁷ Bonaventure, *Breviloquium* Part 5, chapter 10.5.

⁸ Monti, "Introduction," xviii-xix.

⁹ Schlosser, "Bonaventure: Life and Works," p. 26.

incedere; septenarium *dotum* ultimum, quem debemus appetere; septenarium *petitionum*, penultimum, quo debemus petere; septenarium autem *virtutum*, *donorum* et *beatitudinum* triplicem intermedium, per quem debemus transire.

[Therefore, it should be noted that Holy Scripture proposes for our consideration a sevenfold [*septiformem*] series of sevens.... First, the seven capital sins, from which we must withdraw; secondly, the seven sacraments, by means of which we must grow; last, the seven endowments of glory, to which we must aspire; next to the last, the seven petitions, with which we must seek; and, as intermediary stages, the groups of seven virtues, gifts, and beatitudes, through which we must progress.]¹⁰

Beyond its elegance, what is clear in this example of Bonaventure's mastery of Latin composition is that these elements of the faith operate as a unified system, the consideration of which could proceed with or without Bonaventure's eloquent Latin. Moreover, by associating each list with an obligatory action--to withdraw, grow, aspire, seek, progress--Bonaventure also sketches a narrative of progress, which the reader is called upon to see as his own. In doing so, a reader may also visualize the lists and their inclusions as concrete entities of various kinds: the petitions as tools, the sacraments as nourishing food, the sins--again--as monsters to avoid, the virtues, gifts, and beatitudes as a series of stepping stones. With continued contemplation, this reader might also discover in these joined lists a multitude of more specific narratives that could serve as exempla either for guiding him in his own life or in his role as preacher. If he wanted to compose a sermon on the sin of gluttony, for instance, these joined lists might inspire him to advise his listeners to flee it by way of the stepping-stones of fortitude (a gift of the spirit) and

¹⁰ Bonaventure, *Breviloquium* Part 5, chapter 10.5, p. 264; trans Monti, p. 209.

charity (one of the cardinal virtues). While the process of finding these narrative possibilities would be facilitated by the equal cardinalities of the seven lists, it would still entail holding a forty-nine-cell table in one's mind, perhaps a suitable discipline for initiate friars but possibly less so for laypeople. However, a visual artist might present this sevenfold system diagrammatically: a form that would be accessible even to laypeople not well-versed in Latin syntax--or, for that matter, in written French or English either--but who were familiar, instead, with the parataxis of lists and the varieties of thinking lists support, from accounting to ordering to categorizing.

The Pater Noster table in the celebrated late medieval English Vernon Manuscript (Oxford, Bodleian Library MS Eng. Poet. a. 1, c. 1400), which weaves together four of Bonaventure's lists of seven, functions as precisely such a diagram. The lists are arranged in four columns, each of which is headed with the list's title, including its cardinal number, seven. Reading from left to right, they are the seven petitions of the Lord's Prayer, the seven gifts of the Holy Spirit, the seven virtues, and the seven vices. In this way, the table includes seven rows, as well. Each cell in the resulting twenty-eight-cell table is subdivided horizontally into two spaces: each upper space contains the Latin text pertinent to that column; each lower space contains an English translation, which is enclosed in a roundel. In this way, the top cell in the first column--the upper left corner of the table--supplies the Latin text of the first petition, "Pater Noster qui es in celis sanctificatur nomen tuam," below which appears an English translation, "fadur þat art in hevne þi nome be halewed." The table is not solely an array of four equinumerous lists, however. Like Bonaventure, the designer of the Pater Noster table has woven his four lists of seven together with a series of phrases that suggest a narrative arc. In this way, the banner of text that begins below the Latin text of the first petition reads "þis preier, 'fadur þat art in hevne þi nome

be halewed, lediþ a man to Drede of god [which] lediþ a man to mekenesse and lounesse [which] is a3enst pruide and frow<ard>nesse.” A note running across the lower boundary tells the story in general terms: “Per petitiones peruenitur ad dona per dona ad virtutes & virtutes sunt contra vicia” [Through the petitions one is led to the gifts; through the gifts to the virtues, which are against the vices]. But to reduce this table to a further list of seven--that is, to a list of seven fancifully arranged declarative sentences--is to miss entirely its pictorial aspects, the way its designer has brought out the virtual materiality of items in these lists, and the function of cardinality in the design as a whole. All of these aspects of the table pertain to the characteristics of lists that distinguish them from sentences and allow them to become tools for thinking rather than for exposition. Before examining this table as such a tool, it will be useful first to review the ecclesiastical developments and trends in habits of personal devotion that fueled the laity’s interest in such doctrinal lists and, second, to take a look at a selection of visual and verbal displays of these lists designed for lay use. As we shall see, by encouraging the activities of counting, visualizing, ordering, and thinking across categories, these displays would have prepared readers and viewers to see the lists that make up the Pater Noster Table as functioning simultaneously in the realms of words, pictures, and things and thus to use it for multiple forms of thinking.

