

The “Unwritten” and “Written Transmission” of Medieval Chant and the Start-up of Musical Notation*

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I

Whoever thinks about this subject, whether as author or reader, must do so through a veil of otherness that is as daunting as any that the music historian confronts. We—who are accustomed to musical scores as the signs in which composers encode works, as the instructions that guide performers, and as the objects of analysis and comparison for scholars and students—must strain to understand how a distant and complex musical culture that we view as the progenitor of our own thrived without the use of scores. Then we

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must try to imagine how, in the course of its history, systems of musical notation were invented and came to mesh with the age-old systems for making, remembering, and disseminating music through performance alone, and at the same time to contribute to the transformation of those systems.

This is as much as to say that we must try to think ourselves outside of our own habits of musical thought and practice—no small task. The impediment is our continued dependence on the construction of the institution of music that formed in the early years of the Romantic era around the idea of works as texts given notational specification in scores and given acoustical explication in performance events that comply with the specifications of the score.¹ Despite the highly specific historical context and limited reference of this scheme it tends now to function in all fields of musical scholarship except for ethnomusicology—i.e. in music history, theory/analysis, and music esthetics—as the representation of the way music is. Subordinating medieval material to these conceptions and expectations has meant evaluating early medieval notational material according to the measure in which it meets the standard of precision in a prescriptive denotation; envisioning performance in a scriptless musical world in terms of two satellite conceptions of the Romantic work concept: either as the reproduction of an autonomous “text” that has been deposited in all its completeness in “memory,” as a written text would be deposited in a book; or as an improvisation produced through the free exercise of the musical fantasy;² speaking with ease of the replacement of one chant tradition practiced in a vast area of Europe by another as though that were a matter of trading in old books for new ones, without considering that in a scriptless culture that would have meant, not only learning and remembering a complex and prolix new musical system and its repertory, but unlearning and *forgetting* an old one; making *a priori* judgments about the nature and limits of the human mind’s creative and retentive capacities without the support of writing; and measuring medieval melody by the critical standards associated with the Romantic work concept—closure, unity and not

¹ Regarding the constellation of concepts surrounding the work concept and the history of that constellation see Lydia Goehr, “Being True to the Work,” in *The Journal of Aesthetics and Art Criticism* XLVII (1989) pp. 55–67. Carl Dahlhaus has written about the work concept as a premise of our historical view of the same nineteenth-century musical culture that produced it, in the Introduction to his book *Die Musik des 19. Jahrhunderts* (Neues Handbuch für Musikwissenschaft, volume 6. Wiesbaden/Laaber 1980).

² Gassner’s *Universal-Lexikon der Tonkunst* (Stuttgart/F. Köhler, 1849) reports, typically, that the word “improvisieren” (p. 452) is used for “das sogenannte freie phantasieren,” which allows itself “in wahrhaft ungebundener Freiheit die mannigfachsten poetischen Lizenzen.”

least autonomy, particularly vis-a-vis language. The effort to avoid the use of such templates as constraints on medieval materials, though far from easy, will yield a more objective portrayal, and it will at the same time serve as a reminder of the narrow historicity of the work concept and its satellites.

The two main parts of my subject are nowadays regarded as being naturally interrelated in the most intimate way, but that has not always been so. As early as the mid-nineteenth century the question of the "origins" of the neumes was one of the most prominent of medieval topics of discussion, consistent with the orientation of music history in general to questions of origins, but especially given the regard in which medieval chant was held as itself the original of a European musical tradition, and given that the chant was known and discussed only in the context of its written transmission. But, as Wulf Arlt has written, "The discussion about the 'origin of the neumes' ran aground because it was fixated—owing to a development-historical disposition—on the idea of pushing the new mode of inscription back to an older phenomenon of signification: from lesson signs and other directions for text-performance, through cheironomy, to the actual notation systems of the Eastern churches. In no case could the derivation be established with compelling force and to the exclusion of other phenomena; yet the question of derivation stood so prominently in the foreground that the possibility of a qualitative leap into writing, in which the most widely differing factors played a role without any one of them being identifiable as the single most relevant precondition, was never considered."³

³ "Die Diskussion über den 'Ursprung der Neumen' lief sich fest, weil sie aus einem entwicklungsgeschichtlichen Ansatz darauf fixiert war, die neue Aufzeichnungsweise auf ein älteres Verfahren der Zeichengebung zurückzuführen: von Lektionszeichen und anderen Angaben zum Textvortrag über die Cheironomie bis zu eigentlichen Notationssystemen der Ostkirchen. In keinem Fall liess sich die Herleitung zwingend und unter Ausschluss anderer Verfahren nachweisen; doch stand die Frage nach der Ableitung so stark im Vordergrund, dass die Möglichkeit eines qualitativen Sprungs beim Schritt in die Schrift, bei dem unterschiedlichsten Faktoren mitgespielt [haben], aber nicht als die eine massgebliche Voraussetzung isoliert werden können, ausser Betracht blieb. "Anschaulichkeit und Analytischer Charakter: Kriterien der Beschreibung und Analyse Früher Neumenschriften," Michel Huglo, ed., *Musicologie médiévale: Notations et séquences*. Actes de la Table Ronde du C.N.R.S. a l'Institut de Recherche et d'Histoire des Textes (Paris, 1987), 29. For reviews of the principal theories of origin see Solange Corbin, *Die Neumen*, in *Paläographie der Musik I: Die einstimmige Musik des Mittelalters*, (Köln, 1979), 3.11–21; Jacques Hourlier, *L'origine des neumes*, in *Ut mens concordet voci. Festschrift Eugène Cardine zum 75. Geburtstag*, ed. J. B. Göschl (St. Ottilien, 1980), 354–360; and Michel Huglo, "Bilan de 50 années de recherches (1939–1989) sur les notations musicales de 850 a 1300," *Acta musicologica* LXII (1990), 224–59. Regarding the "cheironomy" theory of origin see Helmut Hucke, "Die Cheironomie und die Entstehung der Neumenschrift," *Die Musikforschung* XXXII (1979), 1–16.

Renewed reflection on the early history of neumes has become an integral and necessary part of the problem complex that surrounds the central fact about which there is wide agreement, that the melodic tradition of Gregorian chant had become stabilized prior to the inscription of the melodies in musical notation.⁴ We now recognize the following as distinguishable but integrally related topics: the accumulation and dissemination of an unwritten tradition of Gregorian chant, in itself and in relation to the Old Roman tradition; the invention of systems of musical notation and their development as they were adapted for the creation and dissemination of a written tradition of the chant; the interaction of the written and unwritten traditions, in performance and in the written transmission.

My title speaks of the beginnings of notational practice, not the origin of notation. The new round of discussion has indeed brought up theories of origin, all recycling, with new evidence and interpretation, one or another of the theories that had been advanced earlier.⁵ But I shall try instead to make a small-scale representation of the early efforts to denote melody through systems of graphic signs, aiming less for comprehensiveness than to identify those materials that particularly contribute to a picture of the circumstances of the beginnings of notation, and to understand the purposes for which notations were invented, the principles on which they functioned, the conceptions of the musical objects or acts they were meant to denote (melodies, singing), and the roles they played in performance and written transmission. Insofar as any of these questions can be illuminated by reference to the background of neumatic writing in earlier practices of language writing I shall take advantage of that. But I shall neither advance nor report on unified and systematic theories of origin, which necessarily blot out aspects of what seems to have been a highly active and pluralistic situation.

As it is the topic of "Unwritten" and "Written Transmission" that has brought these matters together into a single essay, that is where I begin the exposition. I take this conventional wording into my title, not as an endorsement, but in order to alert the reader to the ways in

⁴ The reasoning to this conclusion from different sides will be summarized further on.

⁵ Leo Treitler, "Reading and Singing: On the Genesis of Occidental Music Writing," *Early Music History* IV (1984), 135–208; Kenneth Levy, "On the Origin of Neumes," *Early Music History* VII (1987), 59–90; Charles Atkinson, "*De accentibus toni oritur nota quae dicitur neuma*: Prosodic Accents, the Accent Theory, and the Paleofrankish Script," forthcoming in Graeme Boone, ed., *From Rome to the Passing of the Gothic: Essays in Honor of David Hughes*. Isham Library Papers 4 (Cambridge: Harvard University Press).

which our modern tools of language and concept, because of the presumptions that they embody, stubbornly interfere with the efforts to gain access to the medieval material. The formulation implies both a parallelism—that written and unwritten transmission are both processes that do the same sort of thing, that is, to transmit something—and an opposition—that they do so in different, mutually exclusive ways (as one might speak of conveying a message by telephone or by mail). But both of these implications will be misleading at least some of the time. “Written transmission” presupposes an object, something transmittable. Our most familiar image for this idea is that of someone copying a text from a model, and that is reflected in the habit of saying that a manuscript was *copied* at such and such a time and place, even if our evidence allows us to say only that it was *written then and there*. The idea of something transmittable is still more problematic in the case of “unwritten transmission.” If it is a well-known hymn that is being transmitted note-for-note through a stable performance tradition, then the formulation seems perfectly apt. But if it is a trope or an organum melody that we have every reason to think was reconstructed or extemporized in performance, then the object has not been *transmitted through* performance, it has been *realized in* performance. It comes down to the ontological status of the musical item, and with respect to that the parallelism implied by the binary formulation is not reliable. What is more, the phrase “unwritten transmission” tends from the first to suggest the idea of performing from a mental repository (= “memory”) of fixed melodies, as the only respectable alternative to an idea of undisciplined improvisation in the duality to which I referred at the beginning.

The implied opposition is no more reliable in actual practice. One of the most important ideas to be developed in this review will be that from the very beginning of a written tradition reading, remembering, and extemporizing were continuous acts; they were mutually supportive and interdependent.⁶

II

Example 1 is a transcription of an offertory chant for the mass on the fourth Sunday of Lent, made from Codex Bodmer 74, a service book with musical notation for the mass compiled

⁶ This attitude is fully and persuasively developed with respect to language texts in Mary J. Carruthers' *The Book of Memory: A Study of Memory in Medieval Culture* (Cambridge: Cambridge University Press, 1990).

EXAMPLE 1. Offertory *Factus est Dominus*, in the Old Roman transmission of Codex Bodmer 74, f. 62 verso; with variants in Rome, Biblioteca Vaticana latin MS 5319, f. 45 verso; and Rome, Biblioteca Vaticana, San Pietro F22, f. 39 verso.

Fac - tus est do - mi - nus fir - ma - men -

① 5319 folio 69 verso

tum me - um et sal - vum me fe - cit

② F 22 folio 39 verso

② F 22

ab in - i - mi - cis me - is Po - ten - ti - bus et ab

② F 22

his qui o - de - runt me. V₁ Fac - tus est do -

③ F 22 ① 5319

mi - nus fir - ma - men - tum me - um et re - fun -

gi - um me - um et li - be - ra - tor

(Repetenda)

me - us spe - ra - bo in e - um.

② 5319

V₂ Per - se -

EXAMPLE 1. (continued)

P K T P S S S K
 quar in-i-mi-cos me-os et com-pre-hen-dam

T^{II} P S K T^{II} P S
 il-los et non con-ver-tar don- nec

K^I T P M X
 de-fi-ci-ant et li V₃ Pre-cinc-xi-

⑤ 5319

sti me

ab

↓ K T^{II} P M S S S
 vir-tu-tem ad bel-lum et sup-plan-tas-ti

↑ ab

S S S S S K T^{II} P M
 in-i-mi-cos me-os sub-tus me et in-

S S S S S S S S S S K T^{III} P
 i-mi-co-rum me-o-rum de-dis-ti mi-chi dor-sum

M S S S S S K T^I P
 et ho-di-en-tes me dis-per-di-di-si et[li-berator]-

④ 5319

for the Cathedral of Santa Cecilia in Trastevere, Rome, in 1071.⁷ This codex is the oldest surviving fully notated service book of Roman origin, and it stands very near to the earliest known use of musical notation altogether in Rome.⁸ But as the liturgical tradition represented by the codex has been identified in Rome as early as the 8th century, we can conclude that the musical tradition that accompanied it was written for at least two centuries.⁹

Whether that musical tradition is what we now see recorded in Codex Bodmer and the several other books like it that were compiled during the 11th through 13th centuries is something we cannot of course know with complete confidence. Putting it most cautiously, the textual status of the melody of Example 1 may be anything from that of a direct transcription from the unwritten tradition to that of a new composition written down for the first time in Codex Bodmer or an ancestor earlier in the eleventh century (but evidently not before). There are no clues that would lead us to suspect the extreme case of brand new compositions in connection with the writing down, and we shall presently see why such a hypothesis is virtually ruled out. On the other hand it seems inevitable that the very process of writing down would have effected its product editorially. In any case we can be confident that the musical inscriptions in Codex Bodmer are witnesses in some sense to the unwritten tradition that preceded it (and probably continued around it), and they are as close in time to such a tradition as it is possible to come with surviving sources that can be read.

A medieval liturgical chant is first and foremost to be understood as the presentation in melody of an ecclesiastical verbal text. The primary task of melody in chant is the presentation of language in

⁷ A facsimile edition is published under the editorship of Max Lütolf as *Das Graduale von Santa Cecilia in Trastevere (Cod. Bodmer 74)* Fondation Martin Bodmer (Cologny-Geneve, 1987). For earlier discussions of this chant see Helmut Hucke, "Zur Aufzeichnung der altrömischen Offertorien," *Ut mens concordet voci: Festschrift Eugène Cardine*, ed. Johannes Berchmans Göschl (St. Ottilien, 1980) pp. 296–308 and Leo Treitler, "Oral, Written, and Literate Process in the Transmission of Medieval Music," *Speculum* LVI (1981), 471–92.

⁸ John Boe reports his preliminary finding that there is no evidence that the written transmission of the Old Roman Tradition began the before 11th century, in his paper "Chant Notation in Eleventh-Century Roman Manuscripts," read at the conference *From Rome to the Passing of the Gothic* in honor of David Hughes, Cambridge (Massachusetts) 1990. The paper will be published by the Department of Music, Harvard University, under the editorship of Graeme Boone. The working title of the book is the same as the conference title, with the subtitle *Isham Library Papers*. 4. I thank Professor Boe for his generosity in allowing me to read a draft of his paper and for subsequent communication regarding his most recent findings.

