Reading and Singing: On the Genesis of Occidental Music-Writing

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About the year 795, Charlemagne wrote to Baugulf, the Abbot of Fulda,

It has seemed to us and to our faithful councillors that it would be of great profit and sovereign utility that the bishoprics and monasteries of which Christ has deigned to entrust us the government should not be content with a regular and devout life, but should undertake the task of teaching those who have received from God the capacity to learn... Doubtless good works are better than great knowledge, but without knowledge it is impossible to do good.¹

Fulda, a royal monastery, occupied a leading place in the eastern part of Charlemagne’s empire. This passage begins a mandate to

¹ ‘Notum igitur sit Deo placitae devotioni vestae, quia nos una cum fidelibus nostris consideravimus utile esse, ut episcopia et monasteria nobis Christo propitio ad gubernandum commissa praeter regularis vitae ordinem atque sanctae religionis conversationem etiam in litterarum meditationibus eis qui donante Domino discere possunt secundum uniuscuiusque capacitatem docendi studium debeant impendere... Quamvis enim melius sit bene facere quam nosse, prius tamen est nosse quam facere.’ The text is edited by L. Wallach in Alcuin and Charlemagne: Studies in Carolingian History and Literature (Ithaca, 1959), pp. 202-4. Wallach dates it to the period 794-800, and regards it as essentially the work of Alcuin, an attribution that is generally accepted (see D. A. Bullough, ‘Europae Pater: Charlemagne and his Achievement in the Light of Recent Scholarship’, The English Historical Review, 85 (1970), pp. 59-105). While it was initially addressed to Baugulf, it was reissued as a circular letter, and is generally referred to as ‘Epistola’ or ‘Capitulum de litteris colendis’.

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Baugulf to exercise his position in advancing the religious-educational aims that Charlemagne and his advisors had been pursuing vigorously for more than a decade.

The creation of an educated class was a sine qua non for the secular and ecclesiastical administration of the increasingly vast and heterogeneous domain over which Charlemagne claimed hegemony. As the only common denominator in [the] realm and as the repository of both the classical and the Christian heritage of an earlier age, the Church was the obvious means of implementing the educational program necessary to produce a trained executive . . . When it came to creating an educated class out of next to nothing, the Anglo-Saxons were past masters, and it was a shrewd move on the part of Charles to turn to York, at this time the educational centre of England . . . and in 782 to invite Alcuin, the head of its school, to take charge of his palace school and be his advisor on educational matters. 2

Under Alcuin’s leadership the court rapidly became the intellectual and artistic centre of Europe, where some of the most learned and gifted men of the time gathered: the grammarian Peter of Pisa, the historian Paul the Deacon from Montecassino, the grammarian Paulinus of Aquileia, the West-Gothic poet Theodulf, the Irish astronomer Dungal. Collectively they have sometimes been referred to as an ‘academy’, and indeed Alcuin himself identified his colleagues as ‘achademici’. And in view of the general revival of learning, and of the large number of classical texts that were transmitted through their activities – it amounts to the greater part of Latin literature altogether3 – the cultural explosion they touched off has been known as a ‘renaissance’. But these designations probably constitute a misplaced emphasis, considering the overall purposes, at least of the persons in charge. The collecting and editing of classical texts must be further understood in the light of the educational program, which ‘aimed at literacy rather than literature; . . . the classical content . . . was entirely subsidiary to the Christian purpose’. 4 Putting it even more bluntly, the ‘goal of the

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4 Reynolds and Wilson, *Scribes and Scholars*, p. 83.
"educational program" was the transmission of the ability to read and understand the Bible itself; the liberal arts constituted the basic preparation for that. It was the setting of a purely theological, even spiritual goal.\textsuperscript{5}

The value of classical texts, from this point of view, lay less in their contents than in the models they provided for a uniform language, a language for the patristic and ecclesiastical texts of which exemplars of high quality were also being prepared on the direct initiative of Charlemagne. And the broadcasting of texts was accompanied by the production or reproduction of pedagogical handbooks about the several aspects of their language: rhetoric, dialectic, metrics and, most important, grammar.

Perhaps it would be better to think of the 'Carolingian renaissance' as a renaissance not so much of the culture of classical antiquity as of literacy and of the Latin language. From our vantage point it is easy to overlook the urgency that this must have had at the time. By the eighth century speakers of the vernacular offshoots of Latin very likely could understand neither written Latin nor one another. But in addition there were speakers of the Germanic, Slavic, and non-Indo-European dialects and languages of tribes migrating into Western Europe. Without a written standard language, administration, worship and learning over a widening domain must have been severely handicapped under such conditions of polyglottism.

Contemporary documents are quite explicit about the objectives. In the circular 'de litteris colendis' the ecclesiastical and monastic officials to whom it was addressed were charged with organising the 'litterarum studia', the object of which was an accurate knowledge of Scripture on the parts of the monks and clergy. The importance of possessing correct texts and of being able to read them correctly is spelled out clearly in the \textit{Admonitio generalis} addressed by the king to the clergy on 23 March 789.

Having given instructions to the heads of dioceses and abbeys to set up schools, and having mapped out their general programme, the King continues: 'And see that you emend the catholic books with care' – or it may be, 'and see that you have carefully emended catholic books' – 'since all too often men desire to ask some grace of God aright but ask it ill, because the books are faulty. And do not allow your young clerks to corrupt the text of

\textsuperscript{5} F. Brinholzl, 'Der Bildungsauftrag der Hofschule', \textit{Karl der Grosse}, ii, p. 32 (my translation).
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described books, either in reading aloud or in copying; if a copy of the Gospel, psalter or missal is needed, see that it is made by a grown man, working with due care.\textsuperscript{6}

This great undertaking required books in unprecedented numbers. ‘One of the more obvious aspects of the Carolingian age is the staggering amount of parchment it consumed.’\textsuperscript{7} ‘It is striking that after the beginning of Charlemagne’s reign the number of sources increases in extraordinary measure. One sees in this – and this is truly one of the most astonishing of Charlemagne’s effects – that, as no other medieval ruler, he loosened the tongues of his contemporaries and set their pens in motion. \textit{Calamo currente} there was an effort under his influence, at the court and in the monasteries and bishoprics, to write down what the past handed on as worthy of knowing, and what moved the present.’\textsuperscript{8} ‘After 769 Charlemagne’s demands on bishops and abbots were continually renewed and escalated, and the places of active and conscious scriptural culture multiplied accordingly. From decade to decade the number of schools increases in which the ever-more-widely transmitted material can be recognised.’\textsuperscript{9}

That Charlemagne issued in writing the directives for the educational programs that were to transform his kingdom, is itself characteristic. From the 780s and 90s there are signs of a substantial increase in the use of the written word for administrative purposes of all sorts. Ganshof writes: ‘It reflects aspirations towards a clearer view of things and a concern for order, stability and system in state and society, goals characteristic of Charlemagne, which the written word could help to promote. In the years following the imperial coronation we find still greater emphasis on written records, as is consistent with what we know of the Emperor’s efforts . . . to make his government more efficient . . . There seems to me no doubt that the use of the written word for administrative purposes was an act of policy.’\textsuperscript{10}

\begin{thebibliography}{9}
\bibitem{6} F. L. Ganshof, \textit{The Carolingians and the Frankish Monarchy} (London, 1971), p. 29. ‘Et libros catholicos bene emendate [emendatos in some sources], quia saepe, dum bene aliqui Deum rogare cupiunt, sed per inemendatos libros male rogant. Et pueros vestros non sinite eos legendo vel scribendo corrumpere. Et si opus est evangelium, psalterium et missale scribere, perfectae aetatis homines scribant cum omni diligentia.’
\bibitem{7} Reynolds and Wilson, \textit{Scribes and Scholars}, p. 90.
\bibitem{9} Bischoff, ‘Panorama’, p. 234 (my translation).
\bibitem{10} Ganshof, \textit{The Carolingians}, pp. 133–4. Charlemagne’s attitude about this seems to have extended to his subordinates. In an edict of 808 he required that every bishop, abbot, and
\end{thebibliography}
Because writing played such a central role in so many aspects of the transformation that was being achieved, the forms of writing themselves became a critical factor. The desiderata are obvious: a uniform writing system that would be the same throughout the realm, that would be relatively quick to write and easy and attractive to read, and that would be economical in its consumption of parchment space. Through the first half of the eighth century a wide range of script styles was in use in Europe, most of them lacking in just these respects. But within a decade (772–80) scribes at Corbie, proceeding from the early minuscule scripts of Merovingian Gaul, developed a graceful and clear script with separate letters that are uniform in all dimensions, the Caroline minuscule. With the direct encouragement of Charlemagne and Alcuin, it was universally adopted throughout the Empire within a few decades, and it constitutes the basic form of most European writing down to the present.¹¹

The Corbie scriptorium, in which was accomplished the perfection of the Caroline minuscule during the 770s, also achieved during the next decade the completion of the system of punctuation. The basic purpose was the same: the transmission of texts in the most comprehensible form possible.

One read aloud in those times. As signs for the reader as to when the voice was to be raised or lowered and when pauses should be made, so that the articulation of clauses and sentences would help to clarify the sense of the text for listeners, punctuation marks were set in the written texts. Instructions for doing so had been handed down through the treatises of Roman grammarians: a low point . for a short pause after an incomplete clause (comma); a medial point : for a medium pause after a clause that can be complete in itself but whose content can be continued (colon); and a high point . for the end of the sentence (periodus; these terms designate the portions of the sentence, not the punctuation marks, or positurae).¹² In the mid-sixth century Cassiodorus wrote that he had pointed a psalter with ‘distinctiones’, and in the early seventh century Isidore of Seville count retain a notary. (‘Ut unusquisque episcopus et abbas et singuli comites suum notarium habeant’ (Monumenta germaniae historia [MGH], Leges, ed. G. Pertz, 5 vols., i, p. 131: Karoli magni capitularia, December 808, c.4). ¹¹ The history is well summarised in Reynolds and Wilson, Scribes and Scholars, pp. 84–5. ¹² Cf. B. Bischoff, ‘Interpunktion’, Deutsche Philologie im Aufriss, ed. W. Stammler, 3 vols. (Munich, 1975), i, p. 438.
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entered the prescriptions for the *positurae* into his *Etymologiarum*.\(^\text{13}\)

The principles about word-grouping that they entail entered medieval music theory through the *Musica enchiriadis*\(^\text{14}\) as the basic concept, through analogy, for the structure of melody and as the foundation for a theory of text-setting.\(^\text{15}\)

But in fact the rules of the grammarians were widely disregarded by or, more likely, unknown to scribes in the early middle ages, who used instead a wide range of combinations of the point, virgula (\(\checkmark\)), and comma (\(\checkmark\) or \(\checkmark\)). It was to this repertory that the Corbie scriptorium added the question mark (\(\checkmark\) and \(\checkmark/\) or \(\checkmark/\)).\(^\text{16}\) With the same concern for clarity and uniformity of expression that had led Charlemagne to insist on the universal adoption of the Caroline minuscule script, Alcuin wrote of the importance of punctuation practice.\(^\text{17}\)


\(^\text{14}\) Edited by H. Schmid as *Musica et Scolica enchiriadis, una cum aliquibus tractatulis adiunctis recensio nova post Gerbertinam altera ad fidem omnium codicum manuscriptorum*, Bayerische Akademie der Wissenschaften, Veröffentlichungen der musikhistorischen Kommission 3 (Munich, 1981).

\(^\text{15}\) This idea is well developed in the treatise *On Music* by John (of Afflighem?), Chapter 10; see C. V. Palisca, ed., *Hucbald, Guido, and John on Music: Three Medieval Treatises Translated by W. Babb* (New Haven, 1978).


\(^\text{17}\) E.g. in this comment on the punctuation of the scribes at Tours:

\begin{quote}
Videntur vero distinctiones vel sub distinctiones licet ornatum faciant pulcherrimum in sententiis, tamen usus illorum propter rustitatem pene recessit a scriptoribus.
\end{quote}

\(\text{MGH, Epistolae, 4, p. 285}\); and in these verses on the importance of punctuation to the reader in the church:

\begin{quote}
Per cola distinguant proprios et commata sensus,
Et punctos ponant ordine quoque suo,
Ne vel falsa legat, taceat vel forte repente
Ante pios fratres lector in ecclesia.
\end{quote}

\(\text{MGH, Poetae Latini Aevi Carolini}, 1, p. 320, carmen xciv\).
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To us, for whom written language is an autonomous substantive language with many parallels to spoken language that allow it to represent spoken language, without necessarily depending on it, punctuation signs indicate something about the structure of language units. An early medieval text was always either a program for or a record of the spoken word. To an early medieval reader punctuation signs were indicators for the performance of a text. Medieval texts show other graphic indicators with the same general purpose, some of which have come down to the present, others of which have not; spaces or strokes separating words; diacritical marks in the form of the virgula above particular kinds of syllables – monosyllabic words, final syllables with long ‘i’ (indicating that they are not to be pronounced with the first syllable of the following word), stressed syllables; various sign-systems that served as guides to the syntactic grouping of words; and texts laid out ‘per cola et commata’ (i.e. in separate lines for the component clauses of sentences). It is instructive that all of these devices, including punctuation before its Carolingian systematisation in the late eighth century, are more prominent in manuscripts of British origin than in continental sources. That is understandable in the light of the fact that Latin was a foreign language on British soil, where it had not been spoken for a very long time, so that there was a greater need for these ‘paratextual’ devices, as we might call them, to assist in the performance of the language. The same situation has been called upon to explain the fact that, until the ninth century, British scholars were the principal transmitters of Latin grammar-pedagogy. Alcuin’s role in all of these developments gains significance in the light of the fact that he had come from England to assume the leadership of the Carolingian educational drive.

It was just half a century or so after these seminal last decades of the eighth century that our oldest specimens of occidental music-writing were produced. The script culture that the Carolingians created is the general background against which the foundation of a notational practice becomes understandable. But, as will be shown, there were very specific connections as well, and of various kinds.

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19 See CLA, II, ‘Introduction’.
The notational monuments of the ninth century fall clearly into two categories, differentiated by the types and functions of the sources and their contents: on the one hand pedagogical tracts about music, with musical illustrations, and on the other collections of texts, mostly of an ecclesiastical nature, with neumes entered above some texts. As the sources are of fundamentally different types, so are the purposes for which notations have been written into them, and so, in turn, are the underlying ideas of what musical notation is and how it works.

The appearance virtually all at once of notations of fundamentally disparate types and purposes does, however, suggest one idea that connects them all: that their very existence is a reflection into the musical realm of the new scriptual orientation in the culture. One wrote down different kinds of music, for different particular purposes, in ways that quickly became highly differentiated. But one wrote down. And one did so in the interest of a transcendent ideal of clarity and normativity.

This is most directly apparent in the case of the pedagogical tracts. There are two such among the earliest sources: the anonymous *Musica enchiriadis* and the *Musica disciplina* by Aurelian of Réôme. Both are datable to about 840–60. Only one other document with

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21 The most recent survey is that in S. Corbin, *Die Neumen, Paleographie der Musik, 1: Die einstimmige Musik des Mittelalters* (Cologne, 1979), pp. 3.21–41. For the purposes of this paper it is necessary to add the oldest complete source for the *Musica enchiriadis*, which, although it does not contain neumes, is an essential document for the beginning of music-writing. See n. 23 below.

22 I proceed throughout this paper from the premise that these notational systems were invented during the Carolingian period, i.e. that their differentiation is not the result of a long evolution whose earlier traces have disappeared. The arguments for this belief will be developed during the course of the paper.

23 See n. 14 for details of the edition of the *Musica enchiriadis*. The oldest complete surviving source is Valenciennes, Bibliothèque municipale, MS 337 (olim 325), written at St Amand in the late ninth century. The approximate date of composition that I use here is based on Peter Dronke’s reasoning to a terminus ante quem of 859/60 for Scotus Eriugena’s Commentary on Martianus Capella, in which Commentary a version of the Orpheus allegory is presented that, as Dronke shows, is dependent upon the version in the *Musica enchiriadis*; and on the assumption that the latter would have had to be in circulation long enough for Scotus, to have borrowed from it. See P. Dronke, ‘The Beginnings of the Sequence’, *Beiträge zur Geschichte der deutschen Sprache und Literatur*, 87 (1965), pp. 43–73. The *Musica disciplina* is edited by L. Gushee as *Aureliani Rœomensis Musica disciplina*, Corpus scriptorum de musica 21 (Rome, 1975). The oldest surviving source is Valenciennes, Bibliothèque municipale, MS 148, also copied towards the end of the ninth century, and thought also to come from the St Amand scriptorium (although with reservations – see Gushee, p. 24). Gushee writes: ‘the conditions of [the Valenciennæ manuscript’s] existence offer, of all the
Reading and singing notation may have a claim to be older. They represent the beginning of a medieval tradition of pedagogical writing that constitutes a counterpart of the *artes* for teaching about language.

The controlling purpose in the *Musica enchiriadis* is 'to lay out a coherent pitch system and to explain significant relationships among its elements, the pitches. Prime significance attaches to the *symphoniae* . . .', the principal concept through which pitch relationships could be explained, against the background of the concept of 'organum', which had originally to do with sonority. Organum, in the sense of the polyphonic practice, is discussed 'not for its own sake, but in illustration of the properties of *symphoniae*'. The treatise is provided throughout with musical examples, which are called 'descriptiones' (diagrams). These, however, do not function only to illustrate the text. They are an integral part of its construction, which is based on the alternation of precepts and examples, after the form of the grammatical treatises that were the model for the *Ars musica* altogether. The examples function in two ways: they present

Aurelian manuscripts, the strongest possibility of its being close to the author's MS as it left his hands in the middle of the ninth century' (p. 23). The date used here is that generally given for the *Musica disciplina*, and Gushee has reconfirmed it on the basis of the available evidence (pp. 15-16).