While Bonaventure’s *Breviloquium* intervened in the mid-thirteenth century to prepare initiate friars for careers of preaching and hearing confession, the Fourth Lateran Council, held in 1215, had already created a need for the laity to know at least the seven deadly sins, by mandating that all the faithful confess their sins at least once a year.¹¹ In England, the Lambeth

¹¹ The directive appeared in Canon 21, “*Omnis utriusque sexus*.” For the Latin text and French translation of the canon see C.-J. Hefele, *Histoire des Conciles* (Paris: Letouzy and Ane, 1907), ed. and trans. Jean Le Clercq, vol. 5 part 2., p. 1350. English trans. in John T. McNeill and

Council of 1281 called for further education of ordinary Christians as well as for priests adequately prepared to teach them: its Canon IX decreed that priests deliver sermons four times each year not only on the seven deadly sins and “sua progenie” [their progeny], but also on the seven virtues, the seven sacraments, the seven works of mercy, the fourteen articles of the faith, the ten commandments, and the two evangelical precepts.¹² This legislation gave rise to a profusion of instructional material for both priests and laypeople: for parish priests, manuals designed to aid them in their new role as teachers; for the laity, short catechisms, long treatises of all kinds--from the encyclopedic, such as *The Prick of Conscience*, to the allegorical, such as *Livre de Seyntz Medicines*--as well as programs of visual art in stained glass, in church wall paintings, and in manuscript illuminations.

As a response to ecclesiastical directives that either implied lists--the seven deadly sins in the case of the Fourth Lateran Council’s annual confession dictate--or took the explicit form of a list of lists--in the case of the Lambeth Council’s program of sermons--this profusion of instructional material was also an outpouring of lists. As such, it drew from a still earlier spring: the work of the twelfth-century “masters of the sacred page” who revolutionized the study of scripture and theology: authors like Peter Lombard, Peter the Chanter, and Peter Comestor.¹³ Thanks to the work of these and other innovators, finding one’s way in the world of religious learning became much easier than it had been. As W. A. Pantin puts it, “Religious knowledge no

Helena M. Gamer, eds, *Medieval Handbooks of Penance: A translation of the principle libri poenitentialis and selections from related documents* (New York: Columbia University Press, 1990), pp. 413-14.

¹² The requirement appears in Canon 9: “quatuordecim fidei articulos, decem mandata decalogi, duo precept evangelii, scilicet gemine caritatis, septem etiam opera misericordie, septem peccata capitalia cum sua progenie, septem virtutes preincipales, ac septem gratie sacramenta.” ed. F. M. Powicke and C. R. Cheney in *Councils & synods, with other documents relating to the English Church* (Oxford: Clarendon Press, 1964), 2.901.

¹³ Lesley Smith, *Masters of the Sacred Page* (Notre Dame University Press, 2001).

longer meant browsing and ruminating over the sacred page; it was a matter of distinctions and schemata, of definitions and subdivisions, of almost a mathematical precision.”¹⁴ Pantin’s qualifying “almost” is important here, for in their avid defining and subdividing, these scholars displayed a penchant less for quantification than for conceptual operations that pertain to list-making, such as categorizing and enumerating--with or without numbers--as well as for operations that lists support, such as discovering correlations across categories.

The *Distinctiones Abel* by Peter the Chanter (d. 1197) brings these operations together in the form of an alphabetical list of some six hundred words from the Bible, whose symbolic meanings are arrayed diagrammatically. Several diagrams are devoted to the word *ecclesiae*, one of which displays the eight flowers and herbs the church possesses: the roses of martyrs, the lilies of virgins, the violets of confessors, the crocuses of the continent, the ivies of the married, the frankincense of prayers, the myrrh of those who mortify their flesh, and the aloe of the contrite.¹⁵ For a priest, this diagram would work as a ready-made outline for a sermon on the well-known topic of the church as a garden, a diverse habitat that sustains many species of faith in the form of as many categories of people.¹⁶ This sermon would be easy to memorize as well since it would be grounded in a list of concrete, easy to visualize items: a list of flowers and plants. Moreover, the image of a church garden could serve as a mnemonic locus, where the

¹⁴ W. A. Pantin, *The English Church in the Fourteenth Century* (Notre Dame: University of Notre Dame Press, 1962), p. 190.

