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a study based on the manuscript Toledo, Cathedral Archive, MS 35-4

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Old Hispanic Musical and Notational Practices in Toledo: A Study Based on the Manuscript Toledo, Cathedral Archive, MS 35-4

vol. I

Emily Wride

A dissertation submitted to the University of Bristol in accordance with the requirements for award of the degree of Doctor of Philosophy in the Faculty of Arts, School of Arts

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Abstract

The manuscript Toledo, Cathedral Archive, MS 35-4 (T4) preserves chants, readings, and prayers of the Old Hispanic rite. It is one of approximately 40 surviving manuscripts that contain this liturgy and almost a quarter of these are associated with the city of Toledo. While Anscari Mundó used palaeography to re-evaluate the dates of the Toledo corpus and José Janini produced editions of most of its manuscripts, rarely has any study sought to understand the contents or contexts of these manuscripts. As such, little is known about the practices contained in the Toledo manuscripts and how they relate to the rest of the Old Hispanic corpus. In this thesis, I begin to explore the Toledo corpus through a close investigation of T4. My interdisciplinary approach, which incorporates scribal, notational, and musical evidence, demonstrates that T4 preserves practices that are different to those found in manuscripts from the north of Iberia. A codicological and palaeographical approach allows me to suggest a revised dating for T4 while also exploring scriptorium practices at the time of its original compilation. My palaeographical study of the notation not only clearly defines the musical script contained in T4 (horizontal notation), but also allows for speculation about the development of the Old Hispanic rite more broadly. Through musical analysis, I nuance understandings of the regional practices (dialects) present in the manuscript's chant melodies. This thesis also sheds light on T4's relationship with the other Old Hispanic manuscripts from the north of Iberia, as well as with the other manuscripts associated with Toledo, thereby helping to establish the local practices of Toledo and to situate T4 within them.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: Emily Wride DATE: 18 May 2023

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Sigla of Old Hispanic Manuscripts Consulted

In this list I typically use the sigla laid out by Don Randel in his *Index* as these have been adopted in subsequent scholarship.[1] A select few differ from Randel: I use L8 instead of 'AL', to give a more specific shelf mark for this manuscript, and all British Library manuscripts begin BL rather than Randel's BM (which resulted from their preservation in the British Museum at the time of his writing). This list draws information from similar appendices by Hornby, Jones, and Wride in our work on Silos 6,[2] Hornby and others in *Understanding the Old Hispanic Office*,[3] and Raquel Rojo Carrillo in her work on the vespertini.[4] As most manuscripts do not contain colophons and are not mentioned in bibliographical records dating from the medieval period, their dates and provenances are uncertain. Here, I largely follow the dates and provenance suggested in Hornby and others, *Understanding the Old Hispanic Office*, which should be consulted for further reading on each manuscript (see especially their Appendix 1).

Sigla	Shelf mark	Manuscript Type	Date	Provenance	Images (where available)
A30	Madrid, Real Academia de la Historia, Cod. 30	Misticus	10th or 11th century	Suggested: San Millán de la Cogolla	https://bibliotecadigital.rah.es/consulta/registro.cmd?id=66
A56	Madrid, Real Academia de la Historia, Cod. 56	Liber ordinum	10th or 11th century	San Millán de la Cogolla	https://bibliotecadigital.rah.es/consulta/registro.do?id=65
BL45	London, British Library, Add. MS 30845	Misticus	Mid-10th century[5]	Uncertain. Suggested: San Millán de la Cogolla	http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_30845
BL51	London, British Library, Add. MS 30851	Psalter, canticles, hymns, liber horarum, part of a misticus	11th century	Uncertain	https://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_30851

[1] Don M. Randel, *An Index to the Chant of the Mozarabic Rite* (Princeton: Princeton University Press, 1973).

[2] Emma Hornby, Marcus Jones, and Emily Wride, 'Scribal Identity and Scribal Roles in Early Medieval Iberia: A Case Study of Santo Domingo De Silos, Biblioteca Del Monasterio MS 6', *Early Music History* 41 (2022), 1–50 (Appendix 1).

[3] Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), Appendix 1.

[4] Raquel Rojo Carrillo, *Text, Liturgy, and Music in the Hispanic Rite: The Vespertinus Genre* (New York: Oxford University Press, 2021), pp. xii-xvi. See also http://musicahispanica.eu/sources.

[5] This suggested date is thanks to discussion with Marcus Jones who re-evaluates the dating of BL45 in his forthcoming thesis (University of Bristol, 2023).

BL52	London, British Library, Add. MS 30852	Orational	Late-9th or early-10th century	Uncertain	
BN01	Biblioteca Nacional de España, MS 10001	Monastic psalter, canticles, hymns	c. 1100 or later	Uncertain. Previously preserved in Toledo	http://bdh-rd.bne.es/viewer.vm?pid=d-2781010
BN10	Biblioteca Nacional de España, MS 10110 (Olim Toledo, Cathedral Archive, MS 33-2)	Misticus	Late-13th to 14th century	Toledo (Santas Justa y Rufina) (tradition B)	http://bdh-rd.bne.es/viewer.vm?pid=d-2699020
Cinc	Cincinnati, Hebrew Union College, Klau Library, MS Acc 434	Misticus (fragment)	c. 1200	Suggested: Toledo	http://mss.huc.edu/manuscripts/ms-acc-434/
Coim	Coimbra, Archivo da Universidade, IV-3a S-Gv. 44 (22)	Antiphoner (fragment)	Unknown	Uncertain	http://pemdatabase.eu/image-gallery/91309
L8	León Cathedral Archive, MS 8	Antiphoner	Mid-10th century	Region of León. Suggested: monastery of San Isidoro in León	https://bvpb.mcu.es/es/consulta/registro.do?id=449895
PB99	Paris, Bibliothèque Nationale de France, MS nouv. acq. lat. 2199	Antiphoner (fragment)	Late-9th or early-10th century	Unknown	https://archivesetmanuscrits.bnf.fr/ark:/12148/cc70428w
Sal	Biblioteca Histórica de la Universidad de Salamanca MS 2668	Liber psalmorum, liber canticorum, liber horarum	1059	Copied for Queen Sancha of León	https://gredos.usal.es/handle/10366/55563
Sant	Biblioteca de la Universidad de Santiago de Compostela MS 609	Calendar, liber psalmorum, liber canticorum, liber horarum	1055	Copied for King Ferdinand I of León	https://minerva.usc.es/xmlui/handle/10347/9014
Silos 3	Santo Domingo de Silos, Biblioteca del Monasterio MS 3	Calendar, liber ordinum minor, misticus	11th century	Unknown (for parish use)	
Silos 4	Santo Domingo de Silos, Biblioteca del Monasterio MS 4	Calendar, horologium, liber ordinum maior	1052	Copied by order of Abbot Domingo, San Prudencio de Laturce. The place of copying is uncertain	
Silos 5	Santo Domingo de Silos, Biblioteca del Monasterio MS 5	Misticus	1056	Uncertain	

Silos 6	Santo Domingo de Silos, Biblioteca del Monasterio MS 6	Misticus	Late-10th or 11th century	Uncertain	
Silos 7	Santo Domingo de Silos, Biblioteca del Monasterio MS 7	Misticus, liber horarum	11th century	Uncertain; monastic	
T33-3[6]	Toledo, Cathedral Archive MS 33-3	Liber horarum	Late-12th century	Suggested: Toledo	
T35-3	Toledo, Cathedral Archive MS 35-3	Manuale	11th to 12th century	Suggested: Toledo (Santa Eulalia)	
T4	Toledo, Cathedral Archive MS 35-4	Misticus	Post 1085. Suggested: 1192–1208	Uncertain. Suggested: Toledo (Santa Eulalia)	
T5	Toledo, Cathedral Archive MS 35-5	Misticus	Mid-13th century	Uncertain (tradition B)	
T6	Toledo, Cathedral Archive MS 35-6	Misticus	Late-10th to early-11th century	Unknown	
T7	Toledo, Cathedral Archive MS 35-7	Misticus	11th to 12th century	Suggested: Toledo (Santa Eulalia)	
T8	Toledo, Cathedral Archive MS 35-8	Commicus	12th century	Suggested: Toledo (Santa Eulalia)	
Tm25-1	Toledo, Museo de Santa Cruz, MS 1325-1	Misticus (fragment)	13th century	Suggested: Toledo (Santas Justa y Rufina) (tradition B)	
Tm25-2	Toledo, Museo de Santa Cruz, MS 1325-2	Liber hymnorum (fragment)	Unknown	Unknown	
Tm26	Toledo, Museo de Santa Cruz, MS 1326	Gospel readings only (fragment)	12th century	Suggested: Toledo (Santas Justa y Rufina)	
OV	Verona, Biblioteca Capitolare, Cod. LXXXIX	Orational	Before 734	Tarragona	www.nuovabibliotecamanoscritta.it/Generale/BibliotecaDigitale/mostraImmagini.html?codice=15&volume=1

[6] Sometimes referred to as T3 in other scholarship. I have avoided this sigla here to prevent confusion with T35-3, which has a shelf mark more similar to the other 'T' manuscripts.

Introduction

The Old Hispanic rite was a Christian practice performed in Iberia from the seventh century until it was suppressed in the late-eleventh century in favour of the Roman rite. First-hand evidence about the practice of the Old Hispanic liturgy survives in manuscripts containing readings, prayers, and chants, and around forty of these manuscripts contain musical notation. However, around a fifth of the manuscripts containing musical notation are attributed to the late-eleventh to fourteenth centuries — after the suppression of the rite. During this time, the rite continued to be practised in Toledo, where six late sources are currently preserved;[1] three further manuscripts associated with late medieval Toledo are held elsewhere (Madrid and Cincinnati).[2] The manuscripts that bear witness to this late practice have received limited scholarly attention, and as such little is known about the contexts of their production or their contents. In this thesis, I explore the practice of the Old Hispanic rite in late medieval Toledo using the manuscript Toledo, Cathedral Archive MS 35-4 (hereafter T4) as a case study. T4 preserves evidence for the liturgical, musical, and notational practices of the late Old Hispanic liturgy; studying these practices sheds light on the people who performed the liturgy in Toledo and the environment in which they practised their faith. Through an exploration of the physical composition of the manuscript, its palaeography, and its musical content, I aim to better understand the cultural contexts of its production and use, broaden understandings of the Old Hispanic practices, and situate these findings within current scholarly discourse.

Research Aims

The primary focus of this thesis is to explore the cultural contexts in which T4 was written by using the manuscript itself as primary evidence. To this end, I engage with the physical composition of the manuscript (codicology), analyse its written scripts (palaeography), and seek to understand its musical practices (musicology). Through this approach I am able to learn about the people who were involved in writing T4, the situation of its production, and how it relates to the other extant materials from Toledo. My work shows that, despite this manuscript being written at a late stage in the practice of the Old Hispanic rite, multiple people worked on T4, with varying degrees of knowledge. An analysis of the

[1] For a list of manuscripts and their sigla, see p. xiii. The six containing musical notation that are preserved in Toledo are T33-3, T35-3 (in the prayers only), T4, T5, T7, and TM25-1.
[2] These are BN01, BN10, and Cinc respectively.

additions and changes to the manuscript also emphasises that there was a continued concern for the accuracy of its contents, demonstrating an active practice of the Old Hispanic rite in Toledo.

My second research aim is to understand the practices preserved in the Toledo manuscripts within the wider context of the Iberian Peninsula. In researching T4, I carry out the first study that focuses on a manuscript from Toledo; this allows me to contrast my findings with previous scholarship that has typically focused on the earlier manuscripts from the north of the Iberian Peninsula. Through an analysis of the music and notation of T4, I show that the manuscript preserves a distinctive version of Old Hispanic chant. Taking T4 as an example of a Toledo manuscript, I explore its musical script, which is a variation of Old Hispanic notation that has received relatively little attention (known as horizontal notation), and the formation of its musical signs (neumes). This allows me to relate the notational practices of T4 to the better-studied practices preserved in the earlier Old Hispanic manuscripts.[3] T4 also has melodic tendencies that differ from manuscripts copied elsewhere in Iberia. Scholars have previously found that different regions of Iberia have different sets of melodies for verses (specifically in the responsory genre) and different musical 'dialects' at cadences and openings.[4] A close study of T4 therefore allows me to situate the manuscript within the practices of the Old Hispanic rite more broadly and also facilitates a better understanding of the relationship between these practices across Iberia.

Toledo, Cathedral Archive, MS 35-4

T4 is an excellent witness to the Old Hispanic practices: it preserves a large body of evidence, containing almost all the material necessary to perform the temporale liturgy between

[3] For some of the seminal studies on Old Hispanic scripts see Casiano Rojo and Germán Prado, *El canto Mozárabe: Estudio histórico-crítico de su antigüedad y estado actual* (Barcelona: Diputación Provincial de Barcelona, 1929), pp. 40–58; Gregoire M. Suñol, *Introduction à la paléographie musicale Gregorienne* (Paris: Société de Saint Jean l'Evangeliste, 1935); Herminio González Barrionuevo, 'La notación del Antifonario de León', in *El canto mozárabe y su entorno: estudios sobre la música de la liturgia viejo hispánica*, ed. by Ismael Fernández de la Cuesta, Rosario Álvarez Martínez and Ana Llorens Martín (Madrid: Sociedad española de musicología, 2013); Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), pp. 178–234.

[4] Don M. Randel, *Responsorial Psalm Tones for the Mozarabic Office* (Princeton: Princeton University Press, 1969); Emma Hornby and Rebecca Maloy, 'Melodic Dialects in Old Hispanic Chant', *Plainsong and Medieval Music* 25 (2016), 37–72; Rebecca Maloy, *Songs of Sacrifice: Chant, Identity, and Christian Formation in Early Medieval Iberia* (New York: Oxford University Press, 2020).

the Monday after Easter and the start of Advent (17th November).[5] The temporale includes the events in the Christian calendar that are associated with the life of Jesus and that occur year on year.[6] In T4 these are every Sunday between Easter and Pentecost, Pentecost itself, and then the Quotidian Sundays from Pentecost until the beginning of Advent,[7] together with all weekdays that have liturgical materials (including Ascension, the ferias between Easter and Ascension, and the apostolic litany days).[8] It also includes two sanctorale days (days associated with the lives of saints) during Eastertide: one for the celebration of the Holy Cross and one for Saint Torquatus and his fellow bishops.[9] No manuscript associated with Toledo contains the entire liturgical year; T4 is the manuscript that spans the largest portion of the liturgical year of any Toledo manuscript.[10] Moreover, the 695 chants contained within T4 offer a wealth of unstudied palaeographical and musical information.

Further to the wide-ranging contents of the manuscript, T4 also contains hundreds of additions and corrections that provide primary evidence for the continued practice of the rite after its suppression across much of the Iberian Peninsula. Sometimes whole texts were added to blank folios of the manuscript, while in other cases interventions acted as corrections or clarifications to pre-existing music and text. These interventions allow me to study the practice of the Old Hispanic rite in Toledo, not only at the time the manuscript was written, but also as

[5] The start of Advent differs to the Roman rite, in which it begins four Sundays before Christmas. Rather, the feast of Saint Acisclus (17th November) marks the start of Advent in the Old Hispanic rite. For more on the liturgical year in the Old Hispanic office see Hornby and others, *Understanding the Old Hispanic Office*, pp. 32–42.

[6] On the temporale see Hornby and others, *Understanding the Old Hispanic Office*, pp. 30–32; Raquel Rojo Carrillo, *Text, Liturgy, and Music in the Hispanic Rite: The Vespertinus Genre* (New York: Oxford University Press, 2021), pp. 27–42.

[7] Quotidian time is akin to Ordinary time in the Roman rite, in that it consists of the weeks outside of Christmastide and Eastertide, as well as Advent and Lent.

[8] The apostolic litany days were penitential fasting days observed on the four days preceding Pentecost (i.e., Wednesday to Saturday). See Rojo Carrillo, *Text, Liturgy, and Music*, pp. 26–49; Hornby and others, *Understanding the Old Hispanic Office*, p. 36.

[9] On the sanctorale in the Old Hispanic liturgy see Rojo Carrillo, *Text, Liturgy, and Music*, pp. 42–48. For an introduction to the sanctorale see, for example, David Hiley, *Western Plainchant: A Handbook* (Oxford: Oxford University Press, 1995), p. 8. On the Holy Cross see Emma Hornby, 'Musical Values and Practice in Old Hispanic Chant', *Journal of the American Musicological Society* 69 (2016), 595–650.

[10] For an edition of the texts of T4 see José Janini, *Liber missarum de Toledo y libros místicos*, vol. II (Toledo: Instituto de Estudios visigótico-mozárabes, 1983), pp. 10–147. For my digital transcriptions of the chants of T4 see https://neumes.org.uk/view/found/Z2fOTdxRJwGSqgqifqXi9vI-PQEamB1zgr2hqzXC2DA. On the liturgical contents of Old Hispanic manuscripts more broadly, see Hornby and others, *Understanding the Old Hispanic Office*, pp.44–56.

it continued to be used through to the thirteenth century.[11] As there is no manuscript evidence of Old Hispanic practice that can securely be attributed to Toledo during the city's period of Muslim governance (711–1085) and only anecdotal attestations to the practice of the rite, the late Toledo manuscripts and their numerous additions are therefore the most direct evidence of Old Hispanic practices in the city.

Nowadays, there are only around a dozen extant Toledo manuscripts or fragments that preserve the Old Hispanic rite, of which nine contain at least one notated chant.[12] Although there are many differences between the manuscripts, for example the codicology and layout differs in almost every source, T4 acts as a good representation of a Toledo manuscript. This is because they also share many similarities: almost all of these manuscripts contain horizontal notation, with T33-3, T4, T7, and Cinc all preserving an exceptionally similar neume vocabulary and notational style according to my initial observations. It is perhaps because of this notational practice, in combination with written attestations in some manuscripts, that these four sources have all been associated with the parish of Santa Eulalia. Moreover, where there are cognate chants between the manuscripts, the melodies are extremely similar between these sources. This suggests that they preserve the same musical traditions as one another. It is therefore not only the large quantity of material that makes T4 a useful manuscript to study, but also its similarity to other Toledo manuscripts that makes it a valuable case study of Toledo Old Hispanic practices.

T4 also exemplifies of one of the mysteries of the Toledo manuscripts: we cannot confirm when or where it was written. In the early twentieth century, scholars such as Casiano Rojo, Germán Prado, and Gregoire Suñol believed that the manuscripts in Toledo preserved the earliest witnesses to the Old Hispanic rite, possibly from as early as the ninth century.[13] In 1965, Anscari Mundó re-evaluated the dating of the Toledo corpus, suggesting that these manuscripts were in fact the most recent witnesses to the rite and dated from at least 200 years later than initially believed.[14] This revision seems to have resulted in a subsequent disinterest in the manuscripts from Toledo; for example, Jordi Pinell is anecdotally reported to have abandoned plans to work on these very sources.[15] Mundó primarily explored Carolingian

[11] For discussions of when the manuscript was likely to have been written and used see Chapter 1.

[12] These nine are T33-3, T4, T5, T6, T7, Tm25-1, BN01, BN10, and Cinc.

[13] Rojo and Prado, *El canto Mozárabe*; Suñol, *Introduction*.

[14] Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25.

[15] José Janini, *Liber misticus de Cuaresma: (Cod. Toledo 35.2, hoy en Madrid, Bibl. Nac. 10.110)* (Toledo: Instituto de Estudios Visigótico-Mozárabes, 1979), p. xxvi.

influences in the text hands of the sources. He also engaged with the inscriptions and decorations used in the manuscripts to suggest a date and provenance for each. For T4, he suggested a date of 1192–1208 based on his interpretation of the colophon — a colophon that I and other scholars, including Agustín Millares Carlo, Raquel Rojo Carrillo, and Ainoa Castro Correa, do not believe to be so legible.[16] Rojo Carrillo has also emphasised that, despite Mundó attributing many of the manuscripts' origins to Toledo, the origins of the manuscripts cannot be confirmed: they rarely contain colophons and archival records do not document their existence until much later.[17] Rather, as with T4, later additions to the manuscripts sometimes mention a particular location. These additions have led to the assumption that this location was where the manuscript was produced. In T4 there are three additions that mention the Toledan parish of Santa Eulalia, which Mundó claimed was where the manuscript was produced. I, like Rojo Carrillo, believe that this does not demonstrate a place of origin but rather attests to the continued presence of the manuscript at this institution. When referring to the manuscripts held in the city of Toledo and their contents, I therefore opt to use the term 'Toledo' rather than 'Toledan' (e.g., the Toledo corpus); 'Toledo' acts as a descriptor of the current location of the manuscripts, while 'Toledan' might imply that they originated in the city. While I am not able to confirm the specific location where T4 was originally written, I reflect on the proposed dates for the manuscript, using codicological and contextual evidence to offer a wider date range. I further use manuscript evidence to explore the nature of the environment in which T4 was produced and used, regardless of any specific geographical origins. This work highlights the scribal practices at the time of T4's composition as well as the needs and demands of the practitioners of the Old Hispanic rite during the manuscript's active lifespan.

While the chants, texts, and feasts of the temporale were largely consistent across Old Hispanic practices, some of the methods of performing these liturgical elements varied; the music of T4's chants is one example of this. The melodies and notation of chants varied throughout Iberia, with Don Randel identifying three distinct musical regions (León, La Rioja, and Toledo) in his work on verse tones in the responsory chant genre.[18] Outside of this genre

[16] Agustín Millares Carlo and José Manuel Ruiz Asencio, *Tratado de paleografía española*, vol. I (Madrid: Espasa-Calpe, 1983); and Raquel Rojo Carrillo (who cites her correspondence with Ainoa Castro Correa), 'Old Hispanic Chant Manuscripts of Toledo: Testimonies of a Local or of a Wider Tradition?', in *A Companion to Medieval Toledo: Reconsidering the Canons* ed. by Yasmine and Jason Busic Beale-Rivaya (Leiden, The Netherlands: Brill, 2018), pp. 97–139.

[17] Rojo Carrillo, 'Old Hispanic Chant Manuscripts'.

[18] Randel, *Responsorial Psalm Tones*. On the responsory genre see Hornby and others, *Understanding the Old Hispanic Office*, pp. 114–17.

study, musical analysis has tended to focus on manuscripts from the León and Rioja regions. For example, Emma Hornby and Rebecca Maloy identified cadence patterns and phrase openings that were more common in either manuscripts from the León region or from the Rioja.[19] They also identified some traits that were more common in the Toledo manuscripts; however, as I demonstrate in this thesis, there are further compositional and cadential practices that have hitherto been unstudied. By transcribing T4's 695 chants into a program designed especially for the analysis of Old Hispanic chant (the Chant Editing and Analysis Program; henceforth CEAP), I was able to catalogue and analyse the musical practices of a neglected regional practice.[20] I discovered evidence that confirmed the presence of Randel's 'Toledo' dialect in T4 outside of the responsory genre, attesting to the diversity of Old Hispanic practice and nuancing the narrative of its development.

In my study of T4, I not only carry out the first complete analysis of an Old Hispanic manuscript from Toledo and its music, but also enact the first analysis centred around a manuscript written using horizontal Old Hispanic notation. This type of notation — likely named due to its diagonal inclination — is a type of musical notation predominantly found in the manuscripts associated with Toledo. The other variation, 'vertical' notation — so named for its upright orientation on the folio — is almost exclusively preserved in manuscripts attributed to the north of the Iberian Peninsula.[21] As a result of its presence in the Toledo manuscripts, which are thought to have been written later than the vertical ones, horizontal notation has also typically been thought of as a late phenomenon that developed out of vertical notation practices.[22] Throughout studies of the corpus of Old Hispanic manuscripts, horizontal notation has received several names; many scholars, from Rojo and Prado (1929), to Mundó (1965), and even through to Susana Zapke (2007, 2011), refer to it as either 'Toledan' or 'Southern', using horizontal as a descriptive term for its appearance.[23] The uncertain origins of

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[19] Emma Hornby and Rebecca Maloy, 'Fixity, Flexibility, and Compositional Process in Old Hispanic Chant', *Music and Letters* 97 (2016), 547–74; Hornby and Maloy, 'Melodic Dialects', 37–72.

[20] See https://neumes.org.uk/view.

[21] For recent work that discusses some of the general principles that can be used to distinguish between vertical and horizontal notation see Hornby and others, *Understanding the Old Hispanic Office*, pp. 190–99.

[22] For an example, see Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 130.

[23] Rojo and Prado, *El canto Mozárabe*; Mundó, 'La datación', 1–25; Susana Zapke, 'Dating Neumes According to Their Morphology: The Corpus of Toledo', in *Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 91–99; Susana Zapke, 'Notation Systems in the Iberian Peninsula: From Spanish Notations to Aquitanian Notation (9th–12th Centuries)', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic*

the Toledo corpus, outlined by Rojo Carrillo, call these terms into question.[24] I follow the nomenclature adopted in studies by Hornby and Maloy, who opt for the term horizontal, thereby showing no association with geographical location, and referring simply to the aspect of the notational signs (neumes). By making horizontal notation the focal point of my notational study, I enrich current understandings of Old Hispanic notations, demonstrating their diversity in different regions of Iberia and at different periods. This newfound understanding of horizontal notation allows me to shed light on the transmission and development of the notation of the Old Hispanic rite, suggesting that the horizontal notation does not owe its characteristics to its lateness, but rather that it was likely to have been a longstanding notational practice that developed independently from vertical notation.