On the basis of 'now and once extant MSS' Gushee characterises the *Musica enchiriadis* as 'overwhelmingly popular', and contrasts it in that respect with the *Musica disciplina*. He writes that 'the factors which worked against [the latter’s] wide dissemination during the Middle Ages [are] that it offered neither a coherent theory – [this especially as it has the aspect of a compilation] – nor a clear and unambiguous description of practice', but that – and here I agree with Gushee – 'all the same, Aurelian's work is precious' (p. 17). Its value for me lies in the opening it gives us into modes of thought and conceptions about music, and even details of practice, despite its aspects of incoherence and opaqueness. The attitude with which it is read here is that it is richly suggestive, and that, although any single conclusion that one draws from it is made hazardous by these problems and by the uncertainties in its transmission, it is worth the gamble. One point: we know hardly anything about Aurelian. If the text or musical notation in the oldest complete source were not written by him we would not have lost much; they were written by someone, and either this author was copying from Aurelian, or our interest transfers to what he thought and knew.

24 Munich, Bayerische Staatsbibliothek, Clm 9543, with a neumated prosula that Bischoff dates, with its neumes, to 820–30; see Die südostdeutschen Schreibschulen und Bibliotheken in der Karolingerzeit, 1, 2 vols. (Wiesbaden, 1974–80), pp. 203–4, Plate 4d. Corbin (Die Neumen, p. 3.29) implies scepticism about that dating but does not press the question, apparently out of respect rather than conviction.


the sound-phenomena under discussion in a visible, enduring form in order that they may be discussed in detail — the alternative would be to call them up from memory through verbal description or identification, as is done in much of the Musica disciplina — and they carry much of the weight of the explanations directly. That is, the diagram is presented and the reader’s attention is drawn to some property of the sound-phenomenon that it represents, either directly through the eye or by hearing what the diagram instructs him to sing.27 The functions are like those of diagrams in a treatise on mechanics, for example: to make the phenomenon present and stable before the reader’s eyes, and to serve as a mode of demonstration that relies on the reader’s powers of observation and reasoning and on his experience. The aims of the Musica enchiriadis could not be achieved without a musical notation.

As the properties whose explanation is the chief concern of the Musica enchiriadis have to do with relations of pitch, the required notation must be a pitch notation. And it must be sufficiently specific to enable the reader not only to recognise from it melodies that he knows, but also to read from it melodies that are new to him.28 Such a notation is a sine qua non for the treatise, and the author presents one. It is, in fact, one of the subjects of his treatise, and what he says about it is instructive for our purposes.

He makes explicit that the business of the notation is to show pitch. The notational signs he identifies as ‘sonorum signa’, ‘sonus’ being for him synonymous with ‘vox’ (=pitch).29 His descriptions of how the signs work have an elementary and axiomatic character that suggest a new practice (e.g.: ‘These signs stand for the pitch-lines that they show.’).30 (About four centuries later, similar statements

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28 ‘Dandum quoque aliquid eis est, qui minus adhuc in his exercitati sunt, quo vel in noto quolibet melo sonorum proprias discant discernere qualitates vel ignotum melum ex nota eorum qualitate et ordine per signa investigare’ (ibid., p. 10).

29 ‘Sit ut prius ex sonorum signis e regione positis cordarum progressio, et inter cordas diapente simphonia dispositione’ (ibid., p. 35). ‘Sonus quorumque vocum generale est nomen’ (ibid., p. 21).

30 ‘Sint autem cordae vocum vice, quas eae significant notae. Inter quas cordas exprimatur neuma quaelibet, utputa huiusmodi . . .’ (ibid., p. 14). The wording connotes a sense of the novelty of this.
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were made in order to establish the possibility that a written sign could stand for a duration.)\textsuperscript{31} This impression is reinforced by the author’s claims for the possibilities and advantages of the system: ‘Practice will make it possible for us to record and sing sounds as easily as we write and read letters.’\textsuperscript{32} He evidently conceived of music-writing as the functional counterpart of language-writing, and, as we shall see, Aurelian did so as well. It is one of the senses in which language-writing was the model for music-writing.

Two basic principles underlie the system of the \textit{Musica enchiriadis}, as they do all medieval Western notational systems. The first is the conception of the pitch spectrum as an array along the vertical dimension of space, from high to low (or vice versa). All Western notations represent pitches by differentiating them as higher and lower positions in a series.\textsuperscript{33} The notation of the \textit{Musica enchiriadis} refers to a fixed ordering of pitches laid out in tetrachords, and picks out individual notes by identifying them as to their positions in the respective tetrachords. In accordance with the spatial conception, each position is represented by a horizontal line, and the vertical array of horizontal lines can be represented, in turn, by the ‘Daseia’ signs, letters of the alphabet which have been modified according to a system that permits the identification of the tetrachords and the respective positions within them.

The system of lines constitutes a graph of the pitch system, on which individual pitches are indicated by writing the syllables which are sung on those notes on the appropriate lines (see Figure 1). That reveals the other underlying universal of Western notational systems: they all represent in one way or another the voice singing the syllables of speech and, in view of the other universal, moving

\textsuperscript{31} The earliest is John of Garland’s assertion that ‘All simple figures are valued according to their names, whether they are with text or not’ (‘Omnis figura simplex sumitur secundum suum nomen, sive fuerit cum littera sive non’); see my paper ‘Regarding Meter and Rhythm in the \textit{Ars Antiqua}, The Musical Quarterly, 65 (1979), pp. 524–58 (pp. 533–4).

\textsuperscript{32} ‘Sed dum forte in sono aliquo dubitatur, quotus sit, tum a semitonis, quibus constat semper deuterum tritumque disiungi, toni in ordine rimentur et mox, quis ille fuerit, agnosceatur, donec sonos posse notare vel canere non minus quam litteras scribere vel legere ipse usus efficat’ (Schmid, \textit{Musica et Scolica enchiriadis}, p. 13).

\textsuperscript{33} In ‘La représentation spatio-verticale du caractère musical grave-aigu et l’élaboration de la notion de hauteur de son dans la conscience musical occidentale’ (Acta Musicologica, 51 (1979), pp. 59–73, M.-E. Duchez argues – probably correctly – that the spatial conception of sound is not natural or universal but a product of a particular history. It is a product of the simultaneous development of a theoretical note system and the invention of notation in the ninth century, for both of which the \textit{Musica enchiriadis} is a central document.
through the sound-space as they do so.\textsuperscript{34} A conception of the unity of speech and song is fundamental to all medieval Western notational systems.

To return to the \textit{Musica enchiriadis}, it is the syllables on the lines that are the notational signs through which musical items are represented. The Daseia signs represent the notes of the system. It is like the relationship, in our modern system, between the lines and spaces of the staff, which represent the diatonic series and can be identified by letters, and the note-heads that pick out particular positions in the series as they occur in particular musical items.\textsuperscript{35} This understanding will facilitate comparison between the notational system of the \textit{Musica enchiriadis} and that of neumatic writing, which provides a different way of showing the declamation of language with its melodic inflections.

The unified conception of language and music informs the treatise's 'sonus' concept itself, which is the building block in the 'music as language' topos that runs through the medieval theoretical literature as the fundamental principle of musical structure. It allowed writers to place the temporal dimension of music on the table for analysis, just as the notational systems allowed them to

\textsuperscript{34} The conception of melody as a movement of the voice had been a central idea in the Greek view of music (thus Aristoxenus: 'In melody of every kind what are the natural laws according to which the voice in ascending or descending places the intervals? For we hold that the voice follows a natural law in its motion . . .' (O. Strunk, \textit{Source Readings in Music History}, New York, 1950, p. 26). It was transmitted as an aspect of the heritage of classical Greek thought about music by the intermediary scholars of the sixth and seventh centuries (thus Isidore of Seville: 'The first division of music, which is called harmonic, that is, the modulation of voice, is the affair . . . of all who sing' (Strunk, \textit{Source Readings}, p. 95)). And it was spelled out by Guido of Arezzo as a theory of melodic figures – the so-called 'motus theory' (see Palisca, \textit{Hucbald, Guido, and John on Music}, pp. 55 and 73–4). The spatial conception of music that underlies Western notational systems is a further, and more explicit, development of this older idea. Of course the idea itself is still active today, and is manifested in such expressions as 'melodic movement' and 'voice-leading'.

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control the pitch dimension. The idea is laid down at the very outset in the treatise, for everything ultimately depends on it. ‘Soni’ in music are what letters are in speech: the original and indivisible elements out of which the entire discourse is composed, through successively higher levels of structure. The progression in language from letters through words through commas and colons to sentences is matched by their counterparts in the single notes, figures and melodic phrases of various lengths and degrees of completeness.

The Musica enchiriadis conveys only the general sense of the parallel; there is no attempt to show that the structures of particular texts and their melodies match in this sense, or to analyse any melodies in these terms. Perhaps that is because this subject is not central to the author’s main concerns – he needed it only to establish his ‘sonus’ concept; or perhaps he had not thought it out that far. There is such demonstration and analysis in the treatise On Music by John (of Affligem?), written c. 1100. That author makes explicit what we can see again and again through the analysis of chant melodies of much greater age, that their structure was determined by the structure of their texts, as that can be laid bare by means of the grammatical concepts of comma, colon, and sentence. That will be pertinent when the time comes to compare the technologies of language- and music-writing in detail.

While the Musica enchiriadis is given over to the exposition of a system and its explanation, the Musica disciplina aims primarily to describe an ecclesiastical singing practice and to provide guidelines for differentiating the modes of a traditional repertory. Aurelian puts it in his preface that he has written the treatise in response to a request from ‘the brethren to write a detailed discourse about certain rules of melodies that are called tones or tenors and about their

36 ‘Sicut vocis articulatae elementariae atque individucae partes sunt litterae, ex quibus compositae syllabae rursus componunt verba et nomina eaque perfectae orationis textum, sic canorae vocis ptongi, qui Latine dicuntur soni, origines sunt et totius musicae continentia in eorum ultimam resolutionem desinit’ (Schmid, Musica et Scolica enchiriadis, p. 3).

37 ‘Particulae sunt sua cantionis cola vel commata, quae suis finibus cantum distinguunt. Sed cola sunt coeuntibus apte commatibus duobus pluribusve, quamvis interdum est, ubi indiscrete comma sive colon dici potest (ibid., p. 22).

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names." At the outset of Chapter xix he writes: 'At this point it is pleasing to direct the mind's eye together with the point of the pen to the melodies of the verses and to investigate in a few words what is the proper sonority of tone for each one in its lettering, so that the prudent singer may be able to distinguish the varieties of verses that turn harmoniously upon the tenor, since there are some tones that retain in their inflection an arrangement of the verses almost in one and the same way, and unless they are invested by the eye beforehand with a cautious inspection or discernment either in the middle or at the end, the tone of one mode will be changed into that of the other.' As often, it is difficult to make Aurelian's language one's own and to know exactly what he has in mind. But it is clear that at least here, if not everywhere in the treatise, the language is informed by a scriptural and visual orientation. Writing and reading—of something or other—are called upon to help with the discernments and differentiations for which memory and hearing alone could evidently not be relied upon. Whether it is musical notation that is to be invested by the eye with a cautious inspection is not clear. But there is in any case musical notation in the oldest transmission of the treatise, and there is sufficient reason to think that some of it was original to Aurelian's text. It is that notation and its principles that we want to compare with the notation of the Musica enchiriadis and its principles. It occurs, in fact, in the body of the nineteenth chapter, whose opening was quoted above.

A digression is necessary concerning the notation in the oldest transmission of the Musica disciplina. Gushee lists seven places in the text with neumes, and two that were prepared for neumes but did not receive them.41 There are in addition a number of passages where the

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39 '... rogatus a fratribus ut super quibusdam regulis modulationum quas tonos seu tenores appellant sed et de ipsorum vocabulis, rerum laciniosum praescribem sermonem' (Gushee, Aureliani Reomensis Musica disciplina, p. 53). Who 'the brethren' are can be inferred from the corpus of chants that Aurelian describes: they are the cantors and singers of the schola cantorum, whose repertories (Mass-Propers chants, antiphons and responsories) constitute Aurelian's subject. The significance of this fact will arise again later in this article. All translations of Aurelian are from J. Ponte, ed., Aurelian of Reôme: The Discipline of Music, Colorado College Music Press, Translations 3 (Colorado Springs, 1968).

40 'Libet interea mentis oculum una cum acie stili ad modulationes inflectere versuum, et quae propria unicuique sit sonoritas toni in eius litteratura verbis pauculis indagare, uti prudens dinolescere queat cantor varietates versuum in armoniaca vergentes tenore; quoniam quidem sunt nonnulli toni qui prope uno eodemque modo ordine versuum in suamet retinent inflexione, et nisi aut in medio aut in fine provida inspectione aut perspicacione antea circumvallentur oculo, unius toni tenor in alterius permutabitur' (Gushee, Aureliani Reomensis Musica disciplina, p. 118).

41 Ibid., p. 27.
text does not refer specifically to neumes, but to some demonstration that might have been carried out with neumes but is not forthcoming. For example, a description in Chapter XIII reads, in part: ‘quae inflexione tremula emittitur vox, non gravis prima sonoritas, ut inferius monstrabimus.’\textsuperscript{42} But then there is nothing answering that promise. That raises the possibility that the Valenciennes source is defective, and that we do not have a copy of Aurelian’s notation. Gushee reviews that possibility from the point of view of the transmission, without arriving at a conclusion.\textsuperscript{43} He reports his impression that only the neumes in Chapter XIX ‘were there from the beginning’. As reasons he cites the fact that only those neumes ‘are required for the text to make sense’, and he identifies the other five examples as being ‘of the type called paleo-Frankish, while those in [Chapter XIX] are not’.\textsuperscript{44} In a private communication he informs me of his further impression that the text and neumes in Chapter XIX match with respect to ductus and ink-colour, which is not the case with the neumes elsewhere in the Valenciennes source for the treatise. That the neumes in Chapter XIX are required by the text is plain. The two passages read: ‘The melody of the first plagal has in its lettering the shape of the signs:

\[ \text{\textsuperscript{45}} \]

\[ \text{\textsuperscript{45}} \]

and: ‘But in the verses of the antiphons this is the shape of the signs:

\[ \text{\textsuperscript{46}} \]

\[ \text{\textsuperscript{46}} \]

Gushee’s point in identifying the neumes in the other Chapters as Paleo-Frankish and these as not was simply the observation that there are differences in the style of the neumes, which reinforces the impression that the other neumes were added at a later time and by a different notator, and that only those in Chapter XIX are original. In

\textsuperscript{42} Ibid., p. 98.


\textsuperscript{44} Gushee, Aureliani Reomensis Musica disciplina, p. 27.

\textsuperscript{45} ‘Plagis proti melodia in sua littera huiusmodi habet notarum formas . . .’ (ibid., p. 121; the neumes are reproduced in Plate I, 7).

\textsuperscript{46} ‘Porro in versibus antiphonarum haec consistit figura notarum . . .’ (ibid., p. 122; the neumes are reproduced in Plate III, 5).
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the light of the evidence that has been cited, that can be regarded as firm. Those are the neumes to which I shall refer as ‘Aurelian’s neumes’, without intending to rule out altogether the possibility that they could be different from the neumes that Aurelian wrote into his text. I believe that nothing crucial in my interpretations depends on this tenuous identification alone. Whether either one or the other group of neumes is Paleofrankish is a question that entails fine points of classification that can be circumvented here. I want to focus only on characteristics that both groups have in common, and that they share with the Paleofrankish notation as it has been identified in the literature.47 First, they are all ‘Tonortschriften’, as Handschin put it.48 That is, they represent pitch relations by means of the vertical disposition of the neumes on the page. With respect to that, however, the observation of Corbin that the Paleofrankish notation is more strongly diastematic in its earlier sources than in its later ones must be taken into account.49 Second, they do not use the virga, either as single note or in compound neumes. I showed in my paper ‘The Early History of Music Writing in the West’ that writing all single notes with punctum or tractulus is a feature closely coordinated with diastematy in iconic scripts.50 Third, all the neumes used in the examples – both in Chapter xix and elsewhere – are used in the Paleofrankish sources (but not vice versa). Among the additions in


Handschin (p. 87) also reported on neumes that were written elsewhere in the manuscript. The book is a sacramentary, comprising items for the priest. The Gloria is entered on fol. 16v. Before it, on fols. 9v–15v, there is a list of text-incipits of Mass- Proper chants for the liturgical year, and neumes have been written above some of these. They are neumes of the same type, written with the same ink, as those above the Gloria text. Their function was evidently to differentiate melodies for texts with similar beginnings. The utility of a pitch notation for such a task is clear, and it puts the neumation of the Gloria in a less isolated context. It had appeared as the one neumation in a practical book, unaccountably, with a pitch notation. But, that notation having been used for the incipits, it is understandable that the neumatographer would have written the Gloria melody in the same notation.

48 ‘Eine alte Neumenschrift’, pp. 78–81. 49 Corbin, Die Neumen, p. 3.77.