¹⁵ In his excellent digest of the history of collections of distinctiones, Nicholas Perkins points out that incipient collections of this type survive from much earlier than the twelfth century, including the Clavis of Melito of Sardis (d. c. 180); see his ‘Reading the Bible in Sawles Warde and Ancrene Wisse’, *Medium Aevum* 72 (2003), 207-37 (p. 208).

¹⁶ The *locus scripturae* for this motif is Song of Songs, 4.12, *Hortus conclusus soror mea* (My sister, my spouse, is a garden enclosed). Early Christian commentaries understood the beloved of the Song of Songs--here “my sister, my spouse”--as an allegorical representation of the church. For a history of this reading, see E. Ann Matter, *The Voice of My Beloved: The Song of Songs in Western Medieval Christianity* (Philadelphia: Pennsylvania University Press, 1992), pp. 86-122.

flowers' arrangement would provide the priest with additional reminders of the categories they represent: for instance, he could group the roses, lilies, and violets together to remind himself of the three categories of saints; he could visualize the ivy clinging to the garden's wall to remind himself of the married, who cling to each other; and to remind himself of their opposite--the continent--he could visualize a row of crocuses growing right in front of the ivy-covered wall.¹⁷

While this diagram thus has a clear mnemonic utility, we may also note that its list, which appears to grow from a single word--or seed--in the margin, invites readers to do something other than focus on the single topic of the church as a garden. It also invites them to think, in the manner of a proliferating garden, of more lists. In this way, the group of saints at the top of the list brings to mind many lists of saints' names, along with mental images of how they are arranged in books. Two lists of saints' names appear in books of hours: in the calendar and in the litany. In the litany, the names appear hierarchically beginning with such heavenly saints as the Virgin Mary and the archangel Michael and ending with the lowly category of lay saints. On the page, this company of saints takes on the appearance of a collection of embroidered ribbons linked together by the curling Ss--interspersed with a few Os--that begin each line. In calendars, the saints appear in chronological order according to their feast days on pages that bring still more lists to mind: the months of the years, the labors assigned to each month, the signs of the zodiac, and the liturgical seasons of the year. This last brings another division in the Chanter's list into view: the five liturgical colors that distinguish those seasons and that are represented by the colors of the flowers: violet violets for advent and lent, white lilies for Christmas, green ivy

¹⁷ Isidore of Seville sees in ivy (*hederas*) a clear likeness to married couples: '*Hedera dicta quod arboribus reptando adhaereat*' (Ivy is so called because with its creeping it clings to trees). Isidore de Séville, *Etymologies, Livre XVII*, ed. and trans. by Jacques André (Paris: Société d'Édition 'Les Belles Lettres', 1981), p. 171. English trans. from Stephen Barney, Jennifer A. Beach, and Oliver Berghof, *Etymologies of Isidore of Seville* (Cambridge UK: Cambridge University Press, 2006), p. 351.

for ordinary time (the “counted weeks”), white lilies and yellow crocuses for Easter, red roses for Pentecost. What appears to be a simple list of plants linked to a list of categories of the faithful thus becomes a very lush garden for contemplation, much more than an outline for a sermon. Moreover, in their written forms--in the diagram in Peter the Chanter’s *Distinctiones Abel*, on the pages of the litany and calendar--the items in these lists acquire an object-like and therefore countable quality by virtue of their arrangement on the page, or their inscription in red or blue or gold ink, or their embellishment with line fillers, or all of the above.

In giving a sermon on the garden of the church or, following the directives of the Fourth Lateran and Lambeth Councils, in giving sermons on the ten commandments or the seven deadly sins, or the seven works of mercy, a parish priest might have seen himself as an authoritative interpreter of a long period of church reform, which had been fed in part by the work of twelfth-century scholars like Peter the Chanter who toiled to systematize religious knowledge. For their part, his listeners--mostly “the ivy of the married”--would have adapted this legacy (and its lists) to suit various devotional practices that were associated with a trend toward affective piety--or “la religion flamboyante”--that began in the eleventh century, even before the beginnings of ecclesiastical reform. The essence of affective piety was its focus on the humanity of Christ and his suffering on the cross, but by the late Middle Ages, the popular piety it had inspired was characterized by two passions of its own: first an enthusiasm for images of the Passion, whether in such material forms as paintings, sculpture, and stained glass or in the immaterial form of visual meditations; and, second, a preoccupation with the quantification of all manner of details related to the Passion, from the precise length of the cross to the number of drops of blood Christ shed on it. While these two aspects of late-medieval popular piety are usually understood to have developed independently from each other, they both make use of lists for organizing

equinumerous sets, resulting in compilations exhibiting a capacity to function as words, pictures, and things. In the following, I present two examples of this phenomenon as it is supported by the craze for quantifying and then present an example that relates to images and the practice of visualization. After considering these examples, we will return to the Pater Noster Table, recognizing it this time as a list-based environment for thinking.

