

*Increase Mather's 'Catechismus Logicus':  
A Translation and an Analysis of the Role  
of a Ramist Catechism at Harvard*

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IN 1661 a Harvard freshman opened a letter from his uncle and received the following advice on how best to pursue his studies in college: above all he should learn 'the method of the incomparable P. Ramus as to every art he hath wrot upon. Get his definitions and distributions into your mind and memory.'<sup>1</sup> Yet, as Leonard Hoar urged his nephew Josiah Flynt to appreciate the importance of the logic system of Peter Ramus (Pierre de la Ramée, 1515?–1572), Ramism was nearing the end of its hundred-year term of popularity. Nonetheless, the doctrines of Ramism would play a role in Increase Mather's plans for Harvard's regeneration after Hoar's own troubled tenure as president of the college had brought the institution close to extinction. Thus, as advice for Harvard students, Hoar's prescriptions would continue to have merit for some years to come.

Despite the fact that Ramist doctrines were already on the decline, in 1675 Increase Mather produced a brief manuscript logic catechism in Latin for the use of Harvard College undergraduates. The title in the most complete surviving copy is *Catechismus*

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1. Leonard Hoar to Josiah Flynt, March 27, 1661, in Samuel E. Morison, *Harvard College in the Seventeenth Century*, 2 vols. (Cambridge: Harvard University Press, 1936), 2:640.

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*Logicus: ex Petri Rami, Alexandri Richardsoni, et Guilielmi Amesii, Scriptis nunc primum Collectus Authore Crescentio Mathero. Qui in usum Pupillorum Suorum diligentissime Collegit* (fig. 1). The work was never printed and likely was never meant for use outside of Harvard. As indicated in the title, Mather's catechism was intended 'in usum Pupillorum' and to be copied by students, and this explains why the two surviving copies are transcriptions made by Harvard undergraduates.<sup>2</sup> This work exemplifies the kind of rudimentary Ramist textbook used in seventeenth and early eighteenth century New England.

The *Catechismus Logicus*, hitherto largely unnoted as part of Increase Mather's body of work,<sup>3</sup> can add to an understanding of Mather's years at Harvard. The use of a Ramist logic in catechistic form may actually have been a key element in a plan by Mather to promote Harvard's growth as a humanist university on the Dutch model, where students were matriculated at the age of eleven or twelve and remained for about seven years, at which time they would leave with doctorates. Through the agency of Mather, Ramism played an important role in Mather's vision for the rejuvenation of Harvard College.

We will show that this text leads to an alteration of our appreciation of the place of Ramist thought in early New England. Beginning in the 1680s, Ramist logic was used primarily as an introductory system of logic within the larger context of the humanist

2. Mather's original manuscript is unlocated. A checklist of surviving student notebooks will appear in volume 109, part 2 of the *Proceedings of the American Antiquarian Society*. One of the surviving transcriptions was made in about 1686 by John Clark (1670-1705, A.B. 1690) and is now at the Beinecke Rare Book and Manuscript Library, Yale University (no. 12); and the other in 1691 by Walter Price (1676-1731, A.B. 1695), now at the American Antiquarian Society (no. 15). The full title and attribution to 'Crescentius Matherus' is from the Price copy; Clark's copy lists no author.

3. The Mather catechism is not listed in Thomas J. Holmes, *Increase Mather: A Bibliography of His Works*, 2 vols. (Cleveland, 1931). Clifford K. Shipton noted the existence of Price's 'notes on logic' in *Sibley's Harvard Graduates*, vol. 4 (Cambridge: Harvard University Press, 1933), 270. Rick Kennedy mentions the textbook in 'The Alliance Between Puritanism and Cartesian Logic at Harvard, 1686-1735,' *Journal of the History of Ideas* 51 (1990): 549-72, and in *Aristotelian and Cartesian Logic at Harvard: Charles Morton's 'A Logick System' and William Brattle's 'Compendium of Logick'*, ed. and intro. by Rick Kennedy, *Publications of the Colonial Society of Massachusetts* 67 (1995): 95.



Fig. 1. Increase Mather, *Catechismus Logicus*, title page. Transcription by Walter Price (A.B. 1695). Knoles 15. Walter Price Notebook. American Antiquarian Society (AAS).

options expected of a university. Thus, the story of Mather's *Catechismus Logicus* and the role played by this and other logic texts in Mather's ambitions for Harvard College reveal only a limited but educationally important role for Ramist thought in provincial Puritan intellectual life.

#### THE LIMITED ROLE OF RAMIST LOGIC IN NEW ENGLAND

In our opinion, Ramist logic was not so much a distinctive way of thinking as it was a pedagogical strategy that was influential in a limited range of situations from the late sixteenth to the late seventeenth century.<sup>4</sup> The humanistic logic of the Renaissance emphasized classical dialectic while reducing its divisions and complexities. As a form of humanist logic, Ramist logic was derived from the revival of the rhetoric and dialectic of the classical world, especially as manifested in works on logic by Cicero and Quintilian.

Aristotle had delineated two types of logic. The first was *scientific* in that it was a system of demonstration based on self-evident first principles. The result of the demonstrations was *scio* ('I know'). The second type was *dialectical* in that it entailed a system of analysis and synthesis based on opinions. Dialectic logic aspired to yield wise judgment and well-reasoned decisions. Scientific logic was best applied in mathematics or geometry. Dialectical logic was best applied in political leadership or courtroom justice, and was therefore well suited to the pulpit as well. For Aristotle, dialectic was a strategy for reasoning 'from opinions that are generally accepted.'<sup>5</sup> Dialectic was a community logic, while scientific logic was more individual.

The movement of Renaissance logic away from the divisions and complexities of classical logic began with the *Repastinatio Di-*

4. For a bibliographical study of the range of current opinion about Ramus, see Peter Sharratt, 'Recent Work on Peter Ramus (1970-1986),' *Rhetorica* 5 (1987): 7-58. Another important bibliography of work dealing with sixteenth- and seventeenth-century logic is E. J. Ashworth's *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century: A Bibliography from 1836 Onwards* (Toronto: Pontifical Institute of Medieval Studies, 1978).

5. Aristotle, *Topica*, 155b.5-15, trans. W. A. Pickard-Cambridge in *Works of Aristotle*, ed. W. D. Ross, vol. 1 (Oxford: Clarendon Press, 1928).

*alecticae et Philosophiae* (1439) of Lorenzo Valla (1407–1457). Rudolf Agricola (1444–1485) transformed Valla's logic into a popular textbook form, which circulated in manuscript after the 1470s and was first published in printed form in 1515 as *De Inventione Dialecticae*.<sup>6</sup>

Peter Ramus, a master reductionist and simplifier, sought to reduce logic into a simple, black and white format. A man devoted to education in general and textbook writing in particular, Ramus's initial fame rested on attacking scholastic logic. His continuing fame rests on his creation of a simplified dialectical logic, *Dialecticae Libri Duo* (1555 in French, 1556 in Latin, and final revision in 1572).<sup>7</sup> While he followed the direction set by Valla and Agricola, Ramus's treatment of logic was more superficial. Valla and Agricola had created a movement to simplify logic but had produced books that were still heavy tomes full of subtle arguments. Ramus's work, on the other hand, had the advantage of being child-friendly.

The most innovative and vulnerable aspect of Ramus's logic was his call to dichotomize almost every point into two sub-points.<sup>8</sup> Ramus advocated the basic structure of Classical and Humanistic topics: *invention* and *judgment*, the first of which analyzed while the second synthesized. The closing section on *method* in all Ramist logics demanded that the whole of knowledge be laid out

6. Lisa Jardine has put together a fascinating body of work primarily on Agricola and the beginnings of humanistic logic; see 'Lorenzo Valla and the Intellectual Origins of Humanist Dialectic,' *Journal of the History of Philosophy* 15 (1977): 143–64; 'Distinctive Discipline: Rudolf Agricola's Influence on Methodical Thinking in the Humanities,' in *Rudolphus Agricola Pbrsius 1444–1485: Proceedings of the International Conference at the University of Groningen, 28–30 October 1985*, eds. F. Akkerman and A. J. Vanderjagt (Leiden: E. J. Brill, 1988), 33–57; and 'Inventing Rudolph Agricola: Recovery and Transmission of the *De inventione dialectica*' in *Erasmus, Man of Letters* (Princeton: Princeton University Press, 1993), 83–98.

7. For a complete bibliography of editions of Ramus, see Walter J. Ong, *Ramus and Talon Inventory* (Cambridge: Harvard University Press, 1958). Cf. also Ong's *Ramus, Method, and the Decay of Dialogue: From the Art of Discourse to the Art of Reason* (Cambridge: Harvard University Press, 1958).