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the later Paleofrankish sources (of the tenth and eleventh centuries) are the oriscus, quilisma and liquecents. That is especially interesting in view of the declining diastematy in the later Paleofrankish sources. In short, little as survives of it, Aurelian's notation has essential characteristics in common with the Paleofrankish notation, and in fact nothing is in the way of regarding it as a prototype of that script. Then in its subsequent history it lost in the exactness of its signification of pitch relations as it gained in its signification of performance details. But at the same time there was a shift in its application from didactic purposes (the differentiation of pitch-patterns) to the guidance of melodic performance of liturgical texts in all of its aspects. That change is characteristic, as will be shown.

Aurelian's notation, like that of the *Musica enchiriadis*, was designed to show pitch relations. It is in the service of an attempt to teach discrimination of pitch-patterns. As a neumatic notation, it depicts the movement of the voice, syllable by syllable. While the notational signs in the *Musica enchiriadis* are the syllables themselves, whose movement is shown through their placement in the visual correlate of the sound-space, here the neumes, which are just place-markers, as are the syllables of the *Musica enchiriadis*, are aligned with the syllables and depict their movement through the sound-space. The underlying conception of what melody is and how it is to be represented visually is essentially the same.

Aurelian does not try to establish a pitch concept. Although he seems vaguely aware of the music-language parallel that is drawn in the *Musica enchiriadis*, in practice it means nothing to him. He does not have a synthetic conception of melody, building from note to group to phrase. That may simply reflect the fact that he is describing a practice, not building up an axiomatic system (which he would hardly have been capable of doing). The one conception from the grammatical tradition that is thematic for him is that of accentus, the up-and-down movement of the voice in its enunciation of language. It is movement, and sometimes tessitura, but not pitch, that is at the centre of his melody concept, and that is represented by his notation. It just happens that, as details of pitch-pattern are the

51 See, for example, the diplomatic facsimile from Paris, Bibliothèque nationale, MS fonds lat. 17305 in Gorbin, *Die Neumen*, pp. 3.78-9.
52 'Et quomodo litteris oratio, unitatibus catervus multiplicatus numerorum consurgit et regitur, eo modo et sonituum tonorumque lines omnis cantilena moderatur' (Chapter viii; Gushee, *Aureliani Reomensis Musica disciplina*, p. 78).
subject of his descriptions, his neumes are drawn with a degree of
exactness that allows differentiation with respect to those details.

In the treatises of the Roman *Ars grammatica* which came down to
the Carolingians, the term ‘accentus’ and its equivalent, ‘tonus’,
referred to the elevation and lowering of the voice in speech. Three
tones or accents were specified: acute, a rising or high inflection;
grave, a falling or low inflection; and circumflex, rising and falling.
‘Accentus’ could refer either to the inflection itself, or to the sign for
it: ́, or ̀, or ̆ respectively.53 Although Latin had long since ceased to
be spoken with a regulated pitch accent (and indeed may not have
been spoken that way even in Roman times),54 the ‘accentus’ concept
and its terminology had great currency during the middle ages, and
not least in writing about music. For the most part it was not
restricted to its original meaning in the sense of prosodic accent, but
was used in contexts that had to do with the movement of the voice
and the differentiation of high and low. The tessitura of an entire
melody could be characterised in such language: ‘The verse of these
antiphons is entirely pressed down, and a grave accent of the voice is
made, and thus the whole is sung with a low voice.’55 But also the
specific inflection of a syllable in a particular chant could be
described in the same terms: ‘On the fourth [syllable] pa- [of Gloria
patri et filio et spiritui sancto], if it is long, like this same syllable, which
is long by position, an acute accent of the voice will be applied.’56
(Handschin tracked down some of these passages and was able to
establish that Aurelian seems to have had specific melodic inflec-
tions in mind with his terms ‘acutus accentus’ and ‘circumflexio’. He
mistakenly thought that Aurelian was identifying neumes, whereas,
as Corbin noted, it was their melodic referents that were his
subject.)57

The ‘accentus’ concept could overlap during this same time with
punctuation. ‘In the ninth century Hildemar [possibly a monk from

53 For bibliography and exposition of research problems see W. S. Allen, *Vox latina*
54 Ibid., and A. Schmitt, *Musikalischer Akzent und antike Metrik*, Orbis antiquus, 10, ed.
55 ‘Versus autem harum antiphonarum totus in imo deprimitur gravisque efficitur vocis
101).
56 ‘Quarta post haec, hoc est: “Pa-”, si producta fuerit veluti haec eademyllaba quae
positione producitur, in ea acutus accendetur vocis accentus’ (ibid., p. 119).
Corbie], writing to Bishop Ursus of Benevento about the art of reading . . . said that prose is split up by three points, adding “Do not be amazed that I have placed a sign of acute accent in the middle of the sense, since, as I have learned from learned men, to these three points three accents are appropriate: the grave as far as the middle of the sensus of the whole sententia, the acute only in the middle of the sensus, and then the circumflex up to the full sensus.” 58 (That the Bishop of Benevento should be receiving information apparently new to him about punctuation in the ninth century and perhaps from Corbie is interesting in the light of E. A. Lowe’s observation that southern Italy received punctuation as an import from the Carolingian north in the ninth century; 59 this will be further discussed below.) The association (between ‘accentus’ and punctuation) became more specific and more explicit with the doctrine of the ‘accentus ecclesiastici’, which described specific melodic inflections to be executed in response to specific punctuation marks during the recitation of ecclesiastical texts. The formal doctrine seems to date from the fifteenth century, but it may be to some such practice that Hildemar referred in his letter. The ‘accentus ecclesiastici’ will be discussed in greater detail below.

The use by medieval writers of the ‘accentus’ concept reflects their fundamental conception of melody as a movement of the voice, and their understanding of a continuity between melody and speech. In that general sense their conception seems not to have been fundamentally different from that of the ancients. Probably the very antiquity of the concept contributed to its continued use, despite the substantial distance from its original sense. But when a medieval writer speaks of ‘accentus’ it is by no means to be assumed that he has in mind the prosodic accents of the Roman grammarians, except in some far-away sense. References to ‘accent’ in the modern literature on this subject will be considered below.

From the notation in the Musica enchiriadis and the Musica disciplina we can infer a conception common to them both about the nature and purpose of musical notation and about how it works. It is a depiction of the voice moving through the sound-space as it declaims the syllables of a text. It functions by representing the sound-space as the vertical dimension on the writing surface and marking the

positions (pitches) on which the voice alights, in one case with the syllables themselves, in the other with points or traces that are aligned with the syllables written below. When a syllable is sustained through more than one pitch, the markers representing those pitches are connected. In both cases the task of the notation is to show the pitch-patterns or inflections of the syllables with the maximum accuracy that the system allows. That is because their main purpose is to support explanations and/or descriptions of pitch systems and/or patterns in the pedagogical tracts of which they are the necessary tools.

Although the representation of the music–language coordination might not seem in the abstract to be essential to that function, it was an inevitable constituent of notation from the beginning, and for two reasons. First, the very idea of what music was – not *musica* the discipline, but performed, sounding music, in a word, *cantus* – entailed language. Second, because, as in the grammatical treatises that were their models, the precepts of musical treatises that were their models, the precepts of musical treatises were exemplified from an actual practice, the ecclesiastical chant in this instance.

That there are more-or-less precise pitch notations among the earliest Western writing systems seems contrary to the received historical view. Thus Peter Wagner began his chapter on ‘The Beginnings of Diastematy’ with an observation about the ‘tonal uncertainty that . . . as we must presume, accompanied the Latin neumes from the beginning.’ He called this ‘the problem of the Latin neumes’, and he traced, as the history of its solution, the development of diastematy from the initial idea that one could adapt the shape of the neumes according to the width of the intervals that they span to the use of the staff. Here, as in all else, Wagner was in the firm grip of an evolutionism – more Lamarckian than Darwinian – in which the subject advances uniformly and on a single track toward perfection. He did not take account of the *Musica enchiriadis* and the *Musica disciplina* in this context, and what has been observed about them here runs directly counter to his narrative. Nevertheless he made a point of noting how very early the development of diastematy took place in the history of neumatic writing, in both northern and southern regions. He showed that the idea of varying

the form of the neume according to the size of the interval is
demonstrable at the latest about 980, that the principle of direction-
ality is apparent in the tenth-century manuscript Einsiedeln, Stift-
bibliothek, 121,61 and that the clef-line was in use at Corbie by 986.

With reference to the Paleofrankish script, both Handschin and
Hourlier/Huglo underscored Wagner’s emphasis on the early
advent of diastematy in the history of music-writing.62 But in fact it
has to be put more sharply: diastematy – or, better, pitch notation
based on the iconic principle – is as old as Western music-writing
itself. How can that be squared with Wagner’s evidence of a general
trend from rudimentary directionality to the very precise diastematy
of some Lothringian, Aquitanian, and Italian sources; with Corbin’s
observation of a declining diastematy in the history of the Paleo-
frankish script; and with my report on the spread of a reinforced
iconicity in scripts of France, Italy and England?63 These observa-
tions cannot all be assimilated into a coherent narrative with a single
plot. The iconicity of the tenth and eleventh centuries did not grow
out of that of the ninth century; it was a development in scripts that
were initially not much concerned to show pitch. On the other hand
the Paleofrankish script was a development of something like the
scripts of Aurelian and Paris 2291, and the development entailed a
neglect of the indication of pitch in favour of other aspects of vocal-
melodic performance.

Early music-writing seems to have been produced under two
different initiatives, or as two different sorts of project: to provide

61 I use the term ‘directionality’ in the sense introduced in ‘The Early History of Music
Writing’, to refer to the representation of higher and lower notes in higher and lower
positions on the page. And I distinguish it from diastematy, the representation of intervals
by proportional spacing of the neumes in the vertical dimension. Much confusion has been
sown by the failure to recognise that often direction was all that a writer aimed to show –
that it was the only information that was required. Directionality without diastematy is
not the same as bad or primitive diastematy. An example will be shown below.

62 Handschin, ‘Eine alte Neumenschrift’, p. 71; Hourlier and Huglo, ‘Notation paléo-
franque’, p. 213. Wagner’s view about this has improved as it has gone through successive
reports in the literature. He wrote: ‘Diese hochbedeutende Errungenschaft der Umform-
ung der Zeichen nach Massgabe der Intervalle ist spätestens um das Jahr 980 zum ersten
Male nachweisbar’ (Neumenkunde, p. 258). Hourlier and Huglo wrote: ‘La notation de la
Doxa [the Gloria with Greek text in Paris 2291] viendrait donc confirmer la thèse de
Wagner sur la diastematie initiale des notations musicales’ (‘Notation paléofranque’, p.
213). And, as Corbin reported, ‘Dom Hourlier und Michel Huglo schliesslich beschränken
sich darauf, in dieser bereits diastematischen Schrift [the Paleofrankish] eine Bestätigung
der Annahme Peter Wagners zu sehen, dass die Neumenschriften ursprünglich
diastematisch wären’ (Die Neumen, p. 3.77).

examples for treatises – which called for a pitch notation – and to provide guidance in the singing of (mainly ecclesiastical) texts. But guidance about what? Two things are obvious from the very nature of the notation: directionality in the forms of the neumes and – where it occurs – in the writing of single notes (e.g. \(\text{\textbackslash A\textbackslash} \) and \(\text{\textbackslash deus\textbackslash} \)) provides information about pitch-contour; and the neume as notational element provides information about the coordination of melody and language. But there is much more to be learned from the uses to which notations were put, and from contemporary descriptions of chant practice, about what role notations were meant to play in performance situations.

The most valuable descriptions, again, were provided by Aurelian. His program was to characterise the modes by describing chants that represented them. Often his descriptions refer as much to ways of singing the melodies as to their pitch components. And since he includes such qualitative features – which can come out only in performance – among the defining characteristics of the respective models, we have to infer that his conception of melody included its performance. That is, a gradual of the fifth mode, say, not only has this or that sequence of notes, but they are sung in such and such a way, and both aspects are integral features of that particular chant type. And again, if some of the qualitative features that Aurelian described came to be represented quite specifically in notations that postdate his treatise, we have to infer that this conception was not his alone, and that the qualitative aspects were established in the performance tradition before neumes were invented or adapted to represent them.

In Chapter XIX, the section about the third mode, Aurelian writes: 'The verse of the introits: Gloria Patri et Filio et Spiritui Sancto. Wisely observe, O wise singer, that if the praise to the threefold name is sung in its entirety, in two places, that is, on the sixteenth syllable [(San)c]to, and afterwards on the fourteenth syllable [(Sem)per], you make a threefold swift beat like the beating hand.' That seems

64 The first category should probably be generalised to include didactic functions in other kinds of document – tonaries and other lists (such as that in Paris 2291) and even some chant books. But for now I restrict myself to pedagogical treatises.

65 'Versus introituum: Gloria patri et filio et spiritui sancto. Sagax cantor, sagaciter intende, ut si laus nomine trino integra canitur, duobus in locis scilicet in xvi syllaba et post, in quarta decima, trina ad instar manus verberantis facias celerum ictum' (Gushee, Aureliani Reomensis Musica disciplina, pp. 122–3).
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like a figure that would be notated with a tristrophe, and in four manuscripts both of those places are marked with that neume.66

In Chapter xiii, describing two antiphons of the fourth mode, Aurelian writes that the verses, on certain words, 'send forth a tremulous and rising sound.'67 Describing a passage in a gradual of the same mode (Exultabunt sancti, now classified as mode 2) he writes: ‘in the verse, Cantate Domino, after the first and longer melody, which is made on Do-, the other melody follows, which is made on can-. This melody is flexible, repeated, and a sound – but not the first low sound – is emitted with tremulous inflection.’68 The description is sufficiently exact to allow identification of the passage. Figure 2 shows it as it is transmitted in the early German sources of the Graduel neumé (St Gall 339 and 359, Einsiedeln 121, Bamberg lit. 6). The melody of Exultabunt sancti is of the so-called Justus ut palma type, and the same notational figure is found with numerous other texts transmitted with that melodic type. It seems to be an attribute of the type, not just of the one chant.

In Chapter xix, again, regarding the first mode, he writes: ‘In the verse of the antiphons, if it contains twelve syllables, as here: Magnificat anima mea Dominum, the first, Mag-, has a full sound. The second, -ni-, will be scaled up (alte). The third and fourth, -fr-, and -cat, will be kept moderate (mediocr\l ite).’69 The adjectives here call to mind the terms for which the litterae significativa\l es were abbreviations (a and m in this case).70 They and others (sursum (s), iosum (i), tractim (t)) occur throughout the treatise, and they constitute another category of descriptive terms employed by Aurelian that were translated into notational signs.

There is to be sure much descriptive language in Aurelian’s text

66 Bamberg, Staatliche Bibliothek, MS lit. 5; Einsiedeln, Stiftsbibliothek, MS 121; Kassel, Murhardsche Bibliothek, MS Q theol. 15; Paris, Bibliothèque nationale, MS fonds lat. 9448. I am grateful to Professor Helmut Hucke for sharing with me his survey of the notations of the introit psalmody.
67 ‘Versus istarum novissamarum partium tremulam addivemque emittunt vocem’ (Gushee, Aureliani Reomemis Musica disciplina, p. 97).
68 ‘. . . in eiusdem versu “Cantate Domino”, post primam modulationem maiorem quae fit in “Do-”, subsequente modulatione altera, quae fit in “can[tivum]”, flexibilis est modulatio duplicata, quae inflexione tremula emittitur vox, non gravis prima sonoritas ut inferius monstrabimus’ (ibid., p. 98).
69 ‘Porro antiphonarum versus, si duodenarium in sese continuerit numerum, ut hic: Magnificat anima mea Dominum, tunc prior, id est “Mag-” plenum reddit sonum. Secunda, videlicet “-ni-”, alte scandetur. Tertia vero et quarta, id est “-fi-” et “-cat”, mediocriter tenebuntur’ (ibid., pp. 120–1).
70 See Wagner, Neumenkunde, p. 235.
that does not correspond to any neumes or \textit{litterae significativae}. It would hardly have been possible to capture all of those qualities succinctly in signs. But it seems clear that the conception of melody entailed qualitative performance aspects along with, and equally important to, the pitch aspects. That some of the former were given expression in early notational systems, and especially that they seem even to have been of greater importance than the latter in the earliest period, confirms that this conception was held widely.
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I shall cite a parallel, not in order to suggest an actual connection, but to help assimilate the idea of such a conception. In the tradition of Indian classical music a scale degree or svara in any particular raga is considered to be located at one of twelve abstract theoretical pitch positions. ‘But in addition, there is a particular manner of taking that scale degree in a musical context. That manner may be generally designated as gamaka (“ornament”), lāg (“[way of] taking”), uccār (“pronunciation”) and other ways. Sometimes a way of taking a svara is most easily designated by reference to a well-known raga . . .’

From the end of the ninth century we have very clear confirmation that the manner of performance was regarded as integral to the chant melodies, and was encoded in the oldest notations. Hucbald, in De harmonica institutiones, complained about the inadequacy of the neumes for showing pitch relations and taught the use of a letter notation for that purpose. ‘Yet,’ he wrote,

the customary notes are not considered wholly unnecessary, since they are deemed quite serviceable in showing the slowness or speed of the melody, and where the sound demands a tremulous voice, or how the sounds are grouped together or separated from each other, also where a cadence is made upon them, lower or higher, according to the sense of certain letters [litterae significatiae, presumably] – things of which these more scientific signs [the pitch-letters] can show nothing whatsoever. Therefore if these little letters which we accept as a musical notation are placed above the customary notes [neumes], sound by sound, there will clearly be on view a full and flawless record of the truth, the one set of signs indicating how much higher or lower each tone is placed, the other informing one about the afore-mentioned varieties of performance, without which valid melody is not created.’