Toledo: Context

The Toledo manuscripts preserve evidence of how the Old Hispanic rite was practised after its suppression, possibly until as late as the 14th century. Following the suppression of the Old Hispanic rite at the Council of Burgos in 1080, a limited number of places were permitted to continue practising this liturgy.[25] Toledo, in the centre of the peninsula, became the principal location for the practice of the rite, while northern regions that had formerly had active Old Hispanic communities (such as La Rioja and the city of León) lost their rights to practise the liturgy.[26] The Roman rite became the official practice of Christian Iberia and it gradually permeated from the north of Iberia to the more southern areas. For Toledo, which was under Muslim rule, the Roman rite did not become the official practice of the city until 1085 when Toledo was conquered by the Christian king Alfonso VI. According to a later document from the time of Rodrigo Jiménez de Rada (Archbishop of Toledo from 1209–1247), Alfonso VI supposedly designated six parishes as places where the Old Hispanic liturgy could be practised

Origins to the Franco-Roman Transition (9th–12th Centuries), ed. by Susana Zapke (Bilbao: Fundación BBVA, 2007), pp. 189–244.

[24] Rojo Carrillo, 'Old Hispanic Chant Manuscripts'.

[25] Francisco Simonet noted that several monasteries outside of Toledo continued to practise the Old Hispanic rite, although we have no liturgical manuscripts surviving from these places. *Historia de los mozárabes de España* (Madrid: Turner, 1983), p. 700.

[26] On the Council of Burgos see Teófilo Ruiz, 'Burgos y el Concilio de 1080', *Boletin de la Institutición Fernán González* 59/194 (1980), 73–83; Ludwig Vones, 'The Substitution of the Hispanic Liturgy by the Roman Rite in the Kingdoms of the Iberian Peninsula', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th centuries)*, ed. by Susana Zapke (Bilbao: Funcadión BBVA, 2007), pp. 43–59; on post-conquest Toledo as the 'épicentre de la culture wisigothique' see Susana Zapke, 'Asymétrie temporelle : les "renaissances" du rite wisigothique et leur valeur identitaire', *Cahiers de civilisation médiévale* 58 (2015), 395–406 (p. 406).

(San Sebastián, San Torcuatus, Santas Justa y Rufina, San Lucas, San Marcos, and Santa Eulalia), thereby attesting to the survival of the Old Hispanic rite in the city.[27] In contrast, there were 20 Roman parishes at the end of the 12th century, demonstrating that although the Old Hispanic rite was permitted to continue, its communities were not as large as those following the Roman rite.[28] Evidence that the Old Hispanic rite petered out over the next few centuries exists in documentary sources; for example, archbishop Gonzalo Pérez Gudiel (1290–1299) commented on the deterioration of the quality of rite, its manuscripts, and its educational systems.[29] Eventually, there would be a renewed interest in the rite in the late-15th century, resulting in the Neo-Mozarabic office — a sort of re-composition of the Old Hispanic liturgy and melodies into an early-modern form that is still practised daily in the Corpus Christi chapel of Toledo's cathedral (also known as the Mozarabic chapel).[30] This thesis focuses on the Old Hispanic, and not the Neo-Mozarabic, practices of Toledo.

During the late medieval period, the people who practised the Old Hispanic liturgy in the six Toledan parishes are assumed to have been Mozarabs.[31] The term Mozarab has multiple meanings that depend on the context of its use: in the context of a period of Muslim rule, a Mozarab was a Christian who practised under this rule; in other contexts, it is used to refer to Christians who were also Arabs or who were Arabicised (influenced by Arabic customs).[32] In this thesis, I use the latter definition when referring to the Mozarabs of Toledo. In Toledo, the practice of the Old Hispanic rite by Mozarabs resulted from several factors. Firstly, during the Muslim rule of the city from 711 to 1085, it is believed that Christian practice continued within the city, albeit in a Muslim and Arabic *milieu*.[33] This practice continued after 1085, meaning that the communities who had previously resided in Toledo, and who were Arabicised as a

[27] On the permissions granted in the *fuero* of Alfonso VI see Miquel dels Sants Gros i Pujol, 'Les six paroisses mozarabes de Tolède', *Cahiers de civilisation médiévale* 58 (2015), 387–93; Simonet, *Historia*, p. L.

[28] Ramón Gonzálvez Ruiz, *Hombres y libros de Toledo* (Madrid: Fundación Ramón Areces, 1997), p. 382.

[29] Gonzálvez Ruiz, *Hombres y libros*, pp. 384–85; Ramón Gonzálvez Ruiz, 'La persistencia del rito hispánico o mozárabe en Toledo después del año 1080', *Anales toledanos* 27 (1990), 9–34 (p. 179).

[30] Susan Boynton, 'Restoration or Invention? Archbishop Cisneros and the Mozarabic Rite in Toledo', *Yale Journal of Music & Religion* 1 (2015), 5–30; Rojo Carrillo, *Text, Liturgy, and Music*, pp. 4–5; Rojo Carrillo, 'Old Hispanic Chant Manuscripts', pp. 99–107.

[31] Gonzálvez Ruiz, 'La persistencia', 9–34.

[32] Simonet, *Historia*, pp. xi–xii; see also Richard Hitchcock, *Mozarabs in Medieval and Early Modern Spain: Identities and Influences* (Aldershot: Ashgate, 2008), pp. ix–xx; Dominique Urvoy, 'Les Aspects symboliques du vocable "Mozarabe"', *Studia Islamica* 78 (1993), 117–53.

[33] Simonet, *Historia*, pp. 668–71.

result of the Muslim governance, continued to exist within the city. Secondly, until the mid-12th century, the south of Iberia (Al-Andalus), which was under Muslim rule, permitted Christian practice. However, during the Almohad caliphate (12th–13th centuries), Christians in Al-Andalus were forced to choose between conversion or death.[34] This led to many Arabicised Christians fleeing to the Christian parts of Spain, especially Toledo, from 1146 onwards.[35] Documentary evidence attests to some of these Christians practising the Old Hispanic rite. For example, in the 1140s and 50s several Mozarabic bishops migrated from the south of the peninsula (from Asidona, Elepla or Niebla, Ecija, and Marchena) and retained their episcopal dignities until their deaths, suggesting that not only did Mozarabs migrate to Toledo, but also that they received permissions to practise their religion in the city.[36] For T4, it is not clear who practised the rite, whether it was descendants of Toledan Mozarabic lineages, newcomers to the city, or a combination of the two.

The migration of peoples from Al-Andalus to Toledo has been used to explain the presence of two distinct traditions that are preserved in the Old Hispanic liturgical manuscripts of Toledo.[37] These two traditions use different chants, readings, and prayers for different days, and even use a different nomenclature for some chant genres. Jordi Pinell suggested that tradition A was the version of the liturgy that persevered in the city from the time of the Muslim occupation — this is the branch of the liturgy preserved in T4.[38] This is also the branch of the liturgy that survives in the Old Hispanic manuscripts from the north of the peninsula, albeit with some variation in the melodies of the chants between northern and Toledo manuscripts. Although written evidence for tradition B only survives in manuscripts associated with Toledo, Pinell proposed that this second tradition, with its different choices of chants, texts, nomenclature, and its melodies that tend to differ drastically to those of tradition A, was an

[34] Amira K. Bennison, *The Almoravid and Almohad Empires* (Edinburgh: Edinburgh University Press, 2016), pp. 171–73.

[35] Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 122; Gros i Pujol, 'Les six paroisses', 387–93; Aaron Michael Moreno, 'Arabicizing, Privileges, and Liturgy in Medieval Castilian Toledo: The Problems and Mutations of Mozarab Identification (1085–1436)' (unpublished doctoral thesis, University of California, 2012), p. 152.

[36] Simonet, *Historia*, p. 764.

[37] For a summary of scholarship on these traditions, see Emma Hornby and Rebecca Maloy, *Music and Meaning in Old Hispanic Lenten Chants: Psalmi, Threni and the Easter Vigil Canticles* (Woodbridge: The Boydell Press, 2013), pp. 5–14.

[38] Jordi Pinell, 'El problema de las dos tradiciones del antiguo rito hispánico: valoración documental de la tradición B, en vistas a una eventual revisión del ordinario de la misa mozárabe', in *Liturgia y música mozárabes: Ponencias y comunicaciones presentadas al I Congreso Internacional de Estudios Mozárabes, Toledo 1975*, ed. by Jordi Pinell and others (Toledo: Insituto de Estudios Visigótico-Mozárabes de San Eugenio, 1978), pp. 3–44.

import brought to the city by Andalusian migrants. He suggested that tradition B was practised in parishes specifically devoted to this tradition; part of his evidence for this is based on the fact that the bishop of Ecija (a city in the south of the Iberian Peninsula) lived next to the Mozarabic parish of Santas Justa y Rufina, which practised tradition B. Despite its seemingly northern origins, Maloy alternatively suggests that tradition A may also have originated or been known in the south of the peninsula based on lectionary readings that are designated for the same feast days in tradition A manuscripts and in an 11th-century collection of councils from Al-Andalus (written in Arabic).[39] Determining the place of origin for each branch of the liturgy requires a detailed study and is outside the remit of this thesis; however, a brief comparison of the notation and music of each tradition in Chapter 6 allows me to begin to explore the presence of both practices within Toledo, ultimately helping to better contextualise T4 within its Toledan context.

State of the Field

Thus far, although work on the Old Hispanic liturgy, its manuscripts, and its music, has tended to focus on the body of information contained in manuscripts from the north of Iberia, there has been some interest in the Toledo corpus. Aside from Mundó's revision to the dates of the Toledo corpus, the most significant engagement with these manuscripts was the work of José Janini who made text editions of BN10 (olim T35-2), T35-3, T5, T6, T7, and TM25-1.[40] Additional text editions of parts of T4 can also be found in Marius Férotin's *Le Liber mozarabicus sacramentorum*.[41] Further to the text editions, Janini also introduced the manuscripts, their codicology, their dates, their contents, and a brief history. His work provides the most detailed summaries of these manuscripts, drawing on information from both the catalogues and the physical manuscripts themselves; however, he did not analyse their contents, their music, or the context of their production. In this regard, the recent work of Rojo Carrillo on the origins of the Toledo manuscripts and the different liturgical traditions preserved in Toledo provides the most detail. Rojo Carrillo used manuscript evidence to explore the narratives surrounding the Toledo manuscripts, bringing their origins into question.[42]

[39] Maloy, *Songs of Sacrifice*, pp. 222–23.
[40] José Janini, *Liber missarum de Toledo y libros místicos*, vol. I (Toledo: Instituto de Estudios visigótico-mozárabes, 1982); Janini, *Liber missarum* (II).
[41] Marius Ferotin, *Le Liber mozarabicus sacramentorum et les manuscrits mozarabes* (Farnborough: Gregg International Publishers, 1969), cols. 691–722.
[42] Rojo Carrillo, 'Old Hispanic Chant Manuscripts'.

Further recent studies that directly address the Toledo corpus have been carried out by Susana Zapke. In her chapter in *Hispania Vetus*, Zapke attempted to categorise manuscripts from the Iberian Peninsula according to geo-political boundaries. Zapke's interdisciplinary approach considers not only the palaeographical and codicological characteristics of the sources, but also their historical and semiological influences. Although T4 is not included in this discussion as the study is limited to 'the end of the twelfth century', Zapke speculated on the Toledo corpus more broadly. She stated that it 'gives the impression of being a late creation' and suggested that the horizontal notation preserved in the Toledo manuscripts developed to a point where 'hardly any sign is recognisable' and the notation 'only manages to sketch the outline of a melody'.[43] Her claims are unsupported and, through my comparative analysis of both notation and melody, I prove the contrary: that the sources currently held in Toledo bear witness to consistent and detailed Old Hispanic practices. In her 2011 article 'Dating Neumes According to their Morphology', Zapke acknowledged the need to look beyond palaeography to understand the Old Hispanic repertory.[44] She raised pertinent questions about the 'Southern' sources (i.e., the Toledo corpus and a fragment from Coimbra that contains horizontal notation) concerning their dates and provenance, their copying practices, and the environmental contexts surrounding their creation. In this thesis I begin to answer these questions by using manuscript evidence as a witness to cultural practice.

Other discussions of the music and notation of the manuscripts from Toledo have often been little more than a couple of purely descriptive sentences. Common descriptors include 'primitive',[45] 'less rich',[46] 'lying down',[47] 'horizontal',[48], 'cursive',[49] and 'careless'.[50] Some of this vocabulary stemmed from comparisons of horizontal and vertical notation, and implies that vertical notation was more sophisticated and was written with more attentiveness; these

[43] Zapke, 'Notation Systems'.

[44] Zapke, 'Dating Neumes'.

[45] Higini Anglés, 'La música medieval en Toledo hasta el siglo XI', in *Gesammelte Aufsätze zur Kulturgeschichte Spaniens 7,* ed. by M. Honecker, G. Schreiber, and H. Finke (Münster: Aschendorff 1938), pp. 1–68; Higini Anglés, 'Mozarabic Chant', in *The New Oxford History of Music: Early Medieval Music up to 1300,* ed. by Anslem Hughes (Oxford: Oxford University Press, 1954), pp. 81–91.

[46] Rojo and Prado, *El canto Mozárabe*; Anglés, 'La Música medieval'; Anglés, 'Mozarabic Chant'; Millares Carlo and Ruiz Asencio, *Tratado*.

[47] Rojo and Prado, *El canto Mozárabe*; Suñol, *Introduction*; Millares Carlo and Ruiz Asencio, *Tratado*.

[48] Rojo and Prado, *El canto Mozárabe*; Anglés, 'La Música medieval'; Anglés, 'Mozarabic Chant'; Louis Brou, 'Notes de paléographie musicale Mozarabe', *Anuario musical* 10 (1955), 23–44; Millares Carlo and Ruiz Asencio, *Tratado*; Zapke, 'Notation Systems'.

[49] Suñol, *Introduction*; Anglés, 'La Música medieval'; Mundó, 'La datación', 1–25.

[50] Anglés, 'La Música medieval'; Anglés, 'Mozarabic Chant'.

ideas are not supported by the manuscript evidence, as I will show. Nancy Phillips further attempted to interpret the horizontal neumes based on their relationship to vertical neumes. However, she did not accommodate for melodic variation between the different regional Old Hispanic practices in her palaeographical analysis of the neumes.[51] Scholarship about the Toledo manuscripts, their music, and their notation thus currently lacks an adequate terminology, supported by comprehensive analysis, with which to describe the corpus. The previous assumptions made by scholars stimulated me to explore the extent of their claims by using data from T4; I find that terms like 'less rich' or 'horizontal' do not sufficiently encompass the variety of musical and notational practices found in the manuscript.

Using the evidence from a manuscript to explore its history requires understanding of the object itself. In this thesis I rely on codicological and palaeographical analyses of T4 to better understand its composition and its contents. Palaeography often deals with the study of different scripts or scribes in texts.[52] In an initial analysis of T4, I look at the presence of different scribal hands in the manuscript, inspired by the work of Ainoa Castro Correa.[53] Castro Correa focuses on the use and presentation of the Visigothic script in Iberia — the script used in all Old Hispanic manuscripts held in Toledo — and her methodology for identifying scribes based on allographs (the shape of their letterforms) and orthography (their conventional spelling of particular words) is integral to my work.[54]

Palaeographical analysis is not restricted to text; it is also possible to analyse musical notation. In studies that focused on vertical Old Hispanic notation, Herminio González Barrionuevo carried out some of the first research that engaged with the palaeography of the

[51] Nancy Phillips, 'Notationen und Notationslehren von Boethius bis zum 12. Jahrhundert', in *Die Lehre vom einstimmigen liturgischen Gesang,* ed. by Thomas Ertelt and Frieder Zaminer (Darmstadt: wbg Academic, 2000), pp. 293–623 (pp. 442–457).

[52] See, for example, the work of Bernhard Bischoff, *Latin Palaeography: Antiquity and the Middle Ages* (Cambridge: Cambridge University Press, 1990); M. B. Parkes, *Their Hands Before Our Eyes: A Closer Look at Scribes* (Aldershot: Ashgate, 2008).

[53] Ainoa Castro Correa, 'The Regional Study of Visigothic Script: Visigothic Script vs. Caroline Minuscule in Galicia', *Change in Medieval and Renaissance Scripts and Manuscripts: Proceedings of the 19th Colloquium of the Comité international de paléographie latine, (Berlin, 16-18 September, 2015)* (Turnhout: Brepols, 2015), 25–35; 'Visigothic Script vs. Caroline Minuscule: The Collision of Two Cultural Worlds in Twelfth-Century Galicia', *Mediaeval Studies* 78 (2016), 203–242; 'Leaving the Past Behind, Adapting to the Future: Transitional and Polygraphic Visigothic-Caroline Minuscule Scribes', *Anuario de estudios medievales* 50 (2020), 631–64; 'The Scribes of the Silos Apocalypse (London, British Library, Add. MS 11695) and the Scriptorium of Silos in the Late Eleventh Century', *Speculum* 95 (2020), 321–70.

[54] See especially Castro Correa, 'The Scribes', 321–70.

Old Hispanic neumes.[55] To determine the functional and melodic significance of individual neumes, González Barrionuevo examined the palaeography and semiology of each shape, initially exploring the number and direction of pen strokes used to form a neume, before looking at its melodic, rhythmic, and functional implications. His work also relies on comparisons between chants in multiple manuscripts; a method that I adopt in Chapter 3 to help to determine the meaning of certain horizontal neumes.

However, González Barrionuevo's work only engages with the vertical neumes and no study has yet focused on interpreting horizontal neumes. In a more broad-brush approach, Zapke commented on the general palaeographical difference between the two Old Hispanic notations (horizontal and vertical), although she did not interpret specific neumes. The traits she used to distinguish between the two scripts were: 1) the orientation of the neumes ('axis'); 2) the method of writing the neumes ('ductus'); 3) the degree to which pitch is suggested through the notation (diastematy); and 4) the variety of neume shapes used.[56] These observations offered a useful starting point from which I was able to explore the fundamental characteristics of horizontal notation. In combination with the more detailed approach of González Barrionuevo, this allowed me to develop a methodology that deals with both specific and general traits of the script, resulting in a comprehensive definition of horizontal notation based on palaeographical analysis.[57]

As in studies of text, scribal hands can also be identified in neumatic notations. In work on the identification of different notational hands in L8, Elsa de Luca developed a methodology

[55] Herminio González Barrionuevo, 'Una grafía particular del porrectus en la notación "Mozárabe" de tipo vertical', in *España en la música de Occidente: actas del congreso internacional celebrado en Salamanca, 29 de octubre–5 de noviembre de 1985*, ed. by Ismael Fernández de la Cuesta, Emilio Casares Rodicio, and José López-Calo (Madrid: Instituto Nacional de las Artes Escénicas y de la Musica, 1987), pp. 75–90; 'La grafía del "sálicus" en la notación "Mozárabe" de tipo vertical', *Revista de Musicología* 12 (1989), 397–410; 'Dos grafías especiales del "scándicus" en la notación "Mozárabe" del norte de España', *Revista de Musicología* 13 (1990), 11–79; 'Los códices "Mozárabes" del archivo de Silos: aspectos paleográficos y semiológicos de su notación neumática', *Revista de Musicología* 15 (1992), 403–72; 'Dos "Scandicus Subbipunctis" particulares en la notación "mozárabe" de tipo vertical', *Anuario musical* (1993), 47–61; 'El pes corto en "uve" de la notación "Mozárabe" de tipo vertical', *Inter-American Music Review* 18 (2008), 17–71.

[56] Zapke, 'Notation Systems', p. 208. These distinctions are similar to those outlined by Hornby and others, *Understanding the Old Hispanic Office*, pp. 191–99.

[57] For more general considerations see Michel Huglo, 'Toward a Scientific Palaeography of Music', in *The Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 13–22.

for identifying different scribes in vertical notation.[58] This methodology, which is also used by Hornby and Maloy in their forthcoming work on the opening folios of L8, involves identifying specific neumes that have a consistent appearance across a range of folios but that subsequently vary.[59] In several collaborative projects that I undertook with Emma Hornby and Marcus Jones, and with Rebecca Maloy, we expanded the criteria used for scribal identification to consider more general traits, as well as the vocabulary of neumes used by each individual.[60] As all of this work has focused on manuscripts containing vertical notation, the identified 'scribal tells' often do not apply to horizontal notation. My work therefore tests and develops the methods of scribal identification through applying these methods to a different neumatic script.[61]

Understanding musical notation is key to understanding the melodies preserved in T4. My analysis of these melodies is founded on the methodologies for studying adiastematic notation (notation that does not denote specific pitches) developed by Hornby and Maloy.[62] Focusing particularly on manuscripts from León and La Rioja, Hornby and Maloy developed several techniques for musical analysis: analysing cadential patterns, comparing the opening gestures of a phrase, studying the musical pacing of a chant and its exegesis, and exploring the relationship between two melodies. This work acts as the starting point for my own analysis of the melodies of T4, allowing me to identify the features of T4's chants, prior to comparing them to traits established in the scholarship of Hornby and Maloy.

The Old Hispanic rite, its music, and its manuscripts, have therefore been studied from a number of angles. Typically, musicologists have focused on northern sources containing vertical notation and the Toledo corpus has received limited attention. By taking an interdisciplinary approach that combines the methods used in previous scholarship, I carry out the first detailed study of an Old Hispanic manuscript that is not from the northern regions. Not only does my thesis offer the first insight into the practices of Toledo through a manuscript

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[58] Elsa De Luca, 'A Methodology for Studying Old Hispanic Notation: Some Preliminary Thoughts', *Cantus Planus*, Venice, Italy (28 July–1 August 2014) (IMS Study Group, 2014), 19–40; Elsa De Luca and Océane Boudeau, 'Erreur, variante et correction : l'exemple du plain-chant médiéval', *Textus et Musica* 1 (2020).

[59] Emma Hornby and Rebecca Maloy, 'Notated Chant in the Opening Folios of the León Antiphoner' in *Les folios introductifs de l'Antiphonaire de León (Archivo de la Catedral de León, ms 8)*, ed. by Thomas Deswarte (Turnhout: Brepols, 2023), pp. 149–79.

[60] Emma Hornby, Marcus Jones, and Emily Wride, 'Scribal Identity and Scribal Roles in Early Medieval Iberia: A Case Study of Santo Domingo De Silos, Biblioteca Del Monasterio MS 6', *Early Music History* 41 (2022), 1–50; Rebecca Maloy and Emily Wride, 'Why Write Music? Scribes and Partial Musical Notation in Toledo 35.6' (forthcoming).

[61] See Chapter 2, 'Notators', beginning on p. 65.

[62] Hornby and Maloy, *Music and Meaning*; 'Fixity', 547–74; 'Melodic Dialects', 37–72; Hornby and others, *Understanding the Old Hispanic Office*; Maloy, *Songs of Sacrifice*.

study, it also presents the first study of a manuscript likely produced after the Old Hispanic rite was largely suppressed.

Terminology

Throughout this thesis I engage with the musical notation in T4. Old Hispanic chants were notated using neumes (notational signs that represent one or more notes) and these neumes do not preserve the prescriptive levels of detail that we are accustomed to in modern musical notation; like many early neumatic notations, the Old Hispanic neumes do not convey information about specific pitches (they are adiastematic).[63] Rather, the neumes that were used to record the melodies acted as an *aide-memoire* for singers — people who had spent years memorising the specific melodies — and reminded them how to fit the melodies they knew to specific chant texts. As a result, the neumes do not communicate the pitches that were to be sung, nor the specific rhythm, nor the dynamic qualities. Instead, the shapes of the neumes reminded the singer of the melody by representing its rises and falls (the melodic contour), without indicating the size of the interval or the relationship between the notes.

Previously, the melodic contours of neumes have been discussed using Latin nomenclature (e.g., 'virga', 'puncta', 'torculus' etc.).[64] I often choose to avoid using this traditional nomenclature for several reasons. The first is that Old Hispanic neumes can contain an exceptional number of notes; for example, one especially long neume in BL45 contains 14 notes. If wanting to use Latin nomenclature, there are no terms that describe neumes that are 14 notes long. Secondly, Latin nomenclature sometimes has implications about the meaning of the shape, despite primarily being used to describe its palaeographical appearance. For example, a short rising line is typically called a 'virga' and is generally understood to represent a high or higher note. This is potentially confusing, as different notation systems often use palaeographically similar shapes in different ways.[65]

It is for these reasons that I adopt a method of discussing Old Hispanic neumes that describes the direction of the melodic contours, the relationship between pitches, and their

[63] On early neumatic notations see Susan Rankin, *Writing Sounds in Carolingian Europe: The Invention of Musical Notation* (Cambridge: Cambridge University Press, 2018).

[64] For a summary see Hiley, *Western Plainchant*, pp. 340–385. Regarding the standard nomenclature of neumes, also see: Michel Huglo, 'Les noms des neumes et leur origine', *Études grégoriennes* 1 (1954), 53-67; Michael Bernhard, 'Die Überlieferung der Neumennamen im lateinischen Mittelalter' in *Quellen und Studien zur Musiktheorie des Mittelalters*, ed. by Michael Bernhard (Munich, 1990-2001), 2:13-91.

[65] See Giovanni Varelli, 'Musical Notation and Liturgical Books in Late Carolingian Nonantola' (unpublished doctoral thesis, University of Cambridge, 2017), pp. 138–141.

palaeographical qualities, but does not imply specific notes. This system, which was developed by Hornby and Maloy, uses letters and symbols to give details about the neume, rather than the traditional method of using Latin terminology.[66] To refer to pitch, N represents the starting note of a neume (a Neutral, undetermined pitch), while H, L, and S are used for subsequent notes in the same neume that are comparatively Higher, Lower, or the Same as the previous note. D and U can also be used for neumes that do not have a clear meaning; D represents a note that is either the same or lower than the previous, while U represents a note that is either the same or higher. Connections (the way in which the different pen strokes of a neume are joined together) are also represented by a combination of letters, while the shapes of the pen strokes are represented by symbols such as * and / (see the Guide to the NSHL System, p. 223). When discussing the setting of musical notation to a specific syllable of the text, to show that multiple neumes are present on one syllable of text I use a hyphen between neumes (–), and to show that neumes fall on different syllables I use a plus (+). I opt for this system to discuss the neumes, rather than the nomenclature traditionally used in discussions of medieval notation, as it allows for a high level of precision. Throughout this thesis I also use standardised Latin for chant titles, as often I compare the same chant across manuscripts with different spellings. To refer to a specific word within a manuscript I use the manuscript spelling.