Thomas Lentes traces the devotional phenomenon he calls “counting piety” from its modest beginnings in early references to Christian salvation as a mercantile transaction to its spectacular, fanatical culmination in the late Middle Ages in “a veritable arithmetic of salvation.”¹⁸ While Lentes is eager to prove that this form of piety was truly arithmetical--that is, involving multiplication and division as well as adding and subtracting--a close look at many of the devotions involving counting that were practiced by laypeople during this period suggests that, mathematically speaking, what interested them the most were questions of cardinality and its associated activity, finding equivalences. Counting prayers using a rosary is an excellent example of a devotional practice that is based on the cardinality of a set, and Lentes himself points to the rosary as an “outstanding example” of counting piety.¹⁹ Strings of beads have been employed in the practice of prayer around the world for millennia and have benefits that exceed their usefulness as counters. As Eithne Wilkins explains, the simple act of moving one’s fingers from bead to bead or knot to knot helps to stave off what she calls “attacks of interior chaos” during periods of prayer.²⁰ That said, attestations of their use for counting appear early in their history. As William of Malmesbury reports, in her last will and testament, none other than Lady

¹⁸ Thomas Lentes, “Counting Piety in the Late Middle Ages,” in *Ordering Medieval Society: Perspectives on Intellectual and Practical Modes of Shaping Social Relations*, ed. Bernhard Jussen, trans. Pamela Selwyn (Philadelphia: University of Pennsylvania Press, 2001), 55-91 at 55.

¹⁹ Lentes, “Counting Piety in the Late Middle Ages,” 55.

²⁰ Eithne Wilkins, *The rose-garden game: the symbolic background to the European prayer-beads* (London, Gollancz, 1969), p. 34.

Godiva bequeathed to Coventry's Benedictine priory "a circlet of gems that she had threaded on a string, in order that by fingering them one by one as she successively recited her prayers she might not fall short of the exact number."²¹ In pointing out that the circlet of gems allows Lady Godiva to recite the "exact number" of prayers--rather than stating the cardinality of the set of prayers--say, one hundred--Malmesbury makes a subtle point about the usefulness of a set of objects as a measure, whether or not the cardinality of the set is known. As long as one places the items of the new set--in this case prayers--in one-to-one correspondence with the first set, one will always arrive at the same "exact number."

While the rosary involves counting prayers onto real, concrete objects, a devotion said to have been prescribed by Christ himself employs a set of visualized objects--his wounds--as prayer counters. According to a story that appears in many fifteenth-century Books of Hours, the devotion was given to a female recluse who wanted "to knowe the nommbre" of wounds that were inflicted on Christ in the course of his Passion. After she had expressed her desire for this knowledge in many prayers, Christ speaks to her and tells her that if she says fifteen Paternosters and fifteen Ave Marias every day for a year, she will have "wurchede euery wounde and fulfilled the noumbre of the same."²² In support of Lentes' claim that "counting piety" was truly arithmetical, this devotion does provide the necessary information for calculating "the nommbre"--that is to say, the cardinality--of the set of Christ's wounds, thus satisfying the recluse's yearning: fifteen Pater Nosters and fifteen Ave Marias per day multiplied by 365 days in a year equals 10,950. But in prescribing this devotion, it would seem that Christ is less interested in the number of his wounds than with giving the recluse a way to worship every

²¹ William of Malmesbury, *Gesta Pontificum Anglorum* book iv, chapter 2; quoted in Wilkins, p. 34. Lady Godiva died circa 1041.

²² *The Commonplace Book of Robert Reynes of Acle: an edition of Tanner MS 407*, ed. Louis Cameron (New York: Garland, 1980), p. 268.

single one of them. In the logic of this schedule of prayer, the wounds serve as the beads of a rosary, for the number of the recluse's prayers will exactly match their number, just as Lady Godiva's rosary assured her of saying an "exact number" of prayers.

