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PAUL SAENGER

THE SEPARATION OF WORDS AND THE
ORDER OF WORDS: THE GENESIS
OF MEDIEVAL READING¹

Ancient Latin was profoundly modified in the post-classical period which had direct impact on the physiology of reading. The modifications of Latin were motivated by two principal concerns. One was to facilitate the mastery of Latin by clerics for whom it was a foreign tongue. The second was to make Latin an intrinsically more precise tool of written communication, suitable for giving unambiguous expression to the logical distinctions which came to form the essence of scholastic culture. These goals, in turn, were achieved in two ways which themselves were profoundly complementary. The first was the introduction of word order as a critical adjunct to the ancient principles of construction based almost entirely on inflection.² The second was the introduction of word separation which, in the context of the new minuscule scripts of the early Middle Ages, implied the creation of word shape and the new physiological method of reading that ultimately laid the foundation for rapid silent reading as we now know it.³ In the exclusively Christian milieu of late antiquity, modest precursors of these complementary changes of

¹ This article forms part of a chapter in a forthcoming study on the format of the page and the birth of modern reading habits.

² A. MEILLET, *Le caractère concret du mot*, «Journal de psychologie», XX, 1923, pp. 246 ff. and *Remarques sur la théorie de la phrase*, «Journal de psychologie», XVIII, 1921, pp. 601 ff., reprinted in A. MEILLET, *Linguistique historique et linguistique générale*, nouveau tirage, II, Paris, Champion, 1948, pp. 9-23. See also J. VENDRYES, *Le langage: Introduction linguistique à l'histoire*, Paris, La Renaissance du Livre, 1921, pp. 67-76.

³ See P. SAENGER, *Physiologie de la lecture et séparation des mots*, «Annales E.S.C.», XLIV, 1989, pp. 939-962.

format and syntax can be found in Saint Jerome's Vulgate translation of the Bible which combined simplified syntax with rudimentary elements of word order and a new *per cola et commata* format for the written page.

Although it is a topic which has not sufficiently been discussed in the standard studies of medieval Latin, the suggestion that conventions of word order formed a significant new dimension of Latin, and written language in general, during the course of the Middle Ages is not a new one.⁴ The French *philosophes* of the eighteenth century regarded the constraints of a word order similar to that of modern English to be a sign of the superiority of French in comparison to both classical Greek and Latin and baroque Spanish and Italian.⁵ Nevertheless, the imposition of conventions of word order on medieval Latin prose has more often been regarded as a symptom of the degeneration of classical norms of style, due to the influence of vernacular models, than as a positive achievement of medieval culture.⁶ The modern mode of word separation by clearly perceptible units of space was similarly a consequence of the medieval experience, and it too, in its early manifestations, has been viewed as a degeneration of ancient cultural norms. However, an attempt to narrate the development of word separation poses far more profound methodological problems than does a study of evolving word order.

It would seem logical to begin a study of the hitherto obscure progression of word separation within Europe during the Middle Ages with the published catalogues of manuscript collections which serve scholars as guides to the plethora of details contained in ancient and medieval manuscripts. In general, catalogues of manuscripts are unfortunately not the totally objective research tools which we sometimes imagine them to be. Rather they tend to follow the established interests of scholars of the epoch in

⁴ See most recently A. SCAGLIONE, *The Classical Theory of Composition from Its Origins to the Present: A Historical Survey*, Chapel Hill, University of North Carolina Press, 1972, pp. 105-122.

⁵ See U. RICKEN, *L'ordre naturel du français, naissance d'une théorie*, in A. JOLY and J. STÉFANINI, *La grammaire générale des modistes aux idéologues*, Villeneuve-d'Ascq, Université de Lille III, 1977, pp. 201-216; U. RICKEN, *Grammaire et philosophie au siècle des Lumières: controverses sur l'ordre naturel et la clarté du français*, Villeneuve-d'Ascq, Université de Lille III, 1978.

⁶ L. HAVET, *Manuel de critique verbale appliquée aux textes latins*, Paris, Hachette & Cie Lahure, 1911, reprinted Rome, L'Erma di Bretschneider, 1967, p. 245 (1030).

which they are prepared. Cataloguers are not prone to record details of potential interest which researchers have not yet learned the significance. In the eighteenth century, when old manuscripts were principally treasured for their classical and patristic texts, the Maurist and Jesuit-trained authors of the first scientific catalogues of both printed books and manuscripts devoted their manuscript catalogue entries to the pursuit of the correct identification of texts.⁷ In addition to the identification of author and title of a given manuscript, Anicet Mélot's eighteenth century French royal catalogues gave only that information which scholars of the day deemed pertinent for placing a text chronologically within a tradition of transmission.⁸ This information included a judgement on the date of the codex and a description of its support, for the latter detail even then was recognized to be highly significant for distinguishing between central and late medieval codices. In the nineteenth century, the authors of the catalogue of the additional manuscripts of the British Museum continued to give only this minimal level of physical description.⁹ It was not until the late nineteenth century that Henry Bradshaw, inspired by parallels between manuscript description and the principles of the nascent discipline of analytical bibliography, set forth the goal of recording information pertaining to the scribal preparation of the codex.¹⁰ Montague Rhodes James developed and applied these criteria in his twenty-two volumes of catalogues of Cambridge College libraries.¹¹

⁷ For printed books, see L. DELISLE, *Notice sur les anciens catalogues des livres imprimés de la Bibliothèque Nationale*, «Bibliothèque de l'École des Chartes», XLII, 1892, pp. 165-174, and *Extrait de l'introduction au catalogue général des imprimés*, «Revue des bibliothèques», VII, 1897, pp. 359-413; E. G. LEDOS, *Histoire des catalogues des livres imprimés de la Bibliothèque Nationale*, Paris, Éditions des Bibliothèques nationales, 1936.

⁸ A. MÉLOT, *Catalogus codicum manuscritorum Bibliothecae regiae*, III-IV, Paris, e Typographia regia, 1739-1744. On the author see *Eloge de M. Mélot*, in *Histoire de l'Académie Royale des Inscriptions et Belles Lettres...*, XXIX, Paris, 1764, pp. 360-371.

⁹ *List [later Catalogue] of Additions to the Manuscripts in the British Museum*, [1836-], London, 1843-.

¹⁰ *The Early Collection of Canons Known as the Hibernensis: Two Unfinished Papers by the Late Henry Bradshaw*, Cambridge, Cambridge University Press, 1893, pp. 43-44. See also P. NEEDHAM, *The Bradshaw Method: Henry Bradshaw's Contribution to Bibliography*, Chapel Hill, Hanes Foundation, 1988.

¹¹ These catalogues were published between 1895 and 1925. See M. R. JAMES, *Points to be Observed in the Description and Collation of Manuscripts, Particularly Books of Hours*, in his *A Descriptive Catalogue of the Manuscripts in the Fitzwilliam Museum with Introduction and Indices*, Cambridge, Cambridge University Press, 1895, pp. XIX-XLI.

In the course of the twentieth century, an ever widening interest in the history of medieval book production and the practices of medieval scriptoria has resulted in a continually lengthening list of paleographical and codicological details deemed pertinent for inclusion in a complete manuscript catalogue description. The cumulative detailed research of Léopold Delisle, Ludwig Traube, E. A. Lowe, and, more recently, Julian Brown and G. I. Lieftinck has made the description and classification of script an essential part of any medieval manuscript description.¹² The remarkable studies of Wallace M. Lindsay in his *Notae Latinae*¹³ and in articles, most dating from the second decade of this century, have led catalogues to record the presence of the abbreviations used in high medieval manuscripts because they serve as accurate guides for the assignment of date and provenance.¹⁴ The studies of E. K. Rand on Tours manuscripts from the eighth to the tenth century have stimulated cataloguers to record details concerning punctuation, parchment, ruling, gatherings, and quire signatures for medieval codices of all dates and provenances.¹⁵ In the past twenty-five years, the magnificent exhibition catalogues and manuscript studies of L. M. J. Delaissé have obliged subsequent cataloguers to describe and categorize the illuminated miniatures and margins of late medieval books.¹⁶

In contrast to an increasing tendency of twentieth century cataloguers of medieval manuscripts to record data either to justify the assignment of a given manuscript to a particular *scriptorium* or, as has now become more frequently the case, in the hope of providing raw data which will permit subsequent scholars to do

¹² B. BISCHOFF - G. I. LIEFTINCK - G. BATTELLI, *Nomenclature des écritures livresques du IX^e au XVI^e siècle: Premier colloque international de paléographie latine, Paris 28-30 avril 1953*, Paris, C.N.R.S., 1954, pp. 15-34.

¹³ W. M. LINDSAY, *Notae Latinae: An Account of Abbreviation in Latin MSS. of the Early Minuscule Period (c. 700-850)*, Cambridge, Cambridge University Press, 1915.