Chapter Summary

In this thesis, I undertake an interdisciplinary study of T4. As each chapter engages with different disciplines, it was necessary to employ various methodologies from the relevant fields. I begin, in Chapter 1, by looking at the codicology and palaeography of the manuscript in order to conduct an initial exploration into its origins and use; this also to helps to familiarise the reader with T4 and its history. Initially, I reflect on the methods previously used by Mundó to date the manuscript — dates that were subsequently accepted by most scholars.[67] This involves a palaeographical analysis of the colophon in T4, in which Mundó identified the name of Archbishop ‘Mart[in]’ (1192–1208) who he believed was the dedicatee of the manuscript.

[66] Hornby and Maloy, *Music and Meaning*, pp. 19–20; Hornby and others, *Understanding the Old Hispanic Office*, p. 184.

[67] Mundó, 'La datación', 1–25. For scholars that accept this dating see, for example, Randel, *Responsorial Psalm Tones*; José Janini, Ramón Ruiz Gonzálvez, and Anscario M. Mundó, *Catálogo de los manuscritos litúrgicos de la Catedral de Toledo* (Toledo: Diputación Provincial, 1977); Pinell, 'El problema'; Janini, *Liber missarum* (I); Janini, *Liber missarum* (II); Jordi Pinell, *Liturgia hispánica* (Barcelona: Centre de Pastoral Litúrgica, 1998); Zapke, 'Notation Systems'; Zapke, 'Dating Neumes'; Hornby and Maloy, *Music and Meaning*.

By considering the letterforms of the colophon I refute Mundó's conclusions; instead, I use a palaeographical analysis of the colophon, a study of the structure of the manuscript and its additions, and contextual analysis to posit a dating post 1085, and likely the 12th century more broadly. Additions in T4 also offer insight into the *terminus ante quem* of the manuscript, provide a potential period for its initial copying, and give an insight into the use of the manuscript throughout its lifespan.

In Chapter 2 I concentrate more closely on the palaeography of T4, focusing on the initial stage of its composition by exploring scribal practices. This chapter is separated into two closely linked sections: the first deals with the identification of text hands, the second with the identification of music hands (notators). Taking inspiration from the work of Castro Correa and her study of the scribes of the Silos Apocalypse, I firstly identify the text hands through a comparison of their letterforms and their traits.[68] As I show, there is mix of different scribal capabilities in T4. Having identified the text hands, I explore how they worked alongside one another, shedding light onto the scribal practices of the institution in which they worked. The second part of the chapter follows the same methodology but focuses on notators. This requires a different set of analytical criteria that considers the shape of neumes as opposed to letterforms, as carried out by De Luca on her work on the scribes of L8.[69] Following the identification of notators in T4, I relate their work to that of the text hands. I demonstrate that the people involved in the initial stage of T4's production had specific roles and responsibilities.

A study of T4 would not be complete without examining its chants. The first step in this process is to be able to read and understand the notation of the manuscript. As such, Chapter 3 presents the first in-depth study of horizontal Old Hispanic notation. In this chapter, I begin by outlining the principles of horizontal notation, focusing on how neumes were formed. This work is inspired by Malcolm Parkes's work on how text scripts were composed of their essential elements;[70] here, I explore the elements of the musical script, including the conceptualisation of basic shapes and the possible ways of combining pen strokes to form neumes. This analysis then allows me to compare the principles of horizontal notation with those of vertical notation (conserved in manuscripts from León and La Rioja). This comparison engages with the extensive discussions about Old Hispanic notations from the early-20th century (such as those by Rojo and Prado) to present day (such as work by Hornby and

[68] Castro Correa, 'The Scribes', 321–70.
[69] De Luca, 'A Methodology', 19–40.
[70] Parkes, *Their Hands*.

Maloy).[71] I further explore the relationship between the two scripts by examining the functional significance of visually similar neumes in horizontal and vertical scripts, notably a 'w' shaped neume that has a distinctive yet individual function in both scripts. This offers new insight into the chronological development of writing practices across Iberia, suggesting that horizontal notation may have developed in a separate, contemporaneous *milieu* to vertical notation, rather than being a late developmental stage of the same notational script, as is often assumed.

This work enables my subsequent musicological analysis of the melodies preserved in T4. In Chapter 4, I identify recurring melodic contours in the melodies of T4 and compare them to cognate chants in sources from León and La Rioja. Firstly, I turn to the recurring contours used at cadences. This work follows the methodologies used by Hornby and Maloy who identified regional melodic dialects in León and Rioja manuscripts at three-syllable cadences and at cadences that have an accent on the antepenultimate syllable (proparoxytonic cadences), often on the word 'domine'.[72] I further consider the use of common melodic contours (titled Formula A and Formula B by Hornby and Maloy), in order to explore whether these formulas, which were used at specific structural moments within a chant in northern manuscripts, were conceived in the same way in T4. This analysis of cadences not only highlights that T4 does not closely follow either the León or Rioja traditions, but also that it has its set of melodic contours that are used consistently throughout the manuscript. These findings support those of Randel, and Hornby and Maloy, who identified different melodic dialects in the Toledo manuscripts, and I further propose a new set of traits that might also be indicative of the Toledo dialect.[73] In the second half of the chapter, I consider the use of melismas in T4, exploring their melodies and notational practices. I also look at the different methods of notating melisma segments, identifying a similar neumatic vocabulary to that found in manuscripts from León and La Rioja.

For this chapter, I carried out my analysis using the Chant Editing and Analysis Program (CEAP): a software developed specifically for the purpose of transcribing and analysing adiastematic notation.[74] Transcriptions from multiple Old Hispanic manuscripts have already been recorded using this program, with progressively more being added to the corpus,

[71] Rojo and Prado, *El canto Mozárabe*; Hornby and Maloy, 'Fixity', 547–74; Hornby and Maloy, 'Melodic Dialects', 37–72.
[72] Hornby and Maloy, 'Fixity', 547–74; Hornby and Maloy, 'Melodic Dialects', 37–72.
[73] Randel, *Responsorial Psalm Tones*; Hornby and Maloy, 'Melodic Dialects', 37–72.
[74] https://neumes.org.uk/view was developed by Emma Hornby and Paul Rouse (software developer). I am grateful to Paul for his assistance with CEAP throughout my thesis and for developing new analytical tools as needs arose.

which facilitates comparison and analysis of vast amounts of data. During my thesis, I transcribed all 695 chants of T4 into CEAP, thereby entering the first complete manuscript from the Toledo corpus and the first horizontal notation manuscript. With the data generated from these transcriptions, and using the analytical algorithms of the software, I was able to evaluate the musical information contained within T4 at a significantly greater rate than possible without this digital tool.

Chapter 5 deals with a phenomenon unique to sources associated with Toledo: an additional layer of notation that surrounds the main neumes. As this notation has received almost no attention, in this chapter I simply begin by exploring the vocabulary of shapes used. Following this, I consider who wrote the additional notation, using the same palaeographical analytical techniques as outlined in Chapter 2 to identify multiple scribes. I highlight that each of these scribes consistently applied additional notation in the same manner, confirming that it was a unified system practised by several individuals. The second part of the chapter has a dual purpose: 1) to understand the information conveyed by the additional notation (for example whether it was an alternative method of notating pitch); and 2) to explore the purpose of the notation (such as whether it was written to correct the notation or to provide further information not encoded in the neumes). Ultimately, this chapter combines musicological and palaeographical analyses to explore this new system of presenting, preserving, and editing musical information.

In the final chapter (Chapter 6), I situate T4 within its Toledan context by carrying out a comparison with other Old Hispanic manuscripts associated with the city. I choose to focus on the three extant tradition B manuscripts to better understand how the chants of T4 relate to other Old Hispanic practices in Toledo. A complete analysis of the liturgical relationship between traditions A and B in Toledo is beyond the scope of this chapter, and I instead narrow my focus to the notation and the music.[75] My palaeographical and musical investigations of T4's chants in Chapters 3 and 4 serve as the points of comparison with the tradition B manuscripts. Through these comparisons I confirm that, even within the single city of Toledo, there were two different versions of the Old Hispanic liturgy, and further identify that the musical and notational practices of the city contain clearly identifiable qualities unique to their respective tradition. This nuances our understanding of the musical and manuscript practices of the city and establishes the foundations for future research.

[75] David Santana Cañas is currently conducting research into the Toledo corpus as part of his doctoral studies, including both tradition A and B manuscripts.

Throughout this thesis, I take an interdisciplinary approach in order to shed light onto the practice of the Old Hispanic rite in Toledo through the lens of T4. Further to exploring the culture of Toledo, I also use comparisons with manuscripts from the north of the Iberian Peninsula to better situate the Toledo practices within their broader Old Hispanic contexts, both geographically and chronologically. This case study of a single manuscript thus demonstrates the value of combining various methodologies in order to learn about the context and culture in which the manuscript was used.

Chapter 1: A History of T4 as Told by Codicology and Palaeography

Codicology and palaeography — the study of the physical manuscript and the study of how it was written — offer a way to understand the history of Toledo, Cathedral Archive, MS 35-4 (T4). While catalogue entries have touched upon the codicology of T4, no study has yet considered how this evidence can inform us about the manuscript's scribes and users.[1] In this chapter, I examine the colophon, additions, erasures, and flyleaves of the manuscript, to explore the context of its production and use. I begin by re-evaluating the dating of T4 proposed by Anscari Mundó, who used palaeographical methods to suggest a date of 1192–1208. Instead, I combine codicological approaches with historical context to offer a revised date for the manuscript. I then consider the corrections and changes made to T4, exploring how the use of the manuscript can inform our understandings of the religious practices and practitioners of the Old Hispanic rite in medieval Toledo.

Dating T4

The accepted dating of the Toledo corpus, including T4, has changed dramatically over the past century. Prior to the work of Mundó (1965), the manuscripts were believed to have been written before the Christian conquest of the Muslim city of Toledo in 1085.[2] In fact, scholars thought they were the earliest witnesses to the Old Hispanic rite, with some even suggesting that T4 was from as early as the 9th century.[3] Casiano Rojo and Germán Prado, Higini Anglés, and Marius Ferotin suggested a slightly later date of the 10th century, while Juan Riaño suggested the 11th.[4] In this scholarship, the use of terms such as 'primitive' contributed to the idea that the manuscripts associated with Toledo were earlier than those from the rest of Iberia, whilst also constructing a narrative that musical notation developed from its 'primitive'

[1] For a summary of the information contained in the catalogue entries see Appendix 1.

[2] Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25.

[3] For a summary of the dates suggested by scholars see the Appendix 1.

[4] Casiano Rojo and Germán Prado, *El canto Mozárabe: Estudio histórico-crítico de su antigüedad y estado actual*, Revue de Musicologie 36 (Barcelona: Diputación Provincial de Barcelona, 1929), p. 19; Higini Anglés, 'La música medieval en Toledo hasta el siglo XI', in *Gesammelte Aufsätze zur Kulturgeschichte Spaniens 7*, ed. by M. Honecker, G. Schreiber, and H. Finke (Münster: Aschendorff, 1938), pp. 1–68 (p. 40); Marius Ferotin, *Le Liber mozarabicus sacramentorum et les manuscrits mozarabes* (Farnborough: Gregg International Publishers, 1969), cols. 691–722; Juan F. Riaño, *Critical and Bibliographical Notes on Early Spanish Music* (London: Quaritch, 1887), pp. 29–30 and fig. 8.

horizontal state into a more refined vertical style in manuscripts such as León, Cathedral Archive, MS 8 (L8).[5] However, Mundó's revision, which was based on a palaeographical analysis of the sources associated with Toledo, offered a date of the 11th century or later for all Toledo manuscripts, with the most recent source (Madrid, Biblioteca nacional de España, MS 10010: BN10) being revised to as late as the 13th–14th century. Concerning T4, Mundó dated the manuscript to 1192–1208 based on his interpretation of Archbishop Martín López de Pisuerga's name in the colophon. The dates proposed by Mundó resulted in a rewriting of the historical narrative of the Old Hispanic sources; those associated with Toledo, with their 'primitive' horizontal musical notation, are now considered to be more recent than those from elsewhere in Spain containing the more elaborate vertical notation.

No work on these sources has been more influential than that of Mundó, and almost all subsequent scholarship has followed the dates offered in his article. Only Agustín Millares Carlo and Manuel C. Díaz y Díaz, and more recently Raquel Rojo Carrillo have expressed any scepticism about his conclusions.[6] Whilst studying T4 over the course of the last four years, I became aware of issues with the criteria Mundó used to date the Toledo corpus. Concerning T4, Mundó's primary evidence for his dating comes from his reading of the aforementioned colophon (Figure 1.1).[7] In the much-worn colophon, written in a Visigothic cursive script, he identified the dedication 'Mart[inum] episcopum', attributing it to the only known medieval Toledan Archbishop by this name, Martín López de Pisuerga (1192–1208).[8] He also assumed

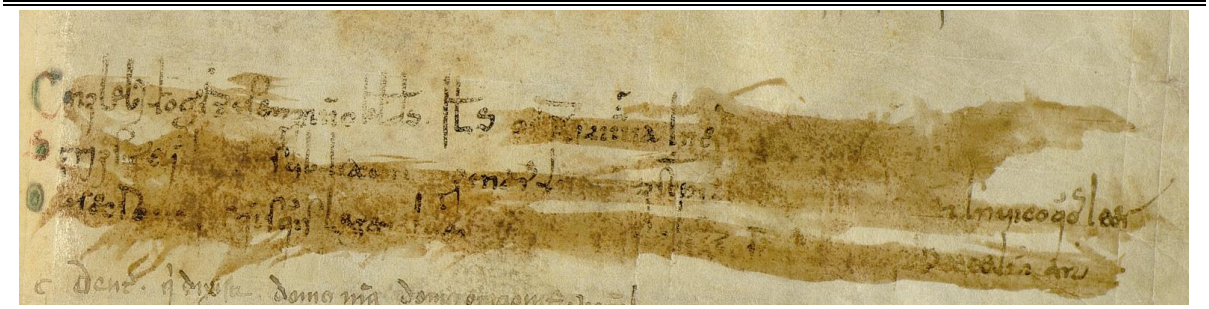
[5] L8 is the most famous and most studied Old Hispanic manuscript. On scholars who use the term primitive, see Higini Anglés, 'La Música medieval'; and 'Mozarabic Chant', in *The New Oxford History of Music: Early Medieval Music up to 1300*, ed. by Anslem Hughes (Oxford: Oxford University Press, 1954), pp. 81–91.

[6] Agustín Millares Carlo and José Manuel Ruiz Asencio, *Tratado de paleografía española*, vol. I (Madrid: Espasa-Calpe, 1983); Agustín Millares Carlo and Manuel C. Díaz y Díaz, *Corpus de códices visigóticos* (Las Palmas de Gran Canaria: Fundación de Enseñanza Superior a Distancia, 1999); Manuel C. Díaz y Díaz, *Manuscritos visigóticos del sur de la península: ensayo de distribución regional* (Sevilla: Secretariado de Publicaciones de la Universidad, 1995); Raquel Rojo Carrillo, 'Old Hispanic Chant Manuscripts of Toledo: Testimonies of a Local or of a Wider Tradition?', in *A Companion to Medieval Toledo: Reconsidering the Canons* ed. by Yasmine and Jason Busic Beale-Rivaya (Leiden, The Netherlands: Brill, 2018), pp. 97–139.

[7] Mundó believed the colophon was written by the same scribe as the rest of the manuscript. In my research, I identify three further scribes in the initial copying phase of the manuscript (see Chapter 2). It is unclear to which scribe Mundó was referring.

[8] On the ability for scribes to write in multiple styles (polygraphism) see Thomas Deswarte, 'Polygraphisme et mixité graphique. Note sur les additions d'Arias (1060–1070) dans l'Antiphonaire de Léon', *Territorio, Sociedad y Poder* 8 (2013), 67–84. For discussions about the continuation of the Visigothic script in Toledo see Lorenzo Martínez Ángel, 'Pervivencia de la escritura visigótica en la comunidad mozárabe de Toledo (con especial

Figure 1.1: Colophon, f. 170r



Mundo (1965):[9]

Conplebj d(e)o gr(ati)a semp(t)imo K(a)l(en)d(a)s J(u)l(ia)s ora VIIII[a] In er[a…]
Scripsit eu(m) d[…] subdiacon(i) p(er) mart[… e]p(i)sc(o)pu(m) […] (t)i In uico quosIter
Obsecro uos quisquis legeri(t) I(s) e(um) […]r[…] cel(um) am(en).

Burriel (1753):[10]

Complebi Deo gratias semper (II[o]) Secundo Kalendas Julias ora nona (VIIII[a]) in Era …
Scripsit eum … subdiaconus per manus … pscpi … In vico quos Iter
Obsecro vos quisquis legerit … in celis. Amen

Millares Carlo (1983):

(no full transcription given)
Central portion of line 2: per manus [domini?] episcopi

Suggested Transcription:

Conplebit[11] d(e)o gr(ati)as semper vii[o] K(a)l(en)d(a)s. J(u)l(ia)s ora VIIII[a] in er[a] [...]
Scripsit eu(m) [...] subdiaconi per man(us) d[omini?] [e]piscop[i] [...]ti In vico q(u)o(s) Iter
Obsecro vos [...] quisquis legeri[t] [...] I [...] e [...] r [...] cel(u)m am(en)

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referencia a las parroquias de las Santas Justa y Rufina y Santa Eulalia)', *Anales Toledanos* 43 (2014), 9–15.

[9] This interpretation is copied exactly from Mundó. Square brackets represent assumed or possible letters, while rounded brackets represent abbreviated letters.

[10] BN 13049, f. 396v.

[11] There is an 'it' ligature at the end of the word.

‘…ti’ to be the end of the word ‘Toleti’ thereby placing the manuscript in Toledo; however, Rojo Carrillo notes that there are many other words that end with the same letters.[12] Millares Carlo expressed scepticism about this interpretation and Ainoa Castro Correa concurred that the colophon is not sufficiently legible to confirm Mundó’s interpretation.[13] As the damage to the colophon is not new — it was equally found to be illegible in Andrés Marcos Burriel’s 1753 study of the manuscript — the colophon is now no more difficult to read than it was for Mundó; his understanding of it therefore requires a more careful consideration.[14]

A palaeographical analysis of the colophon causes Mundó’s interpretation to become less tenable. The letter ‘t’ in Mundó’s ‘mart[inum]’ closely resembles the shape used for ‘d’ by the scribe: it is a vertical line with a horizontal line extruding from the bottom left of the vertical stroke (see for example the ‘d’ used in the first line on ‘deo’ or ‘subdiaconi’, Figure 1.2). By contrast, in Visigothic minuscule script the letter ‘t' joining to the letter ‘i’, as in the word ‘Martinum’, would be a short letter, formed of a loop that joins to a minim stroke.[15] An example of this can be seen at the end of line two of the colophon in ‘…ti’; neither do other examples of the letter ‘t’ in this colophon bear resemblance to the one in Mundó’s ‘Martinum’. Similarly, the ‘r’ in Mundó’s ‘Martinum’ does not resemble any other examples of the letter in the colophon (Figure 1.2). In Mundó’s interpretation, the right-hand extension of the ‘r’ strongly doubles back on itself. This is an unusual trait, even more so in the middle of a word and between the letters ‘r’ and ‘t’; in these examples the letter ‘r’ would normally be only a little higher than the average minim stroke and would descend in its final stroke to join the ‘t’ (e.g., ‘portate’, Figure 1.2).[16] I propose instead that the final part of Mundó’s ‘r’ is the abbreviation

[12] Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 124.

[13] Millares Carlo and Ruiz Asencio, *Tratado*; Ainoa Castro Correa also expressed an inability to read the colophon with confidence in Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 124. The colophon is believed to have been treated with a chemical agent in an attempt to make the text legible. Mundó, 'La datación', 1–25 (p. 9). Mundó hypothesised that the colophon was originally erased by Pedro Camino y Velasco (Commissioner of the Inquisition in Toledo and chaplain of the Mozarabic parish of San Sebastián, 1731–1753), who transcribed the colophon of BN10 incorrectly, adding an attribution to *Regnante Domino Adefonso*, in an attempt to obscure history.

[14] Burriel stated: ‘Hucusque Codex Gothias post haec in eadem pagina caracteribus etiam gothicas non vero rotandis, quadrative; sed cursivas ut vocant, sequitur descriptoris subscriptio; in qua tamen non casu, sed data opera nomina propria et annus en era deleta sunt, vel abrasa, quod nunc vix legi potest’ in Madrid, Biblioteca Nacional de España, 13049, f. 396v.

[15] Minim strokes are strokes that form the basic height of most lowercase letters. For example, the letter ‘i' comprises a minim stroke with a dot above and the letter ‘m’ comprises three minim strokes that are joined together with arches.

[16] At the end of lines, the letter sometimes took on a more elaborate form, extending in a roughly straight diagonal line, as in ‘iter’ at the end of the second line of the colophon.

for ‘us’: in this abbreviation, the pen stroke representing ‘us’ joins to the letter at the top right (a similar gesture is present in the word ‘quos’ at the end of the second line) and takes an s-shape. In the colophon, the letter to which this abbreviation is attached appears to be an ‘n’, joined by way of a ligature to the preceding ‘a’. This ligature is more common between the letters ‘a’ and ‘m’ (see the final ‘amen’ of the colophon in Figure 1.1), although it is also possible between ‘a’ and ‘n’. Following this analysis of letterforms, Mundó’s interpretation of ‘Martinum’ can no longer be substantiated and the present reading aligns more closely with those offered by Burriel and Millares Carlo: ‘per manus d[omini?]’.[17] This interpretation therefore invalidates Mundó’s dating of the manuscript based on a relationship to Archbishop Martín López de Pisuerga.

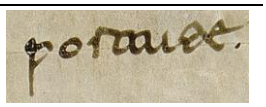
Figure 1.2: Palaeographical Analysis of Letters in the Colophon[18]

Mundó’s suggested letter ‘t’ in Martinum			
Other examples of the letter ‘t’			
scripsit	…ti	iter	‘ti’ ligature in Visigothic minuscule (f. 160v)
Examples of the letter ‘d’			
deo	subdiacon[i]		

(continued on the next page)

[17] Millares Carlo stated that this expression is equivalent to ‘per mandatum’, that is to say, ‘at the order of [our lord]’ in *Tratado*, p. 180.

[18] Throughout this thesis I have edited images to remove irrelevant letters and shapes. This is to aid the reader in seeing the shape in question without other potentially confusing or distracting shapes. I have not edited the shape of any of the letterforms in these images.

Mundó's suggested letter 'r' in Martinum			
Other examples of the letter 'r'			
gratias	scripsit	iter	 'rt' ligature in the middle of a word in Visigothic minuscule (f. 160v)
Examples of the abbreviation for 'us'/'os'			
quos	'us' abbreviation in Visigothic minuscule (f. 161r, 'Plenus')		

The word 'episcopum', which I believe to be legible with a degree of certainty, leads to several questions: who was this bishop to whom the manuscript was dedicated, or who ordered it to be written, potentially at a time when Toledo was a Roman Christian Archdiocese? Were they Mozarabic or were they Roman? If the former, who was this Mozarabic bishop, and if the latter, why mention a Roman bishop in the colophon of an Old Hispanic manuscript? There are a number of possible answers to these questions. The first comes from evidence that several Mozarabic bishops migrated to Toledo after the expulsion of Christians from the south of the peninsula in the 1140s. Writing in the 13th century, Archbishop Rodrigo Jiménez de Rada remarked that the bishops of Ecija, Niebla, Sidonia-Medina, and probably Marchena and Malaga had migrated to Toledo.[19] Francisco Javier Simonet noted that these bishops retained their episcopal dignity while living in Toledo, despite having no official position.[20] Although at least one of these bishops is believed to have practised a different (possibly southern) variant of the Old Hispanic liturgy (known nowadays as tradition B), the colophon could nonetheless

[19] Ramón Gonzálvez Ruiz, 'La persistencia del rito hispánico o mozárabe en Toledo después del año 1080', *Anales toledanos* 27 (1990), 9–34 (p. 30).

[20] Francisco Javier Simonet, *Historia de los mozárabes de España* (Madrid: Turner, 1983), p. 764.

be a dedication to one of these venerable Mozarabic bishops.[21] Alternatively, some high-ranking Roman clergy, such as Archdeacon Maurice (1208–1213, later Bishop of Burgos), supported the Mozarabic population of Toledo, even forming close connections with its communities.[22] It could be that due to the favour of high-ranking officials in the Roman church, the manuscript was either written at their behest and with their approval, or was dedicated to them to show appreciation for their support. Therefore, although unusual, the attribution of T4 to a bishop does not preclude it from having been written in Roman, late-medieval Toledo.

Returning to the issues surrounding the dating of the colophon, Mundó identified the influence of Caroline minuscule in the script of T4, which he used to corroborate his late dating of the manuscript. Although he did not elaborate on what these Caroline elements were, Carmen del Camino Martínez has demonstrated that Mozarabic variations of the Visigothic script — the type used in T4 — present different characteristics to those typically found in northern variations of the script.[23] She identified elements that are typically considered a result of the influence of Caroline minuscule in Mozarabic Visigothic script sources several centuries before Caroline minuscule was widely introduced into the Iberian Peninsula; see, for example, the uncial *M* in Figure 1.3 below, which she identified in manuscripts from the 8th century. Caroline minuscule is thought to have developed towards the end of the 8th century and may therefore have been little known in Iberia at this time.[24] Based on del Camino Martínez's work and my own comparisons with Caroline script, I could see extremely limited influence from Caroline minuscule in the main body of T4, although some later additions do have Caroline

[21] Traditions A and B were two variations of the Old Hispanic rite that are both preserved in sources currently in Toledo. The origin of these traditions is uncertain. For further information, see Jordi Pinell, 'El problema de las dos tradiciones del antiguo rito hispánico: valoración documental de la tradición B, en vistas a una eventual revisión del ordinario de la misa mozárabe', in *Liturgia y música mozárabes: Ponencias y comunicaciones presentadas al I Congreso Internacional de Estudios Mozárabes, Toledo 1975*, ed. by Jordi Pinell and others (Toledo: Insituto de Estudios Visigótico-Mozárabes de San Eugenio, 1978).