But the wounds of Christ are more than a collection of beads, and the procedure of placing prayers in one-to-one correspondence with them sets up an equation that is more than numerical, for it measures a quantity of human worship using a measure of Christ's sacrifice. In this way, the devotion makes an act of counting a prompt for contemplation of these two quite distinct categories, their fundamental incommensurability and the worship that very incommensurability inspires--above and beyond the simple desire to know a cardinal number. An essential factor in this shift from counting to contemplation is the fact that unlike rosary beads, the objects that serve in this devotion as counters--the wounds of Christ--have a meaning of their own. In this way they model the dynamics of a compilation of equinumerous lists, where items both signify and serve as counters.

In another devotion that entails the counting of prayers, two embedded equinumerous lists function to frame and order that activity even as they also serve both as counters and signifiers. Entitled "The Revelation of the Hundred Pater Nosters," the text of this devotion assures a reader that by saying a hundred Pater Nosters for each of the seven "sheddings" of Christ's blood while also visualizing them in vivid detail, he will have worshiped "all the dropes of that precious bloode that he bledde at that tyme."²³ Just like the devotion on the wounds of Christ, this one does not mention what would seem to be its crucial figure: in this case, the cardinal number of the drops of Christ's blood though once again, the necessary information for determining it is present: one hundred Pater Nosters for each shedding equals seven hundred

²³ Edited in Francis Wormald, "The Revelation of the Hundred Pater Nosters: A Fifteenth Century Meditation," *Laudate* 14 (1936): 165-82, at 175.

drops of blood. Instead, the activity of counting a hundred prayers for each visualized shedding provides an occasion to reckon with the differences between human counting and divine generosity. Indeed, the preface to the devotion may be seen as a prelude to this occasion: in the mercantile register that typifies “counting piety,” it asserts that “the worsship of euery drope of alle his blessed blode [is] able to purchase ... more grace and more mercy than euer heart may thynke or tonge telle.”²⁴

In addition to matching prayers to drops of blood, however, this devotion also matches its “sheddings”--the seven times in his life when Christ shed blood--to the seven days of the week: Sundays are for the circumcision; Mondays for the bloody sweat in the garden of Gethsemane; Tuesdays, the scourging; Wednesdays, the removal of his clothes; Thursdays, the crown of thorns; Fridays, the nailing to the cross; and Saturdays, the shedding of blood from his heart. The matching of these episodes of the Passion to the days of the week provides yet another point at which paired items from different categories give way to a sense of the ineffable. In making the time of the week the time of the Passion this devotion transforms a measure of mundane time into a temporal container for contemplating the workings of that grace and mercy that is more “than euer heart may thynke or tonge telle.” Moreover, the equal cardinality of the sheddings and the days of the week--“the dominating and symbolic number seven”--gives the prayers they order a tight and easily visualized temporal frame. As we shall see, the petitions of the Pater Noster work in the same way in the Pater Noster table. Though I have presented “The Revelation of the Hundred Pater Nosters” as an example of “counting piety,” it clearly also anticipates a meditant skilled in visualization. It thus exemplifies the aspect of late-medieval

²⁴ Wormald, “The Revelation,” 172.

piety that was enthralled by images as well. But as I will demonstrate, this second aspect too is preoccupied with equinumerous sets, thus implying both counting and lists.

For summoning images of the Passion in her mind's eye, a layperson's key source would have been her Book of Hours, for by the late Middle Ages, Books of Hours were being produced that held numerous images of the Passion beyond its definitive image, the Crucifixion, including the Agony in the Garden, the Betrayal, the Scourging, the Road to Calvary, the Deposition, and the Entombment. This proliferation of images of the Passion in Books of Hours enjoyed official approval use on the basis of the opinion that they had a special capacity to stimulate viewers' emotions. Among these images, those that featured Christ's wounds had the potential to be especially moving, and artists of the period responded to that potential by portraying Christ with many wounds in addition those in his hands, feet, and side, and by depicting bright red streams of blood gushing from those five.

Books of Hours of this period frequently also include a series of additional prayers addressed to the traditional image of the crucifixion: according to its rubric, "*Ad salutandum ymaginem christi.*" The prayers salute this image by addressing each of its component parts individually, just as "The Revelation of the Hundred Pater Nosters" dissected the narrative of the Passion in order to address each of its key episodes individually. The parts of the Crucifixion image treated in these prayers include the cross, the crown of thorns, the five wounds, and the two most important witnesses to the crucifixion, Mary and the apostle John.²⁵ The miniature paintings that usually accompany the prayers for the five wounds depict each wounded body part surrounded by some kind of representation of water, alluding to the association these prayers