¹⁴ A complete bibliography of Lindsay's works is wanting. For his own select list of articles, see H. J. ROSE, *Wallace Martin Lindsay 1858-1937*, «Proceedings of the British Academy», XXIII, 1937, pp. 509-512.

¹⁵ E. K. RAND, *A Survey of the Manuscripts of Tours*, Cambridge, Mass., The Mediaeval Academy of America, 1929: ID., *The Earliest Book of Tours with Supplementary Descriptions of Other Manuscripts of Tours*, Cambridge, Mass., The Mediaeval Academy of America, 1934.

¹⁶ L. M. J. DELAISSÉ, *Le siècle d'or de la miniature flamande: le mécénat de Philippe le Bon*, Brussels, 1959.

so, cataloguers have shown little conscious concern for recording the kinds of evidence which psychological studies indicate would increase our understanding of the manner in which manuscripts were read. This insensitivity to the history of the physiological activity of reading has been more marked than by the recurrent failure of cataloguers to note the presence or absence of the separation of words.

Without exception, modern psychological studies of page format suggest that the absence or presence of interword space is far more important to the objectively measured reading process than are the relatively minor alterations of letter forms that distinguish the pre-Caroline scripts from Caroline or humanistic *textualis* from humanistic *cursiva*, or even the greater distinctions which set off gothic *textualis* from humanistic letter forms.¹⁷ This is because word separation, which developed in conjunction with the coordinated use of capital and minuscule forms, gives words a quasi-unique image known in the terminology of modern psychology as the «Bouma shape».¹⁸ This shape, largely defined by the initial and terminal letters and by letters protruding below and especially above the line is important both for the use of parafoveal vision and for right hemisphere involvement in the modern reading process. Although we arrange our dictionaries alphabetically and not by word shape, it is frequently word silhouette rather than the sequence of letters which is more important for word recognition.

Historical evidence that word shape rather than letter forms were of paramount importance to mature medieval readers is not lacking. The heavily ligatured Merovingian and Beneventan scripts were rarely, if ever, systematically reworked in the course of the Middle Ages either to correct letter forms or to resolve

¹⁷ For a review of this literature, see B. ZACHRISSON, *Studies in the Legibility of Printed Text*, Stockholm, Almqvist & Wiksell, 1965, pp. 35-36; G. W. OVINK, *Legibility, Atmosphere Value and Forms of Printing Types*, Leiden, A. W. Sijthoff, 1938, pp. 107-117.

¹⁸ The name comes from the Dutch psychologist Herman Bouma, see H. BOUMA, *Visual Interference in the Parafoveal Recognition of Initial and Final Letters of Words*, «Vision Research», XIII, 1973, pp. 762-782; I. TAYLOR - M. M. TAYLOR, *The Psychology of Reading*, New York, 1983, pp. 186 ff.; R. E. MORRISON - A.-W. INHOFF, *Visual Factors and Eye Movements in Reading*, «Visible Language», XV, 1981, pp. 129-146. Word shape is not important for children beginning to read, see P. GROFF, *Research in Brief: Shapes as Cues to Word Recognition*, «Visible Language», IX, 1973, pp. 67-71.

ligatures, and textual corruptions traceable to errors in reading pre-Caroline scripts are of minimal significance to students of the medieval *Überlieferungsgeschichte* of classical and early medieval texts.¹⁹ These facts confirm that the characteristics of letter forms, which to us seem ambiguous, did not affect word recognition sufficiently so as to impede the reading of books of which the marginalia indicate continuous use until after the introduction of printing. In contrast the same manuscripts were frequently reworked during the Middle Ages to introduce the separation between words which had originally been omitted.²⁰ Indeed, *post factum* emendation of unseparated early medieval pre-Caroline and Caroline manuscripts was a common phenomenon of the central and late Middle Ages, and it was discussed in tracts on the art of reading, of which the earliest was Ps. Priscian's *Liber de accentibus*, and in monastic customaries.²¹ The practice of separating unseparated writing documents the perceived advantages of word separation to reading. Yet, the presence or absence of either contemporary or such *post factum* or original word separation has never been recorded as a significant detail in catalogues of a minor or major medieval collection, even in those giving special attention to punctuation.²² Among paleographic monographs focusing on a systematic description of manuscripts of a particular provenance or genre in the critical period when word separation emigrated from the British Isles to the Continent, only Jean Vezin's remarkable *École des Chartes*

¹⁹ L. HAVET, *Manuel de critique verbale*, p. 166; D. GANZ, *The Precondition for Caroline Minuscule*, «Viator», XVIII, 1987, pp. 28-29; and for a specific case-study, M. GORMAN, *The Lorsch «De Genesi ad litteram» and Two Fragments of the Script of Luxeuil*, «Scriptorium», XXXVI, 1982, pp. 248-245.

²⁰ For an example, see Plate I, Newberry Library ms. 10, BOETHIUS, *De Consolatione Philosophiae*, fully described by P. SAENGER, *A Catalogue of the Pre-1500 Manuscript Books at the Newberry Library*, Chicago, University of Chicago Press, 1989, p. 21.

²¹ H. KEIL, *Grammatici Latini*, III, Leipzig, Teubner, 1858, pp. 518-528; CH. KNEEPKENS - F. REIJNDERS, *Magister Singuinus, Ars Lectoria: Un art de lecture à haute voix du onzième siècle*, Leiden, Brill, 1979, pp. 32-33 and 78. The eleventh century customary of Fleury and the twelfth century *Liber ordinis* of the Austin canons of the Abbey of Saint-Victor in Paris testify to the importance of such emendations in medieval monasteries, see the *Consuetudines Floriacenses antiquiores*, in *Corpus consuetudinum monasticarum*, VII, pt. 3, Siégburg, Schmitt, 1984, p. 17; M.-T. D'ALVERNY in COMITÉ INTERNATIONAL DE PALEOGRAPHIE, *Catalogue des manuscrits en écriture latine portant des indications de date, de lieu ou de copiste...*, III, Paris, C.N.R.S., 1974, pp. XI-XII.

²² M. B. PARKES, *The Medieval Manuscripts of Keble College: A Descriptive Catalogue*, London, Scholar Press, 1979, p. XXI.

thesis on the *scriptoria* of Angers in the eleventh century has consistently and accurately recorded the absence or presence of word separation and attempted to grapple with the delicate problem of descriptive nomenclature for both space separation and the *prosodiae* or diacritical marks which medieval scribes used in conjunction with space to separate words and, in the parlance of modern psychology, enhance individual Bouma shapes.²³ Other than Vezin's systematic treatment of Anger manuscripts, the only other notice accorded to the phenomenon of word separation is to be found in certain of the descriptions accompanying the plates of the Palaeographical Society collections of facsimiles.²⁴

The separation of words by space is commonplace to all modern readers. However, historically other kinds of separation have existed in both antique and Latin manuscripts as either supplements or alternatives to the use of space. I shall refer to these marks by their ancient name of *prosodiae*.²⁵ Like separation by space, the presence of *prosodiae* has rarely been noted in the description of medieval manuscripts²⁶. The use of points without space as a means of separation had a long history in the pre-vocalic languages of antiquity. Their use in Latin is particularly well documented by inscriptions of the late first and second century A.D.²⁷ Points were used only on rare occasions to separate words in the manuscripts of late antiquity, and in medieval codices they were occasionally used, primarily in the

²³ J. VEZIN, *Les scriptoria d'Angers au XI^e siècle*, Paris, Champion, 1974. See also TAYLOR - TAYLOR, *Psychology of Reading*, pp. 193-194.

²⁴ E. A. BOND - E. M. THOMPSON, *Palaeographical Society: Facsimiles of Manuscripts and Inscriptions*, second series, London, W. Clowes & Sons, 1873-1894.

²⁵ This is the term used by Donatus in the *Ars maior* and Isidore in the *Libri etymologiarum*.

²⁶ E. A. Lowe's description of the emergence of *prosodiae*, considered apart from word separation, are a starting point for documenting both phenomena in South Italian manuscripts, E. A. LOWE, *The Beneventan Script*, Oxford, Clarendon Press, 1914, pp. 274-277 and 278-279.