⁹ See Michel Huglo, "Le chant 'vieux-romain': liste des manuscrits et témoins indirects," *Sacris erudiri* VI (1954), 96.

such a way as to project its sound structure and meaning with maximum distinctness, while at the same time being faithful to principles of melodic syntax and grammar that assure coherence of idiom and genre and to the constraints of performance practice in the liturgical situation (essentially a matter of who is to sing what, and in what order). The analysis of chant begins with the description of the way these tasks and obligations are discharged.¹⁰

The opening song of the offertory (marked *off*, as in the manuscript) was sung by the choir, and was followed by several verses—here three—for the cantor. Usually the end of each verse is cued in the sources to a final segment of the offertory, which was sung again by the choir as a refrain (called *repetenda*). This always ends on the final of the mode of the chant, so that in the many instances when the verse ends on some other tone, the singing of the *repetenda* brought about tonal closure.

In Example 1, however, there is no such cue at the end of the first verse, while the end of the second verse is cued to the last line of the first, “et liberator. . . .” This unusual circumstance certainly has some connection with another that emerges in a comparison of this chant with its liturgical counterpart in the Frankish Gregorian tradition. It is an offertory with two verses, with words that correspond as follows to the words of the Roman counterpart:

<i>Roman</i>	<i>Frankish</i>
Offertory	
verse 1	Offertory
verse 2	verse 1
verse 3	verse 2

The situation of the *repetenda* cues and the near identity of the words and melody of the Roman offertory with its first verse suggest that some ancestor of the Roman chant comprised an offertory and two verses, like the Frankish counterpart, and that someone later, for whatever reason, fashioned a new offertory for it, based in words and melody on what was originally the offertory and became the first verse. This is of great interest for our examination here precisely because it provides strong evidence against the possibility that the Roman chant was newly composed at the time of its writing down in the Bodmer Codex. We may confidently proceed to read it as a witness to its unwritten tradition and in fact as fresh a witness as it is

¹⁰ In giving priority of place in the analysis to the linkages between music and language, I explicitly take exception to the treatment of chant melodies as autonomous musical works in the sense of the work-aesthetic of early Romanticism.

possible to find in the entire transmission of medieval Latin chant. The following, then, will be an analysis aimed at identifying the sorts of principles that governed the composition of such a chant in that tradition.

The primary melodic units of Example 1 are the settings of the syllables of language. Few are declaimed by a single note, most by groups of two to nine syllables. There are two occurrences of a very long melisma (marked X), and there is a rising two-note group (S) that is repeated in straight recitation (see, especially, the third verse.)

The chant comprises 148 syllables. Given the narrow range of the melody (leaving aside the X melismas, the range is E-F-G-A-B) the number of groups of different melodic contents is bound to be quite limited. I count about sixteen. But giving an exact count is difficult, because it depends on what is to count as "same" and what as "different." So in Example 1 I have labelled with the letter T three configurations that are different when it comes down to the last detail. But they all turn about the note G—moving up to A and down to F—and more important, they all have the same function within the melodic discourse: each one is the middle figure in a sequence of three figures—KTP or KTQ—that always and only articulate the sense-units in which the words are grouped: "The Lord is my firmament [KTP] and he protects me [KTP] from my powerful enemies [KTP] and from those who threaten me [KTQ]." The clausula KTQ provides a melodic full close on the tonic F for the completion of sentences, which means completion of whole sections of the chant (offertory or verse); KTP makes a half close: a clear melodic caesura, but ending on the unstable tone G, with implication of continuation and eventual close on F.

The clausula KTP or KTQ (including their variants) is written out sixteen times in the score. In twelve of those instances the clausula sings three syllables, with stress on the penultimate syllable. In the remaining four instances the stress is on the antepenultimate syllable (off. "poténtibus," off. "hodérunt me," V₂ "deficient, V₃ "súbtus me"). In all but the last of these, the figure K carries the unaccented syllable before the accented one, as elsewhere, but it is turned upward to the note A rather than down to F, and the accented syllable is given the extra descending figure G-F before the continuation with TP or TQ.

On these principles the treatment of "subtus me" in the third verse is anomalous. Following the accommodation to the antepenultimate accent in the three other instances, the setting would be as shown in Example 2. Why that would not have been the preferred setting is not evident.

EXAMPLES 2 and 3. Hypothetical alternate versions of two passages in Example 1.

(V₃) in - i - mi - cos me - os sub - tus me

(V₂) me - os et com - pre - hen - dam

After the clausula KTP there is a continuation, and in almost every instance it is with the conjunction “et.” (This paratactic stringing out of the biblical text has itself been interpreted in the light of the unwritten tradition in the background of the Bible.¹¹) The melodic figure mainly used for continuation after the clausula is M, and following that there is commonly recitation on the repeated figure S, which continues until the next clausula (see V₃, “et inimicorum meorum dedisti michi dorsum”). The recitation is usually articulated with the following clausula by way of a rise to A, after which there is a descent to the F that begins the figure K of the clausula.

The treatment of the recitation in the second verse at “et comprehendam” is anomalous on the criterion of the general practice, with the series of S figures following directly after the P of the clausula. A less anomalous hypothetical version is shown as Example 3. (These “recompositions” are offered as articulations of the system. There is no implication that the manuscript is in any sense mistaken.)

The length of the recitation between M and the clausula depends, of course, on the number of syllables in the sense unit. The longest is the one in the third verse, beginning “et inimicorum . . .”: sixteen syllables, comprising two sung as the continuing figure M, ten recited to figure S, one on the articulating note A and three sung as the clausula. At the other extreme is the phrase “et ab his qui oderunt me” in off: eight syllables, two as the continuation, M, four as the clausula K'T'Q. In the light of the general pattern we can understand the settings of the remaining two syllables: “his” is sung to just one recitation figure, “qui” rises to the A, as in all recitations.

¹¹ See Walter Ong, *Orality and Literacy: The Technologizing of the Word* (New York, 1982), p. 37.

Now we can interpret “et salvum” ($\overline{\text{off}}$) and “sperabo” (V_1): the initial A of the continuing figure M, followed by one instance of the reciting S figure and the articulating tone A. “Et non” (V_2), one syllable shorter, makes do with one S figure and the tone A.

Finally we turn to beginnings, first those of the second and third verses: the melisma X. This is a standard melody for offertories in F in this tradition. It usually begins a verse and aims toward a clausula. Differences are a function of differences in the textual situation. The sustained vowel through the melisma is that of an accented syllable. In verse 2 that syllable is preceded by two others in the same word, in verse 3 by one; hence the requirement for the additional G at the beginning of the former. The exit from the melisma can be understood through comparison with a passage like that in the Offertory, with text “(me-)um/et salvum me fecit.” In Verse 2 the melisma is finished off with the P figure on the syllable “(per-se)-quar.” The next three syllables (“in-i-mi-[cos]”) are given something like an abbreviated M figure that prepares the clausula KTP. In Verse 3, what was the P figure in verse 2 is broken up to accommodate two syllables (“-sti me”), and the continuation on “inimicos” is like the corresponding continuation in the second verse.

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The melisma X, the reciting figure S, and the sequence KTP are the most well-defined and stereotyped features of the melodic idiom of offertories in F in this tradition. All else can be thought of as ways of getting into and out of those, or getting from one to another. Thus the beginning phase of the offertory section of Example 1 is not in itself stereotyped, but is a loosely strung exploration of the two overlapping modules F-G-A and G-A-B that are then shaped together in the stereotyped configuration of figure K.

We have this chant in two other sources for the Roman tradition: the 11th- or 12th-century gradual Rome, Vatican latin MS 5319 for the Lateran Basilica¹², and the 13th-century gradual Rome, Vatican San Pietro F22 for the cathedral of St. Peter (this version has no verses, for by the time of the compilation of F22 these had been dropped from the performance of the offertory throughout the Western church.) Example 1 shows a few variants from these sources (below the transcription from Codex Bodmer) that are instructive from the point of view of this study.

1 : This figure is written for the fourth syllable in both offertory and V_1 in MS 5319.

¹² A transcription has been published as *Monumenta Monodica Medii Aevi II: Die Gesänge des Altrömischen Graduale Vat. lat. 5319* (Kassel, 1970), ed. Margareta Landwehr-Melnicki, with introduction by Bruno Stäblein.

2 : This version of figure P is written consistently throughout MS F22. It retains its identity as a constituent formula in the P position of the idiom as that construed by the singing community of St. Peter's, just as its counterpart does at Sta. Cecilia in Trastevere.

3 : In F22 the figure Q is obviously the simplest adaptation of P for ending on the tonic. This is a different way of deriving a Q figure than the way that is represented in the Bodmer Codex. The point is that each tradition has developed its own internally consistent way of carrying out the function at this place in the chant, within the idiom that they share.

4 : Here the versions of Codex Bodmer and 5319 seem to be responding to two different cues, each correctly in its way. Codex Bodmer responds to the fact that the text has come to the end of a sentence and chooses the clausula accordingly. 5319 responds, presumably, to the coming *repetenda*, and so chooses the half-close. But it does not, in fact, cue the *repetenda* here (it does so at the end of the second verse only).

These variants are not random corruptions of an original; they show each of the local ecclesiastic-musical communities using the generative system of this idiom as they know it with consistency and deliberateness, and thereby they show us the system as such. Variant 5 is of quite a different sort. It is most likely a random corruption, but one that has entered the written tradition through the writing down itself. MS 5319 writes the melisma X one step higher than Bodmer. They come back together at the articulating A just before the clausula. It might be thought that, as this occurs at the beginning of the third verse, the melisma was sung a degree higher than in the second verse for heightened effect. But this sort of effect, which we know from commercial popular music of today and as a nineteenth-century operatic effect, is not in the medieval aesthetic. In any case, of nineteen occurrences of the melisma in MS 5319, only this one is written at that pitch level. It is most likely a writing error, committed either in copying or in writing down from memory or dictation. It may be a witness to the sort of difficulty that must have been encountered by musicians early in the history of notation faced with the task of fitting a well defined melody into the spatial dimensions of a notational matrix. I shall return to that phenomenon further on.

What has been described here is an interwoven texture of materials and procedures for making a melodic presentation of an ecclesiastical text suited for a liturgical occasion of a particular kind. This context of themes and principles is an idiom of composition, written or unwritten. Because of the proximity of the Bodmer Codex to the unwritten tradition in Rome, and because of the virtual certainty that

the Roman "Factus est Dominus" is a chant of long tradition, we can read this inscription of it with a fair degree of confidence as representative of the unwritten tradition. Chants of the same genre, composed in the same idiom with different ecclesiastical texts, are related as members of a family. The networks of materials and procedures through which such tune families¹³ are related constitute both melodic idioms and improvisatory systems.¹⁴

The description has been fearsomely verbose and complex—so many factors in so many different parameters, so many rules. But it is different to think of such idioms being internalized non-verbally by singers who practice them daily and have been doing so since childhood. Perhaps most important and difficult is for us to think that the functions of concrete melodic formulas would have been known as immanent qualities, as much so as their actual note contents—that the figure G-F-E-F-G, for example, would have been activated in the singer's memory only as he was coming to sing the last syllable of a clause that is syntactically complete but not the end of a sentence.

Having called attention to the intimate relationship between melody and language in the analysis, I want to underscore that this relationship was absolutely essential in the medieval chant tradition altogether. It was one of the conditions that made an unwritten tradition of chant performance possible. We know the phrase "Good night" not only for its phonetic and semantic contents but also as a phrase we normally utter during certain portions of the day and as the sign of a certain action (taking leave or going to sleep). Uttered in a different context, if not as a citation or with some special illocutionary intent (good *night!*) it would lose its meaning

Another useful way of characterizing this is as a system of signs, i.e. a semiotic system, in which the signs are S, M, K, T, P, Q, X, and the compound signs KTP and KTQ (I mean of course the sounding melodic figures denoted by those letters, not the letters themselves). Each sign signifies a function in the syntax of the chant: S is a sign of recitation, M of conjunction, K signifies the beginning of the end of a sense unit, and so on. The signification is in two directions: to the singer who responds to the stimulus of the textual situation—with a recitation sign or a conjunction, etc.—and to the listener who is helped by the musical signs in assembling the sense of the text.

¹³ This expression is used here precisely in the sense of its use in folklore studies. An exposition of that concept and its history, and of its relevance to chant studies, is presented by Robert R. Labaree, *'Finding' Troubadour Song: Melodic Variability and Melodic Idiom in three Monophonic Traditions* (Ph.D. dissertation, Wesleyan University, 1989).

¹⁴ I use this word now not in the Romantic sense of "free improvisation" but in the sense of a disciplined performance-composition practice.

The composition of Example 1 is closely governed by a dense web of constraints, affecting virtually every moment of the performance, so that repeated performances of the chant in the unwritten tradition might have been virtually indistinguishable from one another. It is an extreme case in that regard, we might say a boundary case. Someone with today's habits of thought listening to several such performances might simply say that the singer had memorized the chant from beginning to end and was reproducing it from memory. But if we posit a singer with knowledge of the formulas and the rules and principles for their use that we have identified through the analysis, that knowledge would have entered into the learning of the chant and into every performance of it; so if we think of memory here, it should not be in the sense of the storage of what has been learned by rote. Once we have understood the influence of such rules and principles, and understood the dependence of their application on the sound, syntax, and sense of the words, we can also understand why books with only the words circulated before books with neumes and why they would have been called "books of musical art."¹⁵ Such knowledge of the idiom would have enabled the singer to intone different liturgical texts for the offertory on different days of the calendar. The palpable evidence of that would be in the similarities that we would find among the melodic procedures and materials of Old Roman offertories in F. It seems a very efficient way to manage a prolix and many-faceted unwritten practice and repertory, and it would be a way for a situation to develop that we could easily apprehend in the sense of "performance from memory." But at the same time a performance from memory is best understood as just such a reconstruction formed about bits of stereotyped material and guided by rules of procedure.