²⁵ The sequence of prayers is edited by Clemens Blume and Guido M. Dreves under the title "De Vulneribus Christi" in *Analecta Hymnica Medii Aevi* vol. 31 (Leipzig: O. R. Reisland, 1898), no. 68, pp. 87-89.

make between the five wounds and the river of paradise and the four rivers that flow out of it. In this way, the wounds of the hands are compared to the rivers Pishon and Gihon, and the wounds of the feet are compared to the Euphrates and the Tigris. The side wound is likened to the river of paradise before it divides into these four. As the source of the four other river/wounds, this wound is visually depicted along with the other four with a circle of blue running around them all. The circular form of the side wound image is especially suited to form the content of an historiated initial for the prayer it accompanies since that initial letter is an O. The prayer begins “O fons ave paradisi, / A quo quattuor divisi / Dulcis currunt rivuli” [Oh font of paradise, from which divided, four sweet rivers flow].²⁶ Together these images and prayers allow a meditant to get closer to these five wounds than would be possible looking at the crucifixion scene in a Book of Hours as a whole. It allows him to worship, as it were, at the hands and feet and side of the crucified Christ even as his sacrificial blood flows directly from paradise onto the page before his eyes.

At the same time, the paintings and rubrics clearly comprise a compilation of equinumerous sets: first, the set of red-ink headings, “ad vulnus dextra manus, ad vulnus sinistre manus, ad vulnus lateris Christi, ad vulnus dextra pedis, ad vulnus sinistre pedis”; second, the set of pictured body parts and their wounds, and third, the set of rivers. Of all these sets, the images of the wounded hands, feet, and side first catch the eye. Together they describe the extent of Christ’s human form and the physical extent of his sacrifice, calling to mind a point that is often made in Middle English lyrics on the Passion, that Christ was wounded in “every part.” Just as the devotion to the sheddings put episodes of the Passion narrative in one-to-one correspondence with the days of the week, thus giving it a concise temporal frame, this set of paintings gives its

²⁶ Blume and Dreves, “De Vulneribus Christi,” p. 87.

associated prayers a spatial frame that is on the scale of the human body. As that human frame is matched first to the category of wounds and then to the rivers of Paradise, the paintings open a view of Christ's wounds--his sacrifice in his human form--as so many waterways leading (upstream) to heaven. In the devotions I have so far discussed, though, such thinking across categories was prompted by counting, by a meditant's own matching of prayers to wounds or prayers to drops of blood. In this series of prayers, all the matching of equinumerous sets has already been done and no mention of the crucial number five--the number of the flesh, we will recall--the cardinality of all of these sets.

Interestingly, however, the series of images does include one that presents the wounds as a series of counters, like the wound-beads in the first devotion I discussed above. That is the middle image, which shows the wounds abstracted from their respective body parts. Arranged as they are, with one at the center and the other four defining a square--the pattern of five dots on a die--the cardinal number of the wounds is instantly recognizable as five. The term for this phenomenon of recognizing the cardinality of a set without counting is subitization. A look at the history and definition of this term followed by a brief look at research by cognitive scientists on the coevolution of human hands and brains will lead us back to this middle painting, recognizing it now not only as a set of pictures that have features of counters, but also as a set of counters that have features of words. In other words, we will be able to recognize this middle image as a model for how a list of words may also function in the realms of pictures, words, and things. According to the *Oxford English Dictionary*, to subitize is “[t]o apprehend (the number of things contained in a small sample) immediately, without needing to count.”²⁷ The occasion of the word's first use in print, a report on a study of visual discrimination of number published in the

²⁷ *OED*, s.v. “subitize.”

American Journal of Psychology in 1949, confirms that five is a quantity that may be subitized: the authors of the report write, “A new term is needed for the discrimination of stimulus-numbers of 6 and below....The term proposed is *subitize*.”²⁸ The *OED* explains that the word derives from the Latin root, *subite* (an adjective), which means “That occurs or is manifested suddenly,” but from an etymological point of view, what interests me most about the *OED*’s entry for subitize is its use of the word “apprehend” in defining it. From the French *apprehendere*, its earliest sense in English was to “lay hold of with the mind”; only later did it denote seizing or taking hold of a physical object as well. When we subitize, in other words, our minds exhibit our hands’ capacities to grasp and hold objects.