²⁷ J. E. SANDYS, *Latin Epigraphy: An Introduction to the Study of Latin Inscriptions*, Cambridge, Cambridge University Press, 1919, p. 54; A. E. GORDON - J. S. GORDON, *Contributions to the Palaeography of Latin Inscriptions*, Berkeley and Los Angeles, University of California Press, 1957 (University of California Publications in Classical Archaeology, 3/3), pp. 150 and 183-185; A. E. GORDON, *Illustrated Introduction to Latin Epigraphy*, Berkeley-Los Angeles-London, University of California Press, 1983, p. 13; R. D. ANDERSON - P. J. PARSONS - R. G. M. NISBET, *Elegiacs by Gallus from Qasr Ibrim*, «Journal of Roman Studies», LXIX, 1979, p. 131.

eighth and ninth century, in ambiguous passages written in unseparated script. In certain manuscripts and inscriptions of Irish and Anglo-Saxon origin, points were used most often in conjunction with space to separate words, and eleventh century France witnessed a resurgence of this practice particularly in monastic lapidary epigraphy.²⁸ Points as signs of separation were also linked as integral parts to certain conventional abbreviations, and they were often used to designate the transcriptions of numerical expressions. While interpunctuation for word separation was consistently recorded in the major catalogues of papyrus fragments (for example Grenfell and Hunt's *Oxyrhynchus Papyri*²⁹), numerous works on both ancient and medieval lapidary inscriptions systematically suppressed points in their transcriptions by silently substituting either points and space or space alone.³⁰ The presence of points to separate words has never been recorded in catalogues of *medievalia* and only one short (but valuable) contribution on this phenomenon exists in the extensive corpus of medieval paleographical literature.³¹

The *diastole* was another sign used for word separation. A mark originally resembling an enlarged comma, the *diastole* originated in Greek texts written in the second century B. C. in *scriptura continua* as an occasional aid to the reader in separating words or syllables with ambiguous boundaries.³² It came to replace the point as the grammar teacher's usual means of separating words at points of ambiguity in Latin in the second century A.D., when points took on the value of punctuation rather than serving

²⁸ G. A. DE MAILLÉ, *Les cryptes de Jouarre*, Paris, Picard, 1971, p. 228, fig. 102; P. DESCHAMPS, *Étude sur la paléographie des inscriptions lapidaires de la fin de l'époque mérovingienne aux dernières années du XII^e siècle*, Paris, Société générale d'imprimerie et d'édition, 1929, pp. 21-35. For examples at Moissac, see J. DUFOUR, *La bibliothèque et le scriptorium de Moissac*, Genève-Paris, Droz, 1972, plates 77-78.

²⁹ B. P. GRENFELL - A. S. HUNT and others, *The Oxyrhynchus Papyri*, London, Egypt Exploration Fund, 1898.

³⁰ For example, G. PANAZZA, *Lapidi e sculture paleocristiane e preromaniche di Pavia*, Torino, Viglongo, 1953.

³¹ W. M. LINDSAY, *Collectanea varia. III. Aids to Readers: A. Separation of Words by Dots*, «Palaeographia Latina», II, 1923, pp. 16-17.

³² See E. G. TURNER, *Greek Manuscripts of the Ancient World*, Princeton, Princeton University Press, 1971, p. 13.

as signals for distinguishing words.³³ The *diastole* was never used by ancient Latin scribes in copying text. Medieval scribes however used it and developed a number of variant shapes for it. In catalogues of medieval manuscripts, the use of the *diastole* either by scribes, correctors, or readers has scarcely been noted, and a nomenclature for its variant shapes has not been developed, although the variation among them has clear implications for the reader's physiological processes.

A third symbol used to separate words and occasionally noted in descriptions of ancient epigraphs and papyri is the apex which I shall refer to by its modern name, the acute accent mark. A sign similar to the acute accent mark was used in antiquity as a sign of vowel length.³⁴ According to Quintilian (c. 40-c. 118 A.D.), this practice avoided the ambiguity of homographs in certain contexts.³⁵ Subsequently, after Rome's general acceptance of *scriptura continua*, the acute accent mark was also used to indicate the doubling of vowels and occasionally to designate the final syllable of each word or the compound syllables within a word or to identify the syllable receiving the tonic accent.³⁶ Since, according to the ancient Roman rules of accentuation, only one syllable in each word could receive the tonic accent, the presence of acute accents indicating the tonic syllable at least indirectly aided the reader in establishing plausible word boundaries and reduced somewhat the ambiguity inherent in text written either in *scriptura continua* and, later in the Middle Ages, in word blocks.³⁷ In certain ancient books from Egypt and in lapidary inscriptions,

³³ Donatus attributes to it this function, see L. HOLTZ, *Donat et la tradition de l'enseignement grammaticale. Étude sur l'Ars Donati et sa diffusion (IV^e-IX^e siècle) et édition critique*, Paris, C.N.R.S., 1981, p. 611.

³⁴ J. CHRISTIANSEN, *De apicibus et I longis inscriptionum Latinarum dissertatio*, Husum, C. J. Delff, 1889.

³⁵ *Institutio oratoria*, I, IV, 10; I, VII, 2.

³⁶ H. WEIL - L. BENLOEW, *Théorie générale de l'accentuation latine suivie de recherches sur les inscriptions accentuées*, Paris-Berlin, J. Dümmler & C., 1855, pp. 293-294 and 306-307. See also C. BEAULIEUX, *Histoire de l'orthographe française*, II, Paris, Champion, 1927, pp. 2-5. For an example of accents denoting long vowels, see C. H. ROBERTS - E. G. TURNER, *Catalogue of the Greek and Latin Papyri in the John Rylands Library, Manchester*, IV, Manchester, Manchester University Press, 1952, pp. 95-96.

³⁷ For an interesting example of ambiguity in the presence of accents, see E. PULGRAM, *Syllable, Word, Nexus, Cursus*, The Hague, Mouton, 1970 (*Janua Linguarum*, series minor, 81), pp. 31-33, n. 13.

acute accents were used to designate monosyllabic words, usually containing long vowels, and in a few instances, a reverse apex, the modern grave accent, was reserved exclusively for identifying monosyllabic words, while the acute accent was reserved to denote the syllable receiving the tonic accent of polysyllabic words.³⁸

In general, acute accent marks, like other *prosodiae*, were used chiefly on wax tablets or *papyri* by beginning readers engaged in the difficult process of mastering a classical text. Their occasional presence in lapidary inscriptions may be interpreted as aids for the semi-lettered. Accent marks and other *prosodiae* were rarely if ever present in the initial confection of formal Latin books in either the Eastern or Western Empire. Their use in antiquity therefore was chiefly for training in the art of reading comprehension, a process which, because of the difficulty of *scriptura continua*, persisted into adolescence.³⁹

In the early seventh century, Isidore of Seville commended the traditional uses of accent marks as aids to young readers seeking to reduce the ambiguity of problematic texts by distinguishing words and averting homographs.⁴⁰ In Continental manuscripts of the early Middle Ages, as in antiquity, *prosodiae* in manuscripts were almost invariably added by readers and they were never used by scribes with frequency. However in the late seventh century, first in Ireland, then in England and Wales, and subsequently in zones of profound Celtic and Anglo-Saxon influence on the Continent, scribes began to employ the acute accent with great regularity in conjunction with word separation. The practice won general acceptance on the Continent only in the tenth and eleventh centuries.⁴¹ Ps. Priscian's *Liber de accentibus*, titled *Liber prosodiae* in one of the earliest manuscripts,⁴² was the first manual to explain their use as a regular aid in text presentation. Except for Jean Vezin's notes on the manuscripts of Angers, Jean

³⁸ C. H. ROBERTS, *The Antinoe Fragment of Juvenal*, «Journal of Egyptian Archaeology», XXI, 1935, p. 202. This usage does not conform to the rules of Ps. Priscian's *Liber de accentibus*, KEIL, *Grammatici Latini*, III, p. 521.

³⁹ H. I. MARROU, *Histoire de l'éducation dans l'Antiquité*, Paris, Éditions du Seuil, 1965, p. 240.

⁴⁰ ISIDORI, *Etymologiae*, ed. W. M. Lindsay, Oxford, Clarendon Press, 1911, reprinted 1985, Book I, chapter 18.

⁴¹ This is discussed in detail in subsequent chapters of which this study is a part.

⁴² Leiden, Bibliotheek der Rijksuniversiteit Perizonus f. 55, ff. 46-48v.

Dufour's descriptions of the manuscripts of Moissac and the early Insular manuscripts described in the New Palaeographical Society facsimiles, the use of accent marks in Northern Europe, first to complement and enhance word separation and, later (subsequent to the general acceptance of word separation) to enhance word shape, has been almost totally ignored by students of Latin paleography.⁴³ In contrast, their presence in early vernacular manuscripts has been given more careful attention.⁴⁴ As in the case for the separation of words by space in the original Palaeographical Society facsimiles, the New Palaeographical Society notes on accent use, while helpful, are not consistent enough to permit valid generalizations as to the manner in which the tradition of accenting was transmitted from the Eastern Empire of antiquity to the British Isles in the early Middle Ages, and finally, to the Continent in the central Middle Ages. Regretfully, the editors of neither of these two great paleographical collections seem never to have provided a synthesis of their findings, taking into account their very variable criteria for recording data. Despite this taciturnity, it is likely that the interest of these British scholars in separation *prosodiae* stemmed not only from their training in the editing and cataloguing of ancient *papyri* and lapidary inscriptions, but although they never so stated, from the peculiar prominence which separation and *prosodiae* had in the earliest manuscripts transcribed in the British Isles. Subsequent scholars have provided little in the way of systematic studies for reconstructing the chronological and

⁴³ E. M. THOMPSON - G. F. WARNER - F. K. KENYON - J. P. GILSON - J. A. HERBERT - H. I. BELL, *New Palaeographical Society: Facsimiles of Manuscripts and Inscriptions*, second series, London, H. Hart at the Oxford University Press, 1903-1930; DUFOUR, *La bibliothèque et la scriptorium de Moissac*, pp. 63 and 106-154 *passim*.