My purpose so far has been to examine the two main representations that have been harbored under the expression "unwritten transmission." They both play important roles in ideas about the history of medieval chant, especially in relation to the entry of writing into the history. But from what we have seen so far, it seems that we cannot easily mark a sharp boundary between performance on the basis of an improvisatory system and performance from memory, and the less so, the denser the improvisatory system. Suggestions that whole repertoires of melodies were stored in singers' memories as though they were warehouses or computer hard disks should therefore be approached with caution, not so much because they may be

¹⁵ See Bruno Stäblein, "'Gregorius Praesul,'" *der Prolog zum römischen Antiphonale*, *Musik und Verlag: Festschrift K. Vötterle*, ed. R. Baum and W. Rehm (Kassel, 1968) pp. 554ff.

historically incorrect, but because it is not quite clear what they mean. This corresponds to a prevailing view among psychologists and neuro-scientists about memory, that "Remembering is not the re-excitation of innumerable fixed, lifeless and fragmentary traces. It is an imaginative reconstruction, or construction, built out of the relation of our attitude towards a whole mass of organized past reactions or experience. . . ." ¹⁶ That is, remembering is always an active synthesizing process of organizing and reorganizing, not the retrieval of something from dead storage. This is so, no matter how closely the remembered material resembles its models. The difference between the image of a performance of a chant on the basis of an improvisatory system and that of its performance as the recall of something that was memorized as a whole may not be fundamental so far as the means of production are concerned. Both refer to acts of remembering, but the former emphasizes the recognizable components and procedures of the performance while the latter tends more to lead our attention to the modern idea of the musical object as a thing separate from the performance. (When we come to speak of the beginnings of notation we shall see that early notations themselves give clues about the cognitive apprehension and reproduction of melody in the oral tradition.) But it is a difference of practice, not just of description. The singers of one tradition may be highly motivated to strive for sameness in the reconstruction where the idiom leaves room for choices, while those of another may be motivated toward variety or simply indifferent to the question. We require a theory about the continuity between improvising and remembering, because we must try to understand the historical continuity between the two. If improvisation is only capricious and random, and remembering is only the

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¹⁶ This is the classic formulation of Frederick C. Bartlett in his book *Remembering: A Study in Experimental and Social Psychology* (Cambridge: Cambridge University Press, 1964), p. 213. For a report on recent work in which this general theory has been given precision and physiological justification see Israel Rosenfield, *The Invention of Memory*, With a New Forward by Oliver Sacks, M.D. (New York: Basic Books, 1989).

The resonance of this modern, empirically grounded theory of memory with the medieval concept and practice of *memoria*, as has been explicated by Carruthers (see note 6), leaves no doubt about its relevance for representing the transmission and performance of chant in the Middle Ages—both before and after the introduction of musical notation—and its superiority for that purpose to the commonly invoked opposition of "free improvisation" and performance "from memory" as something that is fixed. What is emphasized throughout medieval writing on memory is its absorbing, integrating, transforming, and organizing action. It is regarded, not as an alternative to creativity but as the route to it. It is the basis of *ex tempore* performance, but not in the sense of parroting what has been learned by rote. Such performance is fluent but orderly. Carruthers writes "how greatly we misunderstand when we reduce ancient and medieval *memoria* to our word 'memorization.'" (p. 208)

replaying of a record firmly imprinted in the mind, how was it that the chant tradition evolved from one state to the other?

The variants in the written transmission of the Old Roman offertory are variants in the improvisatory system through which the several versions were generated. There is no evidence of any attempt at a uniform redaction such as is reflected in the sameness of notated versions of Frankish Gregorian melodies across wide areas of Europe.¹⁷ Evidently there were factors operating in the political and cultural context in which the Gregorian tradition developed that favored the uniformity of performance of the same items from one moment and one place to the next, not the least of those factors being a value for unity in itself, to which the Frankish monk Notker, among others, gave witness in his biographical notices about Charlemagne.¹⁸ Notker wrote in the second half of the ninth century, after the breakup of the Carolingian Empire in 842, when the craving for unity in the Church as an international institution was greatly intensified. The very idea that Frankish chant was "Gregorian," which embodied the idea of its unity as the creation of a single, divinely inspired agent, had its origin in anecdotal and iconographic inventions of this period.¹⁹ There is no reason to think that such motives would have been operating within Rome toward a uniformity of performance, even from one church to another, and that is reflected both in the melodic

¹⁷ Reported by David Hughes in "Evidence for the Traditional View of the Transmission of Gregorian Chant," *Journal of the American Musicological Society* XL (1987), 377-404.

¹⁸ *Gesta Caroli Magni* (MGH Scriptorum NS XII). See Leo Treitler, "Homer and Gregory: The Transmission of Epic Poetry and Plainchant," *The Musical Quarterly* LX (1974), 340, for an English translation of the pertinent passage. On the significance of this text for our subject, and for altogether insightful reporting and reasoning on the subject as a whole, see Andreas Haug, "Zum Wechselspiel von Schrift und Gedächtnis im Zeitalter der Neumen," Laszlo Dobsay, ed., *Cantus Planus: Studia Musicologica Academiae Scientiarum Hungaricae* (Budapest, 1990) pp. 33-47. Claire Maître has enriched our understanding of the way that the unification of liturgical and musical practice came to be a project of the Frankish court. "When in 751 Pepin had himself crowned in Soissons by the delegate of the Pope, and then again in Reims in 754 by Stephen II himself, [it marked] a fundamental transformation in the concept of power." The king had become "king and priest," and it was in this "quasi sacerdotal function" that he could order the clergy throughout his domain "to chant the office according to the Roman rite." "He is the Lord's anointed, as was David in Biblical times, to whom Carolingian texts frequently made reference in writing about their princes." In 795 Charlemagne wrote to Pope Leo III, "It is for me to spread the Catholic faith. It is for you, most holy father, raising your hands to God with Moses, to contribute with your prayers to the success of our arms." ("Tradition orale, tradition écrite. Le quilisma chez Aurélien de Réomé," a paper presented to a colloquium on "Wissenschaftstheoretische Grundlagen der Neumeninterpretation," in Feldkirch, Austria, 31 March-2 April 1989. I am most grateful to Dr. Maître for providing me with a copy of this paper, of which publication is pending.)

¹⁹ See Treitler, "Homer and Gregory," pp. 334-44.

independence of the Old Roman tradition, and in the greater degree of variation in the transmission of the same melodies through the several Old Roman sources.

When it is said that a performance has been improvised, it is likely to be understood, first, that the music has been created in the course of the performance, which proceeds without the support of a score. But through that opening rush a host of negative ideas, first of all in the word itself, as it has been used since the later 18th century: from the Italian *improvviso*, unforeseen.²⁰ And so modern dictionaries give us such definitions as “to perform without preparation.” They lead us to another negative that conveys an unreflective and sudden character about such performance: “impromptu,” they tell us, is how we act “on the spur of the moment.” The prompter guides the actor; an impromptu performance goes forward without guidance, *aus dem Stegreif*, in the common German expression. Thus improvisation, writes a music dictionary, is “performance according to the inventive whim of the moment.”²¹ And the author of a recent article on orality in Gregorian chant writes of improvisation in the sense of the “freedom” and “vagaries” of “improvisatory flights” that proceed “without predetermination.”²² Under this conception, which is built into our use of language, there would be no expectation that an improvisatory practice would produce a stable repertory. The very idea of an “improvisatory tradition” would be an oxymoron, for the idea of stability is built into our use of the word “tradition.”²³ Consequently there is a discernible tendency both to represent unwritten tradition as the performance of music deposited in memory, and to posit the use of neumes centuries before the age of the oldest surviving specimens,²⁴ or indeed to regard musical notation simply as continuous with sig-

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²⁰ Improvisation was regarded as an Italian practice. E.g. J. F. Dannely, *An Encyclopedia or Dictionary of Music* (London 1825) gives “*Improvvisare*, an Italian verb, in French *improviser*. To compose and sing, or recite verses extemporaneously; a habit much cultivated in Italy.”

²¹ *The Concise Oxford Dictionary of Music*. Third edition, Michael Kennedy, ed. (London: Oxford University Press, 1981).

²² Kenneth Levy, “On Gregorian Orality,” *Journal of the American Musicological Society* XLIII (1990), 185–227.

²³ “Tradition” and “traditional” are terms that require more careful reflection than we are accustomed to give them in our literature. See Brian Stock, “Tradition and Modernity: Modes from the Past,” in his book *Listening for the Text: On the Uses of the Past* (Baltimore: Johns Hopkins University Press 1990), pp. 159–71, and Ruth Finnegan, “Tradition, But What Tradition, and for Whom?” (The Milman Parry Lecture on Oral Tradition for 1989–90), in the journal *Oral Tradition* VI (1991), 104–25.

²⁴ Kenneth Levy, “On the Origins of Neumes,” *Early Music History* VII (1987) speculates that “Graphic neumes may reach back to Gregory the Great or farther. . .” (p. 89), i.e. two-and one-half centuries or more before the oldest surviving specimens.

nifying practices for the rendering of written language as speech that go back to Antiquity.²⁵

In the negative aura that surrounds the idea of “improvisation” there is a hint that it is something special, the exception to something normal, more grounded, something with all the attributes that improvisation lacks: preparation, guidance, planning ahead, proceeding apace. That something, of course, is “composition.” The very concept of “improvisation” as we have seen it anchored in language is a product of a culture that has valorized its opposite—composition—as a norm, whether or not as a higher form; for no culture is likely to thrive alone on caprice in the making of music. A musical culture is not likely to produce works entitled “Caprice Viennoise” or “Fantasie-Impromptu” or the like, if it does not also produce works entitled “Hammerklavier Sonata” or “Jupiter Symphony”.

The dependence of the Romantic concept of improvisation on an opposite conception of composition is a clue to its inappropriateness for the description of unwritten medieval chant traditions, which do not answer to such a duality. That suggests either banishing the term in this connection—surely a hopeless and pointless project—or an effort to separate it from these negative connotations. The Old Roman offertory “Factus est Dominus” represents in crystalline form what the institution of the church required: a disciplined, teachable art of chanting, one that could function either with or without the support and the control of musical notation. It is hardly the only improvisatory tradition the world has known that proceeds in a disciplined and predictable fashion. Transmission through oral channels does not predestine a practice to instability, any more than transmission through written channels guarantees stability of the tradition, as we shall see. It depends, again, on what was valued in the tradition.

We are undoubtedly influenced in our thoughts about “improvisation” by our feelings about the sorts of life strategies—or lack of them—that are often so labelled. That must interfere with the effort

²⁵ E.g., the theory that the neumes evolved from the prosodic accents of Latin Antiquity. This theory, and the problems attending to it, have been reviewed in Leo Treitler, “The Early History of Music Writing in the West,” *Journal of the American Musicological Society* XXXV (1982), especially pp. 249–50 and 267–71; “Reading and Singing: On the Genesis of Occidental Music Writing,” *Early Music History* IV (1984), especially pp. 181–86; Kenneth Levy, “On the Origin of Neumes,” pp. 79–81; and Charles Atkinson, “*De accentibus toni oritur nota quae dicitur neuma*: Prosodic Accents, the Accent Theory, and the Paleofrankish Script,” forthcoming in Graeme Boone, ed., *From Rome to the Passing of the Gothic: Essays in Honor of David Hughes*. Isham Library Papers 4 (Cambridge: Harvard University). I am grateful to Professor Atkinson for his generosity in allowing me to read a copy of his paper.

to ground—as I am trying to do—a sense of improvisation as a practice or behavior that can result in orderliness and stability in any domain. Mary Catherine Bateson begins her book *Composing a Life* with a description of this tension.

This is a book about life as an improvisatory art, about the ways we combine familiar and unfamiliar components in response to new situations, following an underlying grammar and an evolving aesthetic. It started from a disgruntled reflection on my own life as a sort of desperate improvisation in which I was constantly trying to make something coherent from conflicting elements to fit rapidly changing settings . . . *Improvisation can be either a last resort or an established way of evoking creativity* [my emphasis].²⁶

In each of the Old Roman sources for the gradual “*Sciante gentes*” (Example 4) there is a tendency for melodic figures to recur without change (e.g. the settings of “[De]us meus” and “ut rotam” in the Verse).²⁷ This is a characteristic of the Old Roman tradition in general that we see in the extreme in “*Factus est Dominus.*” We see it in the Gregorian tradition, too, although to a lesser degree. It is this repetitiveness and the corollary economy of formulaic contents of the Old Roman melodies that give them “the appearance of an oral tradition that has only recently been written down.”²⁸ Behind this remark is the idea that, whether or not performers in oral traditions tend toward the elaboration of florid, ornamental features, they tend in any case toward an economy in the number of constituent elements that need to be managed, such as the melodic formulas of chant. And as the Old Roman tradition was a strictly oral one for about two centuries longer than the Gregorian tradition, it displays this latter characteristic in substantially greater measure.

If we now compare the versions of “*Sciante gentes*” that are inscribed in the three surviving sources of the Old Roman tradition for the mass, first with the Gregorian version, then with one another, there is much we can learn about the composition of this chant and its unwritten and written tradition.

In both traditions the melody is composed on the same pattern of melodic range-modules: centered on the pentachord D-A, extending

²⁶ New York: Plume Books (1990), p. 4. I continue my discussion about “Medieval Improvisation” in an essay under that title, in the journal *The World of Music* III (1991): *New Perspectives on Improvisation*, pp. 66–91.

²⁷ See Ruth Steiner’s discussion of the Old Roman transmission of this gradual in Möller and Stephan, *Die Musik des Mittelalters*. . . , pp. 45–49.

²⁸ Thomas Connolly, “The *Graduale* of S. Cecilia in Trastevere and the Old Roman Tradition,” *Journal of the American Musicological Society* XXVIII (1975), 434.

MEDIEVAL CHANT

EXAMPLE 4. Gradual *Sciant gentes* in the Old Roman transmission of Codex Bodmer 74, f. 35 verso; Rome, Bibl. Vat. lat. 5319, ff. 36–36 verso; and Rome, Bibl. Vat. San Pietro F22, f. 16.

Sci - ant gen - tes

1
2
3
4

Detailed description: This system contains four staves of musical notation. The lyrics 'Sci - ant' are positioned above the first staff, and 'gen - tes' is positioned above the second staff. The notation consists of a series of eighth and sixteenth notes, often beamed together, with various melisma lines (arcs) connecting notes across staves. A small 'x' symbol is present under the second staff, and another under the third staff.

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quo - ni - am no - men ti - bi de - us

1
2
3
4

Detailed description: This system contains four staves of musical notation. The lyrics 'quo - ni - am' are positioned above the first staff, 'no - men ti - bi' above the second staff, and 'de - us' above the third staff. The notation continues with eighth and sixteenth notes and melisma lines. A small 'x' symbol is present under the second staff.