That Hucbald could differentiate these functions, and assign them to different signs, reflects a great change in the conception of

72 Palisca, Hucbald, Guido, and John on Music, p. 37. ‘Hae autem consuetudinariae notae non omnino habentur non necessariae; quippe cum et tarditatem cantilenae, et ubi tremulam sonus contineat vocem, vel qualiter ipsi soni iungantur in unum, vel distinguantur ab invicem, ubi quoque caudantur inferius vel superius pro ratione quorumdam literarum, quorum nihil omnino hae artificiales notae valent ostendere, admodum sensurum pro- ficiuea. Quaporter si super, aut circa has per singulos phthongos eadem litterulae, quas pro notis musicis accipimus, apponantur, perfecte ac finullo errore indaginem veritatis liquebit inspicere: cum hae, quanto elatius quantovet pressius vox quoque feratur, insinuent: illae vero supradictas varietates, sine quibus rata non textur cantilena, menti certius figant.’
notation in relation to performance. That will be referred to again presently. And in the eleventh century Guido of Arezzo still emphasised this performance aspect of the neumes: ‘How sounds are liquecent; whether they should be sung as connected or as separate; which ones are retarded and tremulous, and which hastened . . . by a simple discussion all this is shown in the shape of the neumes itself, if the neumes are, as they should be, carefully put together.’

Aurelian’s descriptions of what came to be represented by ‘ornamental’ neumes and letters apparently predate the writing down of any such signs into surviving sources. If that is taken at face value, it means that these performance aspects of the chant were integral to the (oral) performance tradition, and that neumes were invented – or adapted, an important possibility, as will be seen – to represent them; that the neumes as a system were a protocol of the practice in a very specific sense; and that the composition of the Musica disciplina provides an approximate terminus post quem for the beginning of a notational practice with broader functions than the differentiation of pitch-patterns. (The composition of Hucbald’s treatise would provide a terminus ante quem.)

Can the evidence be taken at face value? There are several reasons for thinking that it can. (1) In a treatise, not of criticism or aesthetics but with the very practical aim of helping singers differentiate one melody type from another, such elaborate verbal descriptions would have been the more inefficient medium, if the singers had been accustomed to reading a notation that could show the same things. (2) It has to be assumed that the persons to whom the expositions were addressed would have recognised the chants and passages being described from the descriptions. The text would have been read out to them, and to understand it they would have had to have the chants committed to memory. The purpose of the language was to call them up from memory. They could not have looked them up and compared Aurelian’s descriptions with a notated version, as we have just done. (3) This is confirmed by Aurelian’s very explicit language: ‘Although anyone may be called by the name of singer, nevertheless, he cannot be perfect unless he has implanted by

72 Strunk, Source Readings, p. 120. ‘Quomodo autem liquescant voces, et an adhaerenter vel discrete sonent. Quaeve sint morosae et tremulae, et subitaneae, vel quomodo cantilena distinctionibus dividatur, et an vox sequens ad praecedentem gravior, vel acutior, vel aequisona sit, facili colloquio in ipsa neumarum figura monstratur, si, ut debent, ex industria componantur.’
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memory in the sheath of his heart the melody of all the verses through all the modes, and all the differences both of the modes and of the verses of the antiphons, introits, and of the responses.\textsuperscript{74} To the same effect he repeats the dictum of Isidore of Seville: "The muses, from whom [music] took its name and by whom it was reported to have been discovered, were declared to have been the daughters of Jupiter and were said to minister to the memory, for this art, unless it is impressed on the memory, is not retained.\textsuperscript{75}

Aurelian certainly knew the chant tradition as an oral tradition, and he wrote his treatise with the presumptions, habits, and expectations that implies. That is not contradicted by his own use of notation for the illustrations in Chapter xix. It only draws attention more forcefully to the contrast between the use of a simple pitch notation to point to a few melodic details, and the use of a full system of neumes in the service of a performance practice.

One other fact is relevant here, to which Ewald Jammers first drew attention.\textsuperscript{76} Among the neumated items in practical collections of ecclesiastical texts written in the ninth century, all are items for the priest or deacon, none are for the cantor or schola. But it is cantorial and schola singing that is Aurelian's subject, and we have no notated specimens of that written before the tenth century. The practice that Aurelian described in the ninth century and the practice that was notated in the ninth century complement one another and together constitute the whole of ecclesiastical chant. That the former was a matter of oral tradition at the time Aurelian wrote seems likely. What it means that the latter came to be written down in the first wave of music-writing is a question which will be further discussed.

The \textit{Musica disciplina} is a treatise for singers in an oral tradition. It is the first and last of its kind. Compared to the \textit{Musica enchiriadis} it

\textsuperscript{74} "Porro autem, et si opinio me non fefellit, liceat quispiam cantoris censeatur vocabulo, minime tamen perfectus esse poterit nisi modulationem omnium versuum per omnes tonos discretionemque tam tonorum quamque versuum antiphonarum seu introituum necne responsorium in teca cordis memoriam insitum habuerit" (Gushee, \textit{Aureliani Reomensis Musica disciplina}, p. 118).

\textsuperscript{75} "Dicebantur autem Musae, a quibus nomen sumpsit et a quibus reperta tradebatur, filie Iovis fuisse, quae ferebantur memoriam ministrare, eoque haec ars, nisi memoria infigatur, non retinatur" (\textit{ibid.}, p. 61). Isidore, \textit{Etymologiarum}, III/XV-xvi.

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was very little copied and commented upon, and that itself is
evidence of a transformation in the musical economy of the culture.\footnote{Gushee, \textit{Aureliani Reomensis Musica disciplina}, p. 14.} 

Aurelian’s descriptions and their notated counterparts provide
very concrete instances of what it can mean to say that a perform-
ance practice has been transcribed in writing. It means that signs
have been invented or adapted, whose task it is to call up musical
details, just as Aurelian’s descriptions called them up. Even if it were
not so that the former happened after the latter – that is, if Aurelian
had been unaware of notational practices elsewhere, or if the
Valenciennes manuscript lacked neumes that Aurelian had written
into his treatise in addition to his descriptions\footnote{The possibilities in this respect are reviewed by L. Gushee in his dissertation, ‘The \textit{Musica disciplina} of Aurelian of Réôme’, Chapter 6.} – the descriptions
and the neumatic transcriptions would still stand as counterparts of
one another. Either way, we learn from the \textit{Musica disciplina} to
recognise as a task for early notation, over and above the notation of
pitch, the signification of the qualitative performance aspects that,
as much as pitch-pattern, characterised chant types and were
constituents of the oral performance tradition. And we learn that the
notation represented the chant as performed, that is, as event rather
than as object – and particularly not as object comprising sequences
of pitches.

Among the practical notational specimens of the ninth century,
none makes a priority of conveying information about pitch, beyond
what is conveyed about contour by the compound neumes.\footnote{This is so despite the cases in which individual virgas and puncta are written at somewhat
different levels, as though to reflect a contour. A primary intention to convey pitch
information cannot be inferred in such cases. They are at most directional – certainly too
inconsistent and imprecise to be diastematic. But there is no evidence that they are any
more than unconscious movements of the writer’s hand, following the contours of the
melody that he sings as he writes. We shall shortly see such a case where a notational
contrast is clear, on the other hand.} But
there are liquescent neumes, and there are virtually all of the so-
called ‘ornamental’ neumes that are identified in the neume tables of
the eleventh and twelfth centuries: apostropha, oriscus, pes quassus,
gutturalis, virga strata (the term is modern but the sign medieval),
had to come from the singer’s accumulated store of melodies and
melodic types. The notation guided him in adapting language to
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melody, and in giving the right sounds to the melodic turns. But even this way of putting it probably suggests too sharp a separation between these aspects of the notation’s signification, as does the very term ‘ornamental’ neumes. Probably seeing, say, a tristrophe or a quilisma over a certain syllable would have called up in the singer’s mind the melodic detail along with its mode of performance. (Thus the tristrophe signified not only a note sung ‘with a threefold swift beat’, but also the upper note of a half-step. The quilisma signified not only a figure sung with a tremulous voice, but one that ascends in three notes, most often through the intervals tone-semitone.) Such recall of associated material is a well-known phenomenon in the workings of memory. It is probably too modern a notion to think of the pitch indicators in the early neumatic systems as being primary, with the ‘ornamental’ aspects giving some information about secondary attributes.

One of the most fundamental properties of the neumatic system – one displaying the most intimate relationship between music and language – is the differentiation between the liquescent and non-liquescent versions of certain neumatic characters.

The names ‘notae liquescentes’ and ‘semivocales’, which are derived from the neume tables, were adapted from the terminology for the classification of letters of the alphabet in Latin grammatical treatises. The treatises conventionally identify two main classes of letter: the ‘vocales’ (a, e, i, o, u), so called because they let the voice sound through them, and the ‘consonantes’, so called because they sound only when pronounced with one of the vocales. Two classes of consonantes are identified: ‘mutae’ – which do not sound at all by themselves, and hence are mute (b, c, d, g, h, p, q, t), and ‘semivocales’, which can transmit a sound, but not a full one, for which reason they may be aided by one of the vocales preceding them. (The semivocales are f, l, m, n, r, s, x – in effect ‘ks’, of which the second element is the semivocalis.) The vocales and semivocales together are nowadays called ‘continuants’, because their enunciation can be extended. Several authors differentiate between vocales and semivocales on the ground that the latter cannot alone constitute a syllable, whereas the former can. Of semivocales, finally,

81 The relevant passages are printed in H. Freistedt, ‘Die liquiszierenden Noten des gregorianischen Chorals: ein Beitrag zur Notationskunde’ (dissertation, Univ. of Freiburg, Switzerland, 1929).
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several are identified as the subclass ‘liquidae’, so called because they are less hard, they melt in speech, and they are thus ‘cheated’ of their signification as consonantes.

It is their characteristic as continuants that makes the vocales and semivocales – and only these – singable. In effect, each neume is a sign for the sounding out of a continuant through one or more pitch levels. From their names, one might think that ‘notae liquecentes’ or ‘semivocales’ (the two names seem to be synonymous) were neumes written above semivocales, while all other neumes were written above vocales. I believe that this inference is essentially correct, and that the differentiation is the core of the significance of liquecent neumes. Since the ninth-century practical sources manifest this differentiation, it seems to have been a constitutive property of the neumatic system from the first. This impression of its role is reinforced by the fact that in the letter notation of the eleventh-century gradual Montpellier, Faculté de Médecine, MS n.159 the signification of liquecence is preserved by means of bows connecting the letters representing a liquecent group:

\[
\begin{align*}
dg & \quad gff \\
ct & \quad l\,e & \quad bran & \quad tes
\end{align*}
\]

Whatever its significance for the details of chant performance may have been, the differentiation of liquecent and non-liquecent neumes is an immanent property of the system that shows the neumes, once again, to be signifiers of differentiations in language. Since the differentiation in this instance is one that is described very clearly in treatises of Latin grammar, the liquecent neumes bring the invention of the neumatic system into close proximity with the *Ars grammatica*, and thus constitute another item of strong evidence for the invention as a Carolingian phenomenon.

The phonetic environments for the occurrence of liquecent neumes have been summarised in an oft-cited study by Dom Mocquereau, the standard authority on the subject.\(^{82}\) Four main conditions are posited: (1) the direct succession of two or more consonants; (2) the consonants m and g after the frontal vowels e and i; (3) the diphthongs au and eu; (4) i between two other vowels (the equivalent of the modern j). Liquecent neumes were written only

\(^{82}\) *Paléographie musicale*, 11 (Solesmes, 1891), pp. 37–86.

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above text syllables, not in melismas. If several neumes are written above the same syllable, only the last – if any – is liquescent. That means that whatever the liquescent neumes signified, it would have affected only the enunciation of the ends of syllables.

The heart of Mocquereau’s theory is that the liquescent neumes signified the insertion of a schwa vowel between two syllables bounded by adjacent consonants, which was sung to a shorter, essentially ornamental, note. This idea is embodied in the liquescent neumes of the Vatican edition and in the modern convention for transcribing the final members of liquescent neumes as grace notes.

Freistedt (see note 81) reviewed the evidence from the gradual St Gall 359, the main basis of Mocquereau’s study, and made two critical new observations: (a) conditions (2) and (4) are but partial descriptions of a more general condition, that liquescent neumes could be written above any of the following letters when they were bounded on both sides by vowels: l, m, n, r, t, g, i; (b) of 3,500 liquescent neumes in St Gall 359, 2,452 occur where the first of two or more successive consonants is liquid (many of the others will be accounted for by the liquids – l, m, r – among the cases reported under (a)). In other words, in the great majority of cases in which Dom Mocquereau believed the operative factor to be the succession of consonants, the first in the succession is liquid. That brings them into a larger group, together with the cases in which liquescent neumes are written above single liquid consonants bounded by vowels. Together they constitute the class of liquescent neumes written above liquid consonants preceded by a vowel – liquids aided, as grammarians sometimes put it, by a preceding vowel.

Freistedt offered an explanation of this class that resonates with the phonetic explanations of Latin grammarians, that accords with phonetic realities, and that can account also for the majority of the remaining cases that lie outside that very large class. It will be best to begin the description of his theory with reference to important remarks made by one grammarian and one music theorist. Marius Victorinus observed that ‘of the consonances the semivocales sound with the mouth half-closed’. A shift from a vocalis to a semivocalis, then, entails a partial closing down of the speech aperture. Guido of

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Arezzo described the singing of liquescent notes thus: 'At many points notes liquesce like the liquid letters, so that the interval from one note to another is begun with a smooth glide and does not appear to have a stopping place en route.'

The shift from vocalis to semivocalis coincides with a change of phonetic quality, but not enough of a change, evidently, to constitute a change of syllable (the semivocales, according to the grammarians, do not constitute a separate syllable); and this shift coincides with the melodic movement from the penultimate to the final note represented by the liquescent neume. As he moves through that interval, the singer takes the semivocalis on its final note. He could instead sustain the vocalis, moving with it to the final note, and shifting to the semivocalis at the last possible moment before taking the next syllable:

| Ho-sa | n-na | Ho-sa | a(n) | n-na |

It is the coordinated phonetic–melodic performance of the first alternative that Freistedt implied was marked by liquescent neumes.

Now the description of the phonetic shift from vocalis to semivocalis – from vowel to voiced consonant – also applies to the diphthongs au and eu, and to the i between vowels (as in 'eia'). It applies to the g followed by n as in 'agnus' when that is pronounced 'angnus' or 'anius'. And it would apply to g after e, as in 'regi', if that were softened, as in the Italian 'reggio' or the French 'regi'. (We should probably take very seriously the possibility that the writing of liquescent neumes in such contexts could constitute good evidence for the state of such changes in the pronunciation of Latin. What would be involved in the generation and interpretation of such evidence is the comparative study of notations of the same items from different language-regions.) This means that Freistedt's explanation accounts in an unproblematic way for the very great majority of conditions in which liquescent neumes were written. (What remains problematic is a case like that in the very example Guido took for his description in the passage cited, a liquescent

neume over the first syllable of 'Ad te levavi', and also liquescent neumes over internal syllables ending d and final syllables ending t. Here Freistedt points to the tendency in Romance languages for the final d or t to be softened or dropped, and for the internal d to be assimilated to the following consonance - e.g. 'adiutorium' and Italian 'aiuto'. Then the writing of liquescent neumes in such circumstances could indicate that those changes were underway in the pronunciation of Latin. But it will be difficult to judge about this until such comparative studies as have already been mentioned are undertaken.)

Freistedt’s theory is clearly superior to that of Mocquereau. Mocquereau identified the wrong property - the succession of consonants - as the determining one for the writing of liquescent neumes in the largest number of cases. As a consequence he had to leave a very large number of cases in miscellaneous and apparently unrelated categories. The one unifying principle in his theory is his positing of an inserted vowel, and a note on which to sing it, for transitions between syllables. But this idea is problematic on all sides. His evidence for the practice of vowel insertion consists of inscriptions from antiquity and late antiquity with extra vowels between syllables: 'liberos' for 'libros', 'himenis' for 'hymnis', etc. But a rule about the pronunciation of Latin in the eleventh century, generated from examples written in late antiquity - even if they are assumed to reflect the pronunciation in the earlier period accurately - cannot carry much weight to begin with. Mocquereau's theory is unhistorical precisely in that it tacitly posits an absence of linguistic change - in this case that the mute consonants would always have been pronounced as plosives throughout the history of spoken Latin. (But it cannot in any case be assumed that such inscriptions represent pronunciation accurately; they can reflect associations and confusions of words, clang associations, and just plain confusion about how a word is spelled.) The application of Mocquereau’s rule produces awkward and unnatural results: ‘om-ne’, ‘san-te’, ‘sum-mo’, ‘il-le’. These do not solve problems of pronunciation, they create problems of comprehension. The breaking up of double consonants is especially unthinkable, for there the succession of consonants is purely orthographic, not phonetic; there is no problem of pronunciation. But there are liquescent neumes written in such places. In medieval writings about language and music, including
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those that specifically discuss liquid letters and liquecent neumes, there is not a hint of any reference to such insertions. On the other hand Mocquereau’s theory takes no account of the unmistakable correspondences between the notational practice and the doctrine of the grammarians about the classification of letters. And it conveys the impression that it was a primary task of early neumatic writing in practical sources to mark pitch differentiations, and even pitch hierarchy differentiations, an impression that is, in all likelihood, a major distortion.