⁴⁴ For Provençal manuscripts, see R. LAVAUD - G. MACHICOT, *Boecis: Poème sur Boèce (fragment) le plus ancien texte littéraire occitan réédité, traduit, et commenté*, Toulouse, Institut d'Études Occitanes, 1950, p. 32; for French manuscripts, see K. LINCKE, *Die Accente im Oxforder und im Cambridger Psalter sowie in anderen altfranzösischen Handschriften. Eine paläographische philologische untersuchung*, Erlangen, 1886, and for Anglo-Saxon manuscripts, the introductory notes to *Early English Manuscripts in Facsimiles*, Copenhagen, Rosenkilde and Bagger, 1951-, I, p. 19; IV, p. 18; XII, p. 26; XIII, p. 26; XVI, p. 21; XVII, p. 27; XIX, p. 26; for German manuscripts, see P. SIEVERS, *Die Accente in althochdeutschen und altsächsischen Handschriften*, Inaugural-Dissertation, Berlin, 1909; for Slavic manuscripts, see N. DANIEL, *Handschriften des zehnten Jahrhunderts aus der Freisinger Dombibliothek*, München, bei der Arbo-Gesellschaft, 1973 (Münchener Beiträge zur Mediävistik und Renaissance Forschung, 11), pp. 133-137.

geographical path of the dissemination of the use of accent marks in the high and central Middle Ages. As a consequence of this omission, the narrative of the widening uses of the accent as an aid in word recognition has until now gone unwritten.

Just as the presence of the ancient marks of separation which evolved new uses in the Middle Ages were rarely noted by scholars of the Middle Ages, the new scribal signs invented in the same period both as occasional reader aids and as systematically exploited alternatives to interword space have almost never been mentioned in the literature of medieval manuscript descriptions.⁴⁵ The primary medieval signs for word separation were essentially variant forms of the *diastole*, and consisted of three types. I shall collectively baptize these signs successor notes to the *diastole*. The most common of these forms in high medieval manuscripts was the oblique double slash / which in some manuscripts dating from as late as the eleventh century was composed of a *diastole* below and an *acute accent* mark above, suggesting that this notation for separating originated or was, at the very least, occasionally conceived of as a synthesis of two distinct signs which in Roman antiquity had served to denote separation. A second and rarer sign was a J shaped vertical stroke. Certain unseparated central medieval manuscripts of Donatus present this sign as the normal form of the *diastole*, but it was unknown in ancient codices and fragments.⁴⁶ This mark, like the *diastole*, was from the ninth-century onward employed for correcting omitted interword space as well as for inserting corrections, the latter especially in Anglo-Saxon manuscripts.⁴⁷ A third form was the vertical stroke

⁴⁵ These marks have been briefly noted by BEAULIEUX, *Histoire de l'orthographe française*, II, pp. 6-7. For examples, see Plate II, Cambrai, Bibliothèque Municipale, ms. 470, PHILIPPUS, *in Iob*; E. A. LOWE, *CLA*, V, no. 570 notes the marks and dates them to the twelfth century. In my judgement, the late eleventh century is a more likely date for these emendations.

⁴⁶ See Paris, B. N. lat. 7562, f. 8v from Saint Martial of Limoges, written in the first half of the eleventh century, bibliographical references HOLTZ, *La tradition*, p. 417. In Paris, B. N. lat. 7490, f. 45, the *diastole* is midway between the J form and an enlarged comma.

⁴⁷ This note is present in the emendations of an unseparated Terence manuscript thought to have been copied at Reims, Paris, B. N. lat. 7899, f. 10; bibliography: L. W. JONES, *The Miniatures of the Manuscripts of Terence Prior to the Thirteenth Century*, Princeton, Princeton University Press, 1930-31. It is used as an insertion sign in the so-called Ramsey Benedictinal, Paris, B. N. lat. 987, f. 30 (s. 10); bibliography: E. TEMPLE, *An-*

sometimes placed at a slightly oblique angle. This I call the vertical *diastole*. It seems to have originated on the Continent and was current in certain French monasteries in the eleventh century, notably at the abbey of Saint-Bénigne of Dijon. This sign became by far the most prevalent mark of *post factum* separation at the end of the Middle Ages and is even present in incunables.⁴⁸ The story of the historical evolution and dissemination of these substitute forms of the *diastole* remains, to date, untold. Its narrative is crucially linked to the history of word separation by space for which it ultimately served as a substitute and therefore to the history of the use of word images in reading. The interlinear *dasia* and in certain instances, construction notes also served as signs of separation.⁴⁹

In addition to space and signs, historically, words have been delineated by the use of special letter forms reserved either for the initial or for the terminal position. The use of special initial and terminal forms has a rich history in languages transcribed in the Semitic alphabets, where they have often been a principal mode of separation in Hebrew, Syriac, and Arabic.⁵⁰ In contrast to the Semitic languages, initial and terminal forms never consistently

glo-Saxon Manuscripts. 900-1066, no. 25. Another example is Paris, B. N. lat. 272, f. 119, plate in J. VEZIN, *Manuscrits des dixième et onzième siècles copiés en Angleterre en minuscule caroline et conservés à la Bibliothèque National de Paris*, in *Humanisme actif: Mélanges d'art et de littérature offerts à Julien Cain*, II, Paris, Hermann, 1968.

⁴⁸ P. SAENGER - M. HEINLEN, *Incunable Description and Its Implications for the Analysis of Fifteenth Century Reading Habits*, in S. HINDMAN, ed., *Printing the Written Word: The Social History of Books c. 1450-1520*, (forthcoming, Cornell University Press).

⁴⁹ At the abbey of Saint Peter of Moissac, in the eleventh century an interlinear *dasia* was frequently placed at the beginning of words; for representative manuscripts, see DUFOUR, *La bibliothèque et le scriptorium de Moissac*, pp. 64 and 97-154 *passim*. For an example of construction notes placed so as to parse a word block, see Paris, B. N. lat. 2772, f. 92.

⁵⁰ M. COHEN, *La grande invention de l'écriture et son évolution*, Paris, Imprimerie Nationale, 1958, pp. 183 and 235. Terminal forms were employed in the Dead Sea Scroll Fragments where words were also well separated by space. For Arabic, see also A. SMITH LEWIS - M. DUNLOP GIBSON, *Forty-one Facsimiles of Dated Christian Arabic Manuscripts*, Cambridge, Cambridge University Press, 1907 (*Studia Sinaitica*, 12) and J. PEDERSEN, *The Arabic Book*, English trans. G. French, Princeton, Princeton University Press, 1984, pp. 6 and 76-77. For Syriac, see W. H. PAINE PATCH, *An Album of Dated Syriac Manuscripts*, Boston, 1946, pp. 38-40. A system of diacritical dots, equivalent to Latin *prosodiae* was introduced by Hajaj in the first Islamic century. For Syriac, similar signs were introduced far earlier, see J. B. SEGAL, *The Diacritical Point and the Accents in Syriac*, London-New York, Oxford University Press, 1953; S. MORAG, *The Vocalization Systems of Arabic, Hebrew and Aramaic: Their Phonetic and Phonemic Principles*, The Hague, Mouton, 1962 (*Janua Linguarum*, series minor, 13).

separated words in medieval Latin. However, scribes did use certain terminal forms, much as they did an occasional point, *diastole*, or acute accent, to aid the reader in resolving instances of profound ambiguity created by an infelicitous sequence of words within unseparated writing. They also used them widely as a redundant sign of separation in separated script. The use of capital forms at word endings in the tenth and eleventh centuries has been noted by a few observant paleographers.⁵¹ However, the evolution of these marks from the occasional and frequently haphazard appearance of large letters, usually toward the end of the line, in ancient lapidary inscriptions (a phenomenon discussed at length by students of epigraphy) and manuscripts into an integral part of the graphic *langue* of medieval Latin has gone unstudied.⁵² Indeed, the use of capital forms in the initial position in association with punctuation was ignored by some of the most distinguished students of early Continental codices, notably E. K. Rand and L. W. Jones in their survey of books copied at Tours and Cologne.⁵³

A complementary development, the use of capital forms at the beginning of proper names, a practice virtually unknown in antiquity, became an important aid in establishing boundaries for these words which were often particularly difficult for medieval readers to identify.⁵⁴ Initial capitals combined with writing

⁵¹ VEZIN, *Manuscrits des dixième et onzième siècles*, pp. 292-293; A. PETRUCCI, *Censimento dei codici dei secoli XI-XII. Istruzioni per la datazione*, «Studi medievali», ser. III, IX, 1969, pp. 1115-1126. Robert Marichal notes this practice in the twelfth century in his *L'écriture latine et la civilisation occidentale du I^{er} au XVI^e siècle*, in CENTRE INTERNATIONAL DE SYNTHÈSE, *L'écriture et la psychologie des peuples, XXIII^e semaine de synthèse*, Paris, Armand Colin, 1963, pp. 199-247: 230.