Though one must not put too much stock in etymology, the history of the word apprehend does have analogues in many idioms that figure mental and linguistic activities in terms of hand functions: we grasp ideas, manipulate words, we collect our thoughts, turn them over in our minds, and so on. Though we think of these expressions as metaphorical, cognitive scientists are beginning to find that there are real connections between thought, language, and our hands. In his book *The Hand: How its Use Shapes the Brain, Language and Human Culture*, neurologist Frank R. Wilson explains that human hands and brains evolved in relation to each other; as a consequence of this coevolution, there is a partial commingling of the part of our brains that deals with objects and the part that deals with word. Because of this overlap, our brains really do treat words like objects. As Wilson puts it, we “treat nouns as if they were stones and verbs as if they were levers or pulleys.”²⁹ This coevolution would seem to be replicated in human language learning as well. As Patricia M. Greenfield has hypothesized, a child’s

²⁸ E. L. Kaufman, M. W. Lord, T. W. Reese, and J. Volkman, “The Discrimination of Visual Number,” *American Journal of Psychology* 62 (1949): 498-525, at 520.

²⁹ Frank R. Wilson, *The Hand: How its Use Shapes the Brain, Language and Human Culture* (New York: Vintage, 1999), 169.

vocabulary develops along with his exploration of objects with his hands and with his use of tools: spoons, for instance. In her model, the language area of our brains becomes distinct from the area having to do with objects beginning at around age two, but a homology persists between the way the brain “handles” words and things.³⁰ Thus, as Wilson puts it, it appears that we “build sentences the way we build huts and villages.”³¹ Applying this image to my theory about lists, it is possible to see that just as single stones are manipulable while stones cemented into the walls of buildings are not, so noun “stones” in lists have functionalities that nouns held in place by the syntax of well-formed sentence constructions do not.

Returning to the image of the collected wounds of Christ with this understanding of the cognitive reality of laying hold of something with one’s mind together with a sense of the blurred boundary, as far as our brains are concerned, between laying hold of objects and laying hold of words, we can see, first of all, that the set would allow a reader to focus on the wounds as the essence of Christ’s sacrifice. But in this respect, I would suggest that the red dots in this painting could just as easily be words. As a set of dots wholly displaced from their original contexts, their mimetic relation to wounds is minimal; thus they must be deciphered, just as written words must be read. Conversely, I would suggest that the repeated red-ink Latin word “vulnus” in these prayers’ rubrics may function both as an object, visible to a reader as the one that is present in every rubric, and as a picture, its row of red minims resembling the short streams of red ink extending below the paintings of the wounds. Taking another look now at the equinumerous sets this series of prayers brings together, we may see pictures with the features of both objects and

³⁰ Patricia M. Greenfield, “Language, tools, and brain: The ontogeny and phylogeny of hierarchically organized sequential behavior,” *Behavioral and Brain Science* 14 (1991), 531-95.

³¹ Wilson, *The Hand*, 169.

words, and words with the features of both objects and pictures. This fluidity with respect to mode of signification pertains, I argue, to the verbal lists in the Pater Noster table as well.

Before returning at last to that table, I will put the notion of laying hold of a set of objects or words with the hands of one's mind in the context of late-medieval practices of visual meditation. By far the most spectacular attestation of this practice in late medieval England is the *Mirror of the Blessed Life of Jesus Christ* by Nicholas Love (died c. 1424), a translation and adaptation of the *Meditationes Vitae Christi* written by Pseudo-Bonaventure in the early fourteenth century. In her recent study of this work, Sarah McNamer notes the frequency of its use of the verb "to behold" in directing readers to visualize a scene. As she explains, the verb is derived from Anglo-Saxon *be-healden*, a derivative of *healden*, "to hold."³² In view of its history, "to behold" connotes more than "to look": it also means "[t]o hold or keep in view, to watch; to regard or contemplate with the eyes; to look upon, look at (implying active voluntary exercise of the faculty of vision)."³³ McNamer's work focuses on Middle English senses of the verb that imply a specifically maternal and compassionate way of looking, one that connotes an empathic impulse to guard, and protect the suffering and wounded Christ, but I would suggest that the Middle English sense of "behold"--holding an object with one's eyes--provides a connection between the emphasis on visualization of the Passion in late medieval affective piety and its production of visual and verbal methods of holding information for the purpose of contemplation, holding them in the containers of compilations of equinumerous lists, specifically.

Whether in poetry, painting, or visualized devotion and whether under the influence of an enthusiasm for images or a zeal for counting, late-medieval English popular piety entailed

³² Sarah McNamer, *Affective Meditation and the Invention of Medieval Compassion* (Philadelphia: University of Pennsylvania Press, 2009), p. 136.