There are notational situations from the earliest period in which pitch indication for its own sake really plays no role at all. We noted before that the ecclesiastical items among the earliest notated texts are items for the priest and the deacon: lessons, prayers, Mass-Ordinary intonations. That means that most of the earliest notated items comprised essentially the recitation of ecclesiastical texts on a single note with inflections and cadences at the places marked by the punctuation. Why should one have noted just such routine and simple matter, of all things? The answer begins with a consideration of the function of the punctuation. It marks each time the point in the text at which the celebrant should have come to the end of his inflection or cadence. The difficulty would have been to know when to move off the monotone recitation and begin the cadence. For the celebrant who was not primarily a singer, this evidently constituted enough of a problem to motivate the use of notation. The most direct clue to that is the use of neumes for only the beginning of the cadence, as in the Gospel text shown in Figure 3. The book from which this Figure is taken is provided with such single neumes throughout, always on an accented syllable just before the punctuation sign. The neumes are always the same: either the one shown – \( \text{T} \) – or \( \text{J} \). (The MS St Gall 54, an evangelary of the same provenance and date, presents exactly the same notational situation.) To the reciter the neume stood not so much for a particular note or melodic figure as for the beginning of the cadence. Its placement told him with which syllable to begin. This was a cueing function of early notations. How much of the text was neumated was a matter of local decision, depending perhaps on the abilities of the priest or deacon, or on the standards of the scriptorium. The notational picture in the two evangelaries cited simply constitutes the minimum.

More often the last several syllables before the punctuation sign
Figure 3  Geneva, Bibliothèque universitaire et publique MS lat. 37a, tenth century, St Gall, fol. 36v.
were neumated. Such cueing is found in the following manuscripts:
St Gall, Stiftsbibliothek, MS 342 (a tenth-century sacramentary) and
399 (a twelfth-century pontifical); Munich, Bayerische Staatsbibliothek,
Clm 23261 (an eleventh-century sacramentary) and Clm 3005
(a ninth-century missal with cadential neumes added); Paris, Bibliothèque nationale, MSS fonds lat. 2293 (a ninth-century sacramentary), 11589, 17305 and 9434 (all three eleventh-century sacramentaries). Sometimes in such books texts for recitation were fully noted although what that amounts to is hardly different in effect from the preceding group; undifferentiated virgas until just before the end, then a pattern of cadential neumes (e.g. Paris, Bibliothèque nationale, MS fonds lat. 12051, a tenth-century sacramentary).

Sometimes the inflections in a recited item were too highly differentiated for such minimal cueing to be adequate. Such an item that was singled out for full neumation from the very earliest period is the Genealogy of Christ from the Gospels of Luke and Matthew. Example 1 shows two very early neumations of the Genealogy from Matthew, along with a transcription from a version on the staff. It entails a formulaic recitation system with elements that were alternated in different patterns, evidently according to local custom. The patterns of alternation are irregular and different from place to place, and it is easy to appreciate that the reciters would have been aided by the neumation of these texts in recalling which of the recitation formulas was to be followed with each line of the text.

There is more to report about notation for recited texts, but first two general observations may be inserted. First, it has been tempting to think that one did not sing directly from the earliest books with neumes, but that impression should probably be corrected. It may be so for the books used by cantor and schola (graduals, antiphoners,
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(1) Abraham autem genuit

(a) Jacob

(b)(c) Isaac autem genuit

Jacob autem genuit Judae et fratri eius

Judas autem genuit Freres et Zaram de Thamar

(2) Isaac autem genuit

Esrom

(3) Esrom autem genuit

Aram

Aram autem genuit Aminadab
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cantata); it is probably not true of the sacramentaries, pontificals and missals. Second, the notated items for recitation in books of the latter categories from centuries after the ninth create a context for an understanding of the ninth-century specimens. They can be seen as constituting a coherent class identified by liturgical role, reader-performer and type of musical execution, and we can identify that class in the succeeding centuries. Hence the earliest specimens lose the appearance of randomness that they have had, and we may conclude that they are probably quite representative of what was written down in the ninth century.

Example 2 Responsorial verse-tone of mode 1 from Exeter:
(a) Oxford, MS Harley 863, fol. 117v (R. Domine ne in via)
(b) Oxford, MS Harley 863, fol. 120v (R. Quam magna)
(c) Oxford, MS Harley 863, fol. 121v (R. Misericordia tua)
(d) Oxford, MS Harley 2691, fol. 8 (R. Montes israhel)
(e) Oxford, MS Harley 2691, fol. 29v (R. Dixit angelus)
(Transcriptions are by Susan Rankin, whose kind permission for their use is gratefully acknowledged.)
The need for cues in the performance of liturgical texts was not limited to items for the priest or the deacon. There was a similar need for the more elaborate recitation tones for the cantor and schola. In a recent paper about the beginning of music-writing in Exeter, Susan Rankin has shown how this works in the case of responsory verses:

Most responsory verses are sung to responsorial tones corresponding to the eight modes . . . In each tone certain notes or groups of notes must always correspond with the accentual pattern of the words; thus, at the beginning of [the] first tone [see above, Example 2], the first strong accent will always be sung to the last single note before the descending six-note melisma; for example Timor, or Et perfecisti. Equally the next strong accent will go with the rising pes, and so on through the melody. In notating the responsorial tones the Exeter scribe made little or no use of various possibilities for greater pitch precision . . . In fact, given the familiar nature of the melody, he had no need to be any more precise . . . What the book records is how that ‘familiar’ melodic contour fits different sets of words.

During the course of his narrative on the history of diastematy Wagner reported on such cueing practice with St Gall neumes, although with a somewhat different interpretation. It has to do with the indication of the beginning of the cadences of the psalm verse for the introit and communion in the eleventh-century manuscript St Gall 381. Figure 4 show the introit and communion verses for the sixth and seventh Sundays after Pentecost, together with Wagner's transcription, based on versions on the staff. It is typical of the entire segment of the manuscript that records such verses. The passages with text in italics correspond to those in the manuscript that are treated, as Wagner puts it, ‘diastematisch’. (The + signs indicate liquescence signs.) Without question the first note of the cadence is marked by a virga that is placed unmistakably higher. But it is also instructive to read to the end of the cadence and the initium of the next phrase in each case. Then one sees that the ‘diastematy’ is quite unreliable. In fact it is not diastematy in the strict sense of that word — showing intervals. It is directional, and its purpose is not to show intervals but to provide cues to the beginning of the cadence. It

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85 'From Memory to Record: Musical Notations in Eleventh-Century Exeter Manuscripts', presented at the Oxford Conference on Medieval and Renaissance Music (see introductory note), to be published in Anglo-Saxon England, 13 (1984). Rankin's paper demonstrates that we should not be limited in our investigation of the beginnings of notation to the study of the very oldest sources in Europe altogether, but rather that there is much to be learned from the oldest notated documents in other than the first establishments to write down about what, why and how one first began to notate.

86 Neumenkunde, pp. 263–6.
Ad te domine clamabo deus meus: ne sileas a me, ne quan-

Do- 
m i- 

nus pro-
tec-

tor meus: et in ipso speravit cor meum.

Do- 
m i- 

nus protect
or ur-

te me a quo trepidabo:

Exaudi domine vocem meam qua clamavi mis-

erere me aexaudime.

Subiet populos nobis a gentes:

Sub pedibus nostris.

Ad te domine clamabo deus meus: ne sileas a me, ne quan-

Do-mi-nus pro- 
tec-

tor me- 

us: et in 

ipso spera-

vit cor me-

um.

do tace-
as a me.

meum et adju-
tus sum.

Domi-nus illu-

mini-

ti-o me-

a: et sal-

us me-

a quem timebo?

Domi-nus protector 

vitae me-

ae: a 

quo trepidabo?

Exaudi domine vocem meam, qua clamavi: 

miserere mei et exaudi me.

Subj-ect po-
pulos nobis: et gentes sub 

pedibus nostris.

Figure 4 Introit and Communion psalmody from St Gall, Stiftbibliothek, MS 381, p. 128, with transcription by P. Wagner, Neumenkunde (Leipzig, 1912, repr. Hildesheim, 1963) p. 265
does not do the former badly, it does the latter well. Wagner called it 'primitive diastematy' because of his entrapment in the evolutionary paradigm. His comment is worth quoting:

This diastematy is of a primitive sort; it limits itself to showing occasionally through individual signs whether the melody is rising or falling. But what is striking is that in the north one did not proceed further in this direction once the way was opened; that just in St Gall, where so many talented artists performed the musical service of the abbey, no one drew from that the conclusions that, regarded at least from our standpoint, lay so near to hand; they needed only to write down the whole melody as the cadences of the psalm formulas are written, and the problem of the neumes would have been solved. Unfortunately the circumstances drew the energies of the St Gall artists in a different direction, which certainly posited new and interesting tasks, but thereby removed the goal of neumatic writing from before their eyes.87

Under Wagner's particular (Lamarckian) brand of evolutionism, the function to which neumatic writing eventually evolved — the designation of pitch complexes — was inherent in it as its goal, and accordingly progress towards that goal depended on the recognition of it by the persons using it. It may be easy enough for us to recognise the historical fallaciousness of this doctrine when it is clearly spelled out in that way, but in fact the prevailing classification and historical view of neumatic writing are tacitly based upon it. The alternative is to try to infer from the way the notation was used what its initial purposes were — on the premise that its inventors and early users invested it with capacities that were, for them, adequate to the needs that they perceived. From such a perspective we can see that only in conjunction with the qualitative-performance-indicating and cueing functions of the neumes does the pitch-indicating function define the roles to which the earliest practical notations were adapted. It was only later that these functions became separately identifiable, and that the pitch-indicating function began to take priority (not much later, however; Hucbald bears witness to it already). The neumes in their original multiplex functions represent the entrance of a writing practice into the domain of an oral tradition. The separation of functions marks a major step in the control of the oral tradition by the writing practice.

The interpretations of this section come down to a hypothesis with several elements:

87 Ibid., p. 266 (my translation).
Two kinds of initiative in writing down music in the ninth century have been recognised: to illustrate pedagogical treatises, and to note the melodies of texts in manuscript collections – mainly of an ecclesiastical nature – for their performance. (At the conclusion a further differentiation among the earliest neumations of texts for practical purposes will be suggested.) The ecclesiastical texts were items for recitation in the liturgy, and they constitute a class that continued to be notated throughout the middle ages. It seems that the practical notations followed the didactic ones in time, but not by very long. What is essential for the historical understanding is to recognise that they were different initiatives, differently influenced by the new Carolingian script culture.

According to these differences of purpose, notations had different priorities as to the tasks that they were to accomplish and the forms that they took.

This sort of differentiation must be observed also within the category of practical notations. The earliest practical notations served primarily a cueing function for celebrants reciting ecclesiastical readings and prayers. Such notations were presumably used at the moment of performance. The amount of the text that was neumated varied according to local custom and ability, and also according to the nature of the item. Genealogy and responsory tones called for fuller notation than ordinary lessons and prayers. The notation of antiphons, responsories, and Mass-Proper items for the cantor and schola did not begin until the tenth century. Books containing those items were presumably not used at the moment of performance. It becomes increasingly clear that a representation of the earliest history of medieval notation must be pluralistic in this way; it must follow differentiations of overall purpose, semiotic functioning, content, the role of the user, and the ritual function of the items notated.

Nevertheless there are some universals. All notations, whatever their purpose, shared two characteristics: they were formed on the principle of directionality – some more exclusively than others – which was based on the spatial metaphor and the conception of melody as movement of the voice; and they were signs for the inflection of language. These were, for the West, conditions of

Reading and singing notation, as they reflected the conception of what was notated. But they did not necessarily represent the primary goals of notation.

(5) The principal task of notations for pedagogical purposes was to show pitch-patterns. In the beginning the principal tasks of notations for text collections were to indicate qualitative aspects of performance and to help the singer to adapt his melodic knowledge to the texts before him. They were thus practical notations, and they were tools for an oral tradition.

(6) The initially sharp opposition of priorities between these notational impulses was reduced in time—although not uniformly in all places. This was mainly a matter of the separating off of the pitch-indicating function of practical notations, and its growing priority. That reflects, on one side, the ascendancy of writing practice over a declining oral tradition, and, on the other, the impact of pedagogical writers—whose main interest was in the normalisation of the pitch-dimension of chant—on practice.

I must now turn to suggestions made and questions raised in my paper ‘The Early History of Music Writing’ on this subject, and regard them in the light of certain points of this hypothesis. The main points of contact for the moment are these:

(1) An analysis was offered there of systems of notation in terms of symbolic, iconic, and indexical modes of representation. These modes function jointly but in different hierarchical orderings in different notational systems. There is a trend during the first three centuries of notational practice toward systems in which the iconic mode is predominant. That corresponds to the rising priority of pitch indication as the main task of notations. Of course as the pitch-indicating function becomes predominant, it absorbs the cueing function. As for the corresponding decline in the indication of the qualitative aspects, it presumably reflects an altered conception of music, in which the qualitative aspect related to performance is no longer integral but relegated to a separate level below that of the pitch parameter—the attitude that allows us to speak of ‘ornamental’ neumes. And that, in turn, should presumably be understood as an aspect of musical practice becoming literate and establishing a fixed literature.

(2) The question was left open whether the first notations were predominantly symbolic or iconic. Now we can answer: ‘both’. The notations of the treatises are predominantly iconic. The practical
notations began as predominantly symbolic systems. Which of the two had actual temporal priority is not a question of the greatest historical import.

(3) One of the most interesting things to emerge is the importance of the indexical function of the earliest practical notations. What I have referred to here as the ‘cueing function’ is always indexical. An index is a sign that indicates or points to something that is there, or that has been there, or that has happened, or that will or should happen: e.g., ‘Here is where you begin the cadence’; but also ‘here is where you come down to the lowest note’ (see, again, Figure 4). The real differentiation between virga and punctum is not between high and low notes respectively, but between the moving notes of the melody and its lower boundary. That is characteristic of the St Gall script, among others, and it constitutes important evidence bearing on the question of origins. In these scripts the virga–punctum differentiation is not primarily a pitch-indicating function of notation, but rather a cueing function, albeit in the pitch domain. It shows the singer where he touches bottom. But in the prevailing view of the origins of neumatic writing the virga–punctum differentiation as pitch indicator is the first principle on which the system is built altogether. The elevation of the virga at the beginning of the cadence is an iconic representation, but it functions as an index. On the other hand the differentiation of the punctum as a sign for a low note from all the virgas rests not on a correspondingly low position, but on the differentiation of its form from that of the virga; it is a symbolic, not an iconic differentiation. But the punctum, too, functions as an index here. The newly gained awareness of the prominence of the indexical function in early practical notations will be important for understanding the role of language-writing as a background for the beginning of music-writing.

III

If we now draw together what has been remarked on the subject to this point, it will be unmistakable that the practice of writing down

89 In the preceding volume of this journal, John Boe reported on what amounts to another case of an indexical function in the earliest uses of a neume ('The Beneventan Apostrophus in South Italian Notation, A.D. 1000–1100', Early Music History, 3 (1983), pp. 43–66).
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music arose in and through its intimate association with language, the writing down of language, and the teaching about language that became so important a feature of the Carolingian culture. These are the indications:

(1) One source of the impulses for the beginning of music-writing was the need to provide illustrations for the treatises of the *Ars musice* that was created on the model of the *Ars grammatica*.

(2) The author of the *Musica enchiriadis* claimed that with practice it would be possible to record and sing sounds as easily as one could write and read letters, that is, he aimed to carry over the writing and reading capability from language to music. Aurelian’s image about turning the mind’s eye and the point of the pen to the melodic material in preparation for learning to differentiate it has the same connotation.

(3) All Western notations in the beginning represented speech inflection. Either the notational symbols are the written syllables of speech themselves (as in the *Musica enchiriadis*) or they are written in the closest coordination with syllables. In this connection it is useful to recall again that the earliest practical specimens are music for the priest and deacon. Our interpretation of this was that the music for the cantor and schola was still an oral practice, something that is confirmed by Aurelian. But it also means that the earliest specimens are notations closely tied to syllables in syllabic or neumatic settings (the para- or non-liturgical specimens are all syllabic). The longest melismas are in the Greek Gloria of Paris 2291. From the sources that we have, musical notation seems not to have been autonomous at first. That corresponds to the conception of chant as a form of speech, something that we can infer from passages in medieval descriptive and poetic writing in which chanting, as we would put it, is called ‘speaking’. Perhaps the idea that one could string out neumes over long spans unsupported by syllables – as in the melismas of Mass-chants or the melismatic notations of sequences and prosulas – was conceptually foreign to the earliest neumators; it is not apparent before the tenth century. But it is clear from various sources that long melismas were sung before that time (e.g. from Notker’s report about how he came to compose proses (see below

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90 E.g. the trope-line ‘Ipsi perspicuas dicamus vocibus odas’; ‘To him let us *sing* clear songs with our voices’ (see Jonsson and Treitler, ‘Medieval Music and Language’, p. 12).
(4) Medieval efforts to develop a conceptual vocabulary for precepts about melodic form began with the adaptation by analogy of the conception of language-structure as a constituent-hierarchy, breaking the sentence down to sense-units, words, syllables, and letters. This served as a legitimation for a system of notation at the lower end, and as a first principle for the composition and analysis of chants towards the higher end.

(5) Virtually the most pervasive word throughout the middle ages and continuing into the renaissance for melody or the melodic was ‘accentus’, a word which, in the tradition of the Ars grammatica, stood for the melodic attribute of speech. The term as it is used throughout that long time-span conveys two basic senses, which focus on the melodic itself – e.g. when it conveys the sense of a tessitura – and on the speech-carrying or speech-articulating role of melody – ‘accentus’ for the recited parts of the service or as the sounding form of punctuation.