8. For the Ramist emphasis on dichotomies, see Mather, *Catechismus Logicus*, 1:81, and Walter J. Ong, 'Introduction,' in John Milton, *A Fuller Course &c. In The Art of Logic Conformed to the Method of Peter Ramus* (1672), ed. and trans. Ong and Charles J. Ermantinger, *Complete Prose Works of John Milton*, vol. 8 (New Haven: Yale University Press, 1982): 158.

as a system moving from the most general to the most particular. 'Method' had previously become a standard closing section to logic textbooks, but Ramus gave it a clarity that even children could grasp. While Ramus may not have made any significant innovations within the content of logic, he can be seen as an aggressive pedagogical reformer. As Lisa Jardine explains, Ramus's *Dialecticae Libri Duo* manifests a reductionist attitude with a goal of meeting 'the needs of the arts student at the first-degree level: it teaches him the bare minimum to enable him to carry out the academic exercises which were required of him.'<sup>9</sup> It was also easier to memorize than most of its competitors.

In general, Ramism was respectable in England during the first half of the seventeenth century; however, it lost credibility steadily among the leading thinkers later in the century. From its first appearance, Ramus's logic system was criticized for reducing its subject into too small and simple a package. Nonetheless, English Puritans of the 1570s to 1630s venerated Ramus's memory, in part because of his death at the hands of Roman Catholics. But even the Puritans were a bit embarrassed by the simplicity of Ramus's logic. In an effort to restore Ramism to intellectual respectability, Puritan thinkers such as John Milton, Alexander Richardson, William Ames, and George Downame produced expanded Ramist logics. As Milton explained, 'What is the use of achieving brevity if this means we must go elsewhere for clarification? It is better to produce a longish treatment of an art which achieves clarity all in the course of one work than to explicate a too brief work through a separate commentary which results in less clarity.'<sup>10</sup>

Late seventeenth-century and early eighteenth-century New Englanders appreciated the reductionist aspects of Ramism more than their English intellectual forefathers had. In fact, the type of

9. Lisa Jardine, 'Humanistic Logic,' *The Cambridge History of Renaissance Philosophy*, ed. Charles B. Schmitt (Cambridge: Cambridge University Press, 1988), 173-98. See also Peter Sharratt, 'Recent Work on Peter Ramus (1970-1986),' 7-58 for a discussion of the literature on the whole of Ramus's influence.

10. John Milton, *A Fuller Course &c. In The Art of Logic*, 210.

Ramism that succeeded in New England was not the elaborate form of the early English Puritans. While simplification was an important goal of all Ramist logics, the American logics were overwhelmingly reduced to bare essentials. The most important quality was their simplicity. Increase Mather's *Catechismus Logicus* and the other Ramist logics written in New England are examples of a provincial partiality for these qualities of Ramist logic. In short, if we understand that humanist logicians in general approved of making logic more simple, then we should see Ramists in general as reductionists, with English Ramists mitigating that reductionism and American Ramists enhancing it.

A good example of the treatment of Ramism in New England may be found in the stripped-down logic catechisms that Harvard students transcribed into their notebooks. Both of the surviving student transcriptions of Increase Mather's Ramist logic are accompanied by copies of a second logic text in catechism form, a much reduced version of George Downame's *Commentarii in P. Rami Regii Professoris Dialecticam*.<sup>11</sup> Printed copies of the 1610 edition of Downame's book, as well as Alexander Richardson's *Logician's School-Master* and other published explications of Ramist logic<sup>12</sup> were available to students, but the tutors seem to have preferred teaching much simplified versions. The situation manifests the pattern noted by Walter Ong: 'the simplicity of Ramist logic paradoxically generated commentaries to explain what Ramus meant—commentaries that were in turn suppressed for being too distracting or discouraging and alternately revived and revised and amalgamated again.'<sup>13</sup>

Another example of the New England penchant for humanistic reductionism is the logic text written by John Eliot to be used in teaching Indians. Eliot hoped to train as teachers some of the In-

11. Downame's *Commentarii*, first published in Frankfurt in 1601, was published again in Frankfurt in 1631 and in London in 1669. In addition to the English reductions in the Clark and Price notebooks, see also the Latin version transcribed by William Partridge (A.B. 1689, no. 11).

12. Arthur O. Norton, 'Harvard Text-Books and Reference Books of the Seventeenth Century,' *Publications of the Colonial Society of Massachusetts* 28 (1935): 424-26.

13. Ong, 'Introduction,' *Complete Prose Works of John Milton*, 8:168.

dians he had organized into 'praying towns' on the periphery of Boston. To this end, he set about teaching them not only religion, but also 'some of the Liberal Arts and Sciences, and the way how to analyze.'<sup>14</sup> An important element in this preparation was to 'read unto them a lecture in the liberal arts, especially in logic.'<sup>15</sup> In furtherance of his work, the Commissioners of the United Colonies subsidized the printing of 1000 copies of Eliot's textbook, *The Logick Primer: Some Logical Notions to Initiate the Indians in the Knowledge of the Rule of Reason* (Cambridge, Mass., 1672).<sup>16</sup> The resulting small book was printed in the Massachusetts language with an interlinear English translation. The print is so large that each of the seventy-three pages contains only about twenty words.

Eliot's logic is a rhetorically oriented work that has three parts dealing with *notions, propositions, and speech*, with speech split into *sylogistical arguing or discourse*. While such divisions do not derive specifically from Ramus's *Dialecticae Libri Duo*, they compare loosely with the three main parts of Mather's Ramist logic: arguments, axioms, and disposition with disposition split into judgment or method.<sup>17</sup> Eliot's logic can probably most properly be understood as part of an eclectic tradition that Charles B. Schmitt describes as showing 'the strong influence of humanistic techniques of organization, use of examples, and adaptation of materials to the needs of students.'<sup>18</sup> By employing a simplified presentation of logic, Eliot hoped that he would be able to transform individuals who had little previous education into teachers who

14. John Eliot, *A Brief Narrative of the Progress of the Gospel amongst the Indians in New-England, in the year 1670* (London, 1671), 5.

15. John Eliot to the Commissioners of the United Colonies in New England, Sept. 4, 1671, *Proceedings of the Massachusetts Historical Society* 17 (1879-80): 248.

16. William Kellaway, *The New England Company* (New York: Barnes and Noble, 1962), 141.

17. For the reason that Ramists did not use the term *proposition*, see Alexander Richardson, *The Logicians School-Master* (London: G. Dawson, 1657), 255.

18. Charles B. Schmitt, *John Case and Aristotelianism in Renaissance England* (Kingston & Montreal: McGill-Queens University Press, 1983), 38-39. Schmitt warns readers not to 'overestimate' differences in logic textbooks and to recognize 'threads of continuity.' Both of these recommendations must apply to Eliot's logic textbook.



could 'lay out into particulars both the Works and Word of God; and . . . communicate knowledge to others methodically and skillfully. . . .'<sup>19</sup>

It is this New England appreciation for the particular virtues of a simplifying pedagogy that helps explain the composition of Increase Mather's *Catechismus Logicus*. In turn, the *Catechismus Logicus* helps explain the complex relationship between the use of Ramist logic in England and in New England. Mather was not simply importing English logic; he was creating an alternative. In order to understand the distinction, it is important to examine the text's relationship to its stated sources, its normal Ramist structure, and the most dynamic of its possible influences in New England.

The *Catechismus Logicus* is a cut-and-paste epitome, informally published by means of multiple transcriptions to be used within a small community. The title of Mather's catechism does not try to hide the fact that it is derived from previously published sources; the title is, however, still somewhat deceptive.

In his title, Mather invoked the pedagogical trio he favored—Petrus Ramus, Alexander Richardson, and William Ames. The text, however, is overwhelmingly straight from Ramus. While we know that Mather owned copies of the logic texts by all three authors,<sup>20</sup> there is only one change of terms that can be attributed to Richardson's influence, while nothing can be attributed to Ames.<sup>21</sup> By using the names of these three men in the title of his catechism, Mather attached his logic to the English Puritan tradition, but he was not interested specifically in importing their ideas.

For Increase Mather, the English Puritan tradition of Richardson and Ames was crucial to Ramism's intellectual authority. Mather revealed most clearly what he thought of each of these three when he wrote

19. Eliot, *A Brief Narrative of the Progress of the Gospel*, 5.

20. Mather's 1664 library catalogue includes 'Petri Rami Scholia,' 'Downam in Rami dialect.,' 'Richardson in Rami dialect,' and 'Ames Technometria, ad logica et disput.,' among other works on logic. See Julius H. Tuttle, 'The Libraries of the Mathers,' *Proceedings of the American Antiquarian Society* 20 (1910): 281, 288, 290.