⁵² For ancient practices, see GORDON - GORDON, *Palaeography of Latin Inscriptions*, pp. 202-207, cf. 185-201.

⁵³ RAND, *A Survey of the Manuscripts of Tours*, I, pp. 29-31; L. W. JONES, *The Script of Cologne, from Hildebald to Hermann*, Cambridge, Mass., The Mediaeval Academy of America, 1932, pp. 15-16. On the visual implications of capitalization as an adjunct to punctuation see MARICHAL, *L'écriture latine*, pp. 237-240. See also the remarks of D. WHITELOCK, in *Early English Manuscripts in Facsimile*, IV, p. 18, and more recently M. B. PARKES, *The Contribution of Insular Scribes of the Seventh and Eighth Centuries to the Grammar of Legibility*, in A. MAIERÙ, ed., *Grafia e interpunzione del latino nel Medioevo: seminario internazionale. Roma 27-29 settembre 1984*, Roma, Edizioni dell'Ateneo, 1987, pp. 22-23.

⁵⁴ F. W. SHIPLEY, *Certain Sources of Corruption in Latin Manuscripts: A Study Based on Two Manuscripts of Livy, Codex Puteanus (Fifth Century) and Its Copy Codex Reginensis 762 (Ninth Century)*, New York, The Macmillan Company, 1904, pp. 20-21.

containing the ascending and descending strokes characteristic of minuscule script gave proper nouns a readily identifiable image. The practice of selective capitalization also provided a code for the visual recognition and swift retrieval of specific kinds of information relating to individual persons, places and corporate entities. The adaptation of this convention was an indication that reference consultation, a new form of reading, had begun to flourish in the central Middle Ages. The capitalization of proper names was often neglected by late medieval scribes, but the practice was revived by many humanist scribes and has since been systematically regularized and rendered canonical by modern typographical usage in English, the Romance Languages, and with different encoded significance in German.⁵⁵ In the early and central Middle Ages, the use of all capitals and the use of accents, particularly in transcriptions of Hebrew, Greek and Arabic names existed as an alternative to initial capitalization as cues for denoting proper names and aided the reader to obtain rapid lexical access and thereby to engage in reference consultation.⁵⁶ The same or related graphic conventions were also on occasion used to set off words and phrases written in languages other than Latin or the vernacular.⁵⁷ Traces of this practice remain detectable in certain humanistic type fonts.

Even more than initial capitals, the presence of terminal capitals (or occasionally the capitalization of the penultimate letter), related alternative letter forms and conventional abbreviations at the end of words were used by scribes of the central Middle Ages, first in the British Isles and eventually on the Continent, as a common adjunct to word separation. Such practices, like the use of initial capitals, had no antecedent in antiquity. In the late Middle Ages, a few of these special forms, such as the small capital form or round *s*, and abbreviations, such as that for *tur*, became standard in Gothic script from whence

⁵⁵ TAYLOR - TAYLOR, *The Psychology of Reading*, p. 116.

⁵⁶ W. REEVES, *The Life of Saint Columba*, Dublin, 1857, p. XIX (Irish Archeological Society). For possible ancient precedents for this use of accenting, see GORDON - GORDON, *Palaeography of Latin Inscriptions*, p. 149.

⁵⁷ W. M. LINDSAY, *The Letters in Early Latin Minuscule*, «Palaeographia Latina», I, 1922, pp. 7-61: 18-19.

some entered the fraktur typefonts. Others, such as the terminal capitals R, M, and T passed entirely into oblivion only to be re-adopted by humanist scribes as part of their emulation of eleventh and twelfth century exemplars.

The physiological implication of the central medieval scribal practice of visually designating both word endings and beginnings is highly significant. Modern experiments confirm that peripheral vision which pre-identifies significant features of words during normal reading and thus increases reading speed, depends greatly on the perception of initial and terminal letters.⁵⁸ These letters are critical for establishing a word's shape as perceived by the brain's right hemisphere. In conjunction with contextual clues and letter sequences, word shape plays an important role in the rapid determination of a word's meaning that is characteristic of the modern reading process. In some manuscripts from the ninth to the twelfth century in regions of Europe where word separation had not yet become prevalent, the use of distinctive forms for the initial and final letter of a word greatly aided the reader to separate words. In conjunction with the judicious use of space, the use of capitals, special forms, and abbreviations created manuscripts in which all words were immediately perceptible to the reader although not consistently separated by space. Following the definitive adoption of separation by space, terminal letter forms became far more common. In an age of transition, when the general acceptance of the meaning of intra-textual space as a cue to word separation was not as yet entirely secure, scribes made use of terminal forms to make word separation emphatically clear. In this context, it is not entirely clear whether this use of terminal forms represented a needless redundancy or a veritable enhancement of word image which was all the more perceptible because of the increased peripheral and parafoveal vision which separation created.

Among terminal forms, the capital S, which in the final analysis was most probably a sign of Insular origin, was the most common. Its use as opposed to the long s at word ending

⁵⁸ E. J. GIBSON - H. LEVIN, *The Psychology of Reading*, Cambridge, Mass., M.I.T. Press, 1975, p. 358; L. M. HORAWITZ - M. A. WHITE - D. W. ATWOOD, *Word Fragments as Aids to Recall: The Organization of a Word*, «Journal of Typographical Research», II, 1968, pp. 143-156.

Pedes igitur saluatores praedicatorum suorum et qui
 in uniuerso mundo annuntiant euangelium intel-
 legendi sunt de quibus et apostropho aduocatus
 dicitur: ecce super montes pedes euangelizan-
 ad nuntiam pacem; tamquam in uim prophetae et ap-
 ostoli pauli sic et in quibusdam speciebus pedes euange-
 lizan- tium pacem euangelizan- tium bonae doctrinae
 eodem uerbo ab abacuc propheta dicitur: ante faciem
 que id est diuini uerbum et pro die in campis id est in
 laetitudine regionum post pedes eius; hoc igitur po-
 des scilicet christi uobis et laetitia uerbum cyro bluis et
 absterge quoniam ne os tribulationum prestunt in
 aere scilicet purissimi reddidit docent quoque et alia in
 struent per spiritum suum quem dedit eis simpliciter in nocen-
 tia eorum sicut et apostolus petrus postolus et apostolus
 dicitur fuerat docent se et ceteros; anima uestra et
 astra in nobis ad diem ad caritatem in fraterne
 astra amor simpliciter corde in uicem diligit et con-
 uersa et sic sicut modo nunc in sancta ratione
 sine dolore concupiscere uerbum in ore loqui ad salu-
 et apostolus paulus in simplicitate et in caritate di-
 conuersa et simul in hoc mundo est et in uerbo
 ritate sicut ex libro corinthios in epistola quimus hoc
 eum in modo pedes annuntiant pacem eum in
 dabunt in nece in quibus sunt carnalis sapientia
 lura; de his aliter uerbum in caritate et in
 abundantia lactis et psalmista postea dicitur
 quid suspicamini montes et passat; cum et in uerbo
 remota et in ab omni iniquitate et in uerbo
 in puritatem in iustificationem in per fidem. Et post
 inquit fundebam in uos olei; per in hoc loco et
 ecclesiam non absurdum in uerbo quae ad locum
 in ob lapide appellata hoc modo si fuerit in
 cum et in uerbo in omni in uerbo et in uerbo
 et in uerbo in uerbo in uerbo in uerbo in uerbo

f. 129
 f. 129
 f. 129
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f. 129
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f. 129
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Tav. I. - Newberry Library MS 10, f. 38; Boethius, *De consolatione philosophiae*.

Sumte firmas
ipe qetis amoue
ru suplicus sen
recau aduse

Tav. II. – Cambrai, Bibliothèque Municipale, MS 470, f. 129; Philippus, *In Job*. (An enlarged portion of the plate).

generated a word image clearly more distinct and readily identifiable. Its frequent presence in the autograph writing of Berengar of Tours exemplifies a desire on the part of Continental writers to aid the reader as much as possible to exploit peripheral and parafoveal vision.⁵⁹ The practice of reserving special letter forms to denote the limits of words has been discussed in paleographic literature chiefly as a clue to date and provenance. Paleographers have, for example, quite accurately linked the terminal capital R to the Insular scribal tradition, and its presence is therefore useful for tracing the geographic origins of particular scribes.⁶⁰ However, the special initial and terminal forms, despite their great importance for the separation of words and the expanded role of peripheral vision which characterizes modern reading habits, have never been systematically recorded in catalogue manuscript descriptions of western manuscript books, documents or inscriptions to the great detriment of the history of reading habits.