(6) The liquescent neumes, components of the neumatic system from the first, represent a transcription into music-writing of a fundamental phonetic property of language that is taught in the Ars grammatica.

The search, in modern times, for the origins of Western music-writing has in the main been directed by an awareness that the quarry is to be sought in the technology of the language-writing that was its matrix. The task of the remainder of this paper will be to review the main proposals that have been made about associations between aspects of language-writing and music-writing that bear on the question of origins. It will be a matter of reviewing both the logic of the problem and the evidence. There are three main, very much interrelated topics: neumes and prosodic accents; neumes and the punctuation of ecclesiastical texts, called ‘ecclesiastical accents’, and neumes and punctuation in general.

92 The major exception is the attempt by Constantin Floros to derive the Latin neumes from the Byzantine system (Universale Neumenkunde, 3 vols., Kassel, 1970). The attempt is unsatisfactory, on one side, because it is as though one were studying the transformation of one biological form into another without taking into account the environment. And on the other side it fails on a host of technical grounds – paleographical, chronological, semiotic – which have been summarised by M. Haas in ‘Probleme einer “Universale Neumenkunde”’, Forum Musicologicum, 1 (1975), pp. 305–22.
The theory that Western neumes are derived from the prosodic accents described by the Roman grammarians for the Latin language was proposed by Edmond de Coussemaker, elaborated by Peter Bohn, and then transmitted through Peter Wagner, Paolo Ferretti, and others down to more nearly contemporary writers like Willi Apel and Solange Corbin. It continues as the leading idea about the origins of the neumes. Handschin expressed reservations in connection with his interpretations of Aurelian, but claimed only to narrow the theory, not to deny it. Floros has rejected it in favour of his theory about the Byzantine connection (but see n. 92).

The conception behind this idea can best be summarised from Bohn:

Research to date in the domain of notation justifies the conclusion that the genesis of neumatic script is without doubt to be sought in the accents... The upward and downward motions of the voice, indicated by the ancients with the accentus acutus and gravis, also constitute the basic elements of modulation in song. The accents are the germ of music [this is a quotation from Martianus Capella, 'Accentus seminarium musices'; that this writer of late antiquity should be cited as an authority reveals something about the belief in the deep roots of music-writing that is entailed in this theory]... In neumatic script the accentus acutus was usually written in a vertical position and received a special name; it was called virga and signified a note that is higher than the preceding or following note. The accentus gravis was at first written in a declining oblique position, shortened itself gradually into a point – probably through the natural hand movements of the notators – after which it received the name punctum. It signifies a note that is lower than the preceding or following one. In compound neumes it retains its original form [the grave accent; no reason is given for that, and no notice taken of the fact that it is often not so]. The accentus circumflexus is called elivis, clinis or flexa; it designates two notes of which the first is higher than the second. The accentus antcircumflexus [a modern invention, made, no doubt, to balance the system] was given the name podatus or pes [but as the accent version is a new invention, this chronology is impossible]; it signifies two notes of which the second is higher than the first. One sees that the form and signification of the accents have remained essentially the same in the neumatic script; only the names have changed. [That bears underscoring; the neumes are not derived from the accents, they are the accents, with but their names changed. That means they are as old as the accents. That is really what is
being said when one speaks of 'accent neumes' under the prevailing modern classification.

As the melodies of the chants were gradually extended through the use of larger melismas, and as the notation had therefore to become more variegated, these signs became inadequate and, following the same principles, compound neumes were constructed through the addition of the simple forms of the acutus and gravis. For example, by attaching a virga to the right of a clivis, a porrectus was created, with the signification acutus, gravis, acutus, etc. [The point is not that chants with longer melismas came to be notated, but that chants were composed with longer melismas. It is a further implication of the accent theory that the chant has always been written down, and that goes with the implication about the antiquity of neumatic writing.] The neumes are but combinations of accents, and after what we have seen about the relation between speech-accent and song, there is nothing surprising in that. . . . Accent [and] neume . . . signs have the same meaning and the same origin; in short they are the same signs.95

This amounts to the most literal reading possible of the pervasiveness of the 'accentus' concept in the middle ages, and of the unified conception of music and language. But it flies in the face of evidence and reason on so many fronts that its survival is a marvel.

To speak first of the prosodic accent alone, historians of Latin are agreed that late Latin—the Latin that was spoken during any time that could possibly be considered as the time of origin of the neumes—was not spoken with a pitch accent. What is more the weight of the evidence seems to be against a pitch accent even in the Latin that the Romans spoke.96 That means that the accents on which the neumes were based could not have been drawn from speech at all—that the neumes cannot reflect the continuity of music and speech as a reality—but only from grammatical treatises which were slavishly imitating their Greek predecessors.

The absence of a prosodic (pitch) accent from Latin speech corresponds to the fact that there are no prosodic accent-marks to be found in medieval Latin manuscripts of any period prior to the earliest notated sources. The continuity or transformation imagined by the accent theory can only have taken place in a phantom realm with neither aural nor visual substance.

This claim may seem surprising in view of the durability of the accent theory and of the reports that are found in the literature about

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96 See above, notes 53 and 54.
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accent-marks in Latin sources. Solange Corbin, for example, claimed that, in the domain of scripts with accent-neumes, "Not only is it possible to recognise [a] transition [from accent-marks to neumes] in the sources, but indeed it happens quite frequently." She did not identify, in that passage, the sources in which this could be observed. But elsewhere there are reports of manuscripts with accent-marks in Paris libraries. These turn out to be stress-accent marks and word-boundary markers, usually added by later hands as aids to the pronunciation of the Latin. Lowe unintentionally contributed to the modern dilution of the term 'accent' in CLA, identifying the various markers that were mentioned above, also in connection with guides to the performance of the text, as accents. These marks all have more-or-less the same form, the oblique stroke \/. Together with the dot, it is the commonest of marks in medieval sources, being used, in addition, to mark gatherings and to distinguish the letter i from amongst other verticals belonging to the letters n, u, m, etc. (It seems to be the ancestor of the dot that we place over the i.) Quite apart from the fact that the one purpose for which it was not used is the prosodic accent, there has to be very good reason for claiming a descent from any one of those uses - as against the others - to the virga.

If the term 'accent' has no concrete referent in the practice of speaking or writing during the time when the neumes might have been invented or adapted - at least in the specific sense required by the accent theory of origin - then that has the effect of restricting the meaning of the theory. It means that the idea of the neumes would have had to be taken from the treatises, and - given the sense of the theory about the antiquity of the neumes - at a time when the treatises were not much in circulation, before the Carolingian era. With the recirculation and new composition of grammatical treatises in the Carolingian era, it is not implausible that the inventors of notation would have been influenced by them. Evidence has already been produced of likely connections in the case of the Musica enchiriadis and the liquescent neumes. But it will shortly be

97 Die Neumen, p. 3.18 (my translation). The puzzling thing is that three pages later she wrote, based on her own study of CLA, that there are no accents to be found in text manuscripts prior to 800 (p. 3.21).

shown that Carolingian notation could not possibly have been derived from the accents.

In its restricted meaning the accent theory has the implication that the neumes were invented as a system primarily for representing pitch-patterns. That could appear to be consistent with what we have observed about the primary task of the notations in the earliest pedagogical treatises, and especially with the suspicion that those were the first notations. But the pitch notations of the treatises and of Paris 2291 cannot have been derived from the accents because they have nothing to do with the differentiation of punctum and virga. It is a general characteristic of the early iconic scripts that emphasise pitch representation that they do not differentiate punctum and virga as signs for single notes, and that the virga in compound neumes represents not a high note but an ascent to a higher note.99

On the other hand the scripts that do differentiate punctum and virga for single notes do not consistently meet the conditions required by the accent theory, and they fail especially to meet them in the earliest scripts that would be closest to the moment of their transformation from the accents. The condition that Bohn deduced from the accents is that the punctum represents notes lower than the preceding or following notes and the virga represents notes higher than the preceding or following notes. Apart from the fact that that is not a sufficient statement of constraints to operate such a binary system, it was shown above that the general idea behind it does not operate in the example from St Gall 381 (Figure 4). There a virga could be written for a note that is either higher or lower than either the preceding or following note. It is only the rule for the punctum that applies, and that means that the punctum is an indicator for the lower end of the register in any particular passage. But then it is an indicator not simply of a detail of register, but also of a detail of place, or moment in the sequence of the chant. The punctum indicates the syllable of the text with which the singer has reached the lower extreme of his ambitus. As in this case the lower end is touched only at the beginning and end of a melodic unit, the punctum gives orientation with respect not only to the melodic, but also to the formal flow of the performance. The punctum is not a pitch-sign like a note-head in our system, but an index. As a sign its function is

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comparable to the abbreviations in the margin of the example: susū (susum), iusū (iustum), and eō (equaliter). These are indices that the first note of the antiphon that is to be repeated after the verse is higher than, lower than, or the same as the last note of the psalm tone. Such indices were the hooks by means of which the reciter was able to declaim the text that was before him in accordance with the melodic patterns and procedures that he had in his mind.

The systematic use of the punctum–virga contrast for pitch differentiation seems to have been a later development, and is evident in such sources as Benevento, Biblioteca capitolare, MS vi 34, Lucca, Biblioteca capitolare, MS 601, and Worcester, Cathedral Library, MS f.160.100 Earlier, the differentiation had primarily an indexical function. That means the accents changed not only their names but also their function when they became neumes, and one of them – the gravis – changed its form as well. That leaves the form of the acutus, which must be singled out as accent and neume from the multitude of uses that that form received, in order to maintain the last possible thread in the accent theory.

The idea that the punctum and virga were primarily the basic signs for differentiating high and low pitches – and thus the basis for the system of ‘accent neumes’ as a whole – belongs to the common currency of understanding about neumes. It may have originated with Bohn – I know of no earlier exposition of it in the modern literature that is so explicit. But in any case it is a corollary of the accent theory, and it reflects a conception of neumatic writing as primarily a system of pitch notation. That conception underlies the classification of neumatic scripts according to the duality ‘accent neumes’ – ‘point neumes’. But the interpretation of the punctum–virga differentiation as a matter of pitch differentiation alone has been accepted too uncritically. It is another a priori idea that does not survive confrontation with the actual use of signs, as has been shown. To get a better idea of the meaning of this differentiation the punctum and virga will have to be approached neutrally, as diacritical signs written above texts, to see what in fact they differentiate, in what kinds of books, from what time and place, with what genres of chant, and for what executants. They can be expected to be seen functioning to differentiate not only the pitch properties of chants,

100 Ibid., p. 256.
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but also the formal and textual properties – marking particular places in the chant, or making particular kinds of syllables in the text (e.g. stressed ones).

There is one final problem. Following the accent theory, the earliest sources should be expected to contain a notation comprising principally virga and punctum, podatus and clivis, torculus and porrectus. That is the notation that Bohn described. But there are no such notations among the early sources. On one side there are notations in which the quilisma, oriscus, pressus, gutturalis, pes quassus, virga strata, epiphonus, etc. abound. (The argument against sweeping these aside as ‘secondary’ or ‘ornamental’ has already been presented.) And on the other side there are the pitch notations without such neumes, but again, their notational signs cannot be ‘accent-neumes’. Taking only the notation in the *Musica disciplina* for now, it is not only that there is no punctum–virga differentiation. As Handschin showed, where Aurelian identifies a melodic figure as ‘acutus’ and the notational sign is an oblique rising to the right, it corresponds to a podatus, not a virga, in other sources. Where a ‘circumflexus’ is identified and a figure \( \sim \) is written, it corresponds to a torculus, not a clivis.

It is time the accent theory was abandoned, as a product of *a priori* ideas that have no correspondence to realities and as a red herring that is misleading not only about the nature and origins of the neumes directly, but indirectly about other aspects of the relationship between music- and language-writing, and about the relationship between music-writing and the chant tradition itself. That is just the point – not only that it is itself insupportable as a theory about the origin of the neumes, but that it is a keystone in a comprehensive view that is false: that the neumes have always been systematic, that their origin is to be traced to antiquity, that their task was always to record the pitches of the plainchants, that chant melodies were conceived as sequences of individual pitches, and that they had always been written down.

V

Ideas about old blood-ties between neumes and punctuation began circulating through the musicological literature soon after the announcement of the accent theory of origin. They have partly, but
not entirely, followed the same route as the accent theory, and in the form in which they are usually expressed, they are dependent on the accent theory. There are various points at which we might equally well pick up their course; I choose a recent one, a remark in Willi Apel’s *Gregorian Chant*.

The remark is thrown out as an aside during Apel’s description of the medieval tones for the delivery of prayers and scriptural readings in the Office and Mass. All these tones,’ he writes,

are essentially monotone recitations sung at a certain pitch called tenor . . ., and with downward inflections at the various points of punctuation . . . The melodic punctuations where the singer deviates from the monotone recitation are called *positurae* or *pausationes*. They are chiefly four, namely, flex (*flexa*, originally *punctus circumflexus*), metrum (usually called *punctus elevatus* in medieval sources), the interrogation (*punctus interrogationis*), and the full stop (*punctus versus*, i.e. final stop of the verse).

Now Apel describes what these ‘melodic punctuations’ ‘usually involve’, giving their pitches. He writes that the flex ‘roughly corresponds to a comma of the text’ and that the metrum ‘generally occurs at the place of a colon’, and we can infer that the interrogation occurs at the place of a question mark and the full stop at the place of a period. Then he provides ‘a table . . . which shows the punctuation formulae for some of the ancient tones given in the *Liber usualis*’ (see Figure 5). About the table, he explains that ‘The signs given at the

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<th>Metrum</th>
<th>Interrogation</th>
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Figure 5 Table of *positurae*, from W. Apel, *Gregorian Chant* (Bloomington, 1958), p. 205

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top of the figure are the ones used in the medieval books to indicate the various punctuations — punctus flexus, elevatus, interrogativus — and the corresponding inflections of the melody.' Then comes the remark to which I want to call attention: 'The reader will easily recognize that the sign for the punctus interrogativus is an early form of our question mark which thus reveals an interesting ancestry.'

Exactly what Apel had in mind here may not be immediately recognised by every reader. But in the corresponding passage of the book that served as Apel’s model, it is all spelled out clearly: ‘The fathers of this Lesson script [“Lektionschrift”, Apel’s positurae] selected several signs from the array of neumes [“Tonzeichen”] then in use, and combined them with the sign of punctuation [i.e. the dot] in order thereby to fix certain typical melodic inflections in liturgical recitation.’\textsuperscript{102} Specifically, in Wagner’s report, the punctus elevatus combined the dot with a podatus, the punctus interrogativus with either a porrectus or quilisma, and the punctus versus is either the dot by itself or the dot combined with the apostropha. He shows these forms of the punctus interrogativus: $\check{\text{v}}$ and $\check{\text{v}'}$, and writes that ‘the present-day question mark developed from these’. (Presumably he meant only the first.) The practice, including its graphic signs, he traces back to the ninth century. What engaged Apel was the idea that our modern question mark could have originated as a sign of musical notation. But did it? And was the ‘Lektionschrift’ really a script, with specific musical signification as early as the ninth century?

Before we proceed to these questions we should be clear about a few factual matters that are not evident from the texts of Wagner and Apel. (1) Apel writes that the flex ‘roughly corresponds to a comma of the text’, and that the metrum ‘generally occurs at the place of a colon’. Whatever he may have intended with this language, it should not be taken to refer to the modern punctuation marks called ‘comma’ and ‘colon’. In medieval terminology these are terms for the larger and smaller sense units respectively within the sentence, which would be marked by major and minor pauses respectively in speech, and by appropriate punctuation signs in writing. (As of the eighth century these could be $\check{\text{v}}$ for the comma, and $\check{\text{v}'}$ or $\check{\text{v}''}$ for the colon — see further below.) (2) The punctus elevatus is not everywhere $\check{\text{v}'}$. It could also be $\check{\text{v}''}$. (3) The punctus interrogativus is

\textsuperscript{102} Wagner, Neumenkunde, pp. 88–9 (my translation).
not everywhere ∨ or ∨. It could take other forms of the question mark (see below, p. 200). (A systematic survey of sources for this practice is badly needed.) (4) Apel has no sign for the punctus versus; it is, as Wagner says, . or !. (5) Signs could be combined or multiplied: .", "i" .:., .Io3 In short, the impression of a few signs in a uniform system given by Apel is highly misleading.

Wagner was not the first to propose that the lesson signs were originally neumes, appropriated in combination with the punctuation dot as signs of melodic punctuation. The priority goes to his teacher Bohn, in the same influential paper in which he developed the accent theory.104 He called the cadential formulas ‘accentus ecclesiastici’, which is the designation for them in descriptions of the practice written in the fifteenth and sixteenth centuries. And he claimed that these ‘accents’ were indicated, in manuscripts as far back as the ninth century, by ‘neume signs used as punctuation signs’. That is, it was his idea that punctuation signs were neumes with new names, just as neumes were accents with new names. And so he could write that ‘Accent, neume and punctuation signs have the same meaning and the same origin; in short they are the same signs’.105

The punctuation signs emerged as such, according to Bohn’s reconstruction, in the Biblical texts that were the source for the ecclesiastical recitations of the Divine Office. As the reciters could not be relied upon to recognise the ‘distinctions’ (sense-units) at a glance, or in any case to make the articulations uniformly when several were chanting, it was necessary to mark the text with some external sign. This was done at first with the old positurae (the plain points). But that system was confusing to the readers because the position of the point contradicted the direction in which the voice turned in reaching the end of the text segment (the full close was indicated by the point in the high position, whereas it called for a downward turn of the voice, etc.). The solution was to combine the point with neumes, creating the punctuation signs that signified ‘fixed melodic figures (“Tonfiguren”) for the ends of individual text segments’.