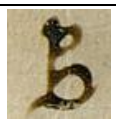
[22] Teresa Witcombe, 'Between Paris and Al-Andalus: Bishop Maurice of Burgos and His World, c.1208–1238' (unpublished doctoral thesis, University of Exeter, 2019); Teresa Witcombe, 'Maurice and the Mozarabic Charter: A Cross Cultural Transaction in Early Thirteenth-Century Toledo', *Journal of Medieval Iberian Studies* 10 (2018), 234–56.

[23] Carmen del Camino Martínez, 'La escritura visigótica de los centros mozárabes en su periodo primitivo', in *La escritura visigótica en la Península Ibérica: nuevas aportaciones: jornadas internacionales*, ed. by Jesús Alturo i Perucho, Miquel Torras i Cortina, and Ainoa Castro Correa (Bellaterra, Cerdanyola del Vallès: Universitat Autònoma de Barcelona, Servei de Publicacions, 2012), pp. 115–44.

[24] Bernhard Bischoff, *Latin Palaeography: Antiquity and the Middle Ages* (Cambridge: Cambridge University Press, 1990), pp. 112–18.

characteristics.[25] It is therefore not possible to date T4's initial phase of production through associations with Caroline, and therefore late, traits.

Figure 1.3: 'Archaising' Letterforms in Visigothic Script Manuscripts

Letter	**Image (taken from T4)**	**Suggested manuscript dates** Underlined manuscripts are dated by Mundó
A		10th century: L8[26] 11th century: Coim, Silos 5 12th century: TM26, T8 (mid), T3-3 (end) 13th century: Cinc (c.1200), BN10 (13th–14th)
Uncial *M*		8th century: Esc. &.I.14,[27] BN 14-3 (8th–9th)[28] 9th century: BRAH 80[29] (mid) 10th–11th century: Esc. P.I.6[30] 11th century: Toledo 14-23[31] 11th–12th century: T1, T35-3, T7, 99-30[32] 12th century: T8 (mid), T33-3 (end) 13th century: Cinc (c.1200), T5, TM25-1, BN10 (13th–14th)
S		11th century: Silos 4, Silos 6 12th century: T33-3 (end) 13th century: Cinc (c.1200)
B		9th–10th century: BL52, PB99 10th century: L8 13th–14th century: BN10
D		8th–9th century: BN 14-3 9th century: BRAH 80 (mid) 12th century: Tm26, T8 (mid), T33-3 (end) 13th century: Cinc (c.1200), T5, TM25-1
O		8th century: OV 9th–10th century: BL52, PB99, 10th century: L8 11th century: Silos 4, Silos 5, Silos 6, Toledo 14-23 11th–12th century: BN01 flyleaves, T35-3, T7 12th century: T33-3 (end) 13th century: Cinc (c.1200), TM25-1, BN10 (13th–14th)

[25] See p. 35.
[26] On the dating of L8, see Carmen Julia Gutiérrez, 'Librum de auratum conspice pinctum: sobre la datación y la procedencia del Antifonario de León', *Revista de Musicología* 43 (2020), 19–76.
[27] San Lorenzo, El Escorial &.I.14.
[28] Madrid, Biblioteca Nacional de España, Vitr. 14-3.
[29] Madrid, Real Academia de la Historia, cod. 80.
[30] San Lorenzo, El Escorial, P.I.6.
[31] Toledo, Cathedral Archive, MS 14-23. This manuscript has a colophon containing the year 1070 (Spanish era 1108).
[32] Toledo, Cathedral Archive, MS 99-30.

With this uncertainty surrounding the dating of T4, Mundó's identification of archaising qualities in the text script becomes problematic. Without any idea of dating, how can we know whether the script is archaising or simply archaic? More specifically, Mundó noted several letterforms that are 'archaising' (Figure 1.3): *A* with parallel sides; the uncial *M* that resembles a pre-Caroline *a*; the *S* with a flattened upper portion of the letter; *B* with the two loops separated; *D* with the belly of the letter sitting lower on the vertical stroke, leaving a short stroke ascending from the top; and *O* with a dot in the middle. Del Camino Martínez, however, has identified all of these features in older manuscripts, mostly from the 10th and 11th centuries. In one of the most extreme examples of the longevity of a trait, I also note that the *O* with a dot in the middle is found in the Verona Orational (written in the 8th century) and in BN10 (Mundó's 13th–14th century manuscript). In the absence of a date, or even date range, for T4, this provides just one example of how the lines between archaic and archaising can be blurred.

These palaeographical factors alone cannot establish a date for T4, or indeed for the other manuscripts of the Toledo corpus. The colophon and 'archaising' elements of the script do not necessarily establish T4 as having a late date; moreover, in Chapter 6, I explore how Mundó conflates different types of horizontal notation to support his dating of the corpus, further bringing his methods of dating T4 into question. As of yet, a possible time period for T4's production remains entirely unestablished.

Dating T4 Using Codicology

While the colophon and palaeography do not establish a specific date of production for T4, other elements of the manuscript can help. After the manuscript was finished, additions were written on folios that had initially been left blank: a set of prayers for the vigil of St Martin, mass prayers for the beginning of Advent,[33] the Athanasian Creed,[34] and a previously unidentified hymn (*Aurora lucis rutilat*). Using a combination of stylistic comparisons, and a

[33] Andrey A. Volkov suggests that these prayers were a continuation of the mass readings for the beginning of advent ff. 166v–167v. 'Informaciones sobre el orden de la misa del rito Hispano-Mozarábe en los manuscritos litúrgicos de Toledo', in *Los Códices Visigóticos Litúrgicos de la Biblioteca Capitular de Toledo* (Toledo: Instituto Teológico San Ildefonso de Toledo, 2018), pp. 55–84 (p. 68).

[34] The Athanasian Creed, also known by its first line, the *Quicumque Vult*, was used by Christians to profess their belief. Unlike the more commonly used Nicene Creed, it focuses on the equality of the elements of the Trinity. For more on the Athanasian Creed, see J. N. D. Kelly, *The Athanasian Creed: The Paddock Lectures for 1962–3* (London: Adam & Charles Black, 1964).

consideration of the contents and physical structure of T4, I argue that due to stylistic similarities between the main body of the manuscript (ff. 1r–170v) and the later additions, the liturgical materials added to these folios point towards the whole manuscript being written post 1085, and possibly in the 12th century or later.

Turning firstly to the physical structure of the manuscript, the additions are found on the last folios of the final gathering (quire) of the manuscript;[35] originally the manuscript finished on the third folio of the quire and the remaining folios were left blank.[36] All folios of this quire are the same size, were ruled using the same spacing and layout as the rest of T4, and were arranged in the same hair-to-hair and flesh-to-flesh organisation as the rest of the manuscript.[37] This indicates that the additions made to the end of T4 were written into the original manuscript.

The similarities between the text hands of the additions and those of the main body of T4 strongly suggest that they were written around the same time as one another.[38] Multiple scribes were responsible for the additions to the end of the manuscript: one scribe wrote the prayers, another the Athanasian Creed, a third scribe wrote the hymn, and a fourth scribe added a final verse. The scribes who added the Advent prayers and the Athanasian Creed used the same basic letterforms, the same ligatures, and the same abbreviations as the main scribes of the manuscript.[39] In T4, the many similarities between the script in the main body of the manuscript and the additions suggest that they were likely contemporaneous; it is not only the general shape of letterforms and abbreviations, but also the inclination of their writing, the size of their script, the size and shape of particular pen strokes and the extremely similar vocabulary of letterforms and abbreviations (see Appendix 2 for a comparison of all scribal hands). These similarities strongly suggest that the additions were entered into the manuscript not long after its completion by people who had similar, and likely contemporaneous, scribal training to one another.

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[35] This is not the flyleaves on ff. 176–77 that were bound in later, but rather the final full quire of the manuscript.

[36] There are seven folios in this quire; the final one is missing (Appendix 1). In its present state, the musical notation appears to stop on f. 170r, however, there were originally benedictiones chants written on 170v (see Figure 1.5 below).

[37] For my quire diagram of the manuscript, see https://vceditor.library.upenn.edu/project/633d4f7fc397640001e69602/viewOnly.

[38] Burriel, who did not identify the hymn but did transcribe its final six verses, noted the different hand of the final verse in BN 13049, f. 406v. This is also implied by José Janini, *Liber missarum de Toledo y libros místicos*, vol. II (Toledo: Instituto de Estudios visigótico-mozárabes, 1983), p. 11.

[39] See especially the similarities to Text Hand 1 in Appendix 2. The characteristics of this scribe are explored in Chapter 2.

Keeping these palaeographical similarities in mind, it is useful to consider the content and use of the additions, particularly the Athanasian Creed and the hymn on ff. 173v–174v. The Athanasian Creed is not common in extant Old Hispanic manuscripts, only occurring in Sant and Sal.[40] Its use within the liturgy is unclear, although all extant examples are associated with personal confession. The first evidence for the Athanasian Creed in Iberia is from Reccared's confession of faith at the Third Council of Toledo (589).[41] Lucy Pick noted that in Sal and Sant the Athanasian Creed is found before the personal confessions of the manuscripts' royal patrons.[42] In his work on the Athanasian Creed, John Kelly stated that in other liturgical traditions it also held 'its primitive function as an instruction for the clergy and test of the correctness of their belief'.[43] As T4 is not a royal or personal manuscript and may have been owned by an institution rather than an individual (as attested to by the additions pertaining to the parish of Santa Eulalia), it would be unusual for the creed to have been written into T4 for the purpose of personal confession.

It is not clear whether the Athanasian Creed had other uses in the Old Hispanic liturgy. In the Roman liturgy, there is evidence that the Athanasian Creed was used at Prime from the beginning of the 9th century. Its popularity across the continent increased over the centuries, with widespread evidence of its use being attested to in 12th-century sources.[44] In the Old Hispanic rite, the Nicene Creed was instead used at Prime.[45] It is therefore possible that the inclusion of the Athanasian Creed in T4 resulted from the influence of the Roman liturgy, especially at a time when the Roman rite was predominant in Toledo post 1085.

The previously unidentified hymn on f. 175v, *Aurora lucis rutilat*, further provides evidence in support of this hypothesis, as it too was used during Prime in the Old Hispanic rite.[46] This Eastertide hymn is only found in one other extant Old Hispanic manuscript, Silos

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[40] See the Sigla of Old Hispanic Manuscripts Consulted for more information about these two manuscripts.

[41] It was also used at the beginning of the Fourth Council of Toledo (633). Lucy K. Pick, 'Liturgical Renewal in Two Eleventh-Century Royal Spanish Prayerbooks', *Traditio* 66 (2011), 27–66 (p. 32).

[42] Pick, 'Liturgical Renewal', 27–66 (pp. 32–44).

[43] Kelly, *The Athanasian Creed*, p. 44.

[44] The Bishop of Basle (807–23) is recorded as directing 'that the faith of Saint Athanasius be learned by priests and be recited by heart every Sunday at the first hour' in MGH, *Leg.* Ii, *Capit. Reg. Franc.* I, 363. Cited from Kelly, *The Athanasian Creed*, pp. 43–44.

[45] W. S. Porter, *Early Spanish Monasticism* (London: Laudate, 1933), pp. 43–44.

[46] I was able to decipher this by digitally manipulating an image of the folio. This facilitated the reading of some words that I then compared with the version of the hymn found in Silos 7 (ff. 58r–v). For a full transcription of the hymn, see http://musicahispanica.eu/chant/86907. The additional final verse is not included in Silos

7, a monastic manuscript, in which it is used at Prime and Second.[47] In the Neo-Mozarabic 1502 breviary, Alfonso Ortiz also placed this hymn at Prime, although, according to Louis Brou, this may be due to his use of Silos 7 as an exemplar.[48] The version of the hymn in T4 also has an additional verse to Silos 7 and the 1502 breviary;[49] the additional verse, 'Quesumus auctor ominium', is also commonly found in versions of the hymn used in the Roman liturgy.[50] According to the hymns currently contained in Cantus Index, the earliest evidence of this verse in the hymn *Aurora lucis rutilat* is found in 12th-century manuscripts from France and Italy.[51] Incipits for the hymn can be found in 11th-century manuscripts containing the Roman liturgy, including two from Spain: London, British Library, Add MS 30850 from Silos, and Toledo, Cathedral Archive, MS 44-2. This demonstrates knowledge of the hymn in Iberia from at least the 11th century, although we cannot confirm whether these iterations of the hymn in Roman rite manuscripts also contained the extra verse.[52] The verse is also used in the hymn *Ad cenam agni*, which can be found in BL51 (f. 133v), demonstrating that the verse was known in the Old Hispanic liturgy, but not necessarily used in the context of the hymn *Aurora lucis rutilat*. It is possible that the Old Hispanic version of *Aurora lucis rutilat* did not include this additional verse, as evidenced by Silos 7 and the initial version written on T4's flyleaves, and that the addition of this verse was under the influence of the later Roman liturgy.

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7. Burriel transcribed the final six verses of T4's version of the hymn in BN 13049, ff. 406r–v, although did not identify it. Justo Pérez de Urbel, discussing this hymn in general (and not in relation to T4) suggested that it originated in the sixth century in *Origen de los himnos mozárabes* (Bordeaux: Féret & Fils, 1926), pp. 18–19. See also Guido Maria Dreves, *Analecta Hymnica Medii Aevi*, vol. II (*Hymnarius Moissiacensis*) (Leipzig: Fues's Verlag (R. Reisland), 1888), p. 47.

[47] Silos 7 is the only extant manuscript containing material for Prime, although these services are also mentioned in the monastic rules of Fructuosus and Monastica communis. Porter, using this information, noted that the hymn is used during Prime and Second in Eastertide. Outside of Eastertide, Porter notes this hymn would have been *Iam lucis orto*. Porter, *Early Spanish Monasticism*, p. 43.

[48] Louis Brou, 'Études sur le missel et le breviaire "mozarabes" imprimés', *Hispania Sacra* 11:22 (1958), 349–98 (pp. 379–82). For a discussion of the breviary, see Susan Boynton, 'Restoration or Invention? Archbishop Cisneros and the Mozarabic Rite in Toledo', *Yale Journal of Music & Religion* 1 (2015), 5–30.

[49] The omission of this verse also suggests that Ortiz did not use T4 for the hymn when compiling the breviary.

[50] The hymn was not always used in monastic settings in the Roman liturgy, although the surviving Old Hispanic liturgy only leaves us with evidence that it was used during monastic hours.

[51] These 12th-century manuscripts are Valenciennes, Bibliothèque municipale 114; Benevento, Archivio Capitolare, V 20 114; E-H Archivo de la Catedral de Huesca, ms. 2.

[52] This verse can also be found in the hymns *Jesu salvator saeculi* (the version of this hymn in BL51 does not include this verse) and *Aeterne regi gloriae*, which is never used in the Old Hispanic liturgy.

While having the Athanasian Creed and *Aurora lucis rutilat* listed sequentially could be coincidence, the association of both of these items with Prime suggests they may have been used for this service. The growing popularity of using the Athanasian Creed at Prime across the continent in the 12th century, in combination with the addition of a potentially new verse to the hymn, suggests that they were added to the manuscript in a more Roman *milieu* post 1085, possibly in the 12th century. This late dating of T4 is also supported by the shortening of some of its chants. In earlier Old Hispanic manuscripts, such as L8, chants such as the sacrificia and soni often have multiple verses. In T4, they only tend to have the first section of the chant. In offertory verses, Rebecca Maloy found that the Gregorian liturgy followed a chronological trend in which later manuscripts had a reduced number of verses, thus offering a parallel narrative.[53] In combination with the palaeographical similarities between these additions and the main scribes of T4, and the sequential presentation of the Athanasian Creed and *Aurora lucis rutilat*, this evidence helps to support a late date for the manuscript.

Terminus ante quem

A relic list written in a later gothic semicursive script on f. 171v provides a *terminus ante quem* for the writing of T4 (Figure 1.4).[54] This addition, previously transcribed by José Janini and Mundó in their *Catálog*o, and by Janini in his edition of T4, refers directly to the church of Santa Eulalia and gives the year 'Era de millesimo e CCC e XXVIII años' (1328).[55] Spain used a dating system known as the Spanish era until around the 14th–15th centuries.[56] This system was 38 years out of sync with the currently used Gregorian Calendar, meaning that in the modern calendar the relic list was written in 1290.[57] It is therefore apparent that the

[53] Rebecca Maloy, *Songs of Sacrifice: Chant, Identity, and Christian Formation in Early Medieval Iberia* (New York: Oxford University Press, 2020), p. 211.

[54] For transcriptions of this relic list see: BN 13049, f. 397v; Janini, *Liber missarum* (II), pp. 142–43; José Janini, Ramón Ruiz Gonzálvez, and Anscario M. Mundó, *Catálogo de los manuscritos litúrgicos de la Catedral de Toledo* (Toledo: Diputación Provincial, 1977), p. 100. For a further discussion of this relic list see: Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 125.

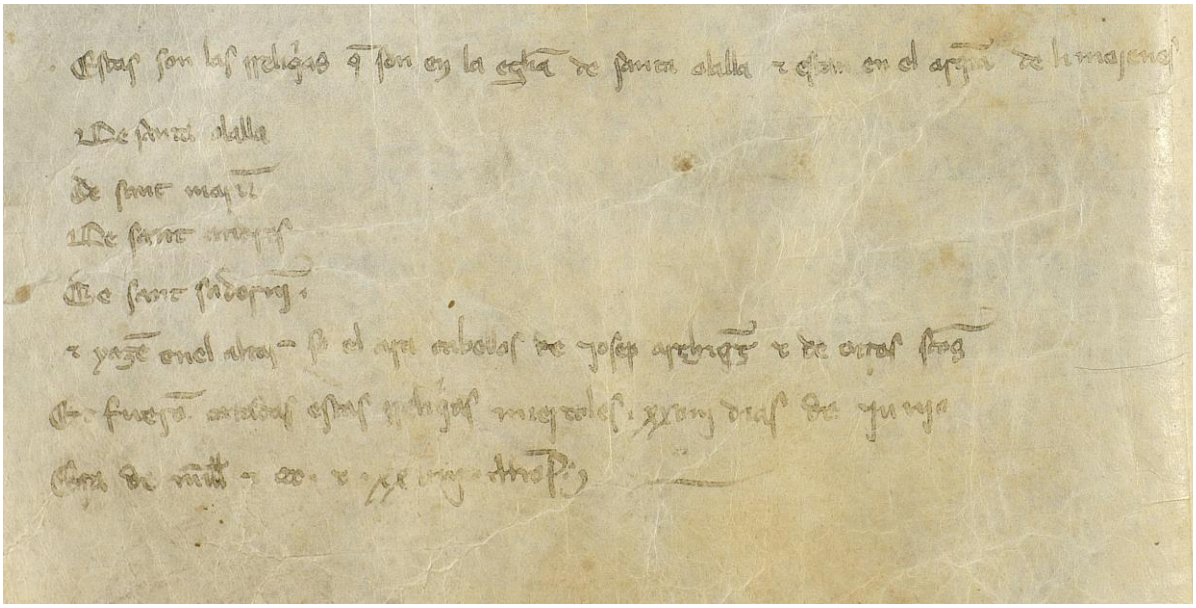
[55] Janini, *Liber missarum* (II); Janini, Gonzálvez, and Mundó, *Catálogo*. The final two lines have also been transcribed by Simonet, *Historia*, pp. 763–64.

[56] Norman Roth, 'Calendar', in *Medieval Iberia: An Encyclopedia*, ed. by E. Michael Gerli (London: Taylor & Francis Group, 2002). 1290 is also the date offered by Janini and Mundó.

[57] The *Catálogo* and Janini's edition differ on the interpretation of the date in June. In *Catálogo*, the date offered is the 24th of June ('xxiiii'); in Janini's edition he writes 'xxxiij', the 33rd of June, which does not exist. I interpret it as the 28th ('xxviii') of June (as does Simonet), which fell on a Wednesday in the year 1290, thus agreeing with the stated 'miércoles'.

manuscript was completed before 1290, at which point it was present in the parish of Santa Eulalia in Toledo.

Figure 1.4: Relic List on f. 171v, with transcription[58]



Transcription

Estas son las reliquias que son en la eglesia de santa Olalla **y**[59] estan en el arqueta[60]
de Limojenes
De **santa**[61] Olalla
De **sant**[62] Martin
De **sant**[63] Andres
De sant Sadornin
E yazen en el altar so el ara **cabellos**[64] de Josep **Archiques**[65] **y**[66] de otr**as**[67] santos
Est[68] fueron **catadas**[69] estas reliquias miercoles **XXVIII**[70] dias de junio
Era de millesimo e CCC e XXVIII años

[58] I present my transcription of the colophon, without grammatical corrections. Both Janini and Mundó's transcriptions contain some errors, which are footnoted below. The differences between my own work and that of Janini and Mundó's *Catálogo* are underlined. The differences between Janini's edition are in bold.
[59] Janini: e
[60] *Catálogo*: arca
[61] Janini: sancta
[62] Janini: sanct
[63] Janini: san
[64] *Catalogó*: cabesas; Janini: cabe las
[65] Janini: Arquiquez
[66] Janini: e
[67] Both: otros
[68] Both: E
[69] Janini: conditas
[70] *Catálogo*: XXIIII; Janini: xxxiij

The Use of the Manuscript

It is easy to think that the most important moment in a manuscript's history was the moment it was written. However, the way in which the manuscript was used during its active life, and how it is preserved today, is equally important. By studying the changes to a manuscript, such as additions or erasures, we can examine the history of its use; who used it, when did they use it, and why? In this section I look at the early additions and corrections to T4 in order to explore these questions.

The many additions made to T4 inform us of how the manuscript was used throughout its lifetime. Alongside the readings, prayers, and chants there are frequent additions by other scribes in a variety of scripts: Visigothic minuscule (e.g., f. 167v), scripts with Caroline influence (e.g., the addition in the top right corner of f. 95r that has the Tironian abbreviation for 'et' found in Caroline minuscule),[71] and Gothic (e.g., f. 125r). These additions are mostly liturgical and include examples where the scribe added a verse to a chant (e.g., f. 95r), noted that the *Per dominum* should be said (e.g., f. 137r), corrected a word or sentence, or added extra musical notation (see Chapter 5 for a study of this additional notation).[72] The variety of scripts, hands, and types of additions indicate that T4 was used by a number of different people over a prolonged period of time. Most people were amending the manuscript to keep it relevant and easy to use. This demonstrates that T4 was likely used liturgically, as opposed to being a gift for a wealthy patron or being a book that was kept solely as a record of the liturgy.

Erasures also provide evidence that the users of T4 were concerned with its functionality and clarity. An erasure involved scraping away the top layer of the parchment with a knife, taking away the pre-existing text.[73] In T4 erasures are present throughout, both in the music and text. In the music, it is likely that the scribe responsible for the correction was changing the melody to the version they deemed to be correct, to the one they preferred, or to the one they were more familiar with.[74] In the text, the most common reason to carry out an erasure was to correct the orthography, specifically changing the letter *b* to the letter *u/v* where appropriate.[75] This resulted from the letters *b* and *u/v* being used interchangeably in Visigothic minuscule, reflecting their similarity in pronunciation. For example, the word 'vivimus' might

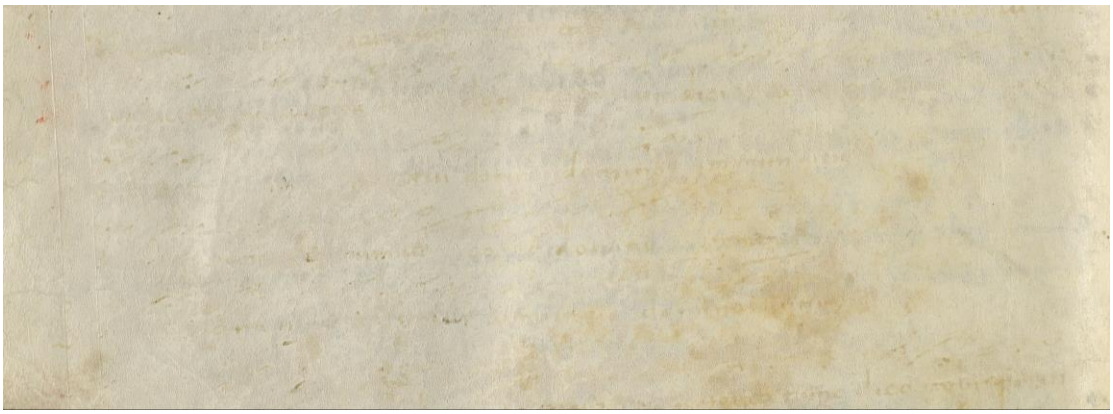
[71] On Tironian notes in Iberia, see Ainoa Castro Correa, 'The Scribes of the Silos Apocalypse (London, British Library, Add. MS 11695) and the Scriptorium of Silos in the Late Eleventh Century', *Speculum* 95 (2020), 321–70 (p. 347).
[72] The *Per dominum* was, and still is, a common ending to prayers.
[73] Bischoff, *Latin Palaeography*, p. 18.
[74] On the alterations made to T4's melodies, see Chapter 5.
[75] The letter *v* was represented by the *u* during this period. See Bischoff, *Latin Palaeography*, p. 97, n. 11.

be written as ‘bibimus’. Understandably, if a reader was unfamiliar with a text, this might cause confusion; ‘vivimus’ (we live) has quite different implications to ‘bibimus’ (we drink). In correcting the spelling of words in T4, the later users of the manuscript were ensuring its ease of use, presumably to avoid confusion and to aid in the correct delivery and understanding of the liturgy.