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EXAMPLE 4. (continued)

tu so - lus al - tis - si - mus

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su - per om - nem ter -

MEDIEVAL CHANT

EXAMPLE 4. (continued)

1 ram

2

3

4

1 V De - us me - us

2 V De - us

3

4

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EXAMPLE 4. (continued)

1 po - ne il - los ut ro - tam

2

3

4

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1 (tam) et sic - ut sti

2 sic - ut

3 vel - ud

4 - ud

MEDIEVAL CHANT

EXAMPLE 4. (continued)

pu - lam an - te fa - ci - em

ven - ti.

downwards to the lower C and upwards to the upper C (with a single upward extension to F in the Gregorian version), with D as the final and A as the central pivotal tone. (In the Gregorian tradition it is classified as first mode. There is no modal classification in the Roman tradition.) This is one basis of the composition. The other is the design of the melody for the clear projection and appropriate emphasis of the liturgical text which was itself composed for singing.

The principal decision in accomplishing that task was the division of the liturgical text into sense units, and we can see that all the versions reflect the same reading.²⁹ The sense units are articulated in that the melodies mark the end of each with some cadential figure, and begin the next with an opening figure. In this aspect the melody plays a role parallel to punctuation in a text to be recited. But then within the setting of each sense unit, the declamatory pace of the text is the same in all versions as well, as controlled by the brevity or length of the melodic figure carrying each syllable. Thus all opening syllables are relatively short, but the syllables “ro-(tam),” “sti-(pulam)” and “fa-(ciem)” in the Verse are carried by long melismas in all versions.

The division of the text into sense units is, of course, a response to immanent syntactical properties of the text itself, and it would have been possible for singers in the same and different traditions to arrive at the same divisions independently. The choice of modal type can also have been a coincidence—there are not so many from which to choose, after all—and that choice can account for many of the similarities with respect to range and principal tones. But such things cannot be said as readily about decisions regarding the declamatory pace. The similarity of all versions with respect to them is the most compelling sign of a continuing tradition for the chant, a tradition that goes back to a time before the separation of the Gregorian and Old Roman traditions, and that was carried through unwritten tradition at least until the Carolingian era in the Frankish regions, and at least until the 11th century in Rome. This is a constant that is far more significant for such a tradition than the melodic outline itself, a fact that tends to be obscured by the habit of comparing the melodies of chants as complete and autonomous tonal configurations.

Among the three Old Roman versions there are variants of different kinds. For one, there are the signs of fluidity in the tradition, for example the number of descents F-D in the final melisma, the details of the descent from A to D on the very last syllable of the

²⁹ Carruthers (*The Book of Memory*) writes, “. . . remembering material *sententialiter* [according to the sense-units, following a definition of Isidore of Seville] would mean to remember it in chunks. . . , by its constituent ‘ideas.’” (p. 90)

Verse, or of the melismas on both syllables of the last word (“*terram*”) of the Respond. These have the appearance of an *ad libitum* component in what is on the whole a rather consistent transmission of the melody. We do not mainly find such a component in the written transmission of the Gregorian tradition, whatever the degree of its textual variation.³⁰ It may be tempting to attribute this difference to the continuing unwritten transmission in the Old Roman tradition and the older Gregorian textual tradition, but again that would be only the exercise of an ungrounded bias. We shall shortly look at specimens of a tradition for which only a written transmission can be documented, and of which a fluidity greater than that of the Old Roman tradition is characteristic. A related bias would associate the fluidity in the transmission with the florid nature of the melodies, and the two together with the phenomenon of orality. But the Gregorian tradition abounds in stereotyped melismas that are transmitted in stable form from source to source and even from melody to melody, and that were sufficiently well known as to require only cuing in written sources much of the time.³¹

I identified another type of variant first in the discussion of the Old Roman offertory “*Factus est Dominus*,” the writing out of the melisma X in the third verse, in the version of Rome, vat. lat. MS 5319, at a level one degree higher than in the other sources. I simply called it an error in that discussion, but there are other things like it in the transmission of “*Sciant gentes*” that suggest a better context of meaning. In the melodic setting of “(quoni-)am no-(men)” in the Respond, the version of the Bodmer Codex is inscribed first two degrees (“-am”), then one degree higher than that of MS 5319. MS F22 begins in agreement with Bodmer, and continues in agreement with 5319. In the second and third neumes of the melisma on “(altissi-)mus in the Respond, there are several disagreements about pitch-height. In none of these can any one version be singled out as an error, as can the displaced melisma X. All such variants in these sources are clues to a difficulty that the notators must have had in writing down their melodies (if not these notators, then the notators from whose sources these were copied). Remembering that we confront here what is

³⁰ Helmut Huckle has reasoned from the extent of textual variation between early notated sources such as Laon 239 and St. Gallen 359 (20–40% between those two) that such sources cannot have been accomplished simply through copying of a musical text, and that an Urtext of the Gregorian gradual cannot be retrieved through text-critical methods. See “Gregorianische Fragen,” *Die Musikforschung* XL (1988), 327.

³¹ See the article “Neuma” in *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie (London 1980) vol. 13, pp. 123–25. The bias referred to here has undoubted connections with the tendency to characterize the Old Roman style as “Oriental” or “Mediterranean.” See note 10.

more-or-less the border between unwritten and written transmission in the Old Roman tradition, it is a difficulty in setting the melodies as the notators knew them into the notational matrix for the first time. This must have been a problem already for notators in Frankish regions earlier, translating the turns and figures of melodies into non-diastematic neumes. But the first notators of Old Roman chant would have had to add to their tasks the exact translation of melodic interval-distance into the fine differentiation of vertical distance that was the operating principle of a notational system that did not evolve with the experience of their musical tradition in writing, but lay ready for their use as novices. That task is second nature to us but must have been totally strange to them. So here variants were created through written transmission that would not likely have occurred in unwritten transmission.³²

As I have already suggested, the melodic tradition of Gregorian chant had very likely become stabilized in performance to a broad extent prior to the inscription and dissemination of the melodies in musical notation. In view of the discussion to this point, it is no longer necessary to frame this in terms of a sharp distinction between improvisation and performance from memory—the displacement of the former by the latter. We shall see indications, indeed, that even after the wide dissemination of books with musical notation was under way, singers continued to rely on their knowledge of both individual melodies and of their idioms to support their “reading” of the notations.

The clues to such a stabilization come from a number of different sides. First there is the evidence of the wide agreement among the earliest notated sources about their melodic contents.³³ Especially when we take into account the differences in notational styles from the earliest times, and the textual variation within and between sources, the stability of their contents seems likely to have been established in the unwritten tradition.

Second, Aurelian of Reome, in his handbook for singers of chant *Musica disciplina*, ca. 850 (perhaps as late as 877)³⁴ gives descriptions

³² Charles Atkinson has discussed problems of chant transmission and classification that arise only when notators are confronted with the task of “capturing [their] precise intervallic structures in diastematic notation, with its dependence on a diatonic tone system.” See “From ‘Vitium’ to ‘Tonus acquisitus’: On the Evolution of the Notational Matrix of Medieval Chant,” *Cantus Planus*, pp. 181–97. And David Hughes, in “Evidence for the Traditional View of the Transmission of Gregorian Chant,” makes reference to the problems that must have been posed by “the reduction to written symbols” (*JAMS* XL [1987], 394).

³³ The most recent report on this is given by David Hughes in “Evidence for the Traditional View of the Transmission of Gregorian Chant.”

³⁴ See Michael Bernhard, “Textkritisches zu Aurelian,” *Musica Disciplina* XL (1986), 49–61.

of individual chants in such minute details that he can only be referring to melodies that are fixed to that level of detail, and his descriptions are confirmable by reference to later sources. His language suggests that he is addressing singers in an oral tradition, and that is confirmed by his own insistence that "Although anyone may be called by the name of singer, nevertheless, he cannot be perfect unless he has implanted by 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," and his reiteration of the oft-cited remark of Isidore of Seville (7th century) that "this art [song], unless it is impressed on the memory, is not retained."³⁵ Even if, as may well be, some fully notated chant books had already been written by this time, that would not cancel the relevance of these remarks.³⁶

Third, a rather special kind of evidence was presented by Karlheinz Schlager who showed, in brief, that poets who applied words (one syllable to each note) to melismas transmitted in the earliest sources rather consistently observed the melodic groupings denoted by neume groupings in those melismatic sources through the determination of word boundaries in their texts—word boundaries coincide with what were neume boundaries in the melismatic originals, especially striking when that is the case in multiple texts fitted to the same melisma. (See Examples 7a and b, in which such a melisma is shown as it appears in three neumatic sources and transcribed from the alphabetic notation of a fourth [7a], and in four text adaptations shown with the same transcribed melody [7b]. Vertical lines in the transcription indicate agreement about neume-boundaries among the four sources; vertical lines in the texts of Example 7b indicate agreement about word-boundaries despite difference of word-contents. This allows us to see the correspondence of neume-boundaries with word-boundaries.) That suggests that the poets knew those melodic groupings as the constituent elements of the melodies, stabilized as such prior to their writing down. That would mean that the earliest notations of such melodies transmitted the immanent groupings within the melodies by means of the neumes. (This practice has something important to teach us about the early uses of notation. The

³⁵ The Latin texts and bibliographic citations are given in Leo Treitler, "Reading and Singing: On the Genesis of Occidental Music Writing," *Early Music History* IV (1984), 147–48 and 160–61.

³⁶ Clear as it is that Aurelian presumed a memory-based performance tradition, he also recognized some role for music writing in that tradition (see Treitler, "Reading and Singing. . ." pp. 148–49). There is nothing contradictory about this. It is only by construing the musical economy of that time as one that entailed the interaction of writing and reading with an actively functioning memory that we can hope to approach a realistic image of how the tradition functioned.

syllabic setting necessitated the resolution of the neumes, which were replaced by single-note neumes. That reduced the information carried by the melismatic neumes about the melodic contour. But because of the scruple regarding neume-boundaries and word-boundaries, the aggregative property of neumes with respect to their constituent notes was shifted, in a way, to words. The words themselves thus could have conveyed the information about note-groupings that would have supported the singer's memory in performance. As Schlager suggested, the words could have functioned as a kind of notation.)³⁷

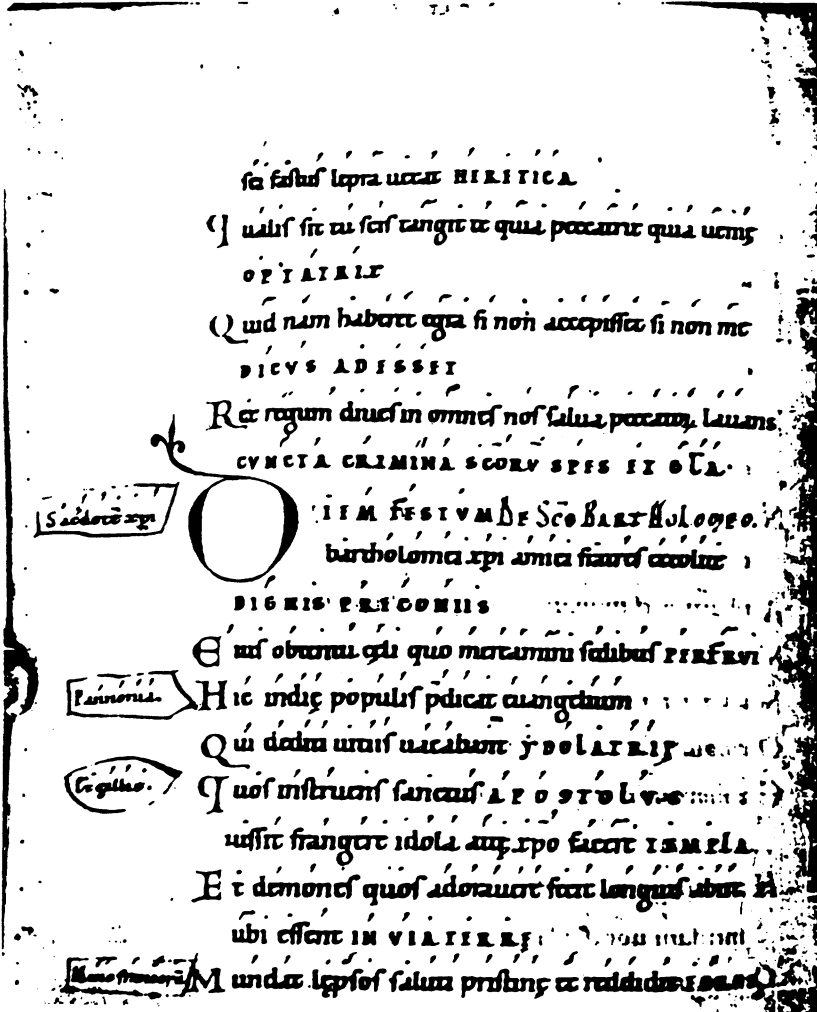
I conclude this part of the discussion with indications that singers integrated their capacity to call up well-known melodies from memory, their ability to read notation, and their continuing practice of composing (or re-composing) melodies in performance.

Andreas Haug has reported on a German sequence collection with neumes, dated to about 1100, which contains pieces of local distribution. In the margins, next to the beginnings of such pieces, in arrow-shaped boxes that point to those beginnings, the scribe has written, also with neumes, the beginnings of sequences that circulated internationally (Figure 1). The neumes of these incipits correspond to those of the beginnings of the pieces in the main text, and the scansion of the poetry corresponds exactly. The interpretation is clear: each such marginal note is an instruction to the singer to sing this text to the well-known tune of such-and-such. It puts him on the track of the melody, and his remembering of the melody guides him in the reading of the notation, which is also an act of reconstruction. But at the same time the notation supports him in his remembering of the melody. This interesting phenomenon of written transmission points to what must have been a fundamental relation of mutual support

³⁷ See Karlheinz Schlager, "Die Neumenschrift im Licht der Melismentextierung," *Archiv für Musikwissenschaft* XXXVIII (1981), 296–316. Three other arguments to the same conclusion that cannot easily be summarized here because of space limitations are presented by David Hughes, in "Evidence for the Traditional View . . ." (see especially, p. 394), Kenneth Levy in "On Gregorian Orality" (where this conclusion is the main thesis), and Leo Treitler, "Homer and Gregory: The Transmission of Epic Poetry and Plainchant," *The Musical Quarterly* LX (1974), 333–72, especially 362–68.