³³ OED, s.v. "behold," sense I.7.a.

practices that involved placing sets of virtual objects in one-to-one correspondence with each other, thereby supporting the activity of thinking across categories. Presentations of these objects further suggest a fluidity in their mode of signification, for they may sometimes be interpreted as either words or pictures. Moreover, each of the practices I discussed was bounded by a temporal or spatial frame comprised of a list of component parts of the Passion, conceived as either a story or an image. Whether or not the cardinality of that list is specified, it serves as the measure for the size--that is, the cardinality--of the sets of objects associated with it.

Turning now to the Pater Noster table, we may see that it offers a viewer much more than seven declarative sentences. Like the devotions involving counting and the prayers to the wounds in Books of Hours, the table takes for its overarching structure a list derived from the life of Christ: in this case, the Lord's Prayer, which Jesus gave in his Sermon on the Mount. Divided into its seven petitions, the prayer serves as a measure both semantically--as the very paradigm of Christian prayer--and visually: it determines the size of the table and produces its elements as objects that may be counted. On this latter point, the large initials that appear to buckle the left side of the table onto its gold leaf border may be perceived as countable objects before they are deciphered as the initials of words. Seven objects are too many to subitize, but the growth of vegetation springing into the left margin of the page divides these seven objects into two subitizable sets: a top set of three and a lower set of four. Positioned between the F of *Fiat voluntas* and the P of *Panum nostrum*, this ornament marks a boundary, as Avril Henry has pointed out, between the three petitions pertaining to matters of heaven and the four pertaining to

earth.³⁴ Beyond these two orders of things, the list of petitions naturally follows the order of the prayer and thus determines the order of the items in all of the table's other three lists.

The table is also framed horizontally by the row of list titles that appear at the top of each column, in which their cardinalities (seven) are explicitly announced. Just as the table's rows are divided into upper and lower sections by a botanical ornament in its left margin, its columns are divided into left and right sections by a central column of interlacing patterns. Here too, the division is between divine and human: in this case, between divine beneficence in the two left columns--devoted to the petitions and the gifts of the holy spirit--and human struggle in the two right columns, devoted to the vices and virtues. Though the divine and the human each occupy two columns, the space devoted to the two left, divine columns is greater. As for the human side, the word "contra" positioned between its two list titles establishes an antagonistic relationship between them and points out that the human side of the table is internally divided while the divine side is united. This much one may gather from the table simply by examining its frame because of its component lists having features of both words and things: that is, they may be counted but they also have semantic value.

The table of contents for the Vernon Manuscript, in which this table appears, gives it the title "Pater Noster in a table ypeynted" (f. ii^v): that is, the Pater Noster depicted, represented in a table in a pictorial manner. Though its contents are strictly verbal, the designer's use of shape and color gives the table's words the aspects of both pictures and things. At first glance, the red-ink Latin words, inscribed in the *textura* script of liturgical works, including Books of Hours, represent doctrinal authority. As single lexical items abstracted from the edifice of Latin syntax--

³⁴ Avril Henry, 'The Pater Noster in a table ypeynted' and some Other Presentations of Doctrine in the Vernon Manuscript," in *Studies in the Vernon Manuscript*, ed. Derek Pearsall (Cambridge: Brewer, 1990), 89-113, at 92.

stones unincorporated into “huts and villages,” to use Wilson’s terms--their meanings may be apprehended at a glance. One need not decipher the row of minims in “Humilitatis” as the letters u, m, and i, for instance; instead, one grasps the whole word from its general shape, as if it were a picture, in other words. By contrast, the wordy English translations of these single Latin words could hardly be understood without actually reading them; at the same time, their location in roundels pictures them as both countable and behold-able objects. Recurring to one of the Middle English definitions of “behold”--to keep or guard--the horizontal bands that intersect the four columns--be they of text or of geometric or botanical patterns--hold all the items in this table securely in place, even as they give the table as a whole the look of a woven fabric. In this way, the Pater Noster table also presents a set of equinumerous lists as a “text” in the original sense of the word: a woven thing.

As such a “text,” the table may be understood as a contemplative space, a space set apart for pondering the connections among measures, orders and categories. In the gospel according to Matthew, Jesus prefaces his prayer with instructions on prayer in general: “Tu autem cum oraveris, intra in cubiculum tuum, et clauso ostio, ora Patrem tuum in abscondito: et Pater tuus, qui videt in abscondito, reddet tibi” [But when thou shalt pray, enter into thy chamber, and having shut the door, pray to thy Father in secret: and thy Father who seeth in secret will repay thee].³⁵ I propose the Pater Noster table as a chamber both for saying the Lord’s prayer and for discovering its secrets.

³⁵ Matthew 6.6