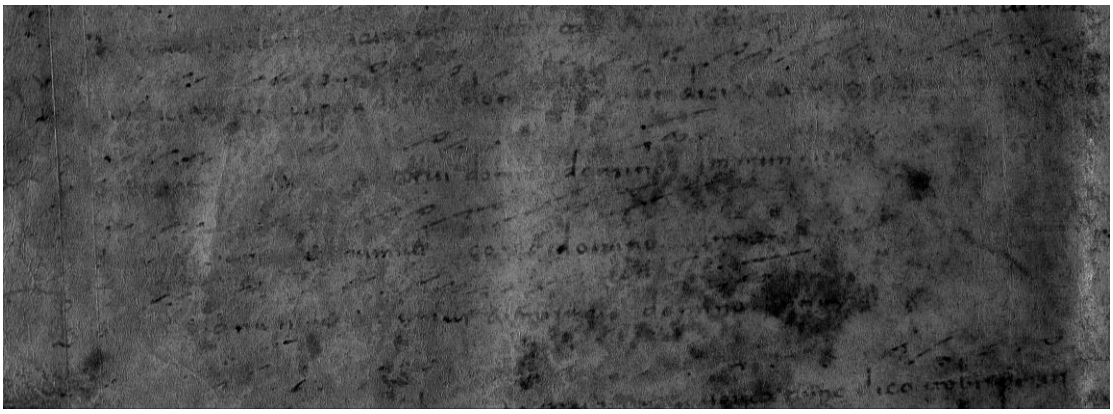
A large erasure on f. 171v presents a different reason for editing the manuscript. Found just above the relic list, the previous contents of this erasure are nearly invisible to the naked eye, and only slightly more visible with the help of photo editing software (Figure 1.5). After editing the image, I found that the folio, now seemingly blank save for the relic list, used to contain a series of benedictiones chants — perhaps a continuation of the list found on ff. 168v–170r. The removal of these chants from T4 likely suggests that they were no longer relevant, demonstrating liturgical change.

Figure 1.5: Benedictiones Chants, f. 171v

Original Image



Edited Image[76]



[76] I edited the original image using the GNU Image Manipulation Program.

Other changes to T4, such as the addition of the Athanasian Creed or the prayers for Saint Martin, also inform us about possible alterations to the liturgy, and even the needs of its practitioners. For example, f. 0v, which was originally left blank, had a reading from the Gospel of Saint John added to it.[77] According to Justo Pérez de Urbel, this reading was for the Saturday following Easter Sunday, which falls during the Ferial days preserved in the first 16 folios of the manuscript.[78] There are no readings included in the main section of T4 for this period, so the copying of this one may have been an attempt to record some of the necessary information for performing the liturgy on Easter Saturday.[79] This, along with the Martin prayers, Athanasian Creed, and hymn, suggests that T4 may have been updated to ensure it was useful for liturgical practice, perhaps with items that were not contained elsewhere in the manuscripts of the institution.

Non-liturgical additions can help to determine the institution where T4 was kept. For example, there are three additions to the manuscript that mention 'Santa Olalla' (Santa Eulalia): an addition on f. 163r ('este libro es de santa Olalla…'),[80] the relic list ('Estas son las reliquias que son en la eglesia de santa Olalla…'), and a note on f. 171v that documents a payment to 'Lucas Martínez clérigo desta eglesia de santa Olalla' from a carpenter.[81] Only the latter two of these contain a date, 1290 and 1398 respectively, and therefore demonstrate the presence of the manuscript in the parish of Santa Eulalia, Toledo, for at least a century.

Additions not only inform us about when and where the manuscript was written and/or used, but also by whom. On folios 54r and 115r there are notes written in Arabic that both appear to be similar.[82] The presence of Arabic in Old Hispanic liturgical manuscripts is not uncommon;[83] however, to my knowledge no other Old Hispanic manuscripts have additions as

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[77] Burriel remarked that it did not seem to be part of the same codex in Madrid, Biblioteca Nacional de España, 13054, f. 22. Janini believed it was originally left blank and the readings were later written by a scribe in the 13th century in *Liber missarum* (II), p. 11.

[78] 'Legendum die Sabbato Pasche', Justo Pérez de Urbel and Atilano Gonzáles Y Ruíz-Zorrilla, *Liber commicus: Tomo II* (Madrid: Consejo Superior de Investigaciones Científicas, Escuela de Estudios Medievales, 1955), p. 407.

[79] Mundó suggested that this addition, and those found on ff. 172–175v, were contemporaneous 13th-century additions that were added to the manuscript to correct the omissions by the principal copyist. Mundó, 'La datación', 1–25 (p. 11).

[80] This addition is latter added to the manuscript on a seemingly random folio and upside down. It is yet to be transcribed due to the difficulty reading the script.

[81] For a discussion of this note, see Burriel, BN 13054, f. 27v. See also Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 125.

[82] There are two other short Arabic interpolations in the left-hand margin of f. 97r. Burriel transcribed, but did not translate, the Arabic at the bottom of ff. 54r and 115r in Madrid, Biblioteca Nacional de España, 13048, f. 123; BN 13049, f. 265v; BN 13054, ff. 2–3.

[83] Some examples of Old Hispanic manuscripts with Arabic additions are T5 and T8.

substantial as those in T4. Simonet translated each of these inscriptions differently; on f. 54r he found the Arabic to read ليس من خط الناسخ ('this is not the writing of the copyist', Figure 1.6), while on f. 115r he translated it as 'for the calm expeditions of the ships'.[84] However, thanks to consultation with Arabic speakers, I believe that both Arabic additions have the same text as Simonet's interpretation of f. 54r, stating that 'this is not the writing of the copyist'.[85] Moreover, the additions only appear alongside the work of one of T4's scribes (whom I suggest is not the main scribe of the manuscript in Chapter 2), thus corroborating the former interpretation for both folios.[86] Perhaps this insertion was the text scribe noting their contribution to the manuscript, maybe to explain differences in the script, maybe to leave their mark on the manuscript, or perhaps even to flag which folios they had written so that they might receive appropriate payment.[87] As this addition only appears twice, yet the scribe responsible contributed to the manuscript on many more occasions, this last option seems unlikely. Alternatively, it could have been the main scribe of the manuscript (or indeed another person involved in the manuscript's production) adding similar information. Regardless of the text and purpose of the addition, and even who was responsible for writing it, the presence of Arabic is nonetheless important; it informs us that Arabic was spoken in the institution in which T4 was produced. It is likely that the addition was made in the native language of the scribe, as opposed to the Latin of the liturgy, as this would have been a more natural and familiar script for them to use for additions that did not have a liturgical function. This suggests that at least one of the scribes who was involved in the production of the manuscript was an Arabicised Christian (Mozarab).[88]

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[84] 'esto no es de la letra del copista' and 'para el sosiego de las expediciones de los barcos', respectively. Simonet, *Historia*, p. 76.

[85] With thanks to Cathrien Hoijinck and Alexander Hainy-Khaleeli for their expertise. Hainy-Khaleeli for identified that the final two words of the inscription on f. 54r are خَطّ ('ḵaṭṭ'), which has meanings such as 'drawing a line', 'writing', 'script' or 'calligraphy' and الناسخ ('al-nāsiḵ'), meaning 'the copyist'. This interpretation therefore aligns with Simonet's reading of f. 54r.

[86] Both occurrences of Arabic coincide with Text Hand 2. For more on the scribes of T4, see Chapter 2.

[87] On the presence of professional scribes adding marginalia to ensure they received the correct payment, see the blog post by Eric Kwakkel: 'Making Books for Profit in Medieval Times', *Medieval Fragments*, April 15th 2013 [accessed 11 May 2023], https://medievalfragments.wordpress.com/2013/04/15/making-books-for-profit-in-medieval-times/.

[88] For information about this term, see Simonet, *Historia*, pp. 4–9; Richard Hitchcock, *Mozarabs in Medieval and Early Modern Spain: Identities and Influences* (Aldershot: Ashgate, 2008), pp. ix–xx; Cyrille Aillet, *Les Mozarabes: Christianisme et arabisation en Péninsule Ibérique (IXe–XIIe siècle)* (Madrid: Casa de Velázquez, 2010), p. XVII; Aaron

Figure 1.6: Arabic Inscription, f. 54r

In medieval Toledo, the Mozarabic community was permitted to continue practising the Old Hispanic rite after the Roman rite became the official religious practice of Toledo in 1085.[89] However, there is also likely to have been a Mozarabic community in Toledo before 1085 while the city was under Muslim legislation, and Mozarabs can be found throughout Al-Andalus.[90] In this sense, the Arabic in T4 does not associate the manuscript with a particular time-period or locality; for example, it could have been brought to Toledo from the south with the migration of Mozarabic communities during the Almohad caliphate (12th–13th centuries), or it could have been written by indigenous Mozarabic communities in the city of Toledo.[91]

Falling out of Use

Not only do the additions help us to explore who used the manuscript, where, and to what end, they also help to inform us about the use of the manuscript as time continued. Some additions might suggest that at a certain moment, the manuscript no longer held liturgical significance; Rojo Carrillo suggests the addition made on April 10th 1398 (f. 171v), which documents that the clerk of Santa Eulalia, Lucas Martínez, received money from a carpenter, implies that T4 was no longer employed in the liturgy by this date, thus resulting in its use in secular matters.[92]

Michael Moreno, 'Arabicizing, Privileges, and Liturgy in Medieval Castilian Toledo: The Problems and Mutations of Mozarab Identification (1085–1436)' (unpublished doctoral thesis, University of California, 2012), pp. 1–5.

[89] Miquel dels Sants Gros i Pujol, 'Les six paroisses mozarabes de Tolède', *Cahiers de civilisation médiévale* 58 (2015), 387–93.

[90] See p. 8 for a summary of Mozarabic communities in Toledo.

[91] For more info about the migration of Mozarabic communities, see Gros i Pujol, 'Les six paroisses', 387–93. For evidence of Christians writing in Arabic in Toledo, see Witcombe, 'Maurice and the Mozarabic Charter', p. 235.

[92] Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 125; see also BN 13054, f. 27v. A further addition in a similar script (now erased and illegible) is also present on the folio.

Around a similar time, an incomplete addition was also made to f. 170r underneath the colophon, that reads: 'xxiii días de junio de mill ccccx años se perdió la flota de'.[93] Manual de Salazar, responsible for the 1775 index at the beginning of the manuscript, misinterpreted this inscription as referring to the discovery of the Americas, stating that it was a 'blunder' ('desatino') as 'at this time the Indias had not yet been discovered'.[94] Ángel Fernández Collado offered a more likely interpretation that this addition refers to the battle of La Rochelle, in which Castille defeated the English on the 23rd June 1372.[95] While this could suggest that the manuscript had fallen out of use, and therefore received seemingly irrelevant additions, in the martyrology Exeter, Cathedral Library, Ms 3518, Sarah Hamilton found that an addition commemorating the Battle of Stamford Bridge bears no relevance to the contents of the manuscript. Hamilton suggested that the inclusion of the addition does not necessarily indicate that the manuscript was no longer used, but rather that this addition was a means of the community at Exeter linking their own history to important national and historical events.[96] For T4, this could mean that the manuscript may have received this commemoration of a battle as a means of creating an authoritative link between the Old Hispanic manuscript and recent political occurrences.

The Present-Day Binding of T4

The present-day compilation of T4 can tell us about its lifespan, both during and after it was used to practise the Old Hispanic rite. At the end of the manuscript there is a bifolio from a *Liber Commicus* that now acts as a flyleaf. This bifolio contains readings for the Quotidian Sundays and votive offices.[97] It has been attributed to the parish of Santa Eulalia in the 11th century by Mundó; this seems unlikely as ongoing archaeological investigations reveal that the church of Santa Eulalia was not built until the mid-12th century.[98] The current binding of T4 is

[93] 'On the 23 day of June, in the year 1410, the fleet of … was lost'. The year is 1372 if using the Spanish era.

[94] This inscription is also mentioned by Burriel in BN 13049, f. 397.

[95] Ángel Fernández Collado, 'Los manuscritos litúrgicos Visigótico-Mozárabes de la Biblioteca Capitular de Toledo', in *Los Códices Visigóticos Litúrgicos de la Biblioteca Capitular de Toledo* (Toledo: Insituto Teológico San Ildefonso de Toledo, 2018), pp. 9–32.

[96] Sarah Hamilton, 'Liturgy as History: The Origins of the Exeter Martyrology', *Traditio* 74 (2019), 179–222 (pp. 216–17).

[97] On the different book types of the Old Hispanic rite, see Hornby and others, *Understanding the Old Hispanic Office*, pp. 43–76.

[98] https://www.latribunadetoledo.es/Noticia/ZEE9F1E20-0136-B758-A839D30B34D78A8A/202201/Santa-Eulalia-revela-su-verdadero-origen [accessed 6 October 2022].

from the sixteenth century, suggesting that at this time, or perhaps even before, there may have been a desire to collate material for this period of the Old Hispanic calendar in one location.

The 18th-century parchment index at the front of the manuscript reflects the renewed interest in the Old Hispanic liturgy around this time.[99] Manual de Salazar was commissioned to write this index in 1775 by Cardenal Lorenzana.[100] The aim of this work was to preserve Spain's cultural heritage. Interest in the Old Hispanic liturgy is also seen around 20 years earlier in the work of the Jesuit Andrés Marcos Burriel, who copied out T4 in full during his time working to document the manuscripts of the Toledo cathedral library.[101] At around the same time, Don Francisco de Palomares, a contemporary of Burriel, worked to create accurate palaeographical reconstructions of manuscripts. Bound into the front of the first manuscript of Burriel's edition (13048) is a sheet by Palomares, in which he recreates f. 168r of T4 by employing the Visigothic script and horizontal notation. Although Palomares's understanding of some of the neumes and the syllabification of chants is not always accurate (for example 'in Syon' on the first row of chant has an additional punctum on 'in' as opposed to on the correct syllable '<u>Sy</u>on'), his work nonetheless shows a renewed interest in not just the liturgical contents of the Old Hispanic rite, but also how it was visually recorded, and perhaps even how it sounded.[102] Therefore, by studying the codicology of T4 in its present state, we can learn about how the manuscript was initially conceived and by whom, and also how it continued to be used over the years, demonstrating periodic renewals of interest in the Old Hispanic liturgy.

Conclusions

My codicological analysis of T4 has helped to establish further information about when the manuscript was written and by whom, when it was used and by whom, and how it came to be in its present form today. Unlike previous attempts to date T4, I considered the manuscript's contents in the context of liturgical changes seen across Europe. My identification of the hymn

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[99] On this renewed interest, see Susan Boynton, *Silent Music: Medieval Song and the Construction of History in Eighteenth-Century Spain* (New York: Oxford University Press, 2011), pp. 21–50.

[100] Other similar indexes can be seen throughout the manuscripts associated with Toledo. See BN10, T5, T7, T8, T35-3. It is not clear whether Salazar was the sole writer of these indexes or whether some manuscripts have indexes by other contributors.

[101] At this time the manuscript had the shelf mark 30-3. In the two volumes that make up Burriel's edition (BN 13048; BN 13049), which were begun in 1753, Burriel makes a number of corrections to the manuscript and its flyleaves, notably corrections to the Latin orthography. For a shorter summary of the manuscript's contents, see BN 13054.

[102] Palomares also omits the majority of the additional notation (these are marks that were added around the main neumes on almost every syllable and will be explored in Chapter 5).

Aurora lucis rutilat allowed me to suggest that T4 may have been written in the 12th century. Furthermore, the manuscript was definitely written by 1290, when the relic list was added on f. 171v, and it may have fallen out of liturgical use within the next 100 years, at which point it was used to record legal matters and a naval victory.

Additions to the manuscript also helped me to determine who wrote and used the manuscript. The Arabic addition indicates that T4 was written in an environment where the Arabic language was spoken. This confirms that at least some of the practitioners of the Old Hispanic rite were likely to be Mozarabic. It further allows for the speculation that the manuscript could have been written in Toledo, where there was a Mozarabic community, or in an area of the peninsula that was predominantly Arabic speaking, possibly the south.

During the period of its use in liturgical practice the additions to the manuscript inform us that the liturgy was continually changing, with old verses or melodies being erased and current ones added. Like the orthographical corrections, these additions inform us that there was a concern for keeping T4 up to date with current liturgical practice and ensuring that the texts and chants were delivered clearly and correctly. Overall, studying the codicology of T4 has helped to situate the manuscript historically, both at the time of its production and during its lifespan. This study has shown that the Old Hispanic rite was not stagnant in its later stages but continued to change and adapt according to the needs of its practitioners.

Chapter 2: Scribes and Their Roles

By identifying the work of individual scribes within a manuscript, it is possible to gain a greater insight into both the people who wrote it and the context in which it was produced: the written traits of a scribe can enlighten us about their training, the content they wrote can inform us about their roles and knowledge, and the way in which multiple scribes worked together paints a picture of the circumstances of manuscript production. In this chapter I explore the text and music hands present in the original copying phase of Toledo, Cathedral Archive, MS 35-4 (T4). During this phase, the majority of the manuscript (ff. 1r–170v) was written. Numerous corrections were also subsequently made to the manuscript, although their number is too vast to discuss within this chapter.[1] Rather, I concern myself with how the different hands can act as a window into the context in which T4 was initially conceived.

My work builds on that of earlier scholars, such as José Janini and Anscari Mundó, who claimed that T4 was the product of just one scribe who was proficient in the liturgy.[2] The only evidence in support of this claim seems to be the colophon, in which Mundó interpreted the letter 'd' to be the beginning of a scribe's name, 'perhaps a D[ominicus]'.[3] Bernhard Bischoff, however, stated that it was common for several scribes to be involved in writing a manuscript, even if a colophon only explicitly names one.[4] To explore the possibility that T4 may have been written by more than one individual, I undertake the first study of scribal hands in the manuscript. I also build on previous scholarship about the identification of music hands (notators) in neumatic scripts, by offering the first palaeographical study of horizontal Old Hispanic notation.[5] Through my analysis, I demonstrate that Janini and Mundó underestimated

[1] See Chapter 1 for a discussion of these additions.

[2] Agustín Millares Carlo and Manuel C. Díaz y Díaz, *Corpus de códices visigóticos* (Las Palmas de Gran Canaria: Fundación de Enseñanza Superior a Distancia, 1999), pp. 192–93 (n. 322); José Janini, *Liber missarum de Toledo y libros místicos*, vol. II (Toledo: Instituto de Estudios visigótico-mozárabes, 1983), p. 10; José Janini, Ramón Ruiz Gonzálvez, and Anscario M. Mundó, *Catálogo de los manuscritos litúrgicos de la Catedral de Toledo* (Toledo: Diputación Provincial, 1977), p. 99 (n. 74); Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25 (p. 9).

[3] 'quizás un D[ominicus]', Mundó, 'La datación', 1–25 (p. 10).

[4] Bernhard Bischoff, *Latin Palaeography: Antiquity and the Middle Ages* (Cambridge: Cambridge University Press, 1990), p. 42.

[5] For examples of scribal identification in vertical Old Hispanic notation, see Elsa De Luca, 'A Methodology for Studying Old Hispanic Notation: Some Preliminary Thoughts', *Cantus Planus, Venice, Italy (28 July–1 August 2014)* (IMS Study Group, 2014), 19–40; Elsa De Luca and Océane Boudeau, 'Erreur, variante et correction : l'exemple du plain-chant médiéval', *Textus et Musica* 1 (2020); Emma Hornby and Rebecca Maloy, 'Notated Chant

the number of individuals who worked on T4. As I show there were at least four text and/or music scribes, each with a varying level of knowledge.

While I deal with palaeography in this chapter, studies of text script and musical notation require slightly different approaches. As such, the following discussion is divided into two parts. In the first, I analyse the text hands in T4. Here, I use a methodology common in studies of medieval scripts, examining the shape of specific letterforms, ligatures, nexuses, and abbreviations, to identify consistent differences between hands.[6] After discussing the traits of the text hands in T4, I then explore each scribe's personal role in the production of the manuscript, considering what this can tell us about their knowledge of Old Hispanic practices and, more broadly, how the scribes' work can inform us about the institution in which they worked. The second part of this chapter concerns the notators of T4. Building on the work of Elsa De Luca, who identified specific neumes that act as markers of scribal identity in vertical Old Hispanic notation, I explore which traits in horizontal notation are useful for identifying the various notators of T4.[7] Following my identification of the notators, I then discuss their responsibilities, their knowledge and, most importantly, their interaction with the text hands. This evidence demonstrates that some of the people who wrote T4 were not only competent scribes, but also competent practitioners of the Old Hispanic chants and texts.

in the Opening Folios of the León Antiphoner' in *Les folios introductifs de l'Antiphonaire de León (Archivo de la Catedral de León, ms 8)*, ed. by Thomas Deswarte (Turnhout: Brepols, 2023), pp. 149–79.

[6] For a recent exemplary article that uses this methodology in the analysis of Visigothic minuscule, see Ainoa Castro Correa, 'The Scribes of the Silos Apocalypse (London, British Library, Add. MS 11695) and the Scriptorium of Silos in the Late Eleventh Century', *Speculum* 95 (2020), 321–70.

[7] De Luca and Boudeau, 'Erreur'; De Luca, 'A Methodology', 19–40.

Part 1: Text Hands

Previous palaeographical studies of medieval manuscripts have resulted in a robust framework for the study of their scripts.[8] In this framework, which is found in broad discussions of script types (such as Caroline minuscule) and in identifications of scribes within one manuscript, scholars describe the forms that were used.[9] The forms that commonly vary between scribes are letters, ligatures (the joining of two letters without changing their morphology), punctuation, abbreviation signs, and in discussions of Iberian scripts, nexuses (the joining of two letters where at least one changes its morphology).[10] For identifying individuals within a manuscript, Malcolm Parkes noted that each scribe had their own set of 'habits'.[11] In Visigothic script, this method of identifying scribes by analysing their habits has recently been used by Ainoa Castro Correa in her 2020 work on the scribes of the Silos Apocalypse.[12] This article is particularly influential on my work as Castro Correa also breaks new ground by using her identifications to explore the role(s) of each individual within the manuscript.[13]

To identify the habits, and therefore scribes, present in T4, I first had to consider which elements on a folio could, with a degree of certainty, be ascribed to the original text scribe. I determined the elements to fall into two categories: 1) those which were highly likely to have been written by the main scribe of a folio, and 2) those which could have been written later by another scribe (Table 2.1). I consider the 'main text scribe' to be the scribe who wrote the majority of the prose on the folio, which typically consists of the prayers and readings. Their work would encompass the letterforms, ligatures, nexuses, and abbreviation signs within the prose, and the layout of the text on a folio. Within their work there could also be common orthographical choices and frequently occurring errors. Elements that are outside of the prayers

[8] For general studies that use this framework to explore Visigothic script, see Agustín Millares Carlo and José Manuel Ruiz Asencio, *Tratado de paleografía española*, vol. I (Madrid: Espasa-Calpe, 1983); Zacarías García Villada, *Paleografía española* (Madrid: Rev. de Filología Española, 1923).

[9] For examples of this method of categorisation applied to script types, see Bischoff, *Latin Palaeography*. For examples that use this methodology to identify scribes, see Susan Rankin, 'Ego itaque Notker scripsi', *Revue Bénédictine* 101 (1991), 268–98; Castro Correa, 'The Scribes', 321–70.

[10] On the use of the terms ligature and nexus in Visigothic script studies, see Castro Correa, 'The Scribes', 321–70.

[11] M. B. Parkes, *Their Hands Before Our Eyes: A Closer Look at Scribes* (Aldershot: Ashgate, 2008), p. xi.

[12] Castro Correa, 'The Scribes', 321–70.

[13] For a case study that also uses these methods, see Rankin, '"Ego itaque Notker"', 268–98.

or readings could have been written by another scribe at a different stage. For example, there is written evidence that some medieval scriptoria had individuals whose role it was to complete the rubrics, or the initials, or the miniatures (or a combination of all three).[14] Musical notation could also have been written by a separate individual, either at the time of the original production of a manuscript, or at a later date when the need arose to notate the chant.[15] Finally, additions and corrections were often made by a later user of the manuscript; I found that sometimes punctuation was added by a later hand and sometimes by the main text scribe, hence its presence in both categories. In the following analysis, I define text hands through the traits that can reliably be ascribed to the main text scribe, with the other elements being used, where relevant, to support this argument and to explore the responsibilities and roles of the text hands.

Table 2.1: Elements on a Folio

Elements that were:	
1. The work of the main text scribe	**2. Possibly the work of another scribe at a later stage**
Any text, letterforms, ligatures, nexuses, abbreviation signs and their use in the main prose of the folio	Any text, letterforms, ligatures, nexuses, abbreviations signs and their use in the smaller module used for chant texts
Orthography in the main prose of the folio	Orthography in chant texts
Errors in the main prose of the folio	Additions and corrections
Punctuation[16]	Punctuation
Layout and spacing of items on the folio	
	Rubrics
	Initials (especially decorated initials)
	Miniatures
	Musical notation

[14] Bischoff, *Latin Palaeography*, p. 42.

[15] On the addition of musical notation to manuscripts after they were written, see Susan Rankin, 'From Memory to Record: Musical Notations in Manuscripts from Exeter', *Anglo-Saxon England* 13 (1984), 97–112 (p. 99). For Old Hispanic manuscripts, see Hornby, Jones, and Wride, 'Scribal Identity'; Rebecca Maloy and Emily Wride, 'Why Write Music? Scribes and Partial Musical Notation in Toledo 35.6' (forthcoming).