The recognition that the Gregorian tradition had become stabilized by the time it was written down has an important implication for our understanding of what could be accomplished and what the range of stylistic possibilities can be in the circumstances of oral tradition. It is a commonplace in the critical assessment of the Gregorian melodies that they are highly crafted, balanced, unified, economical, integrated. Then they must have come to be that way in the oral tradition, and there should be no temptation to associate those characteristics with the possession of a writing technology, and the opposite features with the lack of such a technology.

FIGURE 1. Sequence “Diem festum Bartholomei” in Kremsmünster, Stiftbibliothek codex 309 f. 214 verso. Source: Andreas Haug, “Zum Wechselspiel von Schrift und Gedächtniss im Zeitalter der Neumen,” *International Musicological Society, Study Group Cantus Planus. Papers Read at the Third Meeting Tihany, Hungary, 19–24 September 1988* (Budapest 1990), pp. 33–47.



between reading and remembering in the performance of music after the entry of music-writing into the picture.³⁸

Just as the stabilized, individuated Gregorian melodic tradition was written down, it became the center of a new melodic tradition that remained highly fluid throughout its history, even though its melodies seem to have been transmitted in writing from the very beginning. I refer to the widespread tradition of troping, a way of singing the chants of the mass with newly composed verses that served as introductions to the initial or internal phrases of mass chants, which were very much expanded in consequence. There is something about the transmission of these new verses and their melodies that is important for my subject. The earliest manuscripts in which tropes were written down are virtually as old as the oldest notated sources for the chants themselves, and there is no evidence for a prior oral tradition for the practice, as there is in the case of the chant. But there are vast quantities of trope material surviving in written transmission.

The written transmission reveals a fluidity in the tradition in two senses: first in the selection of verses that were associated in the manuscripts to be sung with a given chant, which were forever being re-

³⁸ See Haug, "Zum Wechselspiel . . ." pp. 33–47. Haug reports on similar practices in other sources on p. 36, note 10. A similar situation in the Old Roman antiphoner London, British Library additional MS 29987 has been reported by Edward Nowacki in "The Gregorian Office Antiphons and the Comparative Method," this *Journal* IV (1985/6), 243–75, especially 273–74. It concerns a series of antiphons for the Easter season on only the word *Alleluia*, repeated. Each antiphon is preceded on the page by the beginning of a fully texted antiphon assigned to another feast (completely written out in another part of the manuscript), whose melody it resembles very closely but not fully. It might seem that here, too, the incipit was an indication to the singer to follow the model of its melody. But the differences yield further insights into the nature of the composition-performance process in such circumstances. Nowacki was able to show that the similarity between Alleluia-antiphons of the same melodic type is often closer than that between any Alleluia-antiphon and its fully texted model, but also that one fully texted antiphon may resemble all the Alleluia-antiphons of its type more closely than any other; i.e. it is the best representative of that melodic type. That means that, despite the fact that the scribe wrote out the incipits of different melodies, it was a melodic archetype more than the particular melody of the incipit that guided him in writing out the corresponding Alleluia-antiphon. And we can only guess what would have guided the singer using that book in the performance of any Alleluia-antiphon: the melody cited in the incipit, the notated melody, or some internalized sense of that melodic archetype. What we cannot assume is that it must have been all one or another of these. Remembering, reading, and reconstructing must have been continuous with one another, and, probably, indistinguishable to the singer.

Here again the conclusions from the musical evidence resonate closely with the theory and practice of memory in the Middle Ages. Carruthers (*The Book of Memory*) writes, "In none of the evidence I have discovered is . . . writing itself a supplanter of memory. . . . Books are themselves memorial cues and aids. . . . (p. 17) "That writing came increasingly into use from the 11th century on . . . [does] not seem to have . . . changed the deliberate cultivation of *memoria*. . . . Writing was always thought to be a memory aid, not a substitute for it." (p. 156)

combined; second, in the highly variable presentation of the notated melodies in many cases. This phenomenon is illustrated in Example 5: transcriptions of a single trope verse from nine manuscripts written in the Duchy of Aquitania between the 10th and 12th centuries and one manuscript from the nearby village of Apt, in the Vaucluse.

This situation may be interpreted in different ways, some more familiar than others. For one, it may simply be filed away as a corrupt textual tradition, a series of failures, for one reason or another, to carry out the assumed task of copying an authoritative source with accuracy. On that assumption the transmission shown in Example 6 would be a good one. The difficulty here is that this transmission is not representative; we would have to consider the whole Aquitanian trope tradition to be corrupt, something that would surely make us want to question our assumptions. What is more, some of the same notators were perfectly capable of copying mass proper chants into the same books with very great accuracy and consistency.

A second interpretation would be that Example 5 comprises written traces of an oral tradition. But that would be just another formulation of the dogma that music necessarily changes in unwritten transmission and does not change in written transmission—hence it would be no interpretation at all.

A third interpretation would be the simplest, although it would lead to an unconventional way of thinking about the possibilities of unwritten transmission and its relation to performance, that is unconventional from the standpoint of the constellation of concepts surrounding the Romantic work concept. It is that musical items or objects like tropes have multiple forms of appearance, and as a corollary, that musical notation does not uniquely denote them. That is to say, no one score of the trope verse “In Ihordane,” for example, denotes all of its possible forms of appearance, thus any score of it must be regarded as a descriptive protocol and only an exemplification for the performance. (The idea of a critical edition or “best text” of this melody would be a chimera.) If that is how medieval singers regarded it, they might not have regarded the details of the notation as compelling down to the last detail in a prescriptive sense. If we ask, then, what are the boundaries of the trope verse “In Ihordane,” we may not be able to answer. But we will always be able to say about any one instance of it that it is like some other instance of it. That may be as close as we can come to recognizing a genre concept for the Middle Ages.³⁹

³⁹ See Ritva Jacobsson and Leo Treitler, “Tropes and the Concept of Genre,” in *Pax et Sapientia: Studies in Text and Music of Liturgical Tropes and Sequences in Memory of Gordon Anderson*, published by Ritva Jacobsson (Stockholm, 1986) pp. 59–90.

EXAMPLE 5. Trope verse *In Ihordane* for the introit *Ecce advenit*, in the Aquitanian transmission of the following mss in Paris, Bibliothèque nationale latin 1119 f. 13 verso, 1121 f. 8 verso, 1084 f. 60, 909 f. 17 verso, 887 f. 17, 1118 f. 30, 903 f. 150, 1871 f. 9 verso, 779 f., and Apt, Archive de Basilique S. Anne 17 f. 88. Source: Leo Treitler, "Observations on the Transmission of some Aquitanian Tropes," *Forum Musicologicum* III (1982), 36-38.

1119

 In Ihor - da - ne a Iho - an - ne bap - ti - za - tus

1121

 idem.

1084

 idem.

909


887


1118


903

 bap - ti - za - to a lo - han - ne

1871, fol. 9'


779


Apt 17


1871, fol. 38'

 Per quam Xpisti - co - le

MEDIEVAL CHANT

EXAMPLE 5. (continued)

1119

 pa - ter - na vo - ce fi - li - us est pro - tes - ta - tus

1121

1084

909

887

1118

903

1871

779

Apt 17

 de - i est ho - di - e

1871, fol. 38'

 tri - um - phan - tes su - per - a

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EXAMPLE 5. (continued)

1119              Introit:
De - us ju - di - ci - um tu - um Re - gi da
cu - ius ho - nor.
ad cla - ma - tus.
scan - dunt.

In such a tradition musical items could be realized in writing as well as in performance; writing down *was* a kind of performance. The creative aspect of musical reconstruction or remembering continued into the writing down in written transmission, just as it did into the performance in unwritten tradition. From this point of view the transmission shown in Example 6 can be understood as an autonomous written tradition, which may or may not correspond to a performing tradition.

Ironically the fluidity of trope transmission in both regards unsettled the vaunted uniformity of Gregorian chant performance; for the performance of any troped chant as a whole, with its trope verses, could be quite different from one time or place to another, no matter how uniformly the core Gregorian melodies were transmitted in the books used in those places. This must be understood to qualify all that has been said about the ideas of stability and uniformity.

A distinction has been made here between the written transmission of Gregorian chant and that of the trope verses with which it was performed. Nothing of what has just been sketched about the written transmission and performance of trope verses is being suggested about the transmission and performance of the chants. There are at least two reasons for the difference: the greater age and longer tradition of Gregorian chant, which had stabilized before the writing down, and a canonical status for the chants that the trope verses never achieved; in the historical circumstances of the 10th and 11th centuries there was no counterpart of the Carolingian demand for uniformity of singing practice.

III

To give the many-sided material that has come down to us its due has necessitated a versatile and open representation about the topic "Unwritten and Written Transmission." And so it must be for the material bearing on the topic "The Start-up of Musical Notation."

The linguist Roy Harris has written that "Unless a reasonably clear answer can be given to the question 'What is writing?' there is simply no basis on which to propose any solution to the problem of its origin."⁴⁰ Theories of the origins of notations are not our primary subject here. But if we want to give a reasonably comprehensible account even of the less ambitious question about the beginnings of the practice of writing music, not only from the paleographic but also

⁴⁰ *The Origin of Writing* (LaSalle, Illinois: Open Court, 1986) p. viii.

EXAMPLE 6. Aquitanian transmission of the trope verse *Discipulis flammas* for the introit *Spiritus domini replevit orbem terrarum*. Source: Günther Weiss, *Introitus Tropen I (Monumenta Monodica Medii Aevi 3, Kassel, 1970)*, p. xxvi.

Sign.	Facs.	Silbeneinteilung													Introitus	
		1	2	3	4	5	6	7	8	9	10	11	12	13		14
lat. 1240	I	Dis	ci	pu	lis	flam	mas	in	fun	dens	ce	li	tus	al	mas	Spi[ritu]s
lat. 1120	II	Dis	ci	pu	lis	flam	mas	in	fun	dens	cae	li	tus	al	mas	Spi[ri]tus
lat. 1121	III	Dis	ci	pu	lis	flam	mas	in	fun	dens	cae	li	tus	al	mas	Spi[ritu]s
lat. 1084	IV	Dis	ci	pu	lis	flam	mas	in	fun	dens	ce	li	tus	al	mas	Spi[ritu]s
lat. 903	G-LINIE!	DIS	CI	PV	LIS	flam	mas	in	fun	dens	ce	li	tus	al	mas	Spi-ri—tus

lat. 909	VI	DIS—CI—	PV—LIS	flam—	mas—	in—	fun—	dens	cae—	li—	tus—	al—	mas	Sp[iritu]s.
lat. 1118	VII	Dis—ci—	pu—lis	flam—	mas—	in—	fun—	dens	ce—	li—	tus—	al—	mas	Sp[iritu]s d[omi]ni
lat. 887	VIII	DIS—CI—	PU—LIS	flam—	mas—	in—	fun—	dens	ce—	li—	tus—	al—	mas	Sp[iritu]s d[omi]ni
lat. 1119	IX	DIS—CI—	PU—LIS	Flam—	mas—	in—	fun—	dens	ce—	li—	tus—	al—	mas	Spiritus
lat. 779	X	G-LINIE!	DIS—ci—	PV—LIS	Fia—	IN—	FUN—	DENS	CAE—	LI—	TUS	al—	mas	Spi-ri—tus
n.a. lat. 1871	XI	Dis—ci—	pu—lis	flam—	mas—	in—	fun—	dens	ce—	li—	tus—	al—	mas	Spi-ri—tus d[omi]ni
Apt. 17(3)	XII	Dis—ci—	pu—lis	flam—	mas—	in—	fu—	dit	pe—	cto—	re	blan—	das	Spiri(tus)

from the semiotic and historical points of view, there is no way to avoid the question of what music writing is or was. And that is to ask what it was meant to accomplish vis-à-vis its objects, in the context of musical practice and theory in which it began, and in the cultural and political circumstances that fostered it. Simply put, the objects of notation were melodies. But in order to understand how notations worked we must be aware of different ways of thinking about melody, all of which are reflected in different degrees in the several notational systems: melody as a whole object or as a multitude of discrete tones; melody as act, i.e. as performance, conceived as the voice in motion, or as the act of speaking through the rise and fall of the voice, even melody as an object which is itself in motion. This matter of how the musical object was conceived is essential for the core of the question about what is notation is the question of reference: to what aspect of the musical object does the notation refer? what is the nature of the reference? is it description, representation, symbolization, imitation? instruction? These terms tend to be used as though they were interchangeable, but they are not; they all have different emphases.

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Our focus on beginnings rather than origins is an important matter of historical perspective. Theories of origin risk a tendency to reach back into a past distant enough to make notation continuous with other practices, denying its novelty by implication and obscuring its distinctness as a signifying practice that was invented in particular historical circumstances, in a “qualitative leap,” as Arlt put it in the passage cited at the beginning, in favor of a theory of immanent and autonomous development. (Harris writes that “the reluctance of modern historians of writing to face the fact of its being an invention is remarkable”⁴¹ and gives over the whole of his fifth chapter to “The Great Invention.”)

Beyond the circumstances that underlie the still somewhat confusing anecdotal reports about the efforts at achieving a unified chant practice under Charlemagne, the particular historical circumstances that are relevant to our subject have to do with the extraordinary explosion of the Carolingian culture into script. Well documented are a massive drive toward the education of the clergy, especially in their ability to read and write Latin, an enormous increase in the establishment of scriptoria and in the production of books, the recirculation of classical and late classical pedagogical books about aspects of language, mandated increases in the use of written documents for administration, the creation of a uniform and easily read script (the

⁴¹ *The Origin of Writing*, p. 122.

Caroline minuscule), and the invention of a comprehensive punctuation system, both of the latter officially mandated for use and both in use still today.⁴²

Before reviewing and interpreting the medieval material we need to reflect on our own vantage point, to think how the notational system that we use functions for us, both in order to recognize similarities and differences with medieval notations, and to avoid crippling the latter by interpreting them as stages on the way to achieving our system.

(Since I am concerned here only with the notation of melody through medieval systems, I shall consider only the notation of melody in the modern system.) The first premise of our notation is the metaphor that our tone system is arranged along a dimension from low to high. By mapping this "vertical" dimension onto the writing surface we make a visual analogue of the tonal disposition of melody (whether the writing surface is actually vertical or horizontal does not matter). This allows us to indicate its up-and-down movement. I call this property directionality.⁴³ The writing surface is also given a horizontal dimension, from left to right, in order to provide for the indication of succession in time. The premise of these vertical and horizontal dimensions is shared with ours by all the earliest notational systems.