21. This is the change from judgment to disposition in the *Catechismus Logicus*, 2:1-2.

In this way that great and famous Martyr of France, *Peter Ramus* held forth the light to others. After him succeeded the profoundly learned and godly, *Alexander Richardson*, of whom Mr. *Hooker* was wont to say, that the Lord would not suffer *Richardson* to live unto old age, or to finish what was in his heart & head to doe, for the same reason that he would not permit more then [*sic*] three hundred Souldiers to goe with *Gideon*, even lest the English nation should glory too much in their own strength, because such a mighty man was once theirs. . . . About the same time the Lord raised up that great Champion, Dr. *Ames* of whom one too truly complaineth, that there might be written over his Grave as once over *Scipio's*, *Ingrata Patria, ne ossa mea quidem habes*. He in his *Medulla Theologiae* hath improved *Richardson's* method and Principles to great advantage. And truly I concur with that worthy Divine, who said, that next to the Bible, he esteemed Dr. *Ames* his *Marrow of Divinity* as the best Book in the world.<sup>22</sup>

Here Mather defines the distinctive roles of each of his stated sources: Ramus as a beacon, Richardson as the great mind, and Ames as the improver and applier of Richardson. This is the relationship of the three as understood by most Puritan intellectuals in New England. Perry Miller recognized the importance of Richardson and Ames. 'More important,' he wrote, 'than the Ramist logic itself in the intellectual history of the colonies is the fact that when the logic came to New England these men had already constructed upon it a fully articulated philosophy, an epistemology, and a systematic body of knowledge.'<sup>23</sup>

Although attention on Ramist thought in New England has tended to focus on Ramus himself, the continuing influence of his logic among Puritans in England and America may actually have had more to do with the work of Richardson. Richardson synthesized some of the Ramist pedagogical and intellectual spirit—the 'light' that he held up—with a broad range of intellectual traditions that were useful to supporting reformed Christianity. A

22. Increase Mather, preface 'To the Reader,' in James Fitch, *The First Principles of the Doctrine of Christ* (Boston, 1679), fifth page.

23. Perry Miller, *The New England Mind: The Seventeenth Century* (1939; reprint, Cambridge, Mass.: Belknap Press, 1982), 155.

glance at Richardson's *The Logicians School-Master: or, A Comment upon Ramus Logicke* (London, 1629; enlarged 1657) shows that it is a much richer intellectual endeavor than Ramus's *Dialecticae Libri Duo*.<sup>24</sup> Richardson criticized, adjusted, and explained Ramus in the context of Renaissance logic in general.<sup>25</sup> Richardson was a creative and eclectic thinker, not merely an English adherent to Ramist philosophy. A recent historian of science has uncovered an influential 'Richardsonian matter theory.'<sup>26</sup> It should not be surprising that Increase Mather's praise of Richardson quoted above is stronger than his statement about Ramus. Mather and the New England Puritans did not see themselves as merely followers of Ramus; instead they were proud of being influenced by the profound Richardson, a Gideon and possible source of 'glory' for a whole nation.

Alexander Richardson (c. 1565–1613?) was a tutor and sometime lecturer for a few years after 1587 at the Puritan stronghold of Queen's College, Cambridge.<sup>27</sup> George Walker reported in 1642 that Richardson also tutored out of his house in Barking, Essex, where 'divers studious young men did resort from Cambridge

24. Miller, in *The New England Mind*, 160, describes the relationship between Ramus's and Richardson's book, writing that Ramus 'defined the issue and pointed the way to solution, but Richardson worked on a much more comprehensive scale.'

25. Richardson responded often to Bartolomeo Keckermann's logic textbook that was published in England as *Gymnasium Logicum, id est De Usu & Exercitatione Logicae Artis Absolutiori & pleniori, Liberi Tres* (London, 1606) while sometimes following the lead of Philipp Melancthon's logic textbooks, which were profoundly influential in creating the tradition of a dogmatically inclined, religiously oriented humanistic logic. See Kennedy, 'Introduction,' *Aristotelian and Cartesian Logic at Harvard*, 1–37.

26. William Newman, *Gebennical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution* (Cambridge: Harvard University Press, 1994), 28–32.

27. On Richardson, see John C. Adams, 'Alexander Richardson's Puritan Theory of Discourse,' *Rhetorica* 4 (1986): 257. Adams has written several works on Richardson, including 'Alexander Richardson's Philosophy of Art and the Sources of the Puritan Social Ethic,' *Journal of the History of Ideas* 50 (1989): 227–47; and 'Ramus, Illustrations, and the Puritan Movement,' *Journal of Medieval and Renaissance Studies* 17 (1987): 195–210. Richardson's intellectual significance deserves more study. For an overview of Ramism at Cambridge, see Richard E. Dickson, *Ramism and the Rhetorical Tradition* (Ph.D. diss., Duke University, 1992), 71–123; and Wilbur S. Howell, *Logic and Rhetoric in England, 1500–1700* (1956; reprint, New York: Russell and Russell, 1961), 146–281. There is some uncertainty about the date of Richardson's death, but George Walker, *A True Relation* (London, 1642), 6, believed it was in 1613, and the date is given as August 26, 1613 in a manuscript copy of his *Theologia* in the Mather Family Papers at AAS (no. 2).

. . . to be directed in the study of Divinitie, and other arts.<sup>28</sup> Richardson made quite an impact for a man who spent only a few years teaching at Queens, was never a 'fellow,' and died without ever publishing a book. Samuel Thomson in 1657 wrote of Richardson that 'divers Graduates from several Colledges flocked unto his lectures, and what he freely discoursed unto them in several Sciences, they eagerly took down from his mouth in writing.'<sup>29</sup> The manuscript notes compiled by Richardson's students were still circulating in 1657. The first printed students' version of his logic lectures was published by John Bellamie in 1629. In 1657, an enlarged edition including notes on other subjects was published by Samuel Thomson, who also wrote the work's preface.

William Ames (1576-1633) was the third in the trio of logicians cited by Mather in the title of his logic, but Ames's influence on the actual catechism was also indirect. Ames was most intellectually active during the zenith of Ramist influence in England and Europe. A fellow of Christ's College, Cambridge from 1601 to 1610, he was very likely one of the 'divers studious young men' who attended Richardson's lectures. He eventually moved to Holland where he filled several teaching posts, most importantly that of professor of theology at the University of Franeker.<sup>30</sup> Ten years after Ames's death, four treatises dealing with logic were published under his name in a volume titled *Philosophemata* (Leiden, 1643; Cambridge, 1646). The most influential of these treatises was the *Technometria*, which had been written shortly after 1631. Also included in this publication was Ames's most pronouncedly Ramist work, *Demonstratio Logicae Verae*, a short set of theses designed for students to use in disputations. Three years before Mather compiled his catechism, Ramus's *Dialecticae Libri*

28. Walker, *A True Relation*, 6.

29. Samuel Thomson, 'The Book-Seller to the Reader,' in Richardson, *Logicians School-Master*, n.p.

30. See Keith L. Sprunger, *The Learned Doctor William Ames: Dutch Backgrounds of English and American Puritanism* (Urbana: University of Illinois Press, 1972); William Ames, *Technometry*, trans. and intro. by Lee W. Gibbs (Philadelphia: University of Pennsylvania Press, 1979); and John Dykstra Eusden's translation of the *Medulla Theologica* as *The Marrow of Theology* (Durham: Labyrinth, 1983).

*Duo* was published in Cambridge, England, in a version that included some of Ames's theses.<sup>31</sup>

When Mather incorporated the names of Richardson and Ames in the title of his textbook, the title did not imply the actual use of these authors in the creation of the text. For example, Mather probably had access to Ames's *Demonstratio Logicae Verae* but apparently did not rely on it when writing his own logic. There is nothing in Mather's *Catechismus Logicus* that is distinctively Amesian. Instead, Mather was probably signaling that his logic should be understood in the context of the Richardson/Amesian synthesis of logic, divinity, and philosophy. A student or tutor looking for elaboration of the catechism could use the title of the work as a guide to the best sources of the Puritan logical tradition. Increase Mather, like his son Cotton, would at times list a large number of supposed sources while neglecting to cite the true ones.<sup>32</sup> The period's standards of citation did not require Increase Mather to be precise about what he meant in his title.

On the other hand, one part of the title is precisely correct: Mather 'gathered' his book 'out of' Ramus's *Dialecticae Libri Duo*. Mather wrote the questions, but almost all the answers in the catechism paste together stock terms, phrases, and sentences from the *Dialecticae*.

The essential parts of Ramist structure as seen in Mather's *Catechismus Logicus* are arguments, axioms, and disposition, with disposition split into judgment and method. As is normal in Ramist textbooks, the discussion of arguments takes up the whole of the first part, called invention, and the rest falls under the second part, generically called disposition. Richardson described arguments as the seeds (*semina*), the bits that are put together to

31. William Ames, *P. Rami Veromandui, Regii Professoris, Dialecticae Libri duo: Quibus loco Commentarii perpetui post certa capita subjicitur, Guilielmi Amesii, Demonstratio Logicae Verae* (Cambridge, 1672).