[16] As punctuation was sometimes added by the main scribe of the folio and sometimes by a later hand, I did not initially use punctuation to help to identify scribes. Rather, I took it into consideration after having identified the stints of each scribe. This subsequently allowed me to determine how certain scribes wrote particular punctuation signs.

Text Hand 1[17]

The first hand we encounter in the manuscript on f. 1r is Text Hand 1 (see Plate 1 for an example of their work).[18] Beginning the folio with the small chant text and continuing with the subsequent hymn in a larger text, this hand quickly demonstrated their command of the Visigothic script by writing in a number of sizes (modules).[19] They were responsible for writing the majority of the manuscript and their work appears on all but seven folios (see Table 2.2). Some basic elements of their writing also show a high level of scribal competency. For example, one of the most characteristic features of this hand is the ascenders: these are clubbed (meaning they are thicker at the top than the bottom), which suggests the scribe used two pen strokes that were meticulously joined together.[20] Similarly, this hand carefully created variation in their descenders by reducing the pressure of the pen towards the bottom of the stroke, creating a line that thins and often tapers to a fine point.

a) Minuscule Letters

Text Hand 1 used a bounded range of letterforms, all of which were common to Visigothic minuscule (Figure 2.1).[21] The letters are usually regular in size and proportion, showing control in this hand's work. To aid in later comparisons, a few forms are worth mentioning: *a* comprises two strokes that are parallel to one another; the top of the letter *e* is slightly higher than the top of the text and the loop nearly always closes; *h* is vertical and both minim strokes are approximately parallel; *m* and *n* are often thicker at the top of the curve and thinner on the minim strokes. These letters also have a serif at the end of the final minim stroke; *r* joins to many letters and often has a small bump on the top of the letter or, in a number of

[17] In my initial analysis I did not assume that the chant texts were written by Text Hand 1, but rather I confirmed this after identifying the traits of this hand. For an introduction on how scribes used different sizes of script for spoken and sung text, see John Haines, 'The Origins of the Musical Staff', *Musical Quarterly* XCI (2008), 327–78 (pp. 340–42).

[18] In the following discussion, I use numbers for text hands (1, 2, 3) and letters for notators (A, B, C). Although I always employ the term 'text hand' or 'notator' in my description, this aims to aid the reader in a clear distinction.

[19] Throughout this thesis I use the pronouns 'they' and 'them' to refer to the scribes (as opposed to 'he' or 'she'). This is because we have no evidence for where T4 was produced, or the balance of gender in that environment. On the continued use of the Visigothic script in Toledo, see Lorenzo Martínez Ángel, 'Pervivencia de la escritura visigótica en la comunidad mozárabe de Toledo (con especial referencia a las parroquias de las Santas Justa y Rufina y Santa Eulalia)', *Anales Toledanos* 43 (2014), 9–15.

[20] For information about the how clubbed ascenders were written, see Claude Mediavilla, *Calligraphy: From Calligraphy to Abstract Painting*, trans. by Alan Marshall (Wommelgem: Scirpus Publications, 1996).

[21] For the alphabets of Text Hands 1, 2, and 3 in a comparative layout, see Appendix 2.

instances, a small line; *u* is parallel in both of its vertical strokes; the bottom left-hand stroke of *x* trails below the baseline and tends to curve downwards.

b) Ligatures, Nexuses, and Abbreviations

There are several ligatures and nexuses used in the writing stints of Hand 1. While the ligatures between letters are quite similar across all hands in T4, the nexuses take slightly different shapes. The nexuses commonly used by Hand 1 are: at the end of a line *it* sometimes joins to form a shape similar to a capital *T* with a looped left-hand side; *t* sometimes joins with an *i* that is lengthened below the line for assibilated sounds, as in 'resurrectio' (in this example, assibilated syllables have an 's' or 'z' sound between the *t* and *i*); *te* or *tr* sometimes join, changing the shape of the *t* into a line with two loops along its left-hand side (giving an appearance similar to a *B* mirrored along its vertical edge); *o* and *r* can be joined at the end of a word (the *r*-rotunda was used in these instances). This nexus normally also has a vertical line through the *r* to indicate -*orum*.

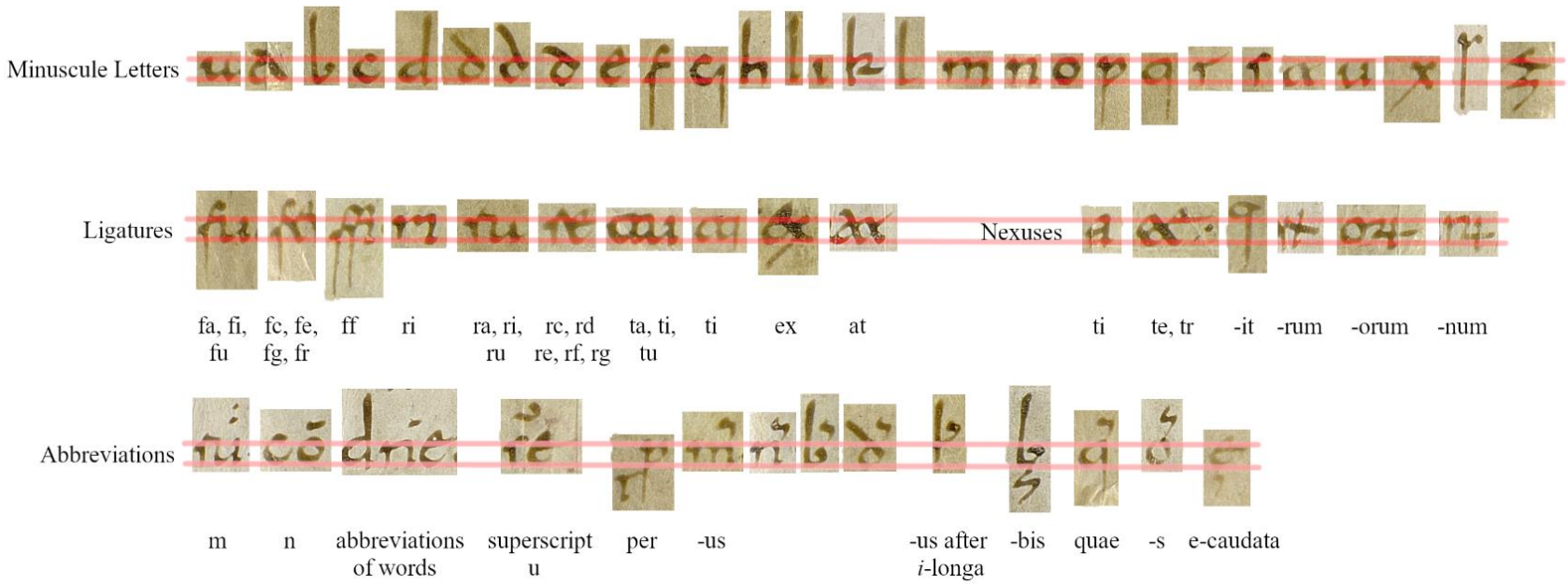
Similarly, there are several abbreviation signs: abbreviations of the letter *m* are marked by a short horizontal line with a dot above, while abbreviations of the letter *n* or whole words are marked by a single horizontal line;[22] the Visigothic abbreviation for 'per' is present;[23] -*um* is abbreviated after *r* at the end of a line with and extended bar intersected by a vertical line; the superscript letter *u* is present; -*us* is signified with a small *s*-like shape above and to the right of *b, m, n, p,* uncial *d,* or *i*-longa; the same also occurs after *q* for 'que'; -*is* is indicated with an *s*-like shape under the letter *b* or *l*; an *e*-caudata is present (an *s*-like shape similar to that used for -*us* is placed under the letter *e* in place of *ae*).

[22] For a discussion of the abbreviations used for *m* and *n* in Visigothic script, see Charles Upson Clark, *Collectanea Hispanica* (Paris: Champion, 1920), pp. 80–81.

[23] For discussions on the use of the Visigothic and Continental abbreviations for 'per' in Southern sources see: Carmen del Camino Martínez, 'La escritura visigótica de los centros mozárabes en su periodo primitivo', in *La escritura visigótica en la Península Ibérica: nuevas aportaciones: jornadas internacionales,* ed. by Jesús Alturo i Perucho, Miquel Torras i Cortina, and Ainoa Castro Correa (Bellaterra, Cerdanyola del Vallès: Universitat Autònoma de Barcelona, Servei de Publicacions, 2012), pp. 115–44 (p. 138); Manuel C. Díaz y Díaz, *Manuscritos visigóticos del sur de la península: ensayo de distribución regional* (Sevilla: Secretariado de Publicaciones de la Universidad, 1995), p. 186.

Figure 2.1: Text Hand 1 Alphabet

The red line represents the minim height (the height of the vertical strokes used in letters such as *i*, *m*, and *n*)



Text Hand 2

When the work of Text Hand 2 begins on folio 4v, several general characteristics make it clear that a different scribe was at work (for an example of their work, see Plate 2). They wrote on thirty-four of T4's 170 folios, significantly fewer than Text Hand 1's contribution to 163 folios (see Table 2.2). This hand seemed to be less precise than Text Hand 1. For example, when writing Text Hand 2 tended to deviate from the ruled line, beginning some letters above and some letters below it, while Text Hand 1 tended to write neatly along it with the bottom of a minim stroke resting on the line. There is also less consistency in the letterforms of Text Hand 2 than Text Hand 1; this is particularly clear in the height of the ascenders, such as the ascender for an upright *d*, which is often slightly taller than that of other letters. Unlike in the work of Text Hand 1, ascenders tend to be a more consistent thickness throughout, without a well-defined club. Descenders can also vary quite significantly in length, with the descender of *q* tending to be shorter than that of *p*. The descenders of Text Hand 2 are slightly thinner than the ascenders but do not tend to taper as they do in Text Hand 1.

a) Minuscule Letters

Although also using the Visigothic script, the letterforms used by Text Hand 2 are sometimes different to those of Text Hand 1 (Figure 2.2. For a direct comparison of the hands see Appendix 2): unlike Text Hand 1, the two stokes of *a* are not always parallel (the second may be angled to create a wide letter); the top of *e* is slightly higher than the top of the text but, unlike Text Hand 1, the loop does not always close, notably in ligatures; the right-hand stroke of the letter *h* is not always parallel with the left and can curve inwards; *m* and *n* do not vary in thickness, generally being consistent throughout. Unlike Text Hand 1 who always wrote a serif at the end of the final minim stroke of these letters, the serif is only sometimes present; *r* joins to many letters and does not often feature a small bump or line like in Text Hand 1; the left-hand stroke of *u* sometimes leans to the left as opposed to being vertical; the bottom left-hand stroke of *x* trails below the line and tends to curve upwards rather than downwards. On f. 134r there is also a letterform for *a* that is unique to Text Hand 2 in the word 'culparum' (see Figure 2.2 for an example of this shape).[24]

[24] This letterform is found various times throughout the other stints of this scribe. It is not present in the folios that were written by Hand 1, nor in the stints of Hand 3.

b) Ligatures, Nexuses, and Abbreviations

These two text hands have a similar range of ligatures and nexuses as each other, albeit with some of the nexuses having a slightly altered appearance. In Text Hand 2's writing, the nexus for *it* is shorter and wider than that of Text Hand 1; the *ti* nexus on assibilated syllables is rarely present and when it occurs it takes on a different form to Hand 1. The *t* resembles a mirrored *B*, while the *i* resembles a modern-day *j*. In a randomly chosen sample (ff. 133v–134r), there are 31 instances where Text Hand 2 could have used a *ti* nexus, yet they only did so on one occasion. In comparison, in a sample taken from ff. 70v to 71r, Text Hand 1 used a *ti* nexus in 95% of possible occasions;[25] *te* and *tr* are regularly joined. Text Hand 2 also used an unusual nexus, for example on f. 134r in 'crimine', where the *r* and *i* are joined to form an *rj* shape (*r* and *i* are normally joined by a simple ligature in both hands). A similar shape also happens with *ni*; *-or* at the end of a word and line is sometimes written as a nexus. This is then normally combined with a vertical line to indicate of *-orum*.

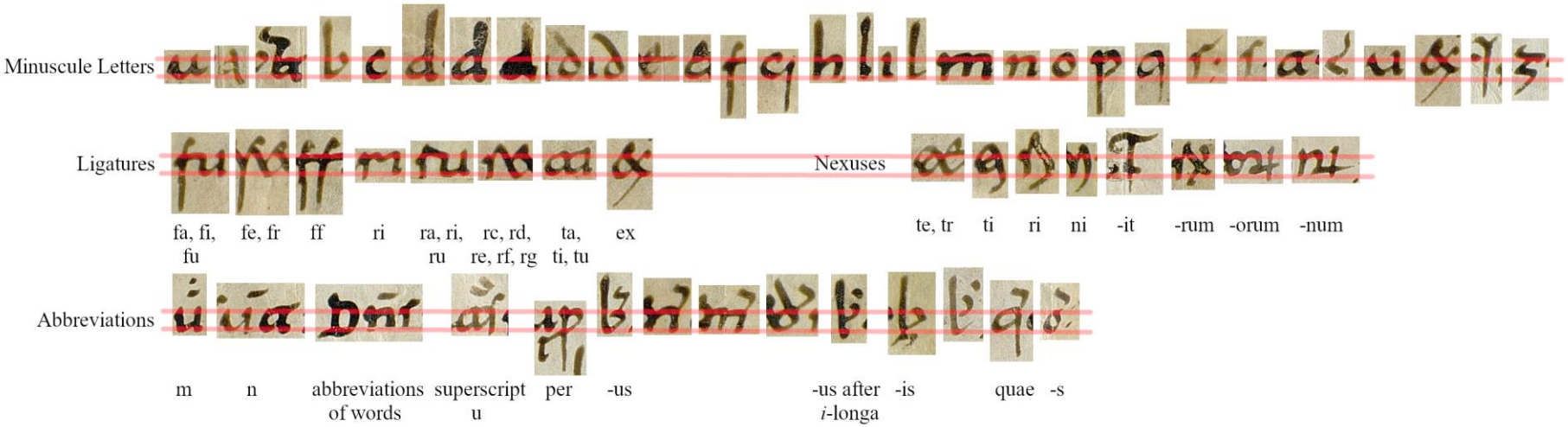
Abbreviations for *m* and *n* are used in the same contexts as in Text Hand 1, although the short line used for the abbreviation of *n* in Text Hand 2's script tends to be longer and flatter. This line is also used to abbreviate words, the spellings of which do not differ from Text Hand 1. On occasion, Text Hand 2 additionally used this line to abbreviate vowels, such as the *e* in 'meam' on f. 134r. The Visigothic abbreviation for 'per' is also used, although the wavy line at the left-hand end of the loop is generally more vertical in Text Hand 2 than Text Hand 1; *-um* after *-r* or *-or* is abbreviated using the same technique as Text Hand 1 but the bar of the *r* is diagonal; *-um* is also abbreviated after *n* using a horizontal line extending from the final minim stroke of the *n* and a horizontal line intersecting it; a superscript *u* is sometimes present after a *q* or in words with ending *-mur*/*-tur*; unlike in Text Hand 1 a 'superscript' *i* and *o* are sometimes used. The infrequent use of these forms suggests that Text Hand 2 may have been adding a forgotten letter, rather than using a genuine superscript; *-us* is represented by an *s*-like shape to the right of *b, m,* and *n,* and unlike in Text Hand 1, it is also used after *i, o* and *u* as an abbreviation for a single *s*; the same sign is also present after *q* for 'que'; after an *i*-longa, *-us* is represented by a short upwards curve and a dot, as opposed to the *s*-like shape in Text Hand 1;[26] *-bis* can be written by placing an *s*-like shape under the letter *b*; an *e*-caudata is not used.

[25] On 58 out of 61 occasions.

[26] This shape, often referred to as a comma in palaeographical descriptions of texts, has typically been associated with more archaic hands, although I note that it is also found in the later tradition B manuscripts. Both del Camino Martínez and Díaz y Díaz similarly note that its use is not indicative of the age of a manuscript. Del Camino Martínez, 'La escritura visigótica', p. 137; Díaz y Díaz, *Manuscritos visigóticos del sur*, p. 186.

Figure 2.2: Text Hand 2 Alphabet

The red lines, included for comparison, represent the average minim stroke height Hand 1

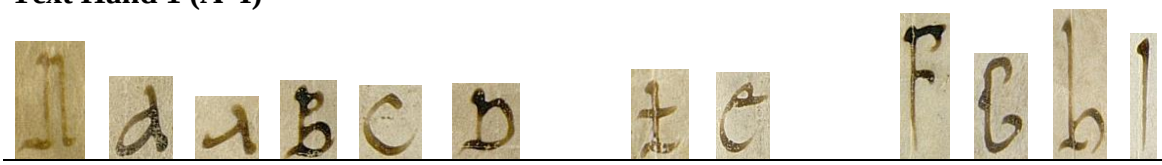


c) Majuscule Letters

Some of the most distinctive characteristics of each hand are revealed through a comparison of their majuscule letters (Figure 2.3). For example, the *E* of Text Hands 1 and 2 has two forms, square and rounded. The rounded version ends with a distinctive hook at the end of the crossbar in Text Hand 2, while in Text Hand 1 it tends to curve upwards slightly; *N* is one of the most characteristic features of Text Hand 2 as it commonly has a horizontal crossbar (as opposed to a diagonal one like that seen in Text Hand 1). When a diagonal bar is used it often begins lower on the left-hand stroke than in Text Hand 1; *O* sometimes has a dot in its centre, which is rarely present in Text Hand 1; *S* is quite tall in Text Hand 2 while in Text Hand 1's writing it is likely to be shorter and wider; generally, *T* in Text Hand 2 has a smaller curve descending from the left-hand side of the bar than in Text Hand 1; both hands used two forms of *U* and *V* interchangeably (rounded and angular). The angular form of the *U* in Text Hand 2 can sometimes end with a short horizontal stroke. These characteristics, in combination with the different nexuses, ligatures, and letterforms, help to distinguish between Text Hands 1 and 2.

Figure 2.3: Examples of Majuscule Letters in Text Hands 1 and 2

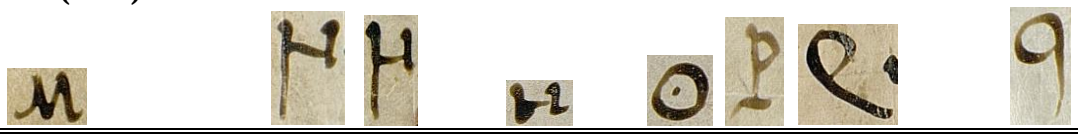
Text Hand 1 (A–I)



Text Hand 2 (A–I)

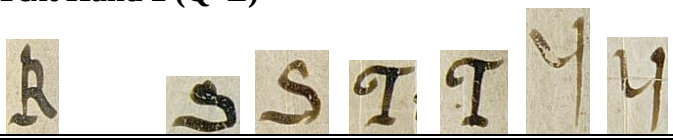
Text Hand 1 (K–P)

Text Hand 2 (K–P)



Text Hand 1 (Q–Z)

Text Hand 2 (Q–Z)



Text Hand 3

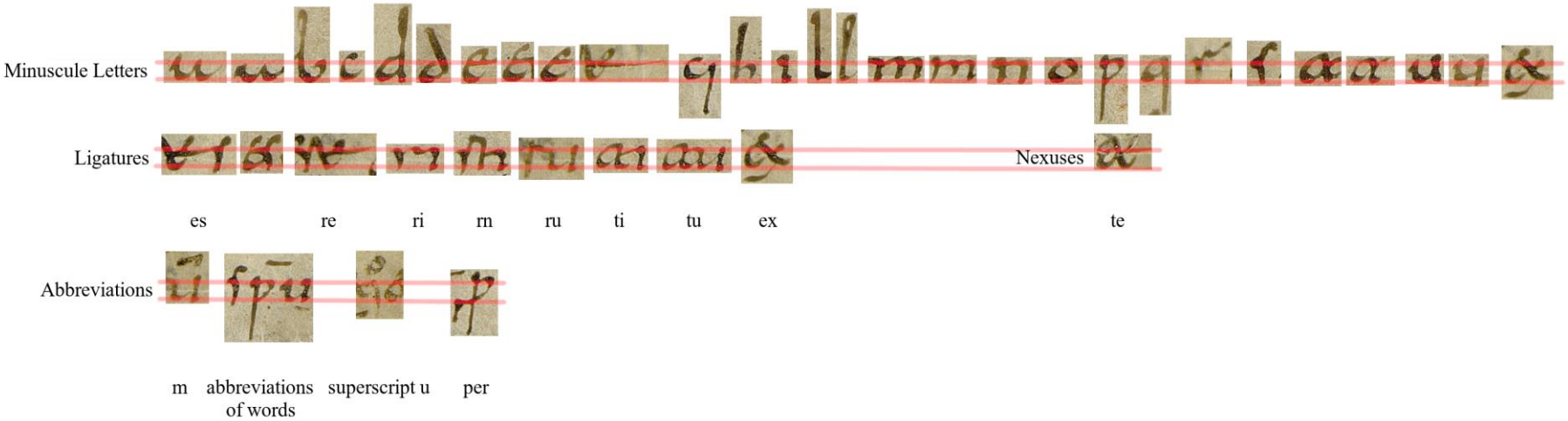
The final text hand in the initial copying phase of T4, Text Hand 3, equally has clearly identifiable traits, despite only appearing twice in the manuscript (ff. 118r and 130r; Plate 3a and b). Due to the brevity of their stints — each is just three lines long — there is only a small amount of data to compare with Text Hands 1 and 2, which nonetheless provides several points of comparison. One notable characteristic is the comparatively larger size of each letter than in Text Hands 1 and 2; this results in fewer letters per line. The overall proportion of the letters is shorter and wider than in other hands; for example, the *m* in 'equimini' (f. 118r, Plate 3a) is approximately 20% wider than the average 'm' of Text Hand 1.[27] Text Hand 3 does not seem to have the same mastery of the pen as Text Hand 1; in ascenders, when trying to create a clubbed shape at the top of the letter, they often did not place the pen strokes close to one another, leaving a small gap. Moreover, Text Hand 3 strayed from the dry point guideline, much more so than Text Hand 2, with letters tending to begin significantly below this line.

For such short stints there is also a lot of variation between the letterforms (Figure 2.4). The letter *a* occurs nine times across the two stints and the minim strokes have different proportions and heights in almost every occurrence. In some instances, the *a* is very short and wide, while in others it is taller; the letter *e* is distinctive when compared to the other scribal hands: the top of the loop is very open in 13 out of the 20 occurrences, and in 9 cases the top of the loop shows no intent to join the central bar, instead rising upwards and to the right. This differs from Text Hand 1 who almost always joined the loop and Text Hand 2 who did not always join the loop but did tend to curve back towards the central bar; *h* has no serifs and the right-hand stroke curves towards the left, unlike Text Hand 1; *m* and *n* are generally a consistent thickness throughout. They sometimes have a small serif at the end of the final minim stroke;

[27] This was calculated by measuring the width of all the 'm's across the work of Text Hand 3 and taking an average width. I then compared this to the average width of 15 'm's taken from across the work of Text Hand 1.

Figure 2.4: Text Hand 3 Alphabet

The red lines, included for comparison, represent the average minim stroke height in Hand 1



r joins to *n*, *u*, and *e*. When joining to *n*, it is joined above the top of the minim stroke, creating irregularity in the text height; the left-hand stroke of *u* is parallel to the right, unlike Text Hand 2; the bottom left-hand stroke of *x* trails below the line and curves strongly upwards. Despite Text Hand 3 appearing only very briefly in this manuscript, the irregularity, letterforms, proportions and spacing all act together to confirm this as a separate hand, distinct from Text Hands 1 and 2.

Scribal Stints and Responsibilities

Having identified the traits of each hand, it is possible to assess how these individuals worked together to compile the manuscript. The length of each stint and the frequency with which each scribe recurs in the manuscript can shed light on the roles, responsibility, and knowledge of each contributor, and can act as a window into the environment in which the manuscript was produced.

Identifying the stints of each hand is the first step in this process (Table 2.2). The first half of the manuscript was predominantly written by Text Hand 1; this hand started on f. 1r and wrote the majority of the first 81 folios in several long stints (the longest being some 47 folios) before interchanging more frequently with Text Hand 2 during the quotidian materials (f. 81v onwards). As mentioned above, Text Hand 3 only wrote only a few lines at a time on just two occasions.

Text Hand 1's contributions suggest that this scribe was the main scribe of the manuscript. Parkes noted that the first stint of a manuscript might often have been completed by a 'master' who, in beginning the manuscript, provided a model for its layout and style.[28] Not only does Text Hand 1 begin T4, but also in the first section of the manuscript (ff. 1r–81r) they wrote the material for every type of service included in T4 at least once (vespers, matutinum, mass, and terce), demonstrating their proficiency in writing all types of readings, prayers, and chant texts.[29] In the second half of the manuscript the scribe's intimate knowledge of the liturgy can be observed in the quotidian Sundays; throughout these 20 formulaic days, Text Hand 1 increasingly omitted more and more ordinary chants as the weeks progressed — seemingly assuming that by the seventeenth Sunday, the user of the manuscript would be familiar with how to perform the opening of matutinum, as this was the same every week.[30]

[28] Parkes, *Their Hands*, p. 9.

[29] Anscari Mundó also suggests that the scribe 'D[ominicus]' 'era persona avezada a su oficio y muy ducho en seguir las tradiciones antiguas' in, 'La datación', 1–25 (p. 10).

[30] Hand 1 is responsible for the folios on which these elements are omitted.

This not only demonstrates the hand's liturgical and scribal proficiency, but also a knowledge of the intended manuscript users. As Text Hand 1 wrote the final liturgical and chant texts of the manuscript, they also likely wrote the colophon at the end of the manuscript (although the use of Visigothic cursive script for the colophon makes this difficult to establish). This further suggests that this hand may have had a position of authority in making the book, as well as being the main scribe.