In our system relative distances between pairs of points along the tone line correspond exactly to relative distance between pairs of points along the vertical dimension of the writing surface. This allows us to indicate the interval components of melodies. In reference to medieval notational systems this property is called diastemata (from the Greek *diastema*, interval). Some medieval systems share this property with ours, others do not. Directionality is not a necessary condition of diastemata, as in notations using letters of the alphabet, for example, although some diastematic notations—ours included—utilize directionality as a means to diastemata. On the other hand we should not think of directionality alone as a primitive stage of diastemata or as poor diastemata. Many of the earliest notations do not manifest the least interest in denoting interval magnitude, nor is there any reason to think that such denotation would have had any value in the musical circumstances.

⁴² For a fuller description and citation of literature, see Treitler, "Reading and Singing. . .," pp. 135–41.

⁴³ See Leo Treitler, "The Early History of Music Writing in the West," *Journal of the American Musicological Society* XXXV (1982), 250 and note 27.

Given these premises, which are in themselves conventional but arbitrary, all notational systems that share them—our modern system and the earliest medieval ones—are in some measure iconic with respect to two aspects of the sounding phenomenon of melody: succession and contour. Those systems that embody the premise of diastemata through directionality are also iconic with respect to the size of intervals.

The note-heads of our system are like markers with which we pick out, i.e. denote, the discrete positions in our tone system, which is represented by the staff or system of staves. We often say informally that note-heads identify pitches, because we are assuming a clef and some standard of pitch (e.g. $a = 440$). But it is important to keep in mind that they really mark positions and the intervals between them, not pitches. Markers at $c\sharp$ and $e\flat$ denote the same pitches as markers at $c\sharp$ and $d\sharp$, but not the same interval; the first pair denotes a kind of third, the second pair denotes a kind of second. In saying that the markers denote positions, we are acknowledging our use of our tone system as a system of functional relationships. Our notational system has reference to a functional tone system (at least in its use for notating tonal music.) This property is shared by some of the earliest notational systems—those that are diastematic—and not by others.

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The identification of signs with the discrete elements of a tone system gives our notation an analytical aspect. All medieval notations that function through such reference have that aspect. There are other analytical aspects to some early medieval notations that are not diastematic: notations of melodies that had originally been melismas and that became newly fitted to texts in a syllabic setting, with the result that the melody was literally analyzed down to its constituent individual tones, as in Examples 7a and b. On the other hand our notation also has an aggregative aspect that is revealed by the metaphor “melodic line,” which catches our sense of melody as more than a succession of discrete elements, as a single, continuous thing that is represented iconically by our notation. Those early medieval notational systems that are comprised of cursive neumes embody that aggregative property more explicitly than our modern notation.⁴⁴

⁴⁴ Walter Ong (*Orality and Literacy*) writes, “The elements of orally based thought and expression tend to be not so much simple integers as clusters of integers. . .” (p. 38). He writes of the formula in oral productions as “obligatory stabilization” (p. 39). It is interesting to think of this in connection with the history of music writing. On the whole it does seem that notation became increasingly analytical. And it is interesting to think, then, that there is, in the aggregative character of some of the earliest notations, a reflection of their role in denoting an orally based melodic tradition.

It is striking that some of the most essential principles of our notational system have been governing Western musical notations since the beginning of the practice. In making that assertion I have not forgotten my initial caveat about viewing medieval practices through modern lenses. Where those principles govern it was a matter of choice, and even more important, where they do not, *that* was a matter of choice as well, not ignorance, carelessness, lack of skill, primitiveness, under-development. The principles that govern early notations are closely related to the purposes that the notations were meant to accomplish in the contexts in which they were used.

A modern score may be used for a number of different primary purposes, and accordingly different aspects of the notation come to attention. When it is used as instruction for performance the analytical aspect—the identification of the discrete elements in relation to the tone system—may be more-or-less consciously in the mind of the performer, depending on his or her abilities in “sight-reading,” and depending also on the reader’s familiarity with the music’s idiom (many readers will be more preoccupied with the analytical aspect of a score by Anton Webern, first working out the individual notes one by one, than of a score by Franz Schubert). But the aggregative, iconic aspect will certainly play an important role in the prescriptive function of scores, as it will for the person listening to a performance and “following the score.” On the other hand in musical analysis, where the score stands for the work, the analytical aspect of the notation is all-important and the iconic aspect virtually irrelevant. This will be the case also when musical notation is used in examples to illustrate precepts in a pedagogical book on, say, harmony or counterpoint.

Such connection between the purposes served by notation and the aspects of notation (reflecting the nature of its reference) that are brought forward in the execution of that purpose, is extremely important in understanding the beginnings of notational practices. Notational systems emphasizing different principles of reference and different ways of conceiving the musical object—also different states of its tradition—were developed according to the needs that the notations were meant to address.

This is rather sharply demonstrated by the notations in the famous 10th-11th-century manuscript Cambridge, Corpus Christi College 473, one of the so-called “Winchester Tropers.” The contents comprise, in different sections of the manuscript, monophonic liturgical songs of various genres and organal voices for performance with mass and office chants as well as tropes and sequences, but not necessarily those that are entered in the monophonic sections. The monophonic chants are notated in non-diastematic English neumes.

But the notation of the organal parts shows efforts at diastemata and other cuing devices that would have helped the organum singers, who could not rely on the tradition of what they were singing as much as the singers of the cantus parts could do. (One example: the clivis [7], which both sites the upper note of its two-note descending figure with its horizontal element, and signals that the organal voice is now to move in contrary motion with the cantus.) Their performances would have been supported by the interaction of such specialization in the notation and by their knowledge of the basic contrapuntal principles on which this organum practice is based.⁴⁵ Here a more informative notation was called upon to guide the singer in the performance of a less traditional repertory. We can also encounter the opposite phenomenon: a notator switching to a less informative system for a more traditional repertory.⁴⁶ These briefly cited examples should serve to counter the temptation to think of the history of notation as the progressive development of an autonomous technology.

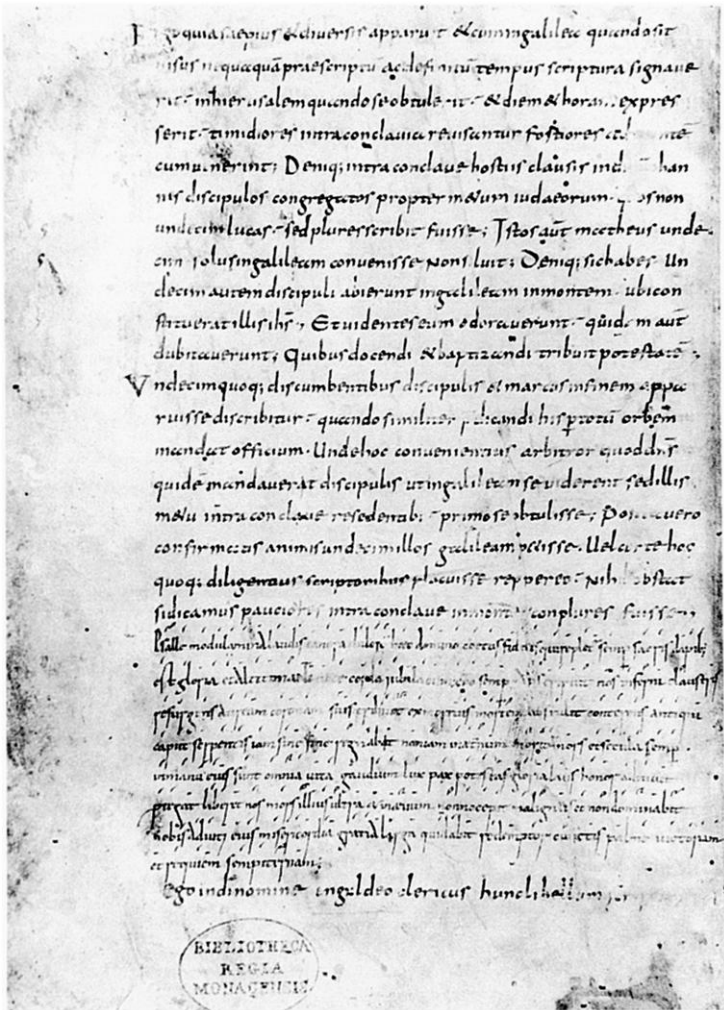
I shall address the topic of the beginnings of musical notation through observation of the oldest surviving specimens, rather than from the vantage point of theories about origins or about the beginning of the written chant transmission that reach back to periods from which we have no sources and that risk prejudicing the evaluation of the notational specimens that do survive. My first example will illustrate that danger. Helmut Hucke has written, "The propagation of Gregorian chant in the Empire and the distribution of manuscripts with neumes are not the same phenomenon."⁴⁷ We must add that the invention and development of systems of notation is yet another phenomenon. All three phenomena are interrelated, but it is counterproductive to develop arguments about any one of them based on assumptions of its close coordination with the others.

⁴⁵ A detailed explication of this subject is given by Susan Rankin, in "Winchester Polyphony: The Early Theory and Practice of Organum," in *Music in the Medieval English Liturgy: Essays for the Centenary of the Plainsong and Medieval Music Society* (forthcoming London: Oxford University Press, 1992). I am most grateful to Dr. Rankin for providing me with a pre-publication draft of her text. Details about specialized notational characters are discussed in Treitler, "The Early History of Music Writing in the West," especially p. 261.

⁴⁶ For example in the manuscript Munich, Bayerische Staatsbibliothek, Clm 17025, a 13th-century book notated mainly in quadratic notation on a four-line staff, in which the notator occasionally reverts to non-diastematic neumes to record hymns—perhaps in order to save space. See Leo Treitler, "Communication to the Editor," *JAMS* LXI (1988), 566–78, especially p. 572.

⁴⁷ "Toward a New Historical View of Gregorian Chant," *JAMS* XXXIII (1980), 437–67. The citation is from p. 447.

FIGURE 2. Beginning of the prosula *Psalle modulamina* from München, Bayerische Staatsbibliothek 9543 f. 199 verso with the source melody *Alleluia. Christus resurgens*. From *Die Musik des Mittelalters (Neues Handbuch für Musikwissenschaft 2)* ed. Hartmut Möller and Rudolph Stephan (Laaber, 1991), p. 190.



Psalle modulamina laudis canora dulcissima haec Domino
 AL - LE - LU - IA

The oldest surviving specimen of medieval European musical notation records a melody for the prosula "Psalle modulamina," composed to the opening melisma of the "Alleluia Christus resurgens" and entered at the end of the manuscript München, Bayerische Staatsbibliothek Clm 9543 (folio 199v.), compiled in the bishopric of Regensburg (Figure 2). The paleographer Bernhard Bischoff has dated the manuscript to sometime between the years 820–48, and has asserted that the prosula with its notation belongs among its original contents.⁴⁸ That would make this the only surviving notation from the first half of the 9th century. It has not been allowed the celebrity to which this position would be expected to entitle it, and that is probably owing to the suspicions with which the claim about its time of origin have been greeted.

These have been of two kinds. First, the writing and notation of the prosula simply *look* different from the writing in the rest of the manuscript, to the naked eye and under magnification (there is no other notation in the manuscript for comparison; the differences are in the appearance of the ink). But that is not sufficient ground for presuming a substantial difference of age, and no one has really challenged Bischoff's authority on this point. Second, this item has been thought to lack the qualifications that the oldest musical notation of medieval Europe ought to display, in several respects, of which I mention two main ones here: it is isolated among the earliest specimens in its east-Frankish provenance—all the rest are west-Frankish, so the presumption would be that notation is a west-Frankish invention and this specimen was written after the west-Frankish ones of the second half of the 9th century; and it is a notation of an item for the Gregorian mass proper (the Alleluia), whereas other evidence suggests that this repertory was not notated before the second half or even the fourth quarter of the ninth century—the presumption is again that this specimen was written after the initiation of the practice in the West, during the second half of the century.⁴⁹ But the reason-

⁴⁸ A thorough review of the facts and problems about this specimen, especially with respect to the question of its place in the history of notation, is given by Hartmut Möller, in "Die Prosula 'Psalle modulamina' (Mü 9543): Beobachtungen und Fragen zur Neumenschrift," Claudio Leonardi and Enrico Menesto, eds., *La Tradizione dei tropi liturgici. Atti dei convegni sui tropi liturgici Parigi - Perugia. Organizzati dal Corpus Troporum soto l'égida dell'European Science Foundation* (Spoleto, 1990) pp. 279–96.

⁴⁹ That was the implication of my own use of Aurelian's *Musica disciplina* as a watershed for the beginning of the written transmission of the mass proper chants, based on the clear indication that he expected his addressees to have that repertory committed to memory (see Treitler, "Reading and Singing. . ."). But as Möller has observed ("Die Prosula 'Psalle modulamina'. . ."), that Aurelian assumes an active oral tradition in his time does not preclude the writing down of something like "Psalle modulamina" some fifty years earlier. This is another reminder of how we can be

ing on both these counts is of an a priori and circular nature. Möller has convincingly shown that the suspicions about “Psalle modulamina” are all similarly unnecessary, that we may indeed hold it in our representation of the beginning of European notation as the oldest surviving instance, and consider what it would tell us about that momentous historical phenomenon.

It is a composition with a history similar to that of the offertory prosula in Examples 7a and b: a text has been fitted to a melisma whose written transmission preserves the grouping of notes in the chain of neumes, reflecting its constituent melodic components. The text setting follows that organization of the melody, in that the main articulations of melodic units are the guides for the articulation of the words (major word-boundaries and neume-boundaries coincide). This suggests, again, that the melodic articulation reflected in the succession of neumes is immanent in the chant from the time of its unwritten transmission, during which it became stabilized, and that the poet knew the melody as that articulated entity. So far as notation is concerned, it suggests that the neumatic succession in the notation of the melisma was designed to make a visual presentation of that articulation, and that when the neumes were resolved owing to the addition of the text, the words became the visual and aural signs of the melodic phrasing, which could be read and heard through them. Written language, therefore, must be counted among the supports we have already enumerated for musical notation in its earliest uses for performance. This concretizes for us the well known anecdote of Notker about the utility of fitting texts to long melismas as a way of remembering the melodies (ca. 880); his anecdote places the introduction of the practice to his monastery a generation earlier, and that brings it quite close to the probable date of inscription of “Psalle modulamina.” Or, putting it the other way about, the association lends credence from another side to Bischoff’s dating.