32. See Winton Solberg's analysis of Cotton Mather's sources in the introduction to Cotton Mather, *The Christian Philosopher* (Urbana: University of Illinois Press, 1994), xlvii-lxix.

form axioms, with the axioms, the foundation of syllogisms.<sup>33</sup> Method is the overall memory-retrieval system that organized the argument, axioms, and types of syllogisms in a standard form laid out from most general to most particular. 'Method,' Richardson wrote, 'makes all things one.'<sup>34</sup> In Mather's logic method is given the standard definition: 'Method is dianoetic disposition of various homogeneous axioms, clearly organized by their nature, retained in the memory.' Only the last few sentences of the catechism deal with method. Richardson offered a nice image for the two parts of logic: invention and disposition. Invention of arguments was like a 'calm sea, for there reason is quiet, being satisfied with the truth.' Disposing of arguments into axioms then syllogisms was like 'a troubled sea, that is, full of storms, winds and tempests, for there our reason beats every corner.'<sup>35</sup>

These Richardsonian images of calm and troubled seas, of a passive Book One and an active Book Two, expose a fundamental difference between the way Ramists and historians of Ramism have viewed the logic. Twentieth-century historians have presented Ramist logic as static and supportive of dogmatic minds. Like Walter Ong, they have characterized the logic as 'a cut-up closed field,' neither dynamic, nor very subtle.<sup>36</sup> Ramists, on the other hand, believed their logic was a tool for the active pursuit of truth, a 'running about of our reason for the finding out of truth.'<sup>37</sup>

Although Ramist logic may have the look of a 'closed system' when laid out in the overall structure of method, like all other Renaissance logic it was formed out of Cicero and Quintilian's courtroom model. Richardson described Ramist judgment as 'a Courtly kind of seeking out truth.'<sup>38</sup> Courtroom logic, the foundation of all humanistic logics, is necessarily dynamic. The two most important wild cards in the Ramist deck were inartificial,

33. Richardson, *Logicians School-Master*, 38.

34. Richardson, *Logicians School-Master*, 295.

35. Richardson, *Logicians School-Master*, 295.

36. Ong, *Complete Prose Works of John Milton*, 8:158, 297n.

37. Richardson, *Logicians School-Master*, 295.

38. Richardson, *Logicians School-Master*, 297.

human testimony and contingent axioms (also called opinions). These two concepts, while not peculiar to Ramist thought, are always present in Ramist logics. The terms testimony and opinion, here again, are in the realm of courtroom logic, rather than in a closed or formal system. Both terms had a long Aristotelian and Humanist tradition. Discussions of testimony in Renaissance logics are, to the modern reader, probably the most interesting and applicable part of the whole logic.<sup>39</sup> Testimony was a subset of inartificial knowledge, or knowledge gained from an outside authority. Testimony was almost always divided into two types: human and divine.

Human Testimony could include almost anything learned from any external source. New England science is one example where the Puritans were dynamically open to human testimony. When Increase Mather took up the pen to 'prove' that small pox inoculations should be encouraged, all but one of his arguments was an inartificial testimony. The first starts 'because I have read.' The second starts 'we hear.' The fourth recommends the authority of 'wise and judicious persons among us.' The pamphlet closes with the testimonies of two witnesses 'well known in our churches.'<sup>40</sup>

Divine testimony has the highest certainty of any human knowledge because in a courtroom-style logic where judgment is rooted in the testimony of witnesses, the testimony of God is to be taken as absolutely true. The Aristotelian tradition, especially once it was Christianized, declared knowledge from revelation to be the highest possible form of knowledge, higher than any innate knowledge or mathematical demonstration. Although Ramus quoted Cicero's *De Inventione* I.iii.101, which lists the sources of divine testimony as 'casting lots, from oracles, soothsayers, portents, prodigies, responses and the like,' it was easy for Mather to

39. The epistemological role of testimony became increasingly studied in the late 1980s and 1990s. See, for example, C.A.J. Coady, *Testimony: A Philosophical Study* (Oxford: Oxford University Press, 1992). John Charles Adams writes specifically on Richardson's influence in New England in 'Ramist Concepts of Testimony, Judicial Analogies, and the Puritan Conversion Narrative,' *Rhetorica* 9 (1991): 251-68.

40. Increase Mather, *Several Reasons Proving that Inoculating or Transplanting Small Pox is a Lawful Practice* (Boston, 1721).

offer a Christianized version of divine testimony. Richardson in *The Logicians School-Master* offered an extensive discussion of divine testimony, making it clear that the Bible—not Roman oracles or soothsayers—is the storehouse of divine testimony. Puritan appreciation of the authority of the Bible as divine testimony was confirmed in the last section of the first book in the Ramist arrangement of all knowledge. Mather's *Catechismus* gives the authority of divine testimony:

Q. What is divine testimony?

R. Divine Testimony is that which is from God, and is the strongest form of argument and unlike any other testimony because it is taken in respect to a testifier who has the fullness of God's prudence, virtue, and goodness.<sup>41</sup>

Most of the innovative aspects of New England Congregationalism for which Increase Mather fought, such as distinctive membership and baptismal and liturgical practices, he believed to be derived from divine testimony. A Ramist approach to scripture could be used to initiate and support innovations.

Contingent axioms, also called opinions, constitute yet another feature of Ramist logic that could be used to subvert the seemingly static nature of Ramism. Mather does not develop the concept of opinion in any detail in his discussion of the concept in *Catechismus Logicus* II.10–11. In his perfunctory, catechetical manner Mather simply says contingent axioms are those things of which a person can be certain, but must admit might be otherwise. Although Mather focuses on knowledge of the past, present, and future in his example, we can see Mather's use of contingent axioms in his book *Cases of Conscience* (Boston, 1693).

In *Cases of Conscience*, Mather attempted to stop the Salem witch trials. Written October 3, 1692, the essay circulated in manuscript and was eventually published in London in 1693 as part of *A Further Account of the Tryals of the New England Witches*. *Cases of Conscience* was a polemic attack on the type of evidence regarded as sufficient to convict a witch. Although Mather argued with his

41. Mather, *Catechismus Logicus*, 1:104.



normal, adamant, self-righteous rhetoric, he was careful at several points to make it clear that he was arguing in the context of opinions and authorities, even though he never used the technical terms contingent axioms and inartificial testimony. At the beginning of his essay he told readers that after duly weighing his arguments in the balance, they must respond affirmatively.<sup>42</sup> In the middle he noted that 'if the things which have been mentioned are not infallible proofs,' then jurors and judges must at least ask themselves whether they can proceed 'with a safe conscience.'<sup>43</sup> Finally, in the work's 'postscript,' Mather noted that his adversaries on this issue were 'wise and good Men, [who] acted with all Fidelity according to their Light,' but that he had simply tried 'to discern the Truth in these dark Cases, to declare my Sentiments, with the Arguments which are of weight with me.'<sup>44</sup> Mather's essay was successful in helping to convince the governor to stop the *ad hoc* court proceedings in Salem Village.

Although Mather never made reference to Ramist logic in the published essay, *Cases of Conscience* is a model of this logic at work. It is pleasing to think that in 1692, while young Harvard students were transcribing the president's logic into their notebooks, the president was out applying the logic in one of the most important issues of public policy of the day. *Cases of Conscience* is a book that exemplifies the openness and intellectual integrity that could be founded upon Mather's logic. It exemplifies Richardson's claim that the first part of logic, the invention of arguments, was like a calm sea, the second part of logic, the putting of arguments to use in axioms and demonstrations, was like a stormy sea. While Ramist logic was not as useful, as sophisticated, or as dynamic as the other logic systems available in the late seventeenth century,<sup>45</sup> it was a workable system of reasoning, neither closed nor lacking in dynamism.

42. Mather, *A Further Account of the Tryals of the New England Witches . . . to which is added Cases of Conscience Concerning Witchcrafts and Evil Spirits Personating Men* (London, 1693), Part II: 1.

43. Mather, *Cases of Conscience*, 29.

44. Mather, 'Postscript,' *Cases of Conscience*.

45. See Kennedy, *Aristotelian and Cartesian Logic at Harvard*, 1-60.

Understanding the *Catechismus Logicus* may enable us finally to appreciate the true nature of the role played by Ramist logic in the thinking of Puritan New England. The catechism is an excellent illustration of the extreme sort of reductionism characteristic of Ramist education in New England. In this respect, it should be distinguished both from the logic originally taught by Ramus and the expanded version of his work propounded by seventeenth-century English Puritans as Ramism was losing its intellectual viability in Europe. However, while New England's teachers pursued a humanist pedagogical commitment to instructing children a rudimentary logic by employing simplified texts, that logic was neither static nor sterile.

THE CATECHETICAL FORM AND INCREASE MATHER'S  
PLANS FOR THE REMAKING OF HARVARD

In 1675, the year that he was composing the *Catechismus Logicus*, Increase Mather was also rescuing Harvard from the threat of extinction (fig. 2). The two activities were not unrelated, for Mather's simplistic Ramist catechism was part of a much bigger project to save, then eventually remake Harvard. A study of the form and use of the *Catechismus* sheds light on Mather's grand and sweeping plans for the provincial college.

Harvard underwent a series of difficulties in the middle of 1675, during and after the politically troubled tenure of President Leonard Hoar. In 1674, Increase Mather had expressed his lack of confidence in Hoar's administration by bringing his son Cotton home from the college to study privately. At the end of 1674, the administration was the subject of a student boycott.<sup>46</sup> The next summer the devastating impact of King Philip's War further compounded Harvard's problems, reducing the college to what the Synod of 1679 would describe a few years later as a 'Low and Lan-

46. Michael G. Hall, *The Last American Puritan: the Life of Increase Mather* (Middletown, Conn.: Wesleyan University Press, 1988), 92-96; and Kenneth Silverman, *The Life and Times of Cotton Mather* (New York: Harper & Row, 1983), 13-23. Cf. Morison, *Harvard College*, 2:405.