Closely related to the codes enumerated above for the separation of words are other symbols which connoted the unity of words. Signs of a sort indicating that an incomplete word at the end of a line would be continued on the next line seem to have been used in antiquity, for they are present in at least one fragment of unseparated Latin script written before the end of the third century A.D.⁶¹ However, special signs to show incomplete words at line ending seem never to have been common, and they disappeared without apparent trace in the richly documented *scriptura continua* of the patristic age. In the earlier interpunct separated script, a more common but still relatively rare sign of word continuation had been a negative one: the absence of an interpunct at line ending when a word was left incomplete in writing where points were regularly placed at lines ending in a

⁵⁹ See Wolfenbüttel, Herzog August Bibliothek, ms. Weissenburg 101, P. SAENGER, *Coupage et séparation des mots sur le Continent au moyen-âge*, in H.-J. MARTIN - J. VEZIN, *Mise en page et mise en texte du manuscrit*, Paris, 1990, pp. 450-455.

⁶⁰ VEZIN, *Manuscrits des dixième et onzième siècles*, p. 293.

⁶¹ A. MARIOTTI, *Testo letterario latino non identificato*, «Athenaeum», n.s., XXV, 1947, pp. 166-170.

complete word.⁶² This sign disappeared of necessity with the prevalence of *scriptura continua*.

Signs of word continuation re-emerged with unprecedented prominence in close conjunction with the spread of separated script in the high and central Middle Ages.⁶³ The chronological and geographical synchronization of the appearance of new signs indicating word continuation with the reappearance of separated script (more than half a millennium after their initial disappearance), in circumstances which precluded any plausible possibility of the emulation of ancient models, suggests a psychological link to changing reading habits. Word separation of necessity reflected a greater awareness of the graphic unity of the word which signs of continuation were intended to preserve. Moreover, the concern with graphic signs for denoting the unity of the word in turn suggests a decoding process oriented toward morphemes rather than the phonemes that had been fundamental to the reading techniques of antiquity. The broader field of vision afforded by separated script was prerequisite for enabling readers to perceive readily in peripheral vision the new cues pertaining to word continuation.

Signs signifying the continuation of words seem first to have appeared in Insular manuscripts of the late eighth century, but they did not become popular in England until the late tenth and eleventh centuries.⁶⁴ In modern English these signs are customarily denoted as hyphens, but in this study they shall be identified as *traits d'union* to avoid confusion with the true ancient

⁶² In lapidary inscriptions, this practice was rare, see GORDON - GORDON, *Palaeography of Latin Inscriptions*, pp. 183-184; GORDON, *Illustrated Introduction to Latin Epigraphy*, p. 13; R. CAGNAT, *Cours d'épigraphie latine*, Paris, Fontemoing, 1914⁴, p. 29. In manuscript books, the few surviving examples indicate that points were frequently omitted even when lines ended with complete words, E. OTHA WINGO, *Latin Punctuation in the Classical Age*, The Hague, Mouton, 1972 (*Janua Linguarum, series practica*, 133), pp. 50-67. In P. Mich. III, 159, the absence of interpunct at the end of line three seems to indicate continuation: H. A. SANDERS, *A Latin Document from Egypt*, «Transactions and Proceedings of the American Philological Association», LV, 1924, pp. 21-34 and pl. 4 following p. 248.

⁶³ CLA Suppl. (1971): nos. 1679 and 1703. This has been observed by J. J. JOHN, *Latin Paleography*, in J. M. POWELL, *Medieval Studies: An Introduction*, Syracuse, N.Y., Syracuse University Press, 1976, p. 41; J. VEZIN, *Les manuscrits datés de l'ancien fonds latin de la Bibliothèque Nationale de Paris*, «Scriptorium», XIX, 1965, p. 86; VEZIN, *Manuscrits des dixième et onzième siècles*, p. 287.

⁶⁴ N. R. KER, *Catalogue of Manuscripts containing Anglo-Saxon*, Oxford, Clarendon Press, 1957, pp. xxxv-xxxvi.

hyphen regularly enumerated by medieval grammarians and used by medieval scribes which had a related but, as shall be seen, distinctly different function. Almost always, the shape of the note used for the *trait d'union* differed from that of the hyphen.⁶⁵ *Traits d'unions* first became common in the central and high Middle Ages. They were ignored by early and central medieval treatises on *prosodiae* and were explicitly mentioned only in the fifteenth century.⁶⁶ With the exception of Jean Vezin's study of the manuscripts of Angers and related articles, their presence has been entirely ignored in Latin paleographic literature.⁶⁷ However, the presence of *traits d'union* has been noted by students of vernacular philology, particularly Anglo-Saxon and Provençal.⁶⁸

The true hyphen, a semi-circular mark written below the line as opposed to the medieval *trait d'union*, had its origins in ancient *scriptura continua* and was introduced into written Latin along with the other Greek diacritical signs, critical signs, and marks of punctuation in the late second or third century A.D. when the Romans, in emulation of the Greeks, adopted *scriptura continua*. Both Greek and Roman grammarians described the hyphen as an artificial aid to the reader. Roman school masters probably employed it when teaching pupils to read from wax tablets.⁶⁹ Both the hyphen and the *diastole* helped to overcome the difficulty of the correct pronunciation of oral verse when the juxtaposition of certain words and syllables rendered word boundaries, and therefore correct accentuation, ambiguous in unseparated script. Occasional examples of the hyphen and the *diastole* survive in the extensive corpus of Greek papyri, but none occur in the smaller

⁶⁵ In the eleventh century at Fleury, there are a few examples of hyphen-shaped *traits d'union*. Such marks also occur in Erlangen-Nürnberg, Universitätsbibliothek 379, Ps. Boethius, *De geometria* (in two books).

⁶⁶ CH. THUROT, *Notices et extraits de divers manuscrits latins pour servir à l'histoire des doctrines grammaticales au moyen-âge*, in *Notices et extraits de manuscrits de la Bibliothèque Nationale et autres bibliothèques*, XXII/2, Paris, Imprimerie Impériale, 1868, p. 46.

⁶⁷ VEZIN, *Les scriptoria d'Angers*, p. 156.

⁶⁸ See *Early English Manuscripts in Facsimiles*, VI, p. 25; XIII, p. 26; XVI, p. 21. For Provençal, see H. HOEPNER - P. ALFARIC, *Le chanson de Sainte-Foy*, Paris, Les Belles Lettres, 1926, pp. 22-23.

⁶⁹ On the use of wax tablets in ancient schools, see MARROU, *Histoire de l'éducation dans l'Antiquité*, pp. 234-235, 259, 267, 406, 602 and *passim*.

corpus of classical Latini papyri and patristic parchment *codices*.⁷⁰ In contrast, the hyphen became a not uncommon mark of scribal punctuation to correct errors in spacing in the high Middle Ages when space began to intrude into text as a cue for both word and syllable division. The hyphen continued to be used in the central Middle Ages with separated script. It thus evolved in medieval Europe from an occasionally used pedagogical mark intended to facilitate oral pronunciation by beginning readers preparing a difficult text for recitation, to a consistently used sign, placed in books either by the scribe or a professional emendator and intended to facilitate both oral and silent reading. In this new role, its chief function was to correct an inappropriately placed space or a space of inappropriate quantity.

The prevalent use of the hyphen by scribes reflected a change in mentality, for its regular presence in manuscripts dating from the eighth century onward is an indication of the acceptance of new codes conferring a significance to space other than that of an occasional sign of punctuation.⁷¹ Recording the presence of hyphens is therefore of considerable significance for the history of reading, but like so many of the other pertinent details relating to the changing conventions for the transcription of the Latin page, it has never been regularly recorded in catalogue descriptions of medieval manuscripts.

The most significant marks intimately linked to the separation of words were those pertaining to the syntactic relation between

⁷⁰ C. H. ROBERTS, *Greek Literary Hands 350 B.C. - 400 A.D.*, Oxford, Clarendon Press, 1955, gives no examples of the hyphen in Greek papyri; E. G. TURNER, *Greek Manuscripts of the Ancient World*, nos. 23 and 34 gives two examples of the *diastole*, all in Greek. GORDON - GORDON, *Palaeography of Latin Inscriptions*, record no instance of either in lapidary use, and WINGO, *Latin Punctuation in the Classical Age*, gives no examples from Latin papyri. I know of no example of either in surviving Latin codices or documents from the patristic age.