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The successions of virgae (/) in Figure 2 show that the setting is syllabic, i.e. that the neumes of the melisma have been dissolved. The tractulus (—) is often, but not dependably, a cue to the melody’s descent to the lowest point of the phrase, a point of phrase articulation. In general the tractulus denotes a tone lower than either the preceding or the succeeding tone or both. From our vantage point all this taken together would seem minimal information to read from a

misled by the model of a progressive one-dimensional historical narrative in which each stage is displaced by the next one, and of the need for an open and pluralistic view in order to avoid as much as possible the prejudiced selection and interpretation of evidence.

EXAMPLE 7a. Melisma on *dierum* in the second verse of the offertory *Deus enim firmavit*, in the mss Montpellier, Faculté de Médecine H159 f. 148, Einsiedeln, Stiftbibliothek 121 f. 29, Rome, Biblioteca Angelica 123 f. 29 and Paris, Bibl. nat. lat. 776 f. 13.

Montpellier H 159, 148

die -
die -
die -
die -

-rum
-rum
-rum
-rum

notation, but in coordination with the kinds of supports we have been observing it was evidently enough of an aid to the performance to be worth the effort.

In a different kind of notational practice for such compositions the responsibility that the words assumed for signifying the grouping of notes that had been set free, so to speak, by the dissolution of the neumes, was shared by marginal inscriptions of the melismas in their original neumatic notation. (See Figure 3a. In Figure 3b only the marginal neumatic notation is used, avoiding the analytical emphasis.) The textual and notational practices offset the inevitable analytical effect created by the addition of the text in the first place, an effect that seems to begin with the beginning of notation.

Figure 2 incorporates one small clue to one of the most fundamental properties of all systems of neumatic notation, and its presence in this early source encourages us to think of it as an immanent property from the beginning. That is not surprising because its function is intimately related to the very nature and purpose of neumatic

EXAMPLE 7b. The melody of Example 7a. with prosula texts from the following mss:

A. Bamberg, Staatsbibliothek Lit, 5, 4

B. Rome, Bibl. nazionale 1343f. 19 verso

C. and D. Paris, Bibl.nat. lat. 776 f. 13

Source for 7a and b: Karlheinz Schlager, "Die Neu-
mierung im Licht der Melimentextierung," *Archiv für
Musikwissenschaft* XXVIII (1981), 294-316.



A	Le - te - mur	gau - di is	quos re - de - mit
B	Di - e - rum	noc - ti - que	vi - gi - la - re
C	Di - e	nos chris - te	is - ta tu - e -
D	Mi - rum fe - cit	do - mi - nus	con - tem - pnen - da



A	ver - bum pa - tris	a be - a - tu	la - que - o
B	quo - que ad te	rec - tor ce - lo	rum et ma -
C	ri dig - na - re	in qua lau - des	pan - gi - mus
D	re - di - men - do	de ex - cel - sis	ve - ni - ens



A	pri - mi	pa - ren - tis	de - i ius - sa	sper - nen - tis
B	ris at - que	ter - re	qui ve - nis - ti	hu - ma - num
C	pre - ce	de - vo - te	te o - ran - tes	do - mi - ne
D	pa - tris	de se - de	ar - che sum - ma	ter - ris nos



A	ar - tem	per hos - tem	heu quan - do	pa - ra - dy - sum
B	ge - nus	sal - va - re	pas - sus ex - po - li - ans	mor -
C	hu - mi - li	pre - ce	de - vo - to	at - que cor - de
D	que - rens	li - be - rans	ut do - mu - i	su - e lau -



A	de - se - rens	e - xul	ve - nit	in e - xi - li - a - les
B	tem qui ter -	ci - a	di - e	sur - re - xis - ti chris - te
C	pla - ce - at	no - bis	o - pem	tu - e tri - bu - e - re
D	di - bus ca -	na - mus	de -	cet sanc - ti - tu - do

A Bamberg, Staatsbibl. Ms. lit. 5

B Rome, Bibl. naz. Ms. 1343

C Paris, Bibl. nat. lat. Ms. 776

D " "

FIGURE 3. The sequence *Congaudent angelorum chori* shown with marginal notation in Bamberg, Staatsbibliothek lit. 5, 4 f. 122 (left) and München, Bayerische Staatsbibliothek Clm 14083 f. 23 verso (right).

deipare unum temp.
Maryr mediq[ue] foras.
CONGAUDENT ANGELORUM CHORI
 Quae sine ulla commotione genuit
 Filium qui suo mundum erexit medicus
 Non ipsa laetatur quod caeli
 Iam conspicimus primigenium
 Interit cui quondam fingendus
 Virgo mammillas protulit
 Quam ceteris angelis maria
 Iste mater eruditur
 Quia filia illius debuit
 Et cognoscunt famulos
 Quae gloria in caelis ista virgo colitur
 Quae domino caeli protulit hosiolum

deipare unum temp.
MARYR MEDIQ[UE] FORAS
CONGAUDENT ANGELORUM CHORI
 Quae sine ulla commotione genuit
 Filium qui suo mundum erexit medicus
 Non ipsa laetatur quod caeli
 Iam conspicimus primigenium
 Interit cui quondam fingendus
 Virgo mammillas protulit
 Quam ceteris angelis maria
 Iste mater eruditur
 Quia filia illius debuit
 Et cognoscunt famulos
 Quae gloria in caelis ista virgo colitur
 Quae domino caeli protulit hosiolum

notations. It is the presence of the “liquescent” version of the virga (P), the tractulus (∩), and the clivis (∩). The name derives from the medieval “notae liquescentes” and refers to the classification of letters of the alphabet in the Latin grammatical treatises that were re-circulated as an aspect of the Carolingian literacy campaign.

The treatises identify two main classes of letters: the “vocales,” 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 (b,c,d,g,h,p,q,t) and “semivocales,” which can sound with the aid of a vocale (f,l,m,n,r,s,x—in effect ks, of which the s is the semivocale). Of the semivocales four (l,m,n,r) were called “liquescentes” because of the character of their sounds, and in modern usage “notae liquescente” has come to stand for what were called both that and “notae semivocales.”

The sounds of both vocales and semivocales can be made continuous—hence they are called nowadays “continuants.” They, and only they, are the sounds that can be sung, and it is to them that the neumes refer. From the beginning, it seems, neume systems provided for each neumatic character (virga, clivis, pes, etc.) a form to be written for singing semivocales and one for singing vocales. The differentiation reflects the different shape of the mouth in singing the two sorts of sound: wide open in singing vocales, closing down after singing the vocale sound in semivocales (the reader is advised to try sounding out and sustaining examples of the two kinds of sound). The liquescent neume in effect was a warning to the singer not to go on singing a wide-open vocale sound.

In the light of this interpretation it should be understood that the two types of neumes within each system have equal status as the musical signs corresponding to the two kinds of continuant sounds of speech, and not that liquescent neumes belong to some category of ornamental, hence subordinate neume (signifying something like a grace note).⁵⁰ The phenomenon of “liquescent neumes,” directs attention to the primary function of neumes in the very beginning to

⁵⁰ For a fuller discussion and citation of literature see Treitler, “Reading and Singing,” pp. 163–68. Not cited there is J. B. Böschl, *Semiologische Untersuchungen zum Phänomen der gregorianischen Liqueszenz* (Vienna, 1980), and Andreas Haug, “Der Sequentiarteil des Codex Einsiedeln 121,” in Odo Lang, ed., *Codex 121 Einsiedeln: Kommentar* (VCH Verlagsgesellschaft mbH, Weinheim, 1991) pp. 207–56. As Haug writes there (p. 245), “wichtige Fragen der Interpretation der Liqueszenzneumen [sind] noch immer ungeklärt.” But the phenomenon offers a rich field for learning about medieval singing practices and about the phonetic evolution of the Romance languages.

provide guidance with respect to various aspects of the melodic rendition of language, rather than to identify the pitch contents of autonomous musical works. In some systems the magnitude of intervals through which the voice was to move was one such aspect, and in only some of those it was a primary one. The notation of "Psalle modulamina," which was not such a system, was perfectly adequate to its task, given all the factors in the contemporary performance tradition to which it contributed. Its "earliness" should not be thought of in the sense of "undeveloped" or "primitive."

But late in the ninth century Hucbald of St. Amand left evidence confirming both that the denotation of pitch patterns was not the primary business of the (non-diastematic) neumes that he knew, and that he regarded them as inadequate for just that reason. In the course of an argument for the use of an alphabetic notation that would precisely specify the interval contents of melodies, he wrote "The customary notes [neumes] are not unnecessary, since they are . . . 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."⁵¹

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When it comes to the designation of interval magnitude, two documents nearly contemporary with the book in which the prosula is inscribed strike the opposite extreme in their notations. Not surprisingly they are both pedagogical treatises, written in the second half of the ninth century, and the notations they contain are musical examples to illustrate precepts or to carry a part of the argument in the course of the exposition.

The main purpose of the *Musica enchiriadis* is the description of a scalar tonal matrix on which the chants of the performance tradition could be located, or fitted, and put out for study.⁵² The invention of a notational matrix as counterpart and representation of the tonal

⁵¹ "Hae autem consuetudinariae notae . . . quippe cum et tarditatem cantilenaе, et ubi tremulam sonus continet vocem, vel qualiter ipsi soni iungantur in unum, vel distinguantur ab invicem. . . ." *De harmonica institutione*, in Gerbert, *Scriptores ecclesiastici de musica sacra potissimum* (St. Blasien, 1784) i, p. 120; Translation by W. Babb, in C. V. Palisca, ed.: *Hucbald, Guido, and John on Music, Three Medieval Treatises* (New Haven, 1979) p. 37.

⁵² See Sarah Fuller, "Theoretical Foundations of Early Organum Theory," *Acta Musicologica* LIII (1981), 52–84; Nancy Phillips, "The Daseia Notation and its Manuscript Tradition," *Huglo*, 1982, pp. 157–73 and literature citations there; Atkinson, 1990. Modern edition of the treatise by H. Schmid, *Musica et Scolica enchiriadis, una cum aliquibus tractulis adiunctis recensio nova post Gerbertinam altera ad fidem omnium codicum manuscriptorum*, Bayerische Akademie der Wissenschaften, Veröffentlichungen der musikhistorischen Kommission 3 (München, 1981). Publication of an English version by Raymond Erickson is anticipated for 1993 in the Music Theory Translation Series of Yale University Press.

matrix was an integral aspect of the project, making possible the visual study of the chants (“per signa investigare”⁵³) as well as study through singing and hearing (“in canendo sentitur”⁵⁴). The treatise is provided throughout with musical examples, called “descriptiones (diagrams),” which function in two ways: they present the sound phenomena under discussion in a visible, enduring form in order that they may be discussed in detail, and they carry much of the weight of the explanation in that they enable the reader to recognize the properties of the sound phenomena that they represent. The aims of the *Musica enchiriadis* could not have been achieved without a musical notation.

The notation comprises a system of signs that stand for the positions of tones within the tone system. The basic sign is the Greek *Prosodia daseia*, the aspirant sign $\bar{\Gamma}$. This is elaborated in three ways: $\bar{\Gamma}$ $\bar{\Gamma}$ $\bar{\Gamma}$. The resulting four signs, $\bar{\Gamma}$ $\bar{\Gamma}$ $\bar{\Gamma}$ $\bar{\Gamma}$, stand for the finals of the four authentic modes on d, e, f, g. Together these tones constitute the “tetrachord of the finals,” an idea adapted from Boethius. That tetrachord, with its interval sequence of Tone-Semitone-Tone (TST) is replicated at the interval of a fifth below (G,A,B-flat,c—called the “graves” tetrachord) and at two successive fifths above (a,b,c’,d’—called “superiores” and e’,f#,g’,a’—called “excellentes”). The system is completed with the lower half of another tetrachord, again a fifth above (b’,c#’—called “remanentes [leftovers]”). The signs for the tones of these derived tetrachords are derived from the signs for the tetrachord of the finals: “graves” through reversal, “excellentes” through inversion, “superiores” through combined reversal and inversion, and “remanentes” through ninety degree clockwise rotation. For the upper note of the “graves” and “superiores” tetrachords a figure \bar{N} and its inversion are used, presumably because $\bar{\Gamma}$ reversed or inverted would remain the same. The system and its modern transcription look as follows:

The diagram illustrates the medieval notation system and its modern transcription. It consists of two rows of signs. The top row shows the medieval signs for the tetrachords: 'graves' (T S T), 'finales' (T S T), 'superiores' (T S T), 'excellentes' (T S T), and 'remanentes' (T). The bottom row shows the corresponding modern musical notation on a staff with a bass clef and a treble clef.

⁵³ Schmid, 1981, p. 10.

⁵⁴ Schmid, 1981, p. 11.

The replication of the four basic signs in the various manipulations corresponds to the replication of the basic tetrachord, and confirms that it is the positions of the tones in the system that are signified. The notational system is striking for its efficiency, being based on a single fundamental sign and two principles for its manipulation. That makes it very easily reproducible without the need for any model for reference. It is another example of a generative or transformational system, typical of oral-based cultures, that allows for the reproduction of the items that it generates, without the need to memorize them as a whole.

The Daseia signs could themselves be used as a notation by writing them above the text of a chant, as was sometimes done (see Figure 4). But then it is a notation that emphasizes the analytical aspect, comprising discrete signs for the individual tones of the melody. The basis of the relationship of reference is arbitrary convention, the agreement that this sign will denote that position in that tetrachord. This sort of relationship of reference is known as “symbolic” in the terminology of semiotics, in contrast to the iconic relationship that is based on some resemblance between the sign and what it denotes.⁵⁵ There is no iconic component in the denotation of the Daseia signs when they are used in this way. The notation is diastematic but not directional.

The analytical aspect in the notation reflects an explicit analytical aspect in the melody concept of the treatise. The notational signs are “sonorum signa,” and “sonus” is synonymous with “vox,” the word for individual tone.⁵⁶

But in the initial presentation of the system in the *Musica enchiridis* there is a strong iconic aspect. The Daseia signs are written in a vertical column and next to each is traced a horizontal line (Figure 5). Here the Daseia signs function as clefs (the author writes “These signs stand for the tone-lines that they show.”⁵⁷ And the notational signs are the syllables of text that are written on the horizontal line. They pick out the notes of the melody within the graphic representation of the tone system extended in time, i.e. the staff. Here the melodic concept is not just that of a sequence of notes, but also of the movement of the voice as it declaims the syllables of language.