Fig. 2. Thomas Emmes, *Increase Mather*. Boston, 1701. Frontispiece: *A Discourse Proving that the Christian Religion is the Only True Religion* (Boston, 1701). AAS.

guishing State.<sup>47</sup> President Hoar's resignation in March of 1674/5 seemed to provide an opportunity for constructive change, and indeed in the years after his departure 'students began to trickle back.'<sup>48</sup> Even after he allowed Cotton to return to Harvard in June of 1675, Increase Mather still had misgivings about the college's future, writing in October that Harvard was 'ag[ai]n likely to Fall.'<sup>49</sup> Indeed, for the next fifteen years the survival of the college would never be secure.

In the period after Hoar's resignation, Increase Mather was appointed a non-teaching fellow and member of the Corporation that oversaw day-to-day Harvard affairs; acting in these capacities he participated in the attempt 'to remake the college.'<sup>50</sup> A 1656 graduate of Harvard, Mather became a major proponent of education in general and of Harvard in particular. In one chilling appeal for public support for education, he wanted the use of land won in King Philip's War. 'Should *Academical Learning* fall in this land, it would be one of the saddest Omens that could be. Ignorance and Barbarisme would overspread the face of succeeding generations. . . . If ever God shall give us the lands of our enemies, I cannot think how they can be disposed of better, or more to Gods glory, and public advantage, than for the support of schools.'<sup>51</sup> His great support for the college, however, should not be misunderstood as suggesting that he was complacent about its prospects.

Mather's deep concerns over the future of the college were probably directly linked to his composition of the *Catechismus Logicus*. On April 26, 1675, less than two months after Hoar's resignation, Mather attended a Corporation meeting at which he unsuccessfully opposed the election of Samuel Danforth as a fel-

47. Morison, *Harvard College*, 2:416, quoting Cotton Mather, *Magnalia Christi Americana* (1702), 2 vols. (1853; reprint New York: Russell & Russell, 1967), 2:331.

48. Morison, *Harvard College*, 2:417.

49. Increase Mather, Diary, Oct. 7, 1675, *Proceedings of the Massachusetts Historical Society*, 2nd ser. 13 (1899-1900): 353.

50. Hall, *The Last American Puritan*, 95. See also Morison, *Harvard College*, 2:399-408, and *Harvard College Records, Publications of the Colonial Society of Massachusetts* 15 (1925): 231.

51. Quoted in Hall, *The Last American Puritan*, 124.

low. Mather wrote in his diary that day, 'By these (in my weak judgement) wilful and selfish motions, the hopes of the college's reviving are at present dashed.'<sup>52</sup> The next morning, Mather began to write *Catechismus Logicus*, and he compiled the textbook in two mornings. On April 27, 1675, he wrote in his diary, 'A.M. Scripsi catechismum dialecticum'; in the afternoon, he read and visited. The following day he wrote, 'A.M. Finished Log. catech.'<sup>53</sup> Although the book may well have been first used by Cotton, who had turned twelve in February and was still studying at home, Increase Mather seems to have been looking towards the future of his college rather than only the future of his son when he composed the little textbook. Eventually, this catechism and others would play a role in Mather's plan to turn Harvard into a humanist university in the pattern of the Dutch Calvinist universities.

In later years, Increase Mather would consent to serve as acting president of the college, continuing as president or rector from 1685 until 1701. During this period, Mather had far more influence in college affairs than he had in 1675 when he wrote the *Catechismus Logicus*. The surviving notebooks of Harvard students from this period suggest that the use of catechisms flourished during the period of Mather's influence at the college.<sup>54</sup>

Following his rise to power at Harvard, Mather tried to hire the 'ablest teachers,' encouraging them to be 'catechists' so as to not only rescue the students from educational degeneracy but to make Harvard better. Early in his tenure as president of the college Mather hired two of his ablest tutors, William Brattle and John Leverett. Both tutors followed Mather's lead by producing manuscript texts on logic and a variety of other subjects for stu-

52. Increase Mather, Diary, January 26, 1674/5, Belknap transcription, *Proceedings of the Massachusetts Historical Society* 3 (1855-1858): 318.

53. Increase Mather, Diary, April 26, 1675, *Proceedings of the Massachusetts Historical Society*, 2nd. ser. 13 (1899-1900): 344.

54. In addition to the Increase Mather and Downname logic catechisms, by 1693 Harvard undergraduates were also transcribing William Brattle's Latin catechism entitled *Compendium Logicae secundum principia D. Renati Descartes. Catechisticae propositum* (B1 in the accompanying checklist).

dent transcription.<sup>55</sup> Through the course of their long associations with the college, Brattle and Leverett gained well deserved reputations for promoting open-minded education and sharing Mather's commitment to improve the quality of the college.

The revival of the college led by Mather, Brattle, and Leverett during this period was predicated on the notion of promoting liberal thinking at Harvard. Increase Mather proclaimed in a presidential address that Harvard students adopted 'a liberal mode of philosophizing' and insisted that students were 'pledged to the formulas of no master.'<sup>56</sup> Alexander Richardson, one of the named sources for Mather's logic, condemned 'scholars that take anything that their authors deliver them, without any examination at all of the things they read.'<sup>57</sup> Similarly, William Brattle wrote that 'reading without understanding is one way to introduce the tongue of a parrot into the head of a rational creature.'<sup>58</sup> Later, as president of the college, John Leverett also gave speeches about the liberality of thought at Harvard. Yet Leverett, Mather, and Brattle all constructed logic textbooks intended for memorization.<sup>59</sup> Why would the president of Harvard College produce an extremely reductionist catechetical form of Ramist logic at the same time he was attempting to reform the college into something bigger and more important? Why would Brattle and Leverett produce short catechisms? The seeming paradoxes surrounding the use of catechisms during this period can be understood in the context of Mather's university plan.

The evidence suggests that Mather wished to employ a hu-

55. The range of works prepared for student transcription by Brattle and Leverett can be seen in the checklist.

56. Cotton Mather, *Magnalia Christi Americana*, 2:2 11; also quoted in Morison, *Harvard College*, 1:167.

57. Richardson, *Logicians School-Master*, 72.

58. Brattle, 'An explanation of the preceding ephemeris,' in *Ephemeris of Celestial Motions* (Cambridge, 1682), first page.

59. Morison, *Harvard College*, 1:168. Leverett's logic text is *Compendium Logica Vera. Theses Logica. Secundum Principia D. Renati Descartes Collecto in Usum Pupillorum Anno 1692*, which is known from two student transcriptions made in the 1720s. Multiple copies have survived of the two manuscript logic texts prepared by William Brattle, the Latin *Compendium Logicae* and the English *Compendium of Logick*. See the checklist following this article.

manist pedagogy in order to raise Harvard to European standards, and catechisms fit that pedagogy perfectly as far as he was concerned. Four years after composing his logic catechism, Mather wrote a short history and justification of catechisms in a preface to James Fitch's theological catechism, *The First Principles of the Doctrine of Christ* (Boston, 1679). He declared in that preface that the work 'of a *Catechist* is not unbecoming or unsuitable to the ablest Teachers. And if endeavors of this sort were more diligently attended, it would be one good means to prevent Degeneracy in the succeeding Generation.'<sup>60</sup> Although Mather was writing in this case specifically about a theological catechism, the enthusiasm of his statement should not be interpreted too narrowly. Mather had a firm belief in the value of catechisms as an educational tool, insisting that they had 'a peculiar excellency and usefulness attending them.' 'These last Ages,' he wrote, 'have abounded in' catechisms: 'one speaketh of no less then five hundred Catechisms extant.'<sup>61</sup>

Mather may also have wanted to bring students into the college earlier and keep them longer in the manner of the new Dutch Calvinist universities. As unlikely as it may seem, catechisms, with their reductionist treatment of complex academic subjects, may have been intended to play a role in implementing both phases of that scheme. Reading catechisms served the youngest students, while writing them fulfilled requirements for higher degrees.