103 See G. Engberg, ‘Ekphonetic notation’, The New Grove Dictionary, vi, p. 102. (But this citation does not amount to an endorsement of the author’s lumping together of the Latin lesson signs with the ephphonetic notations of the Hebrews, Syrians and Greeks.)
104 ‘Das liturgische Rezitativ’.
105 Ibid., p. 50 (my translation).
106 Ibid. (my translation).
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Apel’s offhand remark is a faint third-generation trace of this theory of Bohn’s about the origin of the punctuation signs, which has otherwise not been of much interest to contemporary musicology. However it has been picked up and nurtured in the field of paleography, and we must pursue it there for two reasons. (1) It is an essential part of the comprehensive view of the history of plainchant and its notation that we are attempting to examine critically here; the identity of form between lesson signs and punctuation marks requires explanation. Bohn’s explanation has implications about the age and origin of musical notation that should be of interest to us. (2) As we take note of the importance of punctuation in the history of our subject, the theory must come back at us from the direction of paleography.

In his paper ‘Liturgical Influence on Punctuation in Late Old English and Early Middle English Manuscripts’, Peter Clemoes wrote the following;

From the point and from neums were formed four liturgical positurae [these are described in the usual way] . . . As used in liturgical books positurae indicated musical cadences which were allied to the natural inflections of the voice at points of rest. In fact a system of punctuation had been made generally available to literature, indicating to the reader inflections of the voice appropriate to the phraseological divisions recognized by the Latin Grammarians . . . Further, although primarily denoting intonation, it was inevitable that positurae should be used in association with particular grammatical constructions . . . Within the liturgy was developed, in association with an established tradition of phrasing, a system of guides by which appropriate inflections of the voice were indicated to the reader, and . . . these, taken over by writers of Late Old English and Early Middle English, provided them with a specialized equipment which deeply influenced their style.107

Parkes, in the appendix to ‘Medieval Punctuation, or Pause and Effect’, wrote that

The principal marks of punctuation . . . that emerged during the course of the Middle Ages . . . were all derived from the system of ecphonetic notation which originally indicated the appropriate melodic formula to be used in the liturgy (which in different contexts required different melodic phrases). The melodic formulae indicated by the different signs were applied at the various logical pauses in the sensus of the liturgical texts. With the development of musical notation these signs lost their neumatic

107 Cambridge University, Department of Anglo-Saxon, Occasional Papers 1 (Cambridge, 1952), pp. 12–13, 15, 22.
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significance, and were absorbed into the general repertory of punctuation. The signs are found in non-liturgical texts from the eighth century onwards. [It will be necessary to return to this last sentence and its significance.]¹⁰⁸

To know what might be meant by ‘ecphonetic notation’ (or at least to learn what the source of the expression, used in this connection, might be) it is necessary to return to the literature of music history. In 1912 Jean-Baptiste Thibaut published his Monu-
ments de la notation ekphonétique et neumatique de l'église latine.¹⁰⁹ The ‘notation ekphonétique’ of his title is punctuation in liturgical texts, pure and simple. It was his theory that ‘ecphonetic signs originated as punctuation and were adapted as neumes through a change of function’. He believed that they had always had a certain melodic character, even as punctuation, and that it was upon this that their adaptation as neumes was founded. Calling them ‘ecphonetic notation’ reflected his idea that they were the Latin descendents of the Byzantine ecphonetic system. But in that he was misguided, for Latin ecclesiastical punctuation was not a notation, nor is there a case to be made for a Byzantine connection.

Taking the latter point first, two observations will suffice: the Byzantine cantillation signs work on different principles from those of the Latin ones; and the Latin signs are found in manuscripts a century older than the earliest Byzantine ones.¹¹⁰ In making the first claim I have in mind a set of criteria for what constitutes a notation. Basically, a notation must have the capacity to pick out particular objects from its referent field and to distinguish them from all the other objects in the field. That means that both the characters of a notation and their referents must be distinct, and that the linkages between them must be stable. To be able to read this as a sign for the pitch $f'$: $\frac{4}{4}$ we need to be confident that we can distinguish the sign $\frac{4}{4}$ from the sign $\frac{4}{4}$; that we can distinguish the pitch $f'$ from the pitch $g'$; and that the sign will stand always for the same pitch.¹¹¹ The lesson signs clearly do not satisfy these criteria. Even if the signs are distinct (one can even wonder about that), the referents are not, nor are the linkages between signs and referents stable, so far as we can tell. It is only in books of the fifteenth and sixteenth

¹⁰⁸ p. 140.
¹⁰⁹ St Petersburg, 1912.
¹¹⁰ See M. Haas, Byzantinische und slavische Notationen, Paleographie der Musik, 1: Die einstimmige Musik des Mittelalters (Cologne, 1979).
centuries that expositions of a system of ecclesiastical accents, with specification in ordinary notation of the melodic formulas to be called forth by the respective signs, are found. There are hints that this writing down represents an effort to systematise a loose practice. Certainly that is clear in the most often cited of these expositions, that in the Micrologus of Andreas Ornithoparchus (1517), who writes of priests reading the things they have to read 'so wildly, so monstrously, so faultily, that they doe not only hinder the devotion of the faithfull, but also even provoke them to laughter, and scorning with their ill reading'. Even without referring to such extremes, Ornithoparchus says repeatedly that the accent varies ‘according to the manner and custom of country and place’. He resolves to ‘explain the rules of Accent . . . that Accent might also as true heir in this Ecclesiastical kingdome be established [along with Concess, the chanted portions of the service]'.

When modern writers describing the ecclesiastical accents report that the signs for them are found in books as far back as the ninth century, they are saying more than one can really know. What are in the books of the ninth century are punctuation marks, identifying articulations in the text that would have been marked in recitation by cadential formulas. But that those formulas should have been fixed that early is something for which there is no evidence. Contradictions, in addition to the testimony of Ornithoparchus, are in inconsistencies of placement of the signs in the same text, both with respect to place and with respect to the signs used in different sources of the same text.

The misnomer aside, Thibaut’s theory that the neumes were signs that had earlier been used as punctuation marks is in fact the view that comes into focus with a straightforward reading of the existing manuscript evidence. The last sentence of the quotation above from Parkes explains why on one side: all the signs that are incorporated into the system of lesson signs were in use as punctuation signs in the eighth century. That they are found in non-liturgical as well as liturgical texts clears them of the suspicion of having started out as musical signs.


114 This can be confirmed in CLA.
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The origin of the lesson signs – which are but punctuation marks in ecclesiastical texts – is the same as the origin of post-eighth-century punctuation altogether: invention and normalisation by north-French scribes as an aspect of the reform of language-writing technology and in general the cheirographic explosion that was the necessary correlate of the Carolingian educational program. That this system was so much directed at ecclesiastical texts is but another way of observing that the whole educational program was directed toward the improvement and the widening of ecclesiastical literacy.

That none of these signs appears in the role of neume before the ninth century provides the confirmation of Thibaut’s theory from the other side. This simple fact about the sequence in the appearance of the same signs in different roles has implications that must now be pursued. In place of this stemma:

```
Roman prosodic accent  
                  ↓
     Neumes (date undetermined)  
                        ↓
Lesson signs (from ninth century)
                        ↓
      Medieval punctuation (date undetermined)  
```

we seem to have this much simpler one:

```
Carolingian punctuation (= lesson signs)  
                  ↓
(other factors)  
                  ↓
Neumes (ninth century)
```

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VI

The first task will be to see why we should not presume that the signs common to neumes, punctuation, and lesson signs were active as neumes earlier and that the evidence has all disappeared. I shall cite six reasons of different sorts.

(1) All the liturgical items belong to the same class; i.e. they are not random survivals.

(2) The ninth-century specimens themselves are all occasional neumated items in books that are otherwise not neumated, rather than fragments of books of which the rest has been lost. In all cases the neumes seem to have been added to texts for which they had not been planned.

(3) There is evidence that the oral tradition prevailed in the ninth century, and still in large measure in the tenth: the absence of neumated cantorial items among the ninth-century specimens; the testimony of Aurelian; the writing of full service books without neumes that are, nevertheless, identified in their prefaces as 'Books of Musical Art'; the evidence of oral process in written transmissions that is a contraindication of a written tradition of great age.

(4) The earliest testimony that we have for the use of the written document in place of rote learning with a master for the teaching of chant comes from the late ninth/early tenth century. Notker, in the Proemium to his Liber hymnorum (dated by Von den Steinen to 884) reports that the teacher Marcellus collected Notker's sequences on rotulae, and gave them to his pupils in that form that they might learn them. And Hucbald, in his De harmonica institutione (written about 900), argues explicitly in favour of teaching chant without

115 E.g. Clemoes, 'Liturgical Influence', p. 12, citing G. Reese, Music in the Middle Ages (New York, 1941), p. 133: 'The earliest extant examples of the use of neumes on the Continent are fragments of 8th century MSS but the system was probably two hundred years older.'

116 For details see Corbin, Die Neumen, pp. 330-41.


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dependence on a master but rather with a precise letter notation referring to an exact pitch system. He is worth quoting:

As the sounds and differences of words are recognized by letters in writing in such a way that the reader is not led into doubt, musical signs were devised so that every melody notated by their means, once these signs have been learned, can be sung even without a teacher. But this can scarcely happen using the signs which custom has handed down to us and which in various regions are given no less various shapes, although they are of some help as an aid to one's memory, for the markings by which they guide the reader are always indefinite.120

Hucbald's complaint about the inadequacy of the neumes and the clear implication that they depended on a master do not speak for a well-functioning written tradition.

(5) The earliest specimens of notation in England are of the tenth century, and on internal evidence they show the introduction of notation into an oral tradition, just as do the ninth-century continental specimens.121 That is, there is equally little reason for believing in a lost older written tradition separately; and two lost written traditions would constitute rather much of a coincidence. On the other hand it is hard to believe in a (lost) written tradition on the continent that would have gone for centuries without any influence in the British Isles. (There is a similar conclusion to be drawn with respect to textless notation. If there is a lost written tradition, we must either believe that it required that many more centuries until melismas began to be written down, or that there is a lacuna of similar proportion in the transmission of both texted and untexted notations.)

(6) The best circumstantial explanation for the invention of notation places it in the Carolingian era. In no earlier period can we recognise the same needs, cultural milieu and opportunities.

All of these are positive, direct reasons for accepting that the earliest specimens of music-writing represent more or less the beginning of the practice, and they reinforce the negative evidence of the absence of earlier sources. But there is also an indirect reason: the reasons for believing the opposite are defective, and it is important to bring them out. They are of two kinds: a historiological principle and an ontological one about the hierarchical structure of the historical

120 Palisca, Hucbald, Guido, and John on Music, p. 36.
121 See Rankin, 'From Memory to Record'.
world. Both are of an a priori nature and have enjoyed a privileged status, immune from critical review.

The historiological principle derives from nineteenth-century cultural evolutionism, and can be formulated thus: competent and well-articulated behaviours or practices do not emerge as such all at once in cultures, they come to be that way through more-or-less extended periods of development. The period of development is extended, according to this idea, because the behaviour or practice is the result of a gradual transformation in which the culture is uniformly involved. Wagner’s conception of the evolution of diastematy in neumatic writing is a characteristic instance of this Lamarckian idea. (Lamarck held that a species evolved because its individual members, in consciousness of their goals, changed to meet the demands of the environment – giraffes grew longer necks to reach ever higher limbs on the trees in order to gain a competitive advantage over other species.) Such evolution is called ‘transformational’ by biologists. It is contrasted with ‘variational’ evolution, in which change worked upon or by individuals through causes independent of the effect they will have can effect whole populations in a relatively short time (a mutation or an invention). Darwin’s evolutionary scheme was a variational one, and it is strange that it has had so little influence on thinking about evolution in humanistic disciplines (where there is often a mistaken belief that Darwinian ideas have been assimilated).\textsuperscript{122} The early history of music-writing is a clear instance of a variational evolution, in which a technology, invented for one set of tasks, was rapidly adapted and transformed for purposes and in ways that could not have been predicted from the vantage-point of the beginning.

Indeed the aggregate of ninth-century specimens can give the impression of a ‘well-developed’ (the term betrays the idea) notational practice. Every basic principle of notation that became functional by the time of the introduction of the staff in the eleventh century is in evidence before the mid-ninth century: the Daseian letter system and the graphic staff system of the Musica enchiriadis, and both types of neumatic writing, the iconic system of Aurelian and Paris 2291, and the symbolic system of Munich 9543. And

\textsuperscript{122} The recent book by J. Miller and B. van Loon, Darwin for Beginners (Oxford, 1982), can be recommended as a straightforward exposition of Darwin’s theory of evolution against the background of the history of the general problem with a clear sense of what is specifically Darwinian.
virtually all the neumatic characters that are identified in the neume tables of the eleventh and twelfth centuries are found in the ninth-century sources. This amounts to a high degree of differentiation and can be taken as presumptive evidence for a lengthy prior development. But it can also have been produced over a few decades by deliberate experimentation. This is plausible enough, given the circumstances described at the beginning, and thinking of the rapid development of the Caroline minuscule hand. The sources do not yield any basis for choosing between these alternative interpretations. The presumption of a gradual evolution does not merit the privileged status it has enjoyed. The interpretations must compete on the level of the coherence and plausibility of the broader accounts of the history of musical transmission in the context of that time with which they are integral.

The ontological principle is one that we can observe even in Carolingian times. Ideas about the antiquity of music-writing are in effect also ideas about its source: ultimately the Greek world – ancient or Byzantine – with Rome as the intermediary to the Latin world. Ideas about Rome as the point of origin or transmission of music-writing in the Latin West mingle with ideas about the origin of Latin chant itself.

The idea that the chant tradition of the Latin church is a Roman tradition is a Carolingian idea carried forward into the scholarly literature of our time, and it is inseparable from the idea of the antiquity of music-writing, a fact concretised in the Carolingian portrayals of Gregory receiving and dictating or transcribing the chant into books. Virtually all of the main (and dubious) ideas about the origin of Western music-writing go back to this deeply rooted orientation to Greece or Byzantium and Rome: cheironomy, ecphonic notation, the prosodic accents of Greek and Latin, and the idea of the priority of Byzantine notation itself. The failure of these ideas in the face of the concrete evidence speaks against the equally deep-rooted belief in the antiquity of music-writing and the genealogy accents → neumes → lesson signs → punctuation that depends on it.

123 See Huglo, 'Les noms des neumes'.
125 The cheironomy theory of origin is laid to rest by Helmut Hucke in 'Die Cheironomie und die Entstehung der Neumenschrift', Die Musikforschung, 32 (1979), pp. 1–16.
The basic elements of the Carolingian systems of punctuation in use before 800 are the point: . , the comma: , or , the virgula: / or , and the question mark, of which there are numerous forms:

And different elements could be combined – thus the question mark nearly always incorporated a point, but also:

It can be seen at first glance that almost all of the elementary signs and many of the compound ones as well came to be used as neumes from the ninth century. And that seems like prima facie evidence that punctuation signs are a factor in the genesis of the neumes. But what are we to make of that? However badly the accent theory squares with the evidence, it makes a good story, and no doubt that has contributed to its long survival. Is there a good story to be made about the relation between neumes and punctuation?

There are at once some caveats to be observed, the first of which is to take account of the fact that many of the signs were used in other connections beside punctuation in the eighth century and neumes in the ninth. The point and the virgula were used to separate words; the simple point could mark an abbreviation following a simple letter (just as today); the double point : and the point with comma ; could signify -us or -et at the end of a word; the comma , or the double point : or the point with comma ; after -q could signify -que; the angular comma 7 could be a sign for 'et' and also for foliating leaves; the virgula / could mark monosyllables and final syllables with long 'i'. It would have little force to pick out one of these signs in any one of its functions before the ninth century and
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claim it as the progenitor of a neume just on the grounds of its form.

A further reason for caution is that most of the figures are not restricted to specific localities in their use as punctuation signs; whereas it seems self-evident that if signs are imagined to pass from one use into another, it would be by way of neumators taking signs that are already in use in the locality in which they are active and turning them to some other use, rather than taking signs from some comprehensive catalogue.

Both of these caveats really come down to the observation that most of the signs are of highly general and simple form, so that it is not surprising that they were widely distributed and came into a variety of uses, including their use as neumes. But with question marks the case is different. They are more specialised in form and function, and their forms are more specific to particular places. Of all the forms shown, only (j) was used before the eighth century in a capacity other than that of marking a question. It could be a symbol for the final syllable -tur. (In the ninth-century antiphoner of Senlis (Paris, Bibliothèque Ste Geneviève, MS 111), ò appears as a symbol for the final syllable -er. I am not aware of any eighth-century occurrences.) As for their distribution, Lowe and Vezin have both observed that question marks can be sufficiently characteristic and localised to contribute substantially to the determination of the date and provenance of the manuscripts in which they appear.126 It therefore seems appropriate to enquire whether the signs shown as question marks on p. 200 are also found as neumes, and, if they are, whether they are found in both capacities in the same regions. The second question must be asked because, again, it can hardly be imagined that the early neumators worked from a comprehensive catalogue of punctuation signs. The provenance of the question marks shown above is indicated in Table 1.