Even though this notational system was introduced in a pedagogical treatise, the author gives the impression that he expected it would be used in performance practice, as when he writes, “Practice will

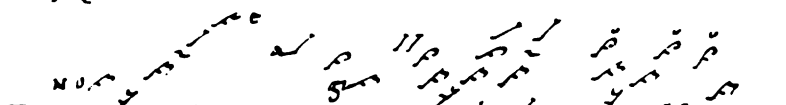
⁵⁵ See Treitler, “The Early History of Music Writing in the West,” pp. 238–41.

⁵⁶ “Sonus quarumque vocum generale est nomen.” (Schmid, p. 21).


⁵⁷ “Sint autem cordae vocum vice, quas eae significant notae.” (Schmid, p. 14).

FIGURE 4. Daseia notation of the second modal formula in the tonary of Einsiedeln, Stiftbibliothek 79 p. 105 (left) and of the first half of the sequence *Rex caeli* in Bamberg, Staatsbibliothek Var. 1 (olim HJ IV, 20) f. 64. Source: Bruno Stäblein, *Musikgeschichte in Bildern III: Musik des Mittelalters und der Renaissance*. Lieferung 4 (Leipzig, 1975), p. 221.

Nestis enim ^{um} in peccata serpi.
 Regis. et. et. nel pa pu li prinē
 Stat. e. n. f. am. enlu seculi pceptu.
 SEQUITUR NEUMA RIGVI TONIS SECUNDI.



Bonus toni modulatio impietatis sono succedit. / tris. Inque tunc
 usus leuatur syllaba. usum dequibus sono uideant. / sum firmens quar
 / se/cu/ rum/ tam t quita sine syllaba
 / me / in / sonu / deponit / de / cur / Seqn
 Glo / te / rursus / erige / ultima / tot / in / archiu. r. leuar.
 se solus in hoc tono distinctionis modus. nisi qd ultima interdum
 breuis uideum e longa Breuis in archiu. his. Speculore a men
 Longa in his. Speculore a men. De. se au differencu
 Beion exis. Olapione. Cecogor. Cant pular. la. splaru amaph inru
 Conit. off. Ompl ser. Beamae. Astupis in. qualitat admon ebis. Ar
 Cecemar. Celam. e. Madruat. Boned nos. distinctiones ista in
 Erma e. A. f. e. m. Coatondus. Dn. d. ay. modis offerem. Aliquo
 Laud. dm. O. bl. e. e. Credu. m. v. p. Dn. rag. ou. cion. seris. abarti. prioris
 Inone. tot. O. dno. Calu. Anpa. me. Cat. salu. ubi. in. p. m. u. sonu. leuam
 Inuru. tot. I. uste. ap. p. Opera. ma. Franca. sul. et. m. h. e. f. i. s. p. q. u. o. n. a. s. u. b. i.
 Arcilla. x. p. fa. Conit. ap. u. In. te. u. id. Seno. bon. de. p. o. m. m. u. s. u. a.
 Audius. uoc. Spi. dm. Orp. gl. p. Mic. h. e. f. t.
 Archang. m. Quo. uid. Mox. u. n. Cpl. e. p. l. o. r. e.
 Michael. arch. Conu. r. pu. V. bo. n. car. t. i.
 Suru. arm. Magnu. s. et. firm. i. s. t. i.
 Et. sim. i. l. i. t. u. s. A. s. t. e. r. m. o. s. t.

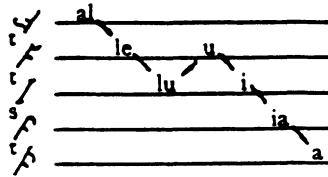


Gloria ac ^{ruone de serm} po ^{in locu} la

FIGURE 4. (continued)

Rex caeli domine · iqualideq. sole
Tyrannis nocere maris undisoni
To humiles famulis modulis uenerando pijs
Se uibeas flagrant uapris liberare malis.
Cythara sapientis melodia est
Tibimae genitor forte placita
Cuncta captus deuotorum laudum munus.
Nisi quoq. sume uocis arthoriam
Placate domine nris obsequiis
 uenoste ferimus quoq. moribus
 rimiram purga maculas.
Quibus corda nostra hebetant
Nobis a bone semor
Pro reatu dona ueniam
Nullus dignus tuis potest optueribus
 p' resonari sine libe flagitij
Co laudom ale sancto canam nomini.

FIGURE 5. Daseia notation in the *Musica Enchiriadis*. Source: Hans Schmid, ed. *Musica et Scolica Enchiriadis una cum aloquibus tractatulis adiunctis* (München, 1981), p. 14.



make it possible for us to record and sing sounds as easily as we write and read letters.”⁵⁸ And so it was, as in Figure 4. But it fell into disuse after the 10th century. Whatever the reasons for that (the system is cumbersome to write and read compared to neumes, and the tone system has disadvantages compared to the diatonic octave system) it demonstrates the relatively low priority that the designation of relative pitch or interval size had among the tasks that musical notations were meant to carry out early on, outside the realm of pedagogy or theory. We shall see that demonstrated again in the history of the notational system that Aurelian used to illustrate his treatise.

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Aurelian’s primary aim in the *Musica disciplina* was to describe an ecclesiastical singing practice and to provide guidelines for differentiating the modes of a traditional repertory. It is in his nineteenth chapter that we find neumes that are probably original to the treatise,⁵⁹ and he begins the chapter thus: “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.”⁶⁰ Clearly

⁵⁸ “. . .sonos posse notare vel canere non minus quam literas scribere vel legere ipse usus efficiat.” (Schmid p. 13).

⁵⁹ See Treitler, “Reading and Singing. . .” pp. 148–49 on this point.

⁶⁰ Lawrence Gushee, ed., *Aureliani Reomensis Musica Disciplina*, Corpus scriptorum de musica XVI (Rome, 1975), p. 118 “Libet interea . . . permutabitur.”

it is for the differentiation of fine points of melodic pattern that may not make their impression in performance from memory that Aurelian calls for visualization of the melody. He is in a position similar to that of a medieval Arabic writer on music like Al-Farabi, for example, describing a musical tradition that does not depend on musical notation, but using a notation in doing so.

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:

NO - E - A - NE⁶¹

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

Et ex - ul - ta - vit spiritus meus.⁶²

Jacques Handschin called neumatic writing of this kind a "Tonortschrift," because it denotes tones by locating their place in the vertical dimension onto which the space of the melody's tone system is mapped.⁶³ On that definition the Daseia notation of Figure 5 is a Tonortschrift, but not that of Figure 4, and not the notation of "Psalle modulamina." By the same token Aurelian's neumes bear an iconic relationship to the melodic inflections that he wants to represent visually.

It goes with the different purposes of their two treatises that the emphasis of the *Musica enchiriadis* author is very much on the analytical aspect of the melody concept and on the projection of that into his notational system, whereas Aurelian's emphasis is always more on the aggregative aspect of melody and its reflection in the notation. His word "tonus" evidently reflects an aggregative conception, for he uses it to refer to melodic inflection. But the concept that most speaks for his idea of melodic inflection is that of "*accentus*," the up-and-down movement of the voice in its enunciation of language, a concept that had great currency during the Middle Ages. For example, "On the fourth [syllable] . . . an acute accent of the voice will be applied;"⁶⁴ or "The verse of these antiphons is entirely pressed down, and a grave

⁶¹ Gushee, p. 121, "Plagis proti . . . formas." The neumes are reproduced in Plate I, 7.

⁶² Gushee, p. 122, "Porro in versibus . . . notarum." The neumes are reproduced in Plate III, 5.

⁶³ "Eine Alte Neumenschrift," *Acta musicologica* XXII (1950), 69–97.

⁶⁴ Gushee, p. 119, "Quarta post haec . . . accentus."

accent of the voice is made. . ." or that a certain syllable will be "circumflexed."⁶⁵

Handschin called Aurelian's notation "Paleofrankish" (that is the "alte Neumenschrift" of his title), and since he wrote, the characteristics of that script have been identified in numerous additional sources.⁶⁶ In an effort to match Aurelian's descriptive language with the neumatic details of this script, he made a comparative study of fourteen neumatic sources for the *Doxa in ipsistis theo* (*Gloria in excelsis dei*), the oldest of which—Paris, Bibliothèque nationale latin 2291 (ca. 875)—is more or less exactly contemporary with the oldest source for Aurelian's treatise. He found that the neumes that resemble the signs of prosodic accents whose names Aurelian used in his descriptions correspond consistently to particular melodic figures: what is called an acute accent corresponds to an ascending two-note figure, signified in the Paleofrankish script by / ; what is called a grave accent corresponds to a descending two-note figure, signified in the Paleofrankish script by \ ; and what is called a circumflex accent corresponds in the Paleofrankish script to a three-note figure—rising and falling—signified by \wedge .⁶⁷ Handschin's point in all this was to discredit a still current theory of the origin of neumes from the prosodic accents, according to which the acute accent became the virga, the grave accent became the punctum, and the circumflex became the clivis; obviously the theory is incorrect on the grounds of those specific derivations.⁶⁸ There is, however, a recent demonstration linking accents with neumes in a specific and convincing way.

These signs of the Paleofrankish script quite literally represent the movement of the voice, and in an iconic way. They are the notational expression of the "accentus" concept of melody. Charles Atkinson has recently taken up again a famous 10th-century Frankish dialogue on chant, in which the melodic conception and the notation seem to be brought very close together.⁶⁹ It begins "What is chant?" "It is skill in the musical art, the inflexion and modulation of the voice. . . . Its origin and its structure are revealed in the accents of tone. . . . Indeed, it is founded in acute, grave and circumflex accents of tone. . . . From the accents of tone arises the notational sign which

⁶⁵ Gushee, p. 101, "Versus autem . . . accentus."

⁶⁶ See Treitler, "Reading and Singing. . .," p. 150, note 47, for citation of literature about this script and the sources where it may be found. See also Arlt, in the work already cited, for an additional source and discussion of the script.

⁶⁷ "Eine alte Neumenschrift," pp. 69–73.

⁶⁸ Treitler, Levy, and Atkinson are in agreement about this.

⁶⁹ "De accentibus. . . ."

is called 'neume.'"⁷⁰ This oft-cited last sentence seems unexceptionable if we take it to refer to Aurelian's melody concept and neumes like those of the Paleofrankish script, as Atkinson shows. But it is just that which sets the Paleofrankish neumes apart from all other early systems of neumatic writing.

The accent-like Paleofrankish neumes have isomorphs or near-isomorphs in the notations of some of the earliest chant books, e.g. St. Gall 359, but these have quite different significations. The figure / is a virga, a sign for a single note, not for two notes ascending. The figure \ is a tractulus, also a sign for a single note, not for two notes descending. (The notation of the early Aquitanian manuscript Paris, Bibliothèque nationale latin 1240 from the first quarter of the 10th century includes a tractulus that more distinctly resembles the grave accent.) And the figure ^ is a clivis, a sign for two notes descending, not three notes ascending and descending. These are not only different conventions, they represent different fundamental principles for forming neumes and different modes of representation—a difference of which we have already taken notice. All three of these Paleofrankish neumes can be thought of as tracing on the writing surface the melodic figure that it denotes. That cannot be said of their isomorphs in St. Gall 359 (for example the upstroke that begins the clivis [^] does not trace any part of the melodic figure that the clivis denotes [↗]⁷¹). The representation of the Paleofrankish neumes is iconic, that of the neumes in St. Gall 359 is symbolic.⁷² For them, as for all other families of neumes beside the Paleofrankish, the assertion of the anonymous writer is not accurate in any strict sense. The important thing about that from the point of view of our subject here is not what it says about the question of origins. It is that we are again shown a plurality of invention and a diversity of types and functioning principles in the earliest history of musical notation. This phenomenon shows that history to be a model of what biologists call a "variational" evolution as opposed to a "transformational" one—that is a process of the proliferation of different species with the selection and adaptation of some species and not others, as opposed to a single continuous chain of species in a process of gradual transformation.

⁷⁰ "Quid est cantus? peritia musicae artis, inflexio vocis et modulation. . . . Ortus quoque suus atque compositio ex accentibus toni vel ex pedibus syllabarum ostenditur. Ex accentibus vero toni demonstratur in acuto et gravi et circumflexo. . . . De accentibus toni oritur nota quae dicitur neuma." Biblioteca Vaticana, Cod. lat. Palat. 235, fol. 38v, ed. Peter Wagner, "Un piccolo tratto sul canto ecclesiastico in un manoscritto del secolo X-XI," *Rassegna gregoriana* III (1940), 481–84. Translation from Atkinson.

⁷¹ See Treitler "Early History," for an interpretation.

⁷² For a discussion of this distinction see Treitler, "The Early History of Music Writing in the West," pp. 238–43.

FIGURE 6. Beginning of the Verse of the Gregorian gradual *Exultabunt sancti*, with neumes from St. Gall, Stiftbibliothek codex 359 and Laon, Bibliothèque municipale. Source: *Graduale triplex* (Solesmes, 1979), p. 456.



I close with a report on what is one of the most interesting vignettes, from the point of view of our subject, that Aurelian left us: a detailed and vivid picture of the translation of an aspect of the performing tradition into writing. Describing a passage in the gradual “*Exultabunt sancti*” he writes “in the verse, ‘*Cantate Domino*,’ after the first and longer melody, which is made on ‘*Do-*,’ the second melody follows, which is made on ‘*can-*.’ This melody is flexible, repeated, and a sound—but not the first sound—is emitted with tremulous inflection.”⁷³ This can be tracked down, too. Figure 6 (“*can[iticum]*”) shows it as it is notated in the early sources Laon 239 and St. Gall 359. The place Aurelian describes is notated in both sources with a quillisma, which corresponds to his characterization “tremulous.” This gradual belongs to a large melodic family in which numerous texts adapt the same basic melodic pattern. But always in the corresponding place a quillisma is written. The “tremulous inflection” seems to be a constitutive property of the family that became fixed in the melody in the unwritten tradition and was given a special neume adapted to such inflections.⁷⁴ Recall again Hucbald’s remark, written a generation later: “The [neumes]. . . are 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.”⁷⁵

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⁷³ Gushee, p. 98 “. . . in eiusdem versu. . . vox.”

⁷⁴ I have discussed this and similar phenomena in “Reading and Singing. . .,” pp. 156–61. See also Claire Maître, “Tradition orale, tradition écrite. . . .”

⁷⁵ See note 49.