It was upon his return from England in 1692 that Mather set in motion his most energetic schemes for the growth of the college. Mather had used his time in England to lay a foundation for Harvard's development; although his primary duty overseas had been to negotiate with the crown for a new colonial charter, he also spent much time cultivating college patrons and negotiating be-

60. Mather, preface 'To the Reader,' in James Fitch, *The First Principles of the Doctrine of Christ*, sixth page.

61. Mather, 'To the Reader,' fourth page. Andrew Maunsell in 1595 counted sixty-eight catechisms on sale in London, and Hugh Peters in 1660 counted 'near an hundred' in England. See George Henry Littlefield in *Early Schools and School-books of New England* (1904; reprint New York: Russell & Russell, 1965), 50-51.

quests.<sup>62</sup> When Mather proposed a new charter for the college in 1692, it essentially signaled his 'intention to give Harvard full university status.'<sup>63</sup> In October 1693, Mather challenged the Harvard Corporation with the question 'How may the Colledge be made greater or better?'<sup>64</sup> One result of this challenge was a new building program that guided the physical development of the college for the next fifty years and influenced the future design of colleges across America.<sup>65</sup>

A number of the 'Matherian Charters and Manoeuvres' involved in the reform of the college suggest that Mather was using the Dutch universities as his pattern.<sup>66</sup> As part of what has been called a 'web of informal relationships [that] connected the leaders of trans-Atlantic Puritanism,' Mather would have been well informed about developments in the Netherlands.<sup>67</sup> The same religious and political pressures that had driven some English Puritans to New England had inspired others to seek refuge in Holland. During the twenty-year period of civil war in England, the Netherlands came to serve as a conveniently located sanctuary for unyielding Puritans when the fortune of their cause fell at home. Welcomed by Dutch Calvinists, many of the English Puritans were appointed to positions in the church, the army, and the universities. The exiles also used the presses of their adoptive homeland to make Amsterdam and Leiden important centers of Puritan publishing for a 'trans-Atlantic' audience.<sup>68</sup>

Mather could reasonably have expected to find congenial mod-

62. Morison, *Harvard College*, 2:483-88; Hall, *The Last American Puritan*, 224-25.

63. Morison, *Harvard College*, 2:490.

64. *Harvard College Records, Part I: Corporation Records, 1636-1750, Publications of the Colonial Society of Massachusetts* 15 (1925): 345.

65. The showpiece of this building program was Stoughton Hall (1698), donated by William Stoughton and designed in part to support Harvard's program for Indian education. On the building plan, see Rick Kennedy, 'Thomas Brattle: Mathematician-Architect in the Transition of the New England Mind, 1690-1700,' *Winterthur Portfolio*, 24 (1989): 231-45.

66. Morison, *Harvard College*, 2:489-536.

67. Francis J. Bremer, 'Increase Mather's Friends: The Trans-Atlantic Congregational Network of the Seventeenth Century,' *Proceedings of the American Antiquarian Society* 94 (1984): 60.

68. Sprunger, *The Learned Doctor William Ames*, 232-36.



els for his own educational projects in the universities of the Netherlands, where exiled Englishmen like William Ames had found an opportunity to explore and practice their beliefs in a comparatively unfettered environment. As a result, over the course of the seventeenth century a number of 'Puritan gentlemen began looking to the Netherlands for places to educate their sons' rather than sending them to Cambridge.<sup>69</sup> Sixty or so years after it was founded in 1575, the University of Leiden was the largest in the Protestant world and drew a large percentage of international students.<sup>70</sup> The highly admired William Ames, listed by Mather as one of the sources for his *Catechismus Logicus*, had served both on the faculty at Franeker and at Leiden.<sup>71</sup> It has been suggested that 'What Ames accomplished in the Netherlands was always intended for a larger audience, for the settlers in America and for the faithful remnant in England as much as for the Dutch.'<sup>72</sup> Increase Mather seems to have been a receptive audience. The motto on the seal he proposed for Harvard, *Christo et Ecclesiae*, was copied from the motto of the University of Franeker.

At Dutch universities the students generally matriculated at the age of eleven or twelve and by the age of fifteen would receive an M.A., graduating with a doctorate seven or so years after matriculation.<sup>73</sup> This was a holdover from medieval practice; Morison writes that 'it seems probable that in every medieval university the bachelor's degree was normally taken between the ages of twelve and fifteen.'<sup>74</sup> By the seventeenth century, students at the English universities tended to be older, fitting the maxim: 'Till eight, English reading only: from eight to sixteen, the grammar school; after sixteen, the university.'<sup>75</sup> Mather's Ramist catechism in-

69. Sprunger, *The Learned Doctor William Ames*, 237.

70. See Jonathan Israel, *The Dutch Republic: Its Rise, Greatness, and Fall, 1477-1806* (Oxford: Clarendon Press, 1995), 569-75, 899-902.

71. Morison, *Harvard College*, 2:493.

72. Sprunger, *The Learned Doctor William Ames*, 257.

73. Samuel Eliot Morison, *The Founding of Harvard College* (1935; reprint with a foreword by Hugh Hawkins, Cambridge: Harvard University Press, 1995), 145-46.

74. Morison, *The Founding of Harvard College*, 25.

75. Littlefield, *Early Schools and School-books of New England*, 93.

dicates a move to model Harvard after Dutch universities rather than English, perhaps believing that what the Dutch Calvinists could do successfully, the Calvinists of New England could do as well.

While Mather regarded the use of catechisms and other Ramist texts as particularly suited to the project of training young boys, any plan he may have had to use such texts in the transformation of Harvard into a Dutch-style university with younger students never came to pass. When Mather returned to Harvard in 1692 he was successful in changing the things he could control—a new charter, new degrees, enlarged plans, and even the use of catechisms in the curriculum. However, in the area over which he had no control—the age at which parents would send their children to Harvard—he had no success. Increase Mather had entered Harvard when he was twelve years old and sent his own three sons there when they were either eleven or twelve years old. However, he does not seem to have convinced many of his fellow New Englanders to send their sons to Harvard at such a young age. The four boys in Cotton Mather's class (1678)—probably the first class to use Mather's *Catechismus Logicus*—averaged fifteen years of age at the time of entry, and Cotton was the youngest at eleven. In the next few years the average rose slightly (to age seventeen for the class of 1679, 15.6 for 1680, and sixteen for 1681). By Walter Price's time (1692) no entering students were less than fourteen years of age, in 1693 only three out of fourteen, in 1694 only four out of fifteen, and in 1695 only two out of fourteen. The average age was actually rising to 16.1, 16.4, 15.6, and 16.7 during those years, slightly higher than during Increase Mather's first four years as president: 15.3, 15.4, 16.1, and 15.3.<sup>76</sup> Even in his last days as president, Mather was still trying to solicit funds to support his scheme for the instruction of younger boys, appealing to a frequent benefactor of Harvard in 1701 that "The Colledge is

76. This data comes from the dates given for each student in *Sibley's Harvard Graduates*, vol. 3 (Cambridge: C. W. Sever, 1885), and vol. 4 (Cambridge: Harvard University Press, 1933).

like to be in languishing state as to Learning, through the defect of Grammar Schools.<sup>77</sup>

Mather's plan to award graduate degrees at Harvard was slightly more successful. The master's degree that the college already awarded was loosely structured on the English model as a mere extension of the undergraduate curriculum. It was not a true graduate degree because it was not focused on one of the professions: divinity, law, or medicine. The College Laws of 1650 had required all those who wished to be granted the M.A. to produce 'a Synopsis or summa of Logicke, naturall and morall Philosophy, Arithmeticke, Geometry; and Astronomy.'<sup>78</sup> Mather's new College Laws of 1692 reiterated this requirement in Latin—'*scriptamque synopsis, vel compendium*'—and further added that after the M.A. two more degrees would be offered: 'a baccalaureate and a doctorate in divinity.'<sup>79</sup> The Laws of 1692 stated that the college would begin to offer advanced degrees because 'it is a laudable Custome in Universities whereby Learning has been Encouraged and Advanced to confer Academical Degrees or Titles on those who by their Proficiency as to Knowledge in Theology, Law, Physick, Mathematicks or Philosophy have been judged worthy thereof. . . .'<sup>80</sup> Although the requirements for these degrees were never clearly stated, a model was offered: Increase Mather, himself, received the first (and only) Doctor of Divinity degree from the colonial college, and the two tutors, William Brattle and John Leverett, were awarded Bachelor of Divinity degrees in September 1692.<sup>81</sup> The logic catechisms written by Brattle and Leverett,

77. Increase Mather to William Stoughton, March 4, 1700/01, *Documents from the Harvard University Archives, 1630-1750*, ed. Robert W. Lovett, in *Publications of the Colonial Society of Massachusetts* 49 (1975): 188.

78. Morison, *The Founding of Harvard College*, 337. Very few of these synopses seem to have survived, probably because of the destruction of the college library by fire in 1764. But see for example Thomas Shepard's (A.B. 1653) *My Logickall & Physicall Synops: tended at ye Commencement*, 1655.

79. Cotton Mather, *Magnalia Christi Americana*, 2:25.

80. Morison, *Harvard College*, 2:656.

81. Morison, *Harvard College*, 2:491. Rick Kennedy argues in *Aristotelian and Cartesian Logic at Harvard*, 108-32, that William Brattle served as Harvard's unofficial professor of divinity from 1697 to 1717.

apparently encouraged by Mather, may have helped to justify their new degrees. Cotton Mather, in *Magnalia Christi Americana* (London, 1702), echoed his father's ideals by noting that Harvard applicants for the divinity degrees must meet 'terms *beyond* those required of any one European university.'<sup>82</sup> Europe, in the Mathers's view, had many young universities where the academic standards were not so high that Harvard might not aspire to exceed them.