No neume corresponds to the signs (m) and (n). (o) corresponds to the trigon. The rest correspond either to a porrectus or to a quilisma in some neumatic script. This simply puts into more neutral form what has usually been reported about the neumes and the lesson signs: that the punctus interrogativus incorporates either the porrectus or the quilisma.127 We should now say that most of the

126 Lowe, 'The Codex Bezae' and Vezin, 'Le point d'interrogation'.
127 See, for example, Bohn, 'Das liturgische Rezitativ' and H. Husmann, 'Akzentschrift', Die Musik in Geschichte und Gegenwart, ed. F. Blume, 16 vols. (Kassel, 1949–79), cols. 266–73.
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Table 1 Provenance of question mark types\textsuperscript{a}

<table>
<thead>
<tr>
<th>Question mark type</th>
<th>Provenance</th>
<th>MS</th>
<th>CLA vol. and no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Corbie</td>
<td>Leningrad, Public Library, q.v.1,16</td>
<td>XI, 1619</td>
<td></td>
</tr>
<tr>
<td>(b) Lorsch</td>
<td>Karlsruhe, Landesbibliothek, Aug. cv</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(c) Tours</td>
<td>St Gall, Stiftbibliothek, 75</td>
<td>VI, 904</td>
<td></td>
</tr>
<tr>
<td>(d) Corbie</td>
<td>Paris, Bibliothèque nationale, fonds lat. 13440</td>
<td>v, 662</td>
<td></td>
</tr>
<tr>
<td>(e) Tours</td>
<td>as (c)</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(f) Corbie</td>
<td>as (a)</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(g) Lorsch</td>
<td>as (b)</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(h) ‘Palace school’</td>
<td>Trier, Stadtbibliothek, 22 (‘Codex Ada’)</td>
<td>IX, 1366</td>
<td></td>
</tr>
<tr>
<td>(i)–(l) ‘Possibly palace school’</td>
<td>Brussels, Bibliothèque royale, n.2572</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(m) Salzburg</td>
<td>(i) Cologne, Dombibliothek, 35</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) Vienna, Österreichische Staatsbibliothek, 420</td>
<td>not shown</td>
<td></td>
</tr>
<tr>
<td>(n) St Amand</td>
<td>Douai, Bibliothèque municipale, 12</td>
<td>VI, 758</td>
<td></td>
</tr>
<tr>
<td>(o) Vercelli</td>
<td>Vercelli, Biblioteca capitolare, 183</td>
<td>not shown\textsuperscript{b}</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{a} This survey is based on CLA and on my own viewing of the sources where the latter does not provide a photograph of the question mark.\textsuperscript{b} But see Lowe, The Beneventan Script, p. 245, n. 2.

question marks seem to have been adapted as either porrectus or quilisma, for there is no doubt about the priority of the signs as punctuation marks. And when the question mark corresponds to either of those neumes, it is to that neume as it was written in the same region. (a) and (c) were written as porrectus in northern France (including Corbie), England, northern Italy, and Germany. (b) is the rounded Breton form, but the German porrectus approaches that form as well. Tours is near an enclave of Breton neumes, and Lorsch is in central Germany. (e)–(g) correspond to the quilisma as it was written in the same regions in which (a) and (c) are the porrectus. They are usually more rounded as quilisma, but there is a rounded question mark in St Gall 75 (Tours), whereas the quilisma can take the zigzag form (e.g. Arras, Bibliothèque municipale, MS 734 (712) from St Vaas, just to the north of Corbie). (i)–(k) correspond to the quilisma in both the Breton and Paleofrankish scripts. It is never the case that in a region where a question mark of one form is written the porrectus and quilisma corresponding to different forms are written (e.g. that all of the following forms would be written in the same region: question mark \(\sim\), porrectus \(\sqrt{\text{}}\), quilisma \(\omega\)).
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So it seems quite possible that the form of the neume in each such case came to be what it was as the result of an adaptation of a punctuation sign. This seems likely especially in view of the fact that the same pair of signs of quite different form coincide first in one function, then in the other: \( \wedge \) and \( \vee \) are both question mark first, and porrectus after; \( \wedge \) and \( \sim \) are both question mark first, and quilisma after. It could be said that the first pair resemble one another, the difference being one of orthography. In that case there would be nothing so unusual about their undergoing the shift of function together. But that cannot be said of the second pair. It seems safe to conclude, everything considered, that at least in the case of the question mark two neumes came into use through adaptation of punctuation signs. There was ample opportunity for that to occur, for medieval documents assigned the task of punctuating to persons with musical responsibilities (the cantor or the armarius).[^128] And in particular cases we can be certain that neumes and punctuation signs were written by the same person. (Figure 3 is one example of this. As on the folio shown, the first several lines of the chapters were written in gold and silver. The original punctuation, consisting of the simple point in low, median and high positions, was also gold or silver in those lines. Any other punctuation, e.g. the virgula, as in the eighth line of Figure 3, was added later, by the same person who wrote in the neumes, as can be established from the identity in the forms of the virga and virgula, and in the colour of the ink.) It seems on the face of it most likely that neumes that functioned as cueing signs would have been written in by the persons using them. That impression is strengthened, if not confirmed, by the fact that even in celebrants’ books of the tenth and eleventh centuries containing such neumes they have been added after the preparation of the manuscript. The writing and reading of neumes must have belonged to the literacy of the celebrants.

Now we can return to the other punctuation signs, about which we were so circumspect before. Although it would have been questionable, for the reasons given, to link many of those signs to the neumes they resemble on the grounds of that resemblance alone in each instance, there is nothing in any of them that contradicts the possibility of such a link. And considering that, together with what

has been reviewed here about the question mark, it may be said that
the system of punctuation marks was absorbed into the system of
neumatic writing. In any case that is the way things look with a
straightforward reading of the sources, and closer questioning has
not produced anything contradictory.

If we now add to the neumes that can be associated with
punctuation signs the liquescent signs, that constitutes nearly the
entire repertory of neumes in use during the ninth century. They are
all in one way or another associated with the elocution and articula-
tion of language. This can be read as a statement about the origins of
the neumes, in the same form as, but replacing, the accent theory.
But it will be more powerful as an indication of how those people
conceived of the neumes as something useful for singing.

Neumes in practical sources seem not to have been written
initially primarily in order to map out a melodic line for the singer,
but to direct his attention to the place in the text where a particular
melodic turn is to be sung or a particular kind of voice production is
to be used, to the way a particular reciting tone ends, to the place
where the cadence begins, to the place where the lower end of the
melodic range is reached, to a consonant that is to be given a certain
enunciation, etc. To be sure, the signal may itself be a sign with a
particular pitch or pitch-pattern significance, but indicating the
pitch or pitch-pattern may not have been its primary or sole
function.

These tasks constitute, as noted above, a strong indexical function
for the neumes at the beginning. And it is in their indexical function
that the neumes overlap semiotically with punctuation. It will help
to look at this from the other side. There can be no doubt that the
principal function of punctuation is indexical. Yet all the forms of the
question mark shown on page 200 have a striking iconic aspect: the
one feature that they have in common is that they are turned
upward, corresponding to the inflection of the voice in questions.

That questions received a special inflection in speech seems clear
from something that Lowe reported.129 It is that in the Beneventan
system the interrogation sign is placed not at the end of the sentence,
but above the interrogative pronouns, or, as Lowe put it, 'over the
word with which the interrogative inflection begins'. He did not say

129 The Beneventan Script, pp. 36–70.
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so, but his reasoning was surely that one read aloud, and punctuation signs were signals for pauses and inflections to be made in reading in order to make the sense of the text clear. Hence the placement of the question mark above the interrogative pronouns must have been a signal to make the interrogative inflection at those points.

An iconic aspect of a different kind is apparent in punctuation marks that are made of multiple points or commas, indicating a more major pause than the single point or comma. In both cases punctuation signs exercise their primarily indexical function through an iconic representation of the sort expected from musical notation.

The correspondence between Aurelian’s description of a syllable sung with ‘threefold pulsation of the voice’ and another with ‘tremulous and rising sound’, on one hand, and the later notation of these passages with tristrophe and quilisma respectively, on the other, offers a concrete demonstration of how neumes might have been gained through the appropriation of punctuation signs. Those particular modes of voice production were fixed into those particular melodic types. In translating them into written form appropriate signs were needed, and those two in particular were taken because of their iconic isomorphism with the sounds that were to be represented.

VIII

These results have some bearing on the question, where were the neumes invented? This is the last topic of the present discussion. There are three impressions.

(A) Most of the surviving ninth-century notational specimens were written in the northern part of the West-Frankish domain, particularly the area around Corbie and St Amand. This group includes the pedagogical treatises and all the neumated texts for ecclesiastical recitation. In so far as the rise of music-writing and reading is associated with Carolingian literacy in general there is a consistency here, for that region was a centre as well for the spread of language-writing and reading.

(B) It is striking that there are no East-Frankish sources from the ninth century of the same types as those from the West, i.e.
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pedagogical treatises and ecclesiastical texts with neumes. The earliest neumes of East-Frankish provenance were written above poetic texts of two kinds, both on the periphery of the liturgy: (1) ‘Gelegenheitsdichtungen’ – a ‘Carmina’ of Boethius in the so-called Ludwigspalter, Berlin, Staatsbibliothek, Preussischer Kulturbesitz, cod. theol. lat. 2° 58 from Lorsch, dated by Jammers to 887, and an ‘Evangelienharmonie’ of Otfrid of Weissenburg, in Heidelberg, Universitätsbibliothek, cod. pal. lat. 52 – and (2) the prosula ‘Psalle modulamina’, written, with neumes, into a collection of patristic writings (Munich, Bayerische Staatsbibliothek, Clm 9543) in Regensburg, between 817 and 834.

If this source situation is representative – and it is unlikely ever to be possible to ascertain whether it is – then, as was hinted earlier, it will probably be necessary to consider a different kind of beginning for musical notation in the East-Frankish regions during the ninth century: a beginning as a kind of cantilena notation, for poetic texts. There is nothing surprising in the idea that such texts might have been distinguished as a class by being neumated at this time. They were given generic names (‘versus’, ‘rhythmus’, ‘hymnus’); and Aurelian seems to have given them a special division of the discipline of music. In Chapter IV, on the divisions of Musica humana, he identifies ‘harmonics, rhythmics, and metrics’, the division inherited from classical antiquity.

Harmonics distinguishes high and low inflection in sounds, as in the antiphon Exclamaverunt ad te Domine. Ex- is a low inflection... [with that he begins the first of his many descriptions of the melodies of ecclesiastical chants; ‘harmonics’ is the subdiscipline through which he mainly carries out his task]. Rhythmics inquires into the relationship of the words, whether the sound hangs well or ill. Rhythmics seems to be very similar to metrics; but rhythmics is a modulated (modulata) composition of words, analysed not by the system of metrics, but by the number of syllables, and it is judged by the discrimination of the ears: such are most Ambrosian Hymns.

130 E. Jammers, Aufzeichnungsweisen der einstimmigen ausserliturgischen Musik des Mittelalters, Paleographie der Musik, 1: Die einstimmige Musik des Mittelalters (Cologne, 1979), pp. 4.2–3 and Plates I and 2.

See Corbin, Die Neumen, p. 3.29 regarding the question of dating and other literature.

132 ‘Armonica est quae discernit in sonis acutum et gravem accentum, ut hic: Ant. Exclamaverunt ad te Domine. Ex, gravis accentus... Rithmica est, quae incursionem requirit verborum, utrum sonus bene an male coherat. Rithmus namque metris videtur esse consimilis quae est modulata verborum compositio, non metrorum examinata ratione, sed numero sillabarum atque a censura diiudicatur aurium, ut pleraque Ambrosiana carmina’ (Gushee, Aureliani Romeensis Musica disciplina, p. 67).
Jammers suggested that what was notated in these specimens was music ‘that had no tradition and therefore needed writing down.’ This instantly attractive interpretation merits some second thought. It may be asked how much information the notation – especially of syllabic settings – can have provided for singers to whom the melodies were not traditional. An understanding of the utility of early cantilena notations still eludes us (one thinks especially of texts with a virga and occasionally a punctum set over each syllable). But in any case this would be the only domain in which the hypothesis that the neumes were invented to record new melodies might possibly have some application.

(C) In discussions about the origins of Western musical notation, there are always some fingers that point to Rome. Two prominent recent proposals of the theory of Roman origin have come from Ewald Jammers, in connection with the belief that the Gregorian chant itself originated in Rome, and Constantin Floros, in connection with the belief that the Latin neumes are derived from the Byzantine neumes. But in general the tacit belief in the antiquity of the neumes tends to be associated with a tacit belief in Rome as a point of origin, or at least of transit. Hucke took up the question, and rejected the theory of Roman origin on two grounds: (1) the evidence that the neumes were a Carolingian invention, and (2) the fact that the oldest Roman chant books with neumes (of the eleventh century) used a notation adapted from Benevento, which he took as evidence that the Romans did not have their own notation. That evidence is consistent with the internal evidence from the analysis of the Roman transmission of Gregorian chant that that transmission remained an oral one for much longer than the Frankish transmission.

The general background introduced in the first section of this paper reinforces the impression about the invention of the neumes as a Carolingian phenomenon, and the specific connections shown between the technologies of language- and music-writing concretise that impression. To the extent that these associations are persuasive, they speak against the theory of Roman origins. Bischoff has

133 Aufzeichnungsweisen, p. 4.3.
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characterised the language-writing activity of central and southern Italy as both conservative and sparse. More specifically, in view of the close link between neumes and punctuation, Lowe’s observations about punctuation in the south of Italy must be taken into account:

In the history of Beneventan punctuation two epochs are to be noted. The first comprises the MSS of the eighth and ninth centuries, the second the later MSS. MSS of the first epoch show no uniform system of punctuation, and at times it is impossible to discern any system whatever . . . The most common method of punctuation . . . is the mere point used alike for the large and the small pause . . . Toward the end of the ninth century, apparently as the result of a conscious reform, a new system was introduced . . . [as] a foreign importation (since it is used a full century earlier in MSS written in Charlemagne’s court).

The elements of this ‘new system’ are precisely those shown on page 200. The characteristic Beneventan question mark is as in (b) there. This does not correspond to either the Beneventan porrectus ( or ) or the quilisma ( ), a fact which is explicable on the hypothesis of a separate adaptation of punctuation and neumes. I have elsewhere presented additional evidence for the spread of neumatic writing from north to south in connection with the ‘reinforced iconic’ character of the Beneventan system from the beginning of its tradition. This is a trait that neumatic systems evolved from the eleventh to the twelfth centuries, in which forms of neumes that had initially sharply differentiated the iconic from the symbolic scripts ( and ; and ) are integrated into a single system that encodes more information about pitch-pattern (the forms with up-stroke are written when the first note constitutes an ascent from the preceding note). As the system evolved in the north and is characteristic of the Beneventan script from the beginning, we may take the latter to be based on northern models.

Summarising: (1) The oldest Frankish notations are a century-and-a-half older than the oldest south-Italian ones. (2) The rise of music-writing is associated with the normalisation of the Latin language and its script, with the spread of writing and literacy, and with language-pedagogy. That is a phenomenon of the Frankish domain in the Carolingian era, in which southern Italy participated

very little before the late ninth century. (3) In particular, the earliest neumatic writing in practical sources is associated with the function and forms of punctuation, such as was established in southern Italy only in the late ninth century on Frankish models. (4) The earliest Roman notations are adaptations of Beneventan notation, which is based on Frankish models.

A Roman origin for Latin neumes appears most unlikely, in the light of such evidence. But the theory of Roman origin is problematic, not only on specific evidentiary grounds. It suffers, as does the accent theory of origin, from being a theory of unitary causation. What this review has shown is that no theory of the origins of music-writing that claims a single place, a single prototype, a single agency, or a single purpose for the rise of music-writing can be sustained in the light of all the evidence. It has been necessary to recognise a plurality of loci, backgrounds, functions, forms, uses and users for the earliest notations. In place of an evolutionary stream with a single recognisable source, something like a field in which a multiplicity of factors, linked in various ways, resulted in a multiplicity of ‘beginnings of music-writing’ has been described. It has been possible to locate that field and mark some of its boundaries and features. The cultural context is the Carolingian scholarly-educational development and all that is associated with it. At first that is a Frankish phenomenon of the late eighth and early ninth centuries. But there were new beginnings later and elsewhere, with the earlier beginnings as part, but not all, of the background. The strongest factors relate to the development of language in speech and writing, and to the theory and pedagogy of language. The common purpose was to provide the technical means of contact between language in the form of ecclesiastical and poetic texts and the reservoir of melodic resources – more-or-less concrete – that the readers of notations carried in their memories. From the beginning the signs functioned through a range from representation to signal, in modes from symbolic to iconic to indexical, and the combinations of these. They were used in preparing performances, but in many cases they must have been used at the moment of performance.

This history after these beginnings can be thought of as channeling and normalising of these possibilities and their combinations. It seems clear, however, that the question about the genesis of occidental music-writing is not simply a question about the origins of signs.
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It is a complex of questions, about the kinds of things that were written down and how they were conceived; about the persons for whom they were written down and the purposes for which they were needed; about the ways in which the signs functioned to provide information and guidance for the performance of language and melody; about the ways in which the forms of signs were adapted to their functions; and, indeed, about the antecedents of the signs in respect to both form and function. A view of the history of music-writing must recognise the multiplicity and variety of each of these factors and the uniqueness of particular interrelationships among them. The historical question is not ‘What is the origin of the neumes?’ but ‘What sort of thing was music-writing, and how and for what purposes did it come to be done?’ It is a question of semiotics, not alone of paleography.140

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