Table 2.2: Scribal Stints in T4

* represents where a scribe is only responsible for part of a folio
$^{+}$ represents where a scribe began their stint at the start of a new office or item (e.g., the scribe began writing at the start of a reading)

Text Hand 1	Text Hand 2	Text Hand 3
1r^{+}–4r		
	4v–5v*	
5v^{+}–53v		
	54r	
54v–76v*		
	76v*	
77r–79r*		
	79r*–79v	
80r–104r		
	104v*	
104v*$^{+}$–105r		
	105r*	
105v–109v		
	110r	
110v–111r*		
	111r*–112r*	
112r*$^{+}$–112v*		
	112v*	
112v*$^{+}$–114v		
	115r	
115v–117v		
		118r*$^{+}$
118r*–118v		
	119r*	
119r*$^{+}$–122v*		
	122v*$^{+}$	
123r–125r*		
	125r*–126v	
127r–127v		
	128r*	
128r*–129v		
		130r*

130r*$^{+}$–133r		
	133v–136r	
136v^{+}–137r		
	137v	
138r		
	138v	
139r–140v*		
	140v*$^{+}$	
140v*$^{+}$–142v		
	143r^{+}–143v*	
143v*$^{+}$–144v		
	145r–147r	
147v–149v		
	150r–151r*	
151r*		
	151v	
152r^{+}–152v		
	153r–154r*	
154r*$^{+}$–154v		
	155r	
155v–160v*		
	160v*–161r	
161v–170r		

Conversely, Text Hand 2 only wrote a few folios prior to quotidian time. These folios only contain readings and prayers, and do not contain any chant or musical notation. The brevity of these stints could stem from a number of practical reasons; although the scribe was present early on in the production of the manuscript (making their first appearance on f. 4v), perhaps they were not available to write longer stints, or they were not as proficient as Text Hand 1 in either the liturgy or in writing practice. During quotidian time, however, Text Hand 2 wrote more frequently and in regular alternation with Text Hand 1. Here, Text Hand 2 had the responsibility of writing the text for a few chants, although they predominantly wrote readings and prayers. Typically, these readings and prayers are during the Mass. This is perhaps unsurprising due to the greater volume of textual material during this service and does not necessarily offer insight into the scribe's knowledge concerning liturgical practice or their role within the institution. However, as will be demonstrated in the discussion of notators below, a consideration of the material written by Text Hand 2 suggests that they were indeed a less confident scribe than Text Hand 1.

As noted above, Text Hand 3 wrote only twice, for three lines only on each occasion. This hand started at the top of a new folio, writing a few words of a reading each time. Unlike Text Hands 1 and 2, Text Hand 3 was not responsible for any chant text. The appearance of

Text Hand 3 at the top of a folio may suggest that this hand was given the responsibility of starting the folio, perhaps after having prepared the page, while the scribe responsible for the remainder of the text on the folio was not available; however, their appearance does not correlate with the beginning of new quires, suggesting that they were not responsible for making or laying out the booklets. The paucity of text written by Text Hand 3 could imply that this scribe was not considered competent to write larger amounts of material, despite having a basic understanding of the Visigothic script. Regardless, the contrast in the length of stints in T4 helps to shed light onto their personal knowledge, capabilities, and experience; Text Hand 1 was the more experienced scribe, and probably the 'master' scribe of the manuscript, Text Hand 2 had less responsibility, and Text Hand 3 had an even more limited role.

The roles and knowledge of Text Hands 1 and 2 can be further explored by considering the elements that they were responsible for during their stints. For example, Text Hand 1, who began the manuscript, also began every new office; the frequent recurrence of this scribe at important moments suggests that part of their role might have been to ensure that there was a consistent layout and script. Text Hand 1 also tended to start a new folio or, when beginning part way through a folio, tended to commence at a logical point (for example, the start of a new item or office). There are only two instances where Text Hand 1 started midway through a folio and not at a new item, beginning halfway through Mass prayers (ff. 128r and 151r). By contrast, Text Hand 2 often started halfway through a folio, in the middle of a reading or prayer, perhaps suggesting they were simply carrying on from the work of Text Hand 1 when required.

Despite the apparent seniority of Text Hand 1, there is no evidence that they corrected the work of Text Hand 2. In fact, during their stints Text Hand 2 had equal amounts of responsibility as Text Hand 1; a single scribe was almost always responsible for all items on the folio, including the rubrics. These rubrics, whether cuing the start of a new item or office, usually display the same letterforms as the main text hand of that folio, thereby indicating that the text and rubrics within one stint were written by the same person. Both Text Hands 1 and 2 were responsible for smaller rubrics (e.g., the cue for a chant or a reading) and larger rubrics (like those found at the start of a new office) during their stints.[31] This suggests that in the

[31] For an example of a larger rubric by Text Hand 1, see the rubric for the 7th quotidian Sunday (f. 116v). By way of contrast, the rubric for the 6th quotidian Sunday (f. 112r) was written by Text Hand 2 and has the N with a horizontal bar and an abbreviation for Vespers unique to this scribe. Text Hand 2 also tended to use the abbreviation 'DNCO' for 'dominico' while Hand 1 used 'DNICO', often nesting the 'I' under the right-hand stroke of the 'N'.

production environment of T4 there was no designated rubricator and that each scribe was expected to be competent in all elements on the folio.

Previously, I demonstrated that Text Hand 2 had a more limited role in manuscript production. Considering the layout of their work suggests that their limited role may have resulted from them being less proficient at writing than Text Hand 1. For example, folio 133v, which was written exclusively by Text Hand 2, does not follow the normal layout of the manuscript. Almost all music in T4 was written across the full width of the writing space, spanning both columns (e.g., Plate 1). The exceptions to this are found in very short, simple chants such as the canticle antiphons (Text Hand 1, ff. 14r–15v).[32] The format shown in Plate 1 requires detailed planning so that where a chant occurs part way through a folio, the preceding text fits into the two columns above, without leaving any blank space. This means that the scribe needed to be able to accurately approximate how many lines they required to complete a text. Despite having longer chants such as a responsory, on f. 133v Text Hand 2 wrote in two continuous columns, with chants only spanning the width of a single column (Plate 2). This suggests that Text Hand 2 did not plan the layout of the folio in the typical style of T4, further suggesting unfamiliarity with Old Hispanic conventions or a lack of experience.

The Production Environment

The duration of the stints throughout T4 can also provide insight into the environment in which it was produced. In the second half of the manuscript, there is a clear example of what Jaakko Tahkokallio called ‘continuous collaboration’: that is where multiple scribes frequently changed back and forth within one manuscript with the same scribe(s) appearing several times.[33] Tahkokallio suggested continuous collaboration helped to increase the speed of production, with one scribe being able to work while the other was unavailable. He further suggested that this method of manuscript production would have been difficult to organise unless scribes worked in the same physical setting — it is found most commonly in manuscripts from individual households or ecclesiastical institutions. In the case of T4, it is more likely to

[32] The other exception to this is the biblical verse following a hymn on f. 45v.

[33] This is one of three methods of manuscript copying identified by Tahkokallio. The other two are: quire-by-quire copying, where scribes were responsible for whole booklets of a manuscript and the labour was divided so that multiple quires could be copied by several scribes simultaneously; and sequential collaboration, where a few scribes wrote longer stints within a manuscript. They alternated and recurred less frequently than in manuscripts that preserve evidence of continuous collaboration. Jaakko Tahkokallio, 'Counting Scribes: Quantifying the Secularization of Medieval Book Production', *Book History* 22 (2019), 1–42 (p. 8).

have been written in an ecclesiastical institution than a household, due to the liturgical nature of the source.[34]

In terms of the specific points at which the hands change, the layout of T4 also adheres to Tahkokallio's definition of continuous collaboration (see Table 2.2). There is no apparent correlation between quiring scribal work patterns and hands could start at any point on a folio, even halfway through a text or prayer.[35] Changes halfway through a text generally occur at the end of a line or the end of a clause, which suggests that one scribe began where the other happened to finish, rather than a systematic approach in which a scribe was responsible for an entire section or quire. Where the hands changed halfway through a sentence, normally at a clause, but sometimes at the end of a line without a clear break in a phrase, this demonstrates that the scribes of T4 were working directly from an exemplar; where one scribe stopped, they knew that the following scribe would be able to complete the item accurately and with exactly the text that they had themselves been using.

The structure of the environment in which the scribes worked can further be explored by studying the order in which things were written on the folio. For example, sometimes rubrication and decorated initials were added after musical notation was written (Figure 2.5). This is evident on f. 142v where the 'L' of 'Laudabo' was written in red ink over the existing neumes. This order of writing suggests that some of the musical notation in T4 was written during the initial copying phase of the manuscript, prior to rubrication.[36] On rare occasions, both rubrics and notation may have been added at the same time: f. 56v (*Gloria mea deus*) has a notated incipit with notation written in red ink.[37] Here, the neumes were apparently forgotten when the manuscript was initially notated and when the rubrics came to be written, so too were any missing neumes in whatever colour ink the scribe was presently using; there is no obvious reason why this otherwise normal incipit would require any special colour or treatment. Rubrication could also occur before the writing of the musical notation, like on f. 118r where the music scribe neatly avoided the rubric for the psalmus — either a sign of meticulous planning, or an indication that the rubric was written first. As writing order varies within the

[34] Tahkokallio, 'Counting Scribes', 1–42 (p. 9).

[35] For my quire diagram of T4, see https://vceditor.library.upenn.edu/project/633d4f7fc397640001e69602/viewOnly.

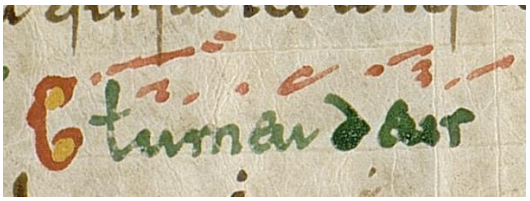
[36] It is often unknown whether the neumes of a manuscript were written at the same time as the text or sometime later. For a discussion of this phenomenon in the manuscript L8, see Carmen Julia Gutiérrez, 'Librum de auratum conspice pinctum: sobre la datación y la procedencia del Antifonario de León', *Revista de Musicología* 43 (2020), 19–76 (pp. 35–37).

[37] See also f. 106v, the final cadence of the Post Sanctus prayer in red ink.

manuscript, this suggests that there was not always a fixed sequence of production, implying that the writing environment did not have a strict *modus operandi*. This could be an indication that T4 was produced in an institution that did not have people carrying out specific roles in a structured order (e.g., scribe, notator, rubricator, corrector). The evidence instead points towards the presence of only a few scribes that were competent in all the elements found on a folio.

Figure 2.5: Examples of the Varying Order of Rubrication in T4

f. 142v



f. 56v

f. 118r

The Significance of Differences Between the Hands

In T4, each hand's distinctive understanding of how to write Visigothic script not only offers insight into the institution in which it was written, but also provides a deeper understanding of the wider cultural *milieu.* For example, recurring variations in writing choices between scribes, such as those seen in the majuscule letterforms and in the use of the *ti* ligature, might indicate that scribes who had originally received training separately worked together in the same environment to produce the manuscript. Their training might have occurred at

different institutions or within one institution at a different time.[38] Chronologically, David Ganz suggested that in a single institution or scriptorium even the difference of one generation could result in a range of tendencies; an older scribe accustomed to more traditional methods of writing might have worked alongside a younger scribe who was influenced by current trends.[39] Variation in T4 could therefore be symptomatic of cultural mixing and/or the progressive development of local script practice.

Moreover, the variation in the work of each hand informs us that uniformity was not an essential component of manuscript production in this institution. In certain manuscripts, for example those coming from specific centres that used Caroline minuscule, there was a concerted effort to maintain uniformity within a manuscript and even within a whole scriptorium.[40] The scribes of T4 did not seem to show this concern. For example, in the work of Text Hand 2 there does not appear to be a significantly higher number of corrections to the text than in the work of Text Hand 1; this suggests that there was no effort to correct the quirks of either scribe in order to maintain a standardised appearance. This might result from a need for producing the manuscript at speed (and as a result not having time to focus on uniformity), it might result from the institution not having the means to train or hire scribes with the same skills, or, more simply, it might point to a lack of concern for a house style. Nonetheless, the different traits present in the hands of T4 demonstrates the variation in Visigothic script practices and allows us to reflect on the possible reasons behind them, such as the movement of people from one environment to another.

Summary

In this palaeographical analysis, I identified three text hands involved in the initial copying phase of T4, thus adding a further two to the one recognised by Janini and Mundó. Each text hand had their own unique understanding of the Visigothic script, suggesting that they were trained in different environments, either chronologically or geographically, hence

[38] Examples of variation at an institutional level can be seen across medieval Europe in sources that preserve Caroline minuscule. See for example: Frank Coulson and Robert Babcock, *The Oxford Handbook of Latin Palaeography* (Oxford: Oxford University Press, 2020), pp. 237–97 (I.4 Caroline Minuscle); Bischoff, *Latin Palaeography*, pp. 112–18; David Ganz, 'Book Production in the Carolingian Empire and the Spread of Caroline Minuscule', in *The New Cambridge Medieval History: II: c.700–900*, ed. by Rosamond McKitterick (Cambridge: Cambridge University Press, 1995), pp. 786–808 (pp. 790–91).

[39] David Ganz, 'Can a Scriptorium Always Be Identified by Its Products?', in *Scriptorium: Wesen, Funktion, Eigenheiten*, ed. by A. Nievergelt *et al.* (Munich: Bayerische Akademie der Wissenschaften, 2015), pp. 51–62 (p. 59).

[40] Coulson and Babcock, *The Oxford Handbook*, pp. 237–97 (I.4 Caroline Minuscle).

showing the mixture of cultures in this manuscript. Not only did each of these hands bring their own flair to the manuscript, but also their own knowledge. Text Hand 1 had a detailed knowledge of writing practice and manuscript layout, while Text Hand 2 was apparently less comfortable with these disciplines.

The level of interaction between the scribes not only deepens our understanding of their relationship to one another, but also allows for an exploration of the environment in which they worked. Their frequent interchanging demonstrates that they had a trusted exemplar to copy from, with one hand being able to continue the work of another at any given moment. This continuous collaboration also suggests that they were working in a close environment, likely a liturgical one according to Tahkokallio's research. In this environment, just one hand was responsible for all elements on a folio, writing them in whatever order they deemed appropriate, indicating that the scriptorium may not have had specialist rubricators or decorators — perhaps it was relatively small.

Part 2: Notators

In this section I continue to examine the knowledge and roles of the scribes who worked during the initial copying stage of T4, using the music hands (notators) as a lens. After identifying these notators, their roles can then be compared with those of the text hands to explore whether music and text were written by different people, or whether each text hand was also proficient in musical notation.[41] In the initial step in this process, the palaeographical analysis, I examine the shape of the neumes, the use of the writing space, and the overall characteristics of a notator, rather than letterforms and ligatures. As with the text hands, my concern is with the initial layer of notation in the manuscript, which is the main notation written above every syllable of a chant. Surrounding the main notation of T4 there are many smaller marks (additional notation) that are not considered in this chapter, as not only do they require a separate set of palaeographical criteria to analyse, they may also have been added at a later stage (see Chapter 5: Additional Notation).

In work on the calligraphy of neumatic notations, Susan Rankin foregrounds the importance of studying music scribes, noting that the work of a scribe 'may be highly individualised'. Each scribe may have a different understanding of a sign as a result of the environment of their musical training, and may also have certain motivations for using a given sign.[42] Recently, scholars have made significant progress in developing approaches for identifying different hands in neumatic scripts,[43] particularly in work on the Old Hispanic manuscripts containing vertical notation.[44] My methodology for identifying music hands in T4

[41] For a study of the relationship between text and music hands in manuscripts from Germany, see Ekaterina Chernyakova, 'Palaeofrankish Musical Notation in the Manuscripts Düsseldorf, Universitäts und Landesbibliothek D1, D2 and D3' (unpublished doctoral thesis, University of Cambridge, 2015).

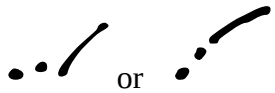
[42] Susan Rankin, 'Calligraphy and the Study of Neumatic Notations', in *The Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 47–62.

[43] In the *Lyell Lecture* series of presentations (2022), Susan Rankin discussed the identification of scribes in Insular manuscripts that contain neumatic notation. Susan Rankin, *The Lyell Lectures 2022: From Memory to Written Record: English Liturgical Books and Musical Notations, 900–1150* (Bodleian Libraries, 2022). See also Chernyakova, 'Palaeofrankish Musical Notation'; Eleanor Giraud, 'Differentiating Hands in Square Chant Notation', *Plainsong and Medieval Music* 31 (2022), 99–121.

[44] De Luca and Boudeau, 'Erreur'; De Luca, 'A Methodology', 19–40; Hornby and Maloy, 'Notated Chant'. Initial identifications of scribes in Old Hispanic manuscripts were made by Ismael Fernández de la Cuesta, *El "Breviarium gothicum" de Silos: Archivo monástico, ms. 6* (Barcelona: Consejo Superior de Investigaciones Científicas, 1965); and Herminio González Barrionuevo, 'Los códices "Mozárabes" del archivo de Silos: aspectos paleográficos y semiológicos de su notación neumática', *Revista de Musicología*, 15 (1992), 403–72.

leans heavily on this scholarship and on work that I have carried out in collaboration with Emma Hornby, Rebecca Maloy, and Marcus Jones.[45] In an initial foray into the study of notators in L8, Elsa De Luca developed a methodology in which she identified specific vertical neumes that have a consistent appearance across a range of folios, but that have a different appearance across other ranges of folios.[46] De Luca found several neumes that varied in L8: the v-shaped NHH, the looped NHH, neumes that fall by way of steps, and NS comprising two back-to-back curves (Figure 2.6a–d). While investigating the opening folios of L8, Emma Hornby and Rebecca Maloy identified two further neumes that act as scribal tells. These both involve a right-to-left gesture (2.6e–f).[47] In my own collaborative work with Hornby and Jones, and with Maloy, we undertook a similar approach when working to identify the scribes of the manuscripts Silos 6 and T6, also considering the shape of hooks at the end of neumes and the alignment of rising gapped NHH neumes (2.6g–h).[48]

Figure 2.6: Scribal Tells in Vertical Notation Manuscripts

a		**e**	
b		**f**	
c		**g**	
d		**h**	 or

Although this selection of neumes is useful for studying hands in vertical notation, many of these examples cannot be used in a study of horizontal notation; in the neumatic vocabulary of T4 there are no v-shaped NHH neumes (2.6a), no descending neumes joined by way of a step ('staircases', 2.6c), no NHLs that curve from right to left (2.6e–f), and an exceptionally limited number of hooks (2.6g), almost all of which were added later.[49] This leaves the looped NHH (2.6b), the NS (2.6d), and the alignment of gapped NHH neumes

[45] Hornby, Jones, and Wride, 'Scribal Identity', 1–50; Maloy and Wride, 'Why Write Music?'.
[46] De Luca, 'A Methodology', 19–40 (pp. 32–34).
[47] Hornby and Maloy, 'Notated Chant'.
[48] Hornby, Jones, and Wride, 'Scribal Identity', 1–50; Maloy and Wride, 'Why Write Music?'.
[49] For a detailed discussion of the neumatic vocabulary of T4, see Chapter 3.

(2.6h). Concerning looped NHHs, De Luca was interested in whether they were written using one spiralling gesture, or whether the neume was written in two gestures with the stem being written first and the loop added in the second gesture.[50] T4 only has the latter form, and this distinction therefore cannot be used to differentiate between scribes in T4. For the gapped NHH neumes, the alignment of the shape can provide information that helps with scribal identification.[51] The nature of horizontal notation means that shapes were written with all of their elements aligned along a diagonal line.[52] As such, there is little to no variety in the placement of strokes in relation to one another as seen in vertical notation; the gapped NHH, then, is also not useful in differentiating between scribes in T4. This leaves just the NS as a possible scribal tell. In this instance, the question is whether the two pen strokes are more curved or more angular.[53] From previous scholarship, the initial lists of neumes that may be scribal tells thus only contain one potentially useful tell for identifying scribal hands in horizontal notation: NS. Nonetheless, the methodological approaches developed in this scholarship act as a template for identifying a new set of neumes that may be indicators of different hands in horizontal Old Hispanic notation.

In previous studies, the more general characteristics of a scribe's work have also been used when identifying different hands in vertical notation. Most of these characteristics can also be taken into consideration in my study of horizontal notation. For example, in his work on the manuscripts preserved at Santo Domingo de Silos, Herminio González Barrionuevo sometimes used general characteristics to identify scribes.[54] While the description of a scribe as 'trembling', 'stable', 'confident', or 'elegant', can be ambiguous and leaves much room for interpretation, González Barrionuevo's descriptions invite consideration of the overall appearance of a scribe's work.[55] Other traits are more tangible. For example, a scribe might have written neumes at a consistent size; in L8, De Luca identified a scribe through neumes that are 'small and carefully written'.[56] The methods of forming neumes in general can also

[50] De Luca, 'A Methodology', 19–40 (pp. 33–34).
[51] Hornby, Jones, and Wride, 'Scribal Identity', 1–50 (p. 20).
[52] For more on the writing practices of T4, see Chapter 3: Characteristics of Horizontal Old Hispanic Notation.
[53] De Luca, 'A Methodology', 19–40 (pp. 34–35).
[54] Herminio González Barrionuevo, 'Los códices "Mozárabes" del archivo de Silos: aspectos paleográficos y semiológicos de su notación neumática', *Revista de Musicología* 15 (1992), 403–72.
[55] 'tembloroso', 'firme', 'seguro', 'elegante'. González Barrionuevo, 'Los códices', 403–72 (p. 413). In my collaborative work with Rebecca Maloy, this sort of analysis was particularly useful in describing the work of Hand 6 in T6. Maloy and Wride, 'Why Write Music?'.
[56] De Luca, 'A Methodology', 19–40 (pp. 32–34). This is De Luca's Scribe D in L8.

help to identify scribes. Some of De Luca's examples include the length of pen strokes (particularly at the end of neumes that end with a rise) and the angularity or curvedness with which a scribe navigates connections between pen strokes.[57] The thickness of pen strokes used to form neumes can also point to the presence of different scribes. In collaborative work on Silos 6 with Hornby and Jones, we observed that some scribes use a consistently thick line, while others contrasted thick and thin pen strokes.[58] While extreme contrasts of thick and thin pen strokes are not common in horizontal notation, as the nibs used to write neumes were generally wider than those used in vertical notation manuscripts, the overall thickness of neumes can still be useful in scribal identification.

One trait which can be used to identify scribes in other neumatic systems but is less likely to be useful in studies of horizontal Old Hispanic notation, is the use of the writing space. In vertical notation, the height of the neumes above the text can vary.[59] Some vertical notation scribes wrote the first neume of each syllable at a consistent height above the texts, while others did not (and the practice can vary in the work of a single scribe).[60] For example, in melismas some scribes varied the height of the neumes in relation to one another at the beginning of new melisma sections (see for example, Figure 2.7, T6, *Doce nos domine*).[61] Other scribes show no variation in the height of the neumes throughout a melisma, instead writing one horizontal row of neumes (e.g., 2.7, T6, *Memor fuit*).[62] These approaches towards placing neumes within the writing space can therefore help to indicate that several scribes were at work. In horizontal notation, there is no variation in the height of the neumes above the text. Rather, every syllable begins at the same height, and subsequent neumes on the same syllable are aligned in a roughly diagonal line rising to the right (e.g., 2.7, T4).[63] As such, each scribe treats the writing space in the same way, thus providing no insight into the presence of notators in T4.

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[57] These are De Luca's L8 Scribes C and G, respectively. Also discussed in De Luca and Boudeau, 'Erreur'.

[58] Hornby, Jones, and Wride, 'Scribal Identity', 1–50. See Hands B and D for contrasting methods.

[59] Susan Rankin, 'On the Treatment of Pitch in Early Music Writing', *Early Music History* 30 (2011), 105–75; Rankin, 'Calligraphy', pp. 54–57.

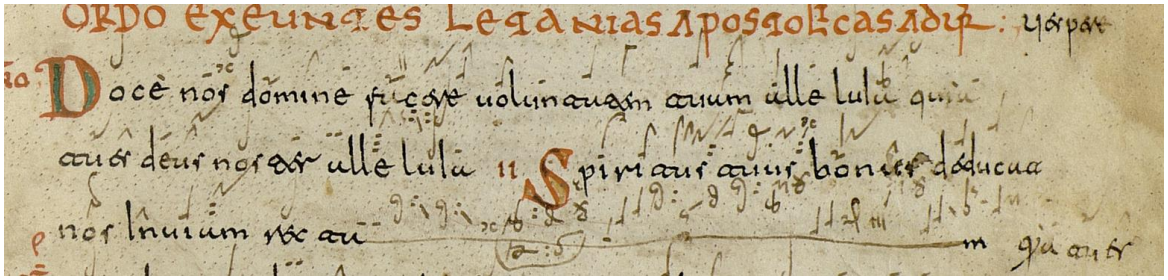
[60] Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), pp. 227–33.

[61] https://neumes.org.uk/view/2333.