⁷¹ See E. A. LOWE, *CLA*, IV (1947), p. viii; WINGO, *Latin Punctuation in the Classical Age*, pp. 127-131. Lapidary examples of space as punctuation include A. E. GORDON, *Album of Dated Latin Inscriptions*, Berkeley, University of California Press, 1958-1965, nos. 28a and 109. Manuscript examples include *CLA*, VIII (1959), no. 1031; III (1938), no. 295; I (1934), no. 1a; IV (1947), nos. 445, 491. See R. W. MÜLLER, *Rethorische und syntaktische Interpunktion: Pausenbezeichnung im antiken Latein*, Inaugural-Dissertation, Tübingen, 1964, p. 22-27; cfr. J. MOREAU-MARÉCHAL, *Recherches sur la ponctuation*, «Scriptorium», XXII, 1968, p. 59. The spaces present in the wooden tablets found at Vindolanda (England), dating from the end of the first century A.D., may be signs of rudimentary punctuation, cfr. A. K. BOWMAN - J. D. THOMAS, *Vindolanda: The Latin Writing-tablets*, London, Society for the Promotion of Roman Studies, 1983.

words. These marks were entirely unknown in antiquity and emerged for the first time in separated Insular writing of the eighth century.⁷² Initially, inter-linear emblematic notes simply denoted words with related terminal inflections and in some instances, identified in encoded form specific syntactical functions such as subject, verb, and object. Later, construction notes provided this information by directing the reader to reorganize sentences in an artificial sequence so that the sense of a Latin sentence could be most easily understood. Within the larger context of linguistic history, word separation and word order represented two principal and complementary simplifications of Latin which distinguished the written language of scholasticism from that of Tacitus and Augustine. In conjunction, word separation and word order made Latin a more analytic vehicle for the expression of thought.

Fixed conventions for the proper ordering of words in sentences was not a mode of signifying in the graphic *langue* of ancient Greek and Latin. Whereas word order in the written form of modern western European languages is syntactically essential, its prevailing absence in written ancient Greek and Latin was syntactically indifferent.⁷³ In both languages, as in other ancient Indo-European languages including Sanskrit, the relationship between words was conveyed by inflection and not by permutation of sequence.⁷⁴ Permutation of sequence only very

⁷² See M. KORHAMMER, *Mittelalterliche Konstruktionshilfen und Altenglische Wortstellung*, «Scriptorium», XXXIV, 1980, pp. 18-58 and F. C. ROBINSON, *Syntactical Glosses in Latin Manuscripts of Anglo-Saxon Provenance*, «Speculum», XLVIII, 1973, pp. 443-475.

⁷³ J. P. POSTGATE, *Flaws in Classical Research*, «Proceedings of the British Academy», III, 1907-1908, pp. 166-167.

⁷⁴ A. MEILLET - J. VENDRYES, *Traité de grammaire comparée des langues classiques*, nouveau tirage revu, Paris, Champion, 1968, p. 578. On the free word order of Greek, see T. D. GOODELL, *The Order of Words in Greek*, «Transactions of the American Philological Association», XXI, 1890, p. 547; E. DIECKERS, *Die Stellung des Verbs im Griechischen und in der verwandtern Sprachen*, Straßburg, 1911; H. FRISK, *Studien zur griechischen Wortstellung*, Göteborg, Elanders boktryckeri aktiebolag, 1932, and P. CHANTRAINE, *Les recherches sur l'ordre des mots en grec*, «Anales de filologia clasica [Buenos Aires]», V, 1952, pp. 72-80 and most recently K. J. DOVER, *Greek Word Order*, Cambridge, Cambridge University Press, 1960. On the even less constrained order of words in Latin, see J. MAROUZEAU, *Traité de stylistique latine*, Paris, Les Belles Lettres, 1954³, pp. 1-11, 228-245 and Id., *L'ordre des mots dans la phrase latine*, Paris, I-II, Champion, III-IV, Les Belles Lettres, 1922-1953. See also N. I. HERESCU, *Entretiens avec J. Marouzeau*, Catania, Centro di Studi sull'antico Cristianesimo - Università di Catania, 1962, pp. 21 and 75-78, and H. DUBOURDIEU, *Étude sur l'ordre des mots en latin: enclave et disjonction d'après César*, «Guerre des Gaules» V, VI, VII, «L'information littéraire», XXII, 1957, pp. 175-180. The

rarely had consequences on sense, but rather it formed a fundamental element of mellifluous style especially in Latin prose and verse. In the periodic sentences of antiquity, which were often syntactically imperfect in their delineation, long portions of text had to be read and retained in memory without being fully understood before ambiguity in constructions could be resolved and the meaning rendered apparent.⁷⁵ The grammatical ambiguity of classical Latin compounded the graphic ambiguity of *scriptura continua* and encouraged the practice of oral reading as a mnemonic tool for abstracting meaning from linguistic and graphic structures which were inherently ambiguous. By contrast, in the Latin of the central Middle Ages and in the emerging written romance vernacular languages written with interword space, ambiguity was reduced as conventions of word groupings and word order became an important adjunct and, for the vernacular, an alternative to inflection for conveying syntax.⁷⁶ Laboratory experiments on eye movements conducted by cognitive psychologists confirm that English texts in subject-verb order are more easily and efficiently read than those in a convoluted order.⁷⁷

question has most recently been reviewed by J. N. ADAMS, *A Typological Approach to Latin Word Order*, «Indogermanische Forschungen», LXXXI, 1976, pp. 70-99. Attempts to detect the traces of an anterior word order in ancient literature are purely speculative, see also W. P. LEHMANN, *Contemporary Linguistic and Indo-European Studies*, «PMLA», LXXXVII, 1972, pp. 976-993.

⁷⁵ The role of short-term memory in ancient reading is to be contrasted to the role of short-term memory today, clearly elucidated by E. WANNER, *On Remembering, Forgetting, and Understanding Sentences*, The Hague, Mouton, 1974 (Janua Linguarum, Series minor, 170). See also P. N. JOHNSON-LAIRD - R. STEVENSON, *Memory for Syntax*, «Nature», CI, vol. CCXXVII, 1970, p. 412.

⁷⁶ A. DAUZAT, *Histoire de la langue française*, Paris, Payot, 1930, pp. 402-403, 425-427 and 435-439; A. DAUZAT, *Les étapes de la langue française*, Paris, P.U.F., 1948, pp. 26, 46 and 65-66. The study of medieval Latin syntax and in particular the grouping of syntactically related words and conventions for word order and clause order within sentences have been largely ignored by some of the standard works on medieval Latin, e.g. K. STRECKER, *Introduction to Medieval Latin*, English translation and revision by R. B. Palmer, Berlin, Weidmann, 1957, pp. 63-68. For useful statements on the subject, see M. HUBERT, *Quelques aspects du latin philosophique aux XII^e et XIII^e siècles*, «Revue des études latines», XXVII, 1949, pp. 211-233; J. HERMAN, *Le latin vulgaire*, Paris, P.U.F., 1970², pp. 83-90; K. P. HARRINGTON, *Mediaeval Latin*, Boston-New York etc., Allyn & Bacon, 1925, pp. xxvi-xxviii and SCAGLIONE, *The Classical Theory*, pp. 105-112.

⁷⁷ H. LEVIN - A. BUCKLER ADIS, *The Eye-Voice Span*, Cambridge, Mass., s.d., pp. 109-147; the diagrams on p. 116 curiously resemble those of the modists, cfr. G. L. BURSILL-HALL - I. ROSIER, *La grammaire speculative*, Stuttgart-Bad Connstatt, Formann-Holzboog, 1982 («Grammatica speculativa», s. 2, n. 1), p. 22.

The medieval sensitivity to word order formed part of a broader tendency to group syntactically related words into what medieval grammarians referred to as contiguous continuations of letters.⁷⁸ This development reflected the medieval propensity to define Latin syntax according to the principles of logic.⁷⁹ To grammarians of the twelfth century, the *continuatio* of an ancient Latin text implied its construing or rephrasing into unambiguous and «correctly» ordered medieval Latin prose. Subsequent medieval grammarians, particularly the modists, came to refer to this analytical order which they imposed on classical norms as the Latin's natural order.⁸⁰ *Hyperbaton*, defined only vaguely by the ancients, became linked to a violation of this order and the boundaries of word grouping or *sectiones* within sentences.⁸¹ Such a logical restructuring of language was a necessary prerequisite, during the central and late medieval period, for the introduction of consistent signs of syntactic punctuation.⁸² The sentence as «un sens total... énoncé par plusieurs propositions qui se succèdent rapidement, et dont chacune a un sens fini et qui semble complet», fundamental for punctuation and facile comprehension in silent reading as we now know it, was born.⁸³

⁷⁸ Guillaume de Conches uses the phrase «de continuatione vel expositione littere»; see E. JEAUNEAU, *Deux rédactions des gloses de Guillaume de Conches sur Priscien*, «Recherches de théologie ancienne et médiévale», XXVII, 1960, p. 225; E. JEAUNEAU, *Guillaume de Conches: Glosae super Platonem*, Paris, Vrin, 1965 (Textes philosophiques du Moyen-Âge, 13), p. 67.

⁷⁹ J. GOLLING, *Einleitung in die Geschichte der lateinischen Syntax*, in G. LANDGRAF, *Historische Grammatik der lateinischen Sprache*, III/1, Leipzig, Teubner, 1903, pp. 28 and 37.

⁸⁰ See THUROT, *Notices et extraits*, pp. 341-350.