The case of Jeremiah Dummer suggests that the standards at Harvard were comparable to those of the Dutch universities. Increase Mather believed Dummer to be 'by far the best scholar of his time at Harvard.'<sup>83</sup> After receiving his M.A. at Harvard and probably with Mather's advice, Dummer entered the University of Leiden in July 1702 and immediately published a theological treatise which he had probably written at least in part earlier under Mather's guidance.<sup>84</sup> Seven months later, on February 3, 1703, Dummer received certification of his theological training from a Leiden professor and immediately transferred to the University of Utrecht, where he was examined and awarded a Ph.D. on February 13, 1703. Dummer returned to New England in 1704, whereupon Increase Mather immediately mounted a campaign to put him on the faculty of Harvard.<sup>85</sup>

Mather's own doctorate from Harvard might seem self-created, but he was in many respects more deserving of a doctorate than Dummer. If a twenty-year-old Harvard graduate could consecutively enter the two most highly esteemed Dutch universities and in less than seven months be awarded a Ph.D., then it appears there may have been some grounds for Cotton Mather's assertion that Harvard requirements for advanced degrees were 'beyond' European.

However, Mather's plan to extend the degrees offered by the

82. Cotton Mather, *Magnalia Christi Americana*, 2:25. The emphasis is Mather's.

83. Sibley's *Harvard Graduates*, 4:454.

84. *Disputatio Theologica de Christi ad Inferos Decensu* (Lugdunum Batavorum: Abraham Elzevier, 1702). Cotton Mather's copy is at AAS.

85. Morison, *Harvard College*, 2:535.

college, like his plan to enroll younger students, ultimately failed. Just as Mather was never able to convince many parents to start sending their boys to Harvard at a younger age, only Mather, Brattle and Leverett were ever awarded degrees beyond the Master's during the colonial era.

If the Dutch university system appealed to Increase Mather as a model because of the composition of its student population, the high quality of the humanistic education offered at the Dutch university was another attraction. Everything Mather wanted for his university, as summed up in the motto *Christo et Ecclesiae*, was rooted in the hope that his students would be able to be like St. Paul in Athens, who 'disputed' with the crowds that gathered.<sup>86</sup> Harvard served varied purposes, but its ultimate justification to Puritans was its ability to train young men to be capable of meeting Paul's demand: 'Be ready always to give an answer to every man that asketh you a reason of the hope that is in you.'<sup>87</sup>

But while it is relatively easy to understand the pedagogical value of catechisms for the teaching of young boys, it may be more difficult to understand how catechisms could serve as part of a scheme for improving the overall quality of education at Harvard. How are we to reconcile the high-flown humanistic rhetoric of Mather and his fellows with what we know of the simplistic form and content of the Ramist texts?

High humanist educational goals included a place for formulaic memorization. Of Guarino Guarini of Varona (1374-1460), 'the greatest teacher in a century of great teachers,' Anthony Grafton and Lisa Jardine write 'memorisation, repetition, catechism—these are the activities on which Guarino's humane learning is firmly grounded.'<sup>88</sup> Erasmus advocated giving infants an 'acquaintance with a liberal education immediately,' but said one must do so by emphasizing memorization. 'The basic elements of

86. Acts 17:2.

87. 1 Peter 3:15.

88. Anthony Grafton and Lisa Jardine, *From Humanism to Humanities: Education and the Liberal Arts in Fifteenth- and Sixteenth-Century Europe* (Cambridge: Harvard University Press, 1986), I, 11.

knowledge,' Erasmus wrote, 'depend above all on the memory; and this faculty, as I have said, is very strongly developed in children.'<sup>89</sup> For John Locke, memory 'is of so great moment, that where it is wanting, all the rest of our Faculties are in a great measure useless.'<sup>90</sup>

The popularity of catechisms in seventeenth-century Europe is a manifestation of the Humanist emphasis on memory in education. David D. Hall writes of early New England that the primer and catechism functioned 'as the entryways to literacy.'<sup>91</sup> Children recited before they understood the texts in front of them. Hall believes this emphasis on catechisms was a manifestation of a larger Protestant emphasis on the authority of print that helped bind people to received belief systems.<sup>92</sup> Hall's analysis of the uses of religious catechisms is also applicable to logic catechisms. The emphasis on addressing memory before being concerned with understanding is one way to understand the terse and disjointed brevity of Mather's *Catechismus Logicus*. Like a religious catechism, Mather's logic catechism was only planting seeds to be nurtured later.

The importance of memory as the basis of education also provides yet another explanation of the importance of Ramist logic in Increase Mather's plans for Harvard. Whether for parroting authorities or promoting independent thought, the structuring of memory was a key feature of humanist pedagogy. The simplistic classification schemes of Ramism provided an extremely useful tool for cataloguing information in the memory.

As strange as Mather's belief that writing catechisms could affect the future of a generation might seem, it must be understood in the context of the great importance the liberal arts tradition placed on memory as a foundation for right thinking. When

89. Erasmus, 'A Declamation on the Subject of Early Liberal Education for Children,' trans. Beert C. Verstraete, *Collected Works of Erasmus*, ed. J. K. Sowards (Toronto: University of Toronto Press, 1985), 26, 297.

90. John Locke, *Essay Concerning Human Understanding*, II.x.15.

91. David D. Hall, *Worlds of Wonder, Days of Judgment: Popular Religious Belief in Early New England* (New York: Alfred A. Knopf, 1989), 37.

92. Hall, *Worlds of Wonder, Days of Judgment*, 38-40.

Mather praised the 'peculiar excellency and usefulness' of catechisms, he would have perceived no contradiction with his decree that his students should be intellectually free to find a friend in truth and not to be subject to any authoritative system. The preservation of rationality, especially the rational methods that can be used to order the community, has long been the role of logic textbooks. In his belief that memorizing was the foundation of intellectual freedom, Mather was a standard humanist of his age. Given the prevalence of such a belief in the high purposefulness of memorization, the emphasis placed on catechisms at Harvard can certainly be seen as consistent with a plan to raise the quality and status of education at Harvard.

#### RAMISM AT HARVARD AFTER INCREASE MATHER

Even though Increase Mather's plans for the college were never fully realized, Ramist catechisms persisted in the Harvard curriculum for at least fifty years after he composed his *Catechismus Logicus*. More modern manuscript systems of logic were introduced at Harvard by the 1680s; nonetheless, Mather's text was in use at the college for more than fifteen years.<sup>93</sup> Charles Morton's Aristotelian text entitled *A Logick System* probably came into use shortly after Morton's arrival in New England in 1686. After William Brattle became tutor in 1686, he prepared two logic texts, *A Compendium of Logick, according to ye Modern Philosophers extracted from LeGrand and leClerc their Systems*, and a Latin *Compendium Logicae Secundum Principia d. Renati Discartes Catechisticae propositum*. By 1692, John Leverett had prepared a work called *Compendium Logica Vera. Theses Logicae. Secundum Principia d. Renati Descartes*.<sup>94</sup> All four of these texts were still being transcribed in the 1720s.<sup>95</sup> However, despite the arrival of the 'new logick,' Harvard students continued to copy Ramist texts alongside Cartesian

93. This is attested in 1683 (the date on Walter Price's title page), in about 1686, when John Clark made his copy, and again in 1692, when Price made his copy.

94. Morton's *Logick System* and Brattle's *Compendium of Logick* are both published in Rick Kennedy, ed. and intro., *Aristotelian and Cartesian Logic at Harvard*.

95. See the checklist.

texts. As late as 1721, Robert Hale (A.B. 1721) transcribed a work entitled *De Logica . . . in Petri Rami Dialecticam, Quaestionibus & Responsibus concinnatum*.<sup>96</sup> Several years later, Daniel Rogers (A.B. 1725), copied a short Ramist work called *Petri Rami Dialectica. Liber primus de Inventione*, a work transcribed in the same period at the fledgling Yale College.<sup>97</sup> Ramus was still required for Harvard freshmen in Henry Flynt's 1723 'Particular Account of the Present Stated Exercises Enjoyed the Students,' to be followed by 'a Manuscript called the New Logick Extracted from Legend, undoubtedly Brattle's *Compendium of Logick*.<sup>98</sup>

Thus, well into the eighteenth century, the men in charge of Harvard's curriculum still thought Ramist logic should be taught at least in some limited way. Based on the evidence of surviving student transcriptions, other Ramist texts seem eventually to have replaced Mather's *Catechismus Logicus* as an introduction to Ramism at Harvard. Mather's text, like the Ramist logics which were transcribed in later years at Harvard, was much too short to be of any use beyond simply installing some basic terms and structures in the memory of the young student. However, despite the fact that Ramist logic had generally been superseded by Aristotelian and Cartesian logic, humanist pedagogy demanded the presentation of alternatives. In 1711 John Leverett, by then president of Harvard, declared that the curriculum was up-to-date: 'Harvardians philosophize in a sane and liberal manner, according to the manner of the century.'<sup>99</sup> However, it is important to note his reference to Ramist logic: 'in Logic as in Physics [Harvardians] are neither sceptics nor dogmatics. Let the dichotomies of the celebrated Peter Ramus be admired, but not pursued religiously or too scrupulously.'<sup>100</sup> Such a statement is an important window into late Ramist logic in New England. After 1685-86, when Leverett and Brattle were hired as tutors, it is a fair as-