⁸¹ See the comments of the ninth century Irish monk MURETHACH, *In Donati artem maiorem*, ed. L. HOLTZ, in *Grammatici Hibernici Carolini aevi*, I, Turnhout, Brepols, 1977, (Corpus christianorum, continuatio mediaevalis, 40), p. 244; ANONYMUS, *ars 'Laureshemensis' (expositio in Donatum maiorem)*, ed. B. LÖFSTEDT in *Grammatici Hibernici Carolini aevi*, II, Turnhout, Brepols, 1977, (Corpus christianorum, continuatio mediaevalis, 40A), pp. 231-235; SEDULIUS SCOTTUS, *In Donati artem maiorem*, ed. B. LÖFSTEDT in *Grammatici Hibernici Carolini aevi*, III, Turnhout, Brepols, 1977, (Corpus christianorum, continuatio mediaevalis, 40B), pp. 384-385; cfr. QUINTILIANUS, *Institutio oratoria*, VII, III, 62; IX, I, 3; IX, I, 6; IX, I, 13.

⁸² See the close relationship between contiguous order and syntax in Roger Bacon's exposition of the notes of punctuation in his *Opus tertium* edited by J. S. BREWER, *Fr. Rogeri Bacon opera quaedam hactenus inedita*, I, London, Longman, Green, Longman & Roberts, 1859, (Rolls Series, 15), pp. 248-256.

⁸³ N. BEAUZÉE, *Grammaire générale ou exposition raisonnée des éléments nécessaires du langage, pour servir de fondement à l'étude de toutes les langues*, Paris, Alain Delalain, 1819², p. 783 (*non vidi*), cited by SCAGLIONE, *Classical Theory of Composition*, p. 220.

A notion of word order, and more generally of word groupings within sentences, was foreshadowed in the vulgar Latin of the very end of the Imperial period.⁸⁴ The influence of this simpler and more direct language may be detected in Jerome's Vulgate translation of the Bible from the Hebrew which reproduced to a degree greater than is usually appreciated the fixed sequence of words which was an attribute of ancient Hebrew and New Testament Greek.⁸⁵ The Latin of the Vulgate with its simpler and shorter sentences and tendency towards subject verb object word order made far less demands on readers to maintain ambiguous text in memory than the Latin of Cicero or even Jerome's own epistolary corpus. The *per cola et commata* page format which Jerome introduced as an essential element of the manuscript text of the Vulgate complemented this effect. The Vulgate, in turn, became a primary model for medieval Latin, and its great influence along with Boethius's translations of Aristotle's *Logica vetus* encouraged the use of the shorter grammatical constructions and conventional word order which were eventually to become normal in *ancien français* and Provençal.⁸⁶

However, while the model of Jerome's Vulgate Bible had enduring syntactical influence, it was not until the late eighth century that word order became a matter of conscious concern as evidenced in the codices exhibiting word separation in which Irish scribes began the practice (which lasted into the sixteenth century) of placing construction marks above words so as to enable the reader to re-arrange mentally the text according to its sense, as defined by conventional syntax, rather than to decode it using memory while reading in lineal progression.⁸⁷ The expanded

⁸⁴ See J. N. ADAMS, *The Vulgar Latin of the Letters of Claudius Terentianus* (P. Mich. VIII, 1977), Manchester, s.d., pp. 467-472 and J. N. ADAMS, *The Text and Language of a Vulgar Latin Chronicle (Anonymous Velesianus II)*, «University of London, Institute of Classical Studies Bulletin», Supplement no. 36, 1976, pp. 135-137.

⁸⁵ For word order in the Greek of the time of the apostles, see P. BARTH, *Zur Psychologie der gebundenen und der freien Wortstellung*, «Philosophische Studien», XIX, 1902, p. 46; W. WUNDT, *Völkerpsychologie*, I, *Die Sprache*, Leipzig, Engelmann, 1900, p. 369.

⁸⁶ See Q. I. M. MOK, *Un traité médiéval de syntaxe latine en français*, in *Mélanges de linguistique et de littérature offerts à Lein Geschiere, par ses amis, collègues et élèves*, Amsterdam, Ropodi, 1975, pp. 42 and 45.

⁸⁷ The oldest codex with contemporary construction marks appears to be the Epistles of Paul, Würzburg, Universitätsbibl. Mp. th., f. 12, see the facsimile edition of L. C. STERN, *Epistolae beati Pauli glosatae glosa interlineali: Irisch-lateinischer Codex der Würzburger Universitätsbibliothek*, Halle a. S., Niemeyer, 1910, p. xiv.

vision of text, physiologically created by word separation and quantifiable in terms of what modern psychologists would term an enhanced eye-voice span, enabled the reader to use these signs effectively. The presence of these marks, and, from the ninth century onward, of sequential construction notes implied a shift on the part of the reader from the aural retention in memory of words with their terminal inflections to visual memory and a direct visual access to meaning derived by combining encoded images on the written page.⁸⁸ In the context of classical and patristic texts transcribed in the British Isles, sequential construction notes thus constituted the earliest rudiments of purely syntactical punctuation. It is interesting to observe that in modern times, syntactical gestures, analogous to written syntactical signs, have been integrated into the standard American sign language of the deaf to accelerate access to meaning and thereby to avoid excessively burdening visual memory with the retention of ambiguous strings of words, a task for which orality plays such a significant role among the hearing.⁸⁹

In medieval Latin prose, the enhanced observation of conventions of word sequence and word grouping, which sequential construction signs implied, reduced the time lag between the phonic (whether internal or external) conversion of a sign for a word and the reader's full comprehension of the word based on its grammatical context.⁹⁰ Modern laboratory experiments reveal that observation of fixed conventions of word sequence in unseparated printed text facilitates the identification of word boundaries and in separated text extends the field of

⁸⁸ For the ninth century Irish use of sequential construction signs, consult M. DRAAK, *Construe Marks in Hiberno-Latin Manuscripts*, in «Mededelingen der koninklijke Akademie van Wetenschappen», afd. Letterkunde, n.s. XX/10, 1957, pp. 261-282 and M. DRAAK, *The Higher Teaching of Latin Grammar in Ireland during the Ninth Century* in «Mededelingen der koninklijke Akademie van Wetenschappen» afd. Letterkunde, n.s. XXX/4, 1967, pp. 109-144. For the impact of word and related graphic images as opposed to oralization on memory, see J. T. E. RICHARDSON, *Mental Imagery and Human Memory*, New York, St. Martin's Press, 1980.

⁸⁹ V. L. HANSON - U. BELLUGI, *On the Role of Sign Order and Morphological Structure in Memory for American Sign Language Sentences*, «Journal of Verbal Learning and Verbal Behavior», XXI, 1982, pp. 621-633.

⁹⁰ Hugh of Saint Victor in his chapter on *De ordine legendi*, outlined the logical process in which first the syntax and then the sense was mastered: C. H. BUTTIMER, ed. *Hugonis de Sancto Victore Didascalicon de studio legendi*, Washington, D.C., Catholic University Press, 1939, p. 58.

vision at each ocular fixation as measured by the eye-voice span.⁹¹ Experiments also show that separated writing enhances the reader's short-term memory of word order, and, in the modern European languages, word order remains far more rigorous in written than in oral expression.⁹² It is, thus, demonstrable that the introduction of rigorous conventions of word sequence and word separation, each a departure from classical norms, reduces the burden of short-term memory in reading and produces similar and complementary physiological effects which enhance the reader's ability to comprehend written text silently. Both word separation and word order facilitated lexical access and thereby made reading easier and more rapid.

The emergence of construction notes has additional significance for the historian of reading because they were among the earliest to belong to a generic group of signs, juxtaposed with text, which emerged on the medieval page. They provided supplementary information as a guide to the meaning of text. Although they did not form part of the text itself, the reader was expected to perceive them simultaneously with the text. These new medieval signs included notes for the punctuation of sense, notes for the identification of citations, tie notes, and musical notation. Of these, the signs for the punctuation of sense were of particular importance. They had precedents in the word-separated Syriac Biblical codices of Late Antiquity, known in Ireland at an early date. But here, I touch upon another and quite complex portion of the story which I will treat in fuller detail in another portion of my study.

⁹¹ See G. A. KLEIN - H. A. KLEIN, *Word Identification as a Function of Contextual Information*, «American Journal of Psychology», LXXXVI, 1973, pp. 399-406. See also H. LEVIN - E. L. KAPLAN, *Grammatical Structure and Reading*, in H. LEVIN - J. P. WILLIAMS, *Basic Studies on Reading*, New York, Basic Books, 1970, p. 120, and TAYLOR - TAYLOR, *Psychology of Reading*, pp. 124 and 151.

⁹² I. BEGG, *Recognition Memory for Sentence Meaning and Wording*, «Journal of Verbal Learning and Verbal Behavior», X, 1971, p. 180; J. S. SACHS, *Memory in Reading and Listening to Discourse*, «Memory and Cognition», II, 1974, p. 99. See also VENDRYES, *Le langage*, p. 390.