96. Checklist 49. Hale's title page does not list an author or compiler.

97. Checklist 63.

98. Morison, *Harvard College*, 1:146.

99. Translated in Morison, *Harvard College*, 1:168.

100. Morison, *Harvard College*, 1:168.



sumption that Ramist logic was *never* taught too scrupulously at Harvard. What Leverett did like—‘Let the dichotomies . . . be admired’—shows that he appreciated the reductionism. From at least the 1680s on, Ramist logic was not taught in any intellectually compelling way; rather, it held a place in the education of the youngest boys in the form of highly simplified, tightly reductionist textbooks.<sup>101</sup>

When Leonard Hoar advised his nephew at Harvard in 1661 to begin his studies with Ramus’s definitions and distributions, he was passing an important principle of New England Puritan thinking on to the next generation.<sup>102</sup> While Ramism was on the decline in Europe, under the direction of Increase Mather, Ramist catechisms would play a key role in the development of education at Harvard in the last quarter of the seventeenth century. Ramist catechisms perfectly suited Mather’s plans to expand Harvard’s student body and promote liberal thinking at the college. Such preparation would enable the student to store in its

101. Although Samuel Johnson’s (1696–1772) *Technologia ceu Technometria* (1714) has long been used as evidence of the importance of Ramist logic at Yale, especially during Jonathan Edwards’s college years, there is no evidence that Ramism was ever the primary system of logic taught there. While using the same Ramist structure and extolling the same sources as Mather’s *Catechismus Logicus*, Johnson’s rudimentary Ramist textbook provides further corroboration of the idea that New England students generally did not actually read Ramus but instead studied tightly packaged, easily memorized versions of Ramist logic. Moreover, although Johnson may have used this text to teach the boys at his grammar school in 1713–14 and a few collegiate students in 1715, the book seems never to have been used after he was officially appointed a tutor in New Haven in 1716. Johnson later appended a note to the work saying that by November of 1715 ‘I was wholly changed to the New Learning.’ The quotation is from *Technologia ceu Technometria*, in *Samuel Johnson, President of King’s College: his Career and Writings*, trans. Herbert Schneider and ed. Herbert and Carol Schneider (New York: Columbia University Press, 1929), 2:61. There is additional evidence of the continued presence of Ramism at Yale. James Noyes (Harvard A.B. 1659) wrote in 1706 to his son Joseph (Yale A.B. 1709), ‘I have sent twice by your brother James for Ramus, & Gudbiletts [Gutberleth’s] comment on Ramus but in vaine, & I know not what to doe, or you will doe. If I had bene well I would have tried ye young ministers Round about us, but I am not able at present.’ (January 8, 1706, Reverend Joseph Noyes Papers, Phillips Library, Peabody Essex Museum, Salem, Massachusetts.) Noyes’s letter suggests first, that his son needed Ramus for his studies, and second, that recently educated ministers living in the area of Stonington, Connecticut, might be expected to own copies of Ramus’s logic or commentaries on it. In addition to this, the Connecticut Historical Society owns a notebook transcribed in 1724 by Judah Lewis (Yale A.B. 1726, checklist R2) containing a set of extracts entitled *Petri Rami Dialectica* that had also been transcribed at Harvard.

102. Morison, *Harvard College*, 2:640.

rightful place any material distilled from daily reading. The simplistic systems of the Ramist catechisms were well suited to the needs of the young boys Mather hoped to enroll in the college while also providing a means by which individuals could store and organize the information that comprised a liberal education. At the same time, the dynamic courtroom-style qualities of Ramist logic offered students a tool they could use in the civic and professional worlds.

#### NOTE ON THE TRANSLATION

The *Catechismus Logicus* survives in Latin in two copies made by Harvard undergraduates some years after the composition of the work. One copy made by John Clark (A.B. 1690) is in the Beinecke Rare Book and Manuscript Library, Yale University; the other is a transcription made in 1691/2 by Walter Price (A.B. 1695), at the American Antiquarian Society. Only Price's copy contains the full title *Catechismus Logicus ex Petri Rami, Alexandri Richardsoni, et Gulielmi Amesii, Scriptis nunc Primum Collegit. Authore Crescentio Mathero Qui in usum Pupillorum Suorum Diligentissime Collegit. Anno Â Christo Nativitate MDCLXXXIII*, which Price inscribed on a separate title page in his notebook. The Clark copy was rebound in the nineteenth century, after an unknown number of leaves had been lost from the volume. However, the text of the *Catechismus Logicus* is complete on six leaves in the Clark notebook.

This work is unusual among the surviving Harvard student-transcribed texts in that significant differences between the two copies make it difficult to establish an authoritative edition of the text. Because most of these differences appear in Book Two, we have chosen to publish here a collated version of Book One and both versions of Book Two in a literal translation.

#### BOOK ONE

It is not unusual for Harvard student-transcribed texts in this period to contain minor variations that were unintentionally intro-

duced during the copying process itself, often suggesting a casual attitude towards precision in transcription. There are many such differences between the two copies of Book One. Most of these are minor enough that they do not affect the translation. Word order varies, particularly in Latin texts. Thus we find:

Price 1.36: *Dissentanea quomodo distribuuntur?*

Clark 1.36: *Quomodo distribuuntur dissentenaea?*

There are also minor changes in language:

Price 1.6: *Argumentum est vel artificiale, vel inartificiale.*

Clark 1.6: *Argumentum est duplex artificiale, aut inartificiale.*

In a few places Clark follows up a definition with additional explanation or an example:

Price 1.84: *Integrum est Totum cui partes sunt essentiales hoc est cui membrum conserant partem.*

Clark 1.84: . . . *hoc est cui membrum conserant partem materiae et partem formae.*

In general we have followed Price's text, collating and correcting it with Clark's copy. We have used bracketed text or a footnote to indicate each case where a difference affects the meaning.

Each transcription contains errors that can be corrected by comparison with the other text. For example, in Book 1, Price (or his source) apparently began to transcribe the response to question 96, but then finished the response with material belonging to the following question. Clark's transcription contains a similar omission—question 1.14 and its response, which appears only in Price's copy. More frequently, the transcriber has written what is clearly the wrong word. Two errors of this sort can be seen in Price's 1.21 and 1.37.

#### BOOK TWO

In the case of Book Two, the Clark and Price versions differ from each other much more substantially. John Clark's Book Two has 74 questions, while Price's has 89. Many of Clark's responses are

condensed versions of the responses in Price's copy, and most of the examples in the Price catechism are absent in Clark's transcription. However, Clark's text is not simply a condensation of the text copied by Price; it contains material that is absent from the Price transcription such as the questions dealing with enthymemes (Clark 2.48) and dianoia (Clark 2.40-42). The use of 'De Dispositio' rather than 'De Judicio' as the title for Price's Book Two suggests a degree of reliance on Richardson's *Logicians School-Master*, but in fact virtually everything in both versions of Book Two can be traced back to Ramus, with each version reducing Ramus's language and categories in slightly different ways.

Price's Book Two is stylistically closer to the style that characterizes Book One, and for that reason we begin here with the Price text. In order to aid readers who may wish to make comparisons between the two versions, we have added question numbers to the Clark version as well as references in brackets linking his questions to the corresponding versions in Price.

While it would be useful to be able to produce a stemma detailing the respective lines of descent of the Price and Clark copies from Mather's original, this is not possible given the limited nature of the surviving evidence. Both copies were made well over a decade after Mather first composed the work, and no evidence is available which would permit an authoritative explanation of the reasons for the differences between the two copies. Thus, it is impossible to state conclusively which of these texts or individual questions is closer to the original *Catechismus Logicus*.

Any attempt to recreate the circumstances that produced these two distinct versions of the text must be based on conjecture. Here are two possible scenarios:

- 1) A tutor found it necessary to offer explication for the brief questions and answers in Mather's original text. It is this expanded text that provided the basis for the Price transcription, while the shorter Clark version more accurately reflects the Mather original.

- 2) By the late 1680s, when William Brattle's English and Latin logics had become the primary logic texts at Harvard, the Ramist

Mather text no longer played a primary role in the curriculum but was still considered useful for students. Given these circumstances, a tutor, or a hurried student (perhaps even Clark himself), might have produced a condensation of the Mather text, with the result of making it even more 'Ramist'—and at the same time, more compact. In this case, the Price copy would more closely represent the text as written by Mather.

Several factors might lend support to the latter hypothesis. Although Price's transcription was made several years after Clark's, the title page in the Price notebook carries the date 1683, suggesting that his transcription was based on a copy produced only eight years after the first appearance of the *Catechismus Logicus*. If we believe that the original is likely to have been stylistically coherent, then the similarities between Book One and Price's Book Two make his transcription more plausibly 'authentic.' Finally, there is the greater length and detail of the Price copy to take into consideration.

It will probably never be possible to know for certain that we have Increase Mather's *Catechismus Logicus* as the author wrote it, unless additional copies eventually emerge from the attics or archives where they may now lie unnoticed. We can, however, be grateful that a work by Increase Mather, which was never printed, has come down to us today in two versions because the text was preserved through transcription by Harvard undergraduates.

For those wishing to consult the Latin text, copies of the editors' typescripts of the Walter Price and John Clark transcriptions are on file at the American Antiquarian Society in the Mather Family Papers, Box 2, folder 15.

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