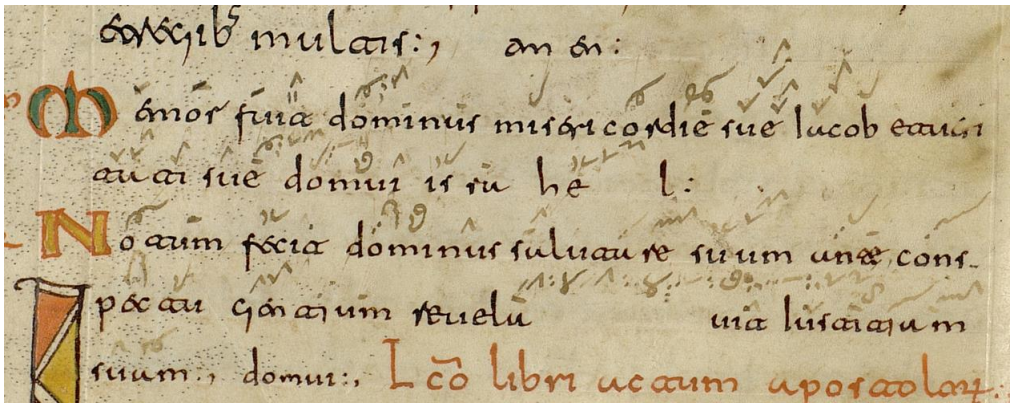
[62] https://neumes.org.uk/view/2371.

[63] For a detailed discussion on the use of the writing space in T4, see Chapter 3, Use of the Writing Space (p. 89).

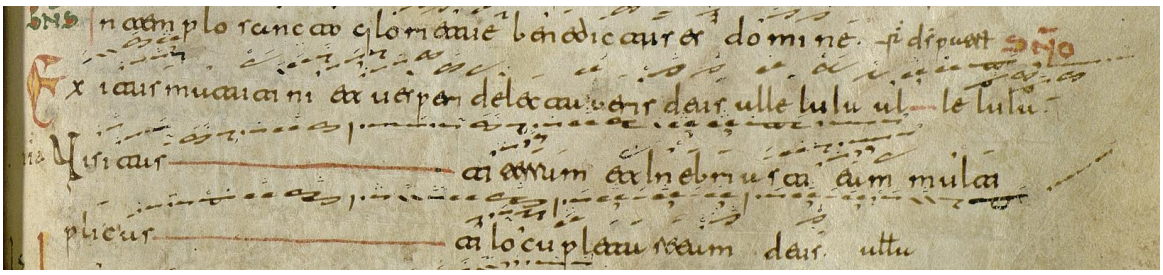
Figure 2.7: Variation of Neume Height in Melismas in T6 and T4



T6, *Doce nos domine* (f. 102r), ‘rectam’



T6, *Memor fuit* (f. 45v), ‘reuelauit’

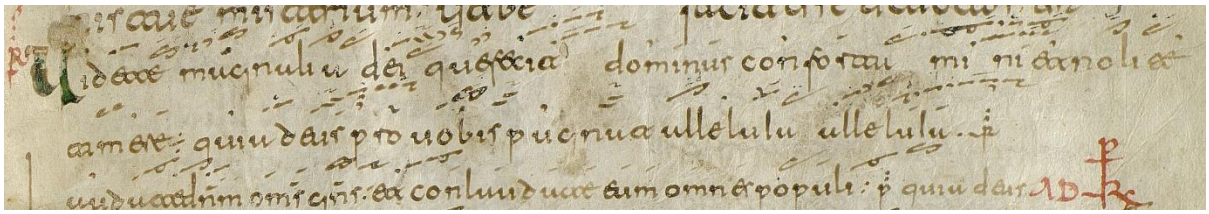


T4, *Exitus matutini* (f. 95r), ‘Uisitasti’, ‘multiplicas’

To identify hands in horizontal notation, it is therefore necessary to employ a combination of previous approaches, whilst being mindful that the neumes useful for identification are different to those used in vertical notation. In the following identification of each hand, I both explore individual shapes and look at the more general traits of a scribe. I have thus adapted and reshaped previous methodologies to meet the demands of horizontal notation.

Identifying Notators A, B, and C

Figure 2.8: Example of Notator A, *Videte magnolia dei*, f. 11r



The first folio written during the initial copying phase begins not with a rubric, but with the text and musical notation for the vespertinus *Laudaverunt te domine*; it is here we encounter Notator A for the first time (see Figure 2.8 for an example of their notation). One of the very first observations about this hand, who wrote the majority of the music in the manuscript, is that the shapes of their neumes are inconsistent, both across the whole folio and even within one chant. For example, on a later folio by Notator A (f. 154r) that contains just two chants, a laudes and a sacrificium, the scribe used a curved NHL shape 14 times.[64] Out of these fourteen examples, there are seven different variations in the shape of the neume (Figure 2.9). These variations occur in the basic elements of the shape, even from the moment the pen meets the parchment; for example, the first pen stroke sometimes has a club (2.9a), is sometimes straight (2.9c–d), and sometimes has a serif (2.9b and 2.9e–g). These differences seem to be the result of natural variation in the work of the scribe; they do not always result from external factors on the folio, such as the availability of writing space, which might cause the proportions of a neume to change. Having variation in a fundamental element of the scribe's writing, such as in the straight line (which may have a club, serif, or be straight), causes difficulty when trying to define how this scribe wrote neumes — every neume has many possible appearances. Due to the inconsistency of this hand, it is comparison with the other two notators of T4 that helps to reveal their unique characteristics.

[64] Some of these are part of an NSHL or NUHL.

Figure 2.9: Different Forms of NHL on f. 154r in Notator A

a		The first pen stroke (leftmost) has a clubbed end No lines touch
b		The first pen stroke has a pronounced serif No lines touch
c		The first pen stroke has no club or serif The first pen stroke is comparatively shorter No lines touch The curves are thick
d		The first pen stroke has no club or serif The final pen stroke curves round to touch the middle pen stroke and closes to form a loop
e		The first pen stroke has a pronounced serif The first pen stroke touches the middle pen stroke, forming a loop
f		The first pen stroke has a pronounced serif All lines touch, resembling an infinity symbol
g		The first pen stroke has a pronounced serif All lines touch, resembling an infinity symbol The second half of the neume is comparatively larger than the first

When we encounter a folio with neumes by Notator B, the contrast between the work of Notator A is striking. Unlike Notator A, who wrote notation that was generally consistent in size and with little contrast between thick and thin pen strokes, Notator B is characterised by neumes that are irregular in size and that have a varying thickness of pen stroke (Figure 2.10). There is similar variation in the basic strokes of neumes, with some lines being entirely straight and some ending with a pronounced serif; however, the clubbing of pen strokes is less common in this hand.

Figure 2.10: Example of Notator B, S*apientia dei super lapides*, f. 133v

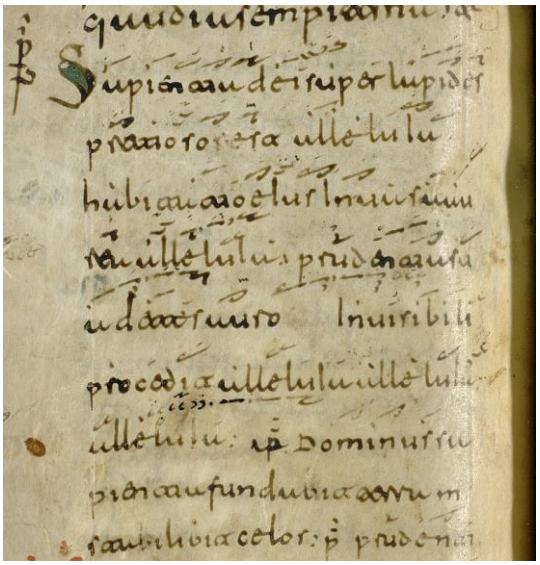
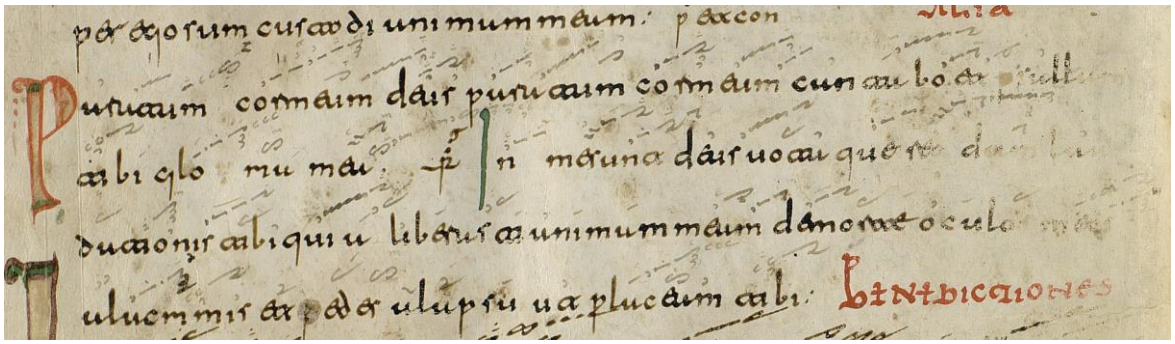


Figure 2.11: Notator C, *Paratum cor meum*, f. 168v



Notator C is also easy to identify. On folio 168v, one chant stands out from all the others, *Paratum cor meum* (Figure 2.11). The most distinctive feature of this chant — the only chant written by Notator C — is the colour of ink they used: a light grey that contrasts the dark browns and blacks of other musical notation in the manuscript. While not a secure way of identifying scribes, the ink colour acts as an initial indicator that this chant was possibly written by a different person to the rest of the folio.

A comparison of all three hands consolidates the hypothesis that there are indeed three music hands in T4. Concerning general characteristics, Notators A and C seem to have a relative degree of control in their writing; while there are variations in the basic pen strokes, the overall proportions of the neumes are regular throughout their work. In contrast, Notator B seems to have had some difficulty in writing the music, especially writing curves: sometimes neumes have very heavy lines at the curved connections (as in Figure 2.10, line 2, ‘pretioso’), sometimes they have exceptionally tight curves (line 6, ‘procedit’), and sometimes very angled ones (line 1, ‘sapientia’). This suggests that Notator B might not have been concerned with maintaining a consistent writing technique, or that they were unable to achieve it.

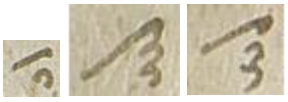
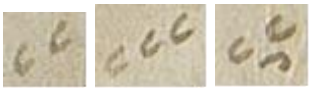
One of the most distinguishing features of each hand is the way they wrote puncta — basic shapes, each representing a single note. In Notator A’s work, puncta are generally rounded, with a very slight curve (Figure 2.12.i). Notator B’s puncta are angled downwards, normally in a straight, or nearly straight, line. This is especially clear in neumes that begin with a punctum and are followed by a gapped connection (2.12.ii). Notator C likewise has their own form for a punctum: a wide curve, which is sometimes aligned with both ends of the curve in a vertical line. While puncta are a useful scribal tell in studies of horizontal notation, they are unlikely to be helpful in studies of vertical notation, as this script has largely similar shaped puncta across scribes and manuscripts. Through the adoption of De Luca’s palaeographical methods, I have therefore identified a horizontal trait pertinent to scribal identification.

Figure 2.12: Comparison of Puncta in Notators A, B, and C

Notator A	Notator B	Notator C
i. Puncta		
ii. Gapped NH		

In fact, the more curved appearance of puncta in Notator C is reflective of the rest of this hand's work. Many of the neumes written by this hand have unusually curved elements: the v-shaped NH (Figure 2.13.i) begins with a wide curved stroke, while Notators A and B have a tighter curve; curved NHLs (2.13.ii) are rounded in Notator C's work, have curves of equal proportions, and none of the lines tend to meet. Notators A and B, on the other hand, have tight curves, and B also varies the proportion of the neume; a similar trait is seen in NLHs (2.13.iii). Notator C has a broad curve for the first connection, while A and B have angular connections. A and B also tend to end with curved connections (the latter's is comparatively larger than A's), while C uses an angled one; neumes with a descent in pitch by way of a gapped connection (2.13.iv) show the same variation in these descents as seen in the puncta characteristic of each hand; shapes with curves that are open on the right-hand side (2.13.v) are widely open in Notator C, with parchment visible between the two sides of the curve. B tends to have open curves as well, while A has much tighter curves that are often closed; finally, the basic pen stroke, the straight line found in rising neumes, tends to be straight in A and B, ending with a club or serif, while Notator C tended to curve the line slightly (e.g., 2.12.ii).

Figure 2.13: Comparison of Curves in Notators A, B, and C

Notator A	Notator B	Notator C
i. V-Shaped NH		
ii. NHL		
iii. NLH		
iv. Gapped NL(+)		
v. Right-Hand Curves		

When discussing the characteristics of each hand, it also helps to consider the proportions of neumes. Some neumes are larger in one hand than others (for example the wavy line in Figure 2.14.i is larger and more defined in Notator C than in A and B), while other neumes have different proportions between their composite pen strokes. One such example is the curved NH (2.14.ii). In this neume, the size of the initial pen stroke (the 'N') is short in Notator B, meaning that the second pen stroke looks comparatively longer (the 'H'). This neume in Notators A and C has a slightly longer first pen stroke, and therefore the difference between the first and second pen strokes is less pronounced in these hands. The NSHL also has different proportions in Notator B to Notator A. The final gesture is elongated in the work of the former hand (2.14.v). Sometimes, Notator B has a squat appearance; when Notator B writes a curved NL (2.14.iv), the first pen stroke is only slightly longer than the second, giving the neume a truncated appearance. By way of comparison, Notator A sometimes has a much longer first pen stroke (although, as seen in the third example in 2.14.iv, this is not always the case). This characteristic of Notator B is also apparent in the NHLH neume (2.14.iii).

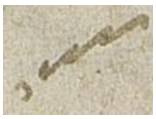
Figure 2.14: Comparison of Proportions in Notators A, B, and C

Notator A	Notator B	Notator C
i. Wavy Line		
ii. Curved NH		
iii. NHLH		Not Present[65]
iv. Curved NL		
v. NSHL		Not Present

Aside from the more general characteristics of these hands, two types of connection help to further define their work. The first is the angular connections between rising pen strokes (Figure 2.15.i). In Notators A and B, the connections in this shape are quite fluid, almost creating a wavy line. Sometimes, this type of connection is so fluid that it is not clearly defined, resulting in a neume without a clear number of pen strokes. In Notator C, the connections in this neume are quite the opposite; they are very clearly defined, with sharp angles joining each pen stroke. The second connection that helps to distinguish between the different hands is the loop (2.15.ii). In Notators A and C, looped connections generally have with a smooth curve. As seen in the discussion of curved connections above, Notator B seemed to have had difficulty writing looped connections — some are very angular, while others do not join the stem of the neume at the top of the loop. That is not to say that Notator A found the loop easy to navigate; often, this hand wrote the loop too tightly, resulting in the absence of the blank parchment in the middle of the loop.

[65] The absence of certain neume forms is not surprising as Hand 3 only wrote one chant.

Figure 2.15: Comparison of Connections in Notators A, B, and C

Notator A	Notator B	Notator C
i. Rising Notes Joined by Angled Connections		
		
ii. Loops		

The differences between the three notators of T4 are pronounced. While all use horizontal Old Hispanic notation, each hand had their own way of writing specific neumes, as well as some notable, more general characteristics. The inconsistency within the work of each scribe makes it difficult to use De Luca's method of using a detailed analysis of particular neumes to identify hands; nonetheless, there are neumes that have particular forms in each hand (e.g., NSHL), and the basic elements of neumes (e.g., puncta and virga) can help to identify the work of individual notators. When focusing on the broader aspect of the notation rather than the finer details, it becomes apparent that the overall appearance and traits of the notators plays a key role in their identification. For example, Notator B seems to be less comfortable writing the notation, often resulting in a squat and angular appearance, while Notator C is characterised by their curved pen strokes.

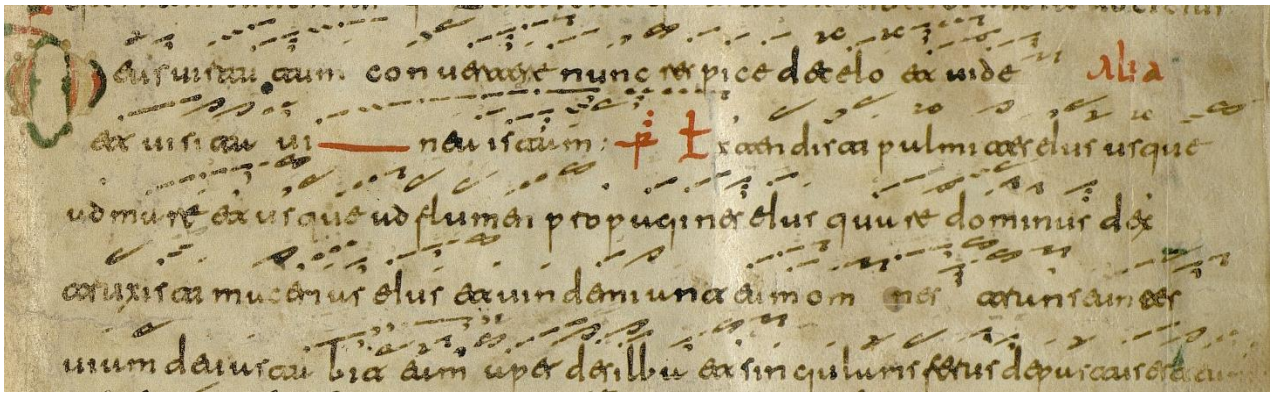
Scribal Roles and Knowledge

As with text hands, analysing the stints of these notators helps to explore their role in the initial copying of the manuscript, as well as their musical proficiency. The notator who made the smallest, and probably latest, contribution to T4 was Notator C. This hand only wrote the main musical notation for one chant, *Paratum cor meum* on f. 168v (Figure 2.11).[66] Although they were responsible for the musical notation of this chant, they were not responsible for the text: from f. 161v to the end of the manuscript, there is only one text hand, suggesting

[66] They also added additional notation to another folio. On additional notation, see Chapter 5.

that the text was already in place prior to Notator C's work. Moreover, while f. 168v is filled with other musical notation, all of which is written by Notator A, there is no evidence of interaction between the scribes; from this one chant it is not possible to work out which scribe notated their chant(s) first. The answer to this question lies in a chant on the preceding recto, *Deus virtutum convertere* (Figure 2.16), which has main notation written by Notator A and additional notation (written much smaller and around the main notation in a light grey ink) by a different hand. Due to the similarly grey ink, thick lines, and curved pen strokes, I hypothesise that the hand responsible for the additional notation to this chant was Notator C.[67] The implication in this chant is that Notator C wrote the additional notation around the initial neumes after Notator A's contribution to the manuscript. This also means that they likely inserted *Paratum cor meum* after Notator A had completed their work, although it is not possible to say how much later this addition occurred.

Figure 2.16: *Deus virtutum convertere*, f. 168r



Only educated guesses can be made as to role of Notator C in the institution where T4 was written and/or kept. Both the chants to which Notator C contributed are psalmi — a genre of chant sung by a soloist.[68] It is possible, then, that Notator C was a soloist and had a specialist knowledge of this genre, although there is too little evidence to confirm this theory. Furthermore, the chant is a unicum; due to the lack of extant cognates, it is not possible to know whether this scribe was notating a unique version of the melody, or simply one that Notator A was not as familiar with. Equally, as today only a small percentage of medieval manuscripts

[67] See also Chapter 5, p. 165.

[68] 'to the psalmist belongs the office of singing. He is to say the benedictiones, psalmi, laudes, sacrificii, responsoria, and whatever belongs to the skill of singing'. Translation by Don M. Randel of part of an early, possibly 7th century, epistle to Bishop Leudefredus in 'Responsorial Psalmody in the Mozarabic Rite', *Études grégoriennes* 10 (1969), 87–116 (p. 90). For a discussion of palaeographical evidence of soloist roles in Iberian manuscripts, see Hornby, Jones, and Wride, 'Scribal Identity', 1–50.

survive, it is not possible to know whether this chant was a rare or new chant.[69] If it were rare or new, this might help to explain the reasons behind its omission by Notator A.

Unlike Notator C, the work of Notators A and B demonstrates a close working relationship between these two scribes. Notator A wrote the vast majority of music in T4, throughout the entirety of the manuscript, with Notator B taking over sporadically (Table 2.3). The sporadic nature of Notator B's interventions can also be explained by considering the relationship between text and music scribes: every chant written by Notator B falls within a stint by Text Hand 2, strongly implying that these hands were one and the same person. As seen above, Text Hand 2 copied in a continuous manner from Text Hand 1, rather than in any relationship to quires or feasts. This might help to explain Notator B's seemingly random contribution to various feasts and folios.

Table 2.3: Chants Written by Notator B

Folio	Chant	Genre[70]	Service	Feast
104v	*Domine exaudi orationem*	PRLG	Mass	IIII Quotidian
110r	*Alleluia Salva plebem tuam*	LDS	Mass	V Quotidian
110r	*Sanctificavit Moyses*	SCR	Mass	V Quotidian
125v	*Magnus dominus et laudabilis valde*	ANT	Matutinum	VIIII Quotidian
	Magnus dominus et laudabilis nimis	ANT	Matutinum	
	Magnus dominus noster et magna	ALL	Matutinum	Whole of Matutinum (including the missa)
126r	*Magnus dominus noster alleluia*	RS	Matutinum	
	Quis similis tibi	ANT	Matutinum	
	Caeli et angeli	BNMT	Matutinum	
	Cantate dominum	PSLD and PSLDV	Matutinum	
	Dominus regna	PRLG	Mass	
133v	*Sapientia a domino deo*	ALL	Matutinum	XI Quotidian
	Sapientia dei super lapides	RS	Matutinum	
	Guvernasti iustitia tua	ANT	Matutinum	
	Stellae caeli benedicite	BNMT	Matutinum	
134v	*Exultabo te domine* (rep cue only)	PSLM	Mass	
146r	*Alleluia Videam pauperes*	LDS	Mass	XIIII Quotidian
151v	*Qui extendit caelum* First line only (10 syllables)	SNO	Vespers	XVI Quotidian

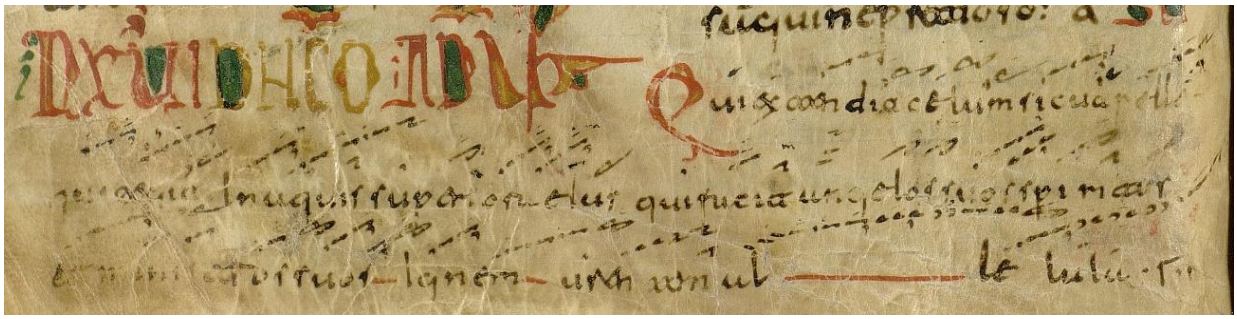
[69] For a recent study on the rates of manuscript survival, see Mike Kestemont and others, 'Forgotten Books: The Application of Unseen Species Models to the Survival of Culture', *Science* 375/6582 (2022), 765–69. See also Michel Huglo, 'A Statistical Survey of Notated Liturgical Manuscripts', in *Antiphonaria: Studien zu Quellen und Gesängen des mittelalterlichen Offiziums*, ed. by David Hiley (Tutzing: Hans Schneider, 2009), pp. 143–45.

[70] For a list of genre abbreviations, see http://musicahispanica.eu/genres.

However, the alignment between the text and music hands is not perfect (summarised in Table 2.4 below). Within the stints of Text Hand 2, sometimes the chant text was written by Text Hand 2 but the music was written by Notator A. That is to say, if Text Hand 2 was Notator B, they were not always responsible for writing the musical notation during their stint. On a folio that contains prayers written exclusively by Text Hand 2, the chant texts were written by Text Hand 1 and the music was written by Notator A. In this case, if Text Hand 2 was Notator B, there were certain chants during their stint for which they had no responsibility. There are no examples where Text Hand 1 wrote the music and Notator B wrote the text which suggests that they are not likely to be the same person. It also confirms the theory that Text Hand 1, who is likely to be Notator A, was a proficient singer and notator as they did not need someone else to write the music on their behalf.

Moreover, the intervention of Text Hand 1/Notator A in the stints of Text Hand 2/Notator B suggests that the latter may not have known the melodies for certain chants or may not have been considered capable of notating them. This narrative supports the idea that Text Hand 2/Notator B was a more junior scribe, as outlined in the analysis of the text hands above. Further evidence for this theory is found in the chant *Qui extendit caelum* (f. 151v, Figure 2.17). In this chant, which begins a new office, Notator B began the sono, getting only as far as the first 10 syllables (the end of the first line) before Notator A took over. This chant, falling at the end of Text Hand 2/Notator B's stint, suggests that the scribe attempted to begin the sono before being told to move on to another task or deciding this task was beyond them.

Figure 2.17: *Qui extendit caelum*, f. 151v



There are two further examples that suggest that Text Hand 2/Notator B was less clear about the musical content of the manuscript than Text Hand 1/Notator A. The first is the addition of a verse after the psallendum on f. 126r. According to Randel's *Index* and work by

Emma Hornby and Raquel Rojo Carrillo, this is the only psallendum to have a verse.[71] Typically, psallendi consisted of a single section and were sometimes followed by an incipit for the doxology ('Gloria et honor'). This suggests that Text Hand 2/Notator B was not familiar with the usual practices of the Old Hispanic liturgy.

The second indicator is found in the nature of the chants that Text Hand 2/Notator B did and did not notate. This hand only completed sixteen full chants and added a few syllables of notation to a further two (Table 2.3). They wrote a variety of genres, both simple ones (such as antiphons) and a few more complicated ones (such as sacrificia). However, typically, this scribe omitted either text, or music, or both, for the more complex genres that were regarded as the purview of the soloist (Table 2.4).[72] This likely suggests that Text Hand 2/Notator B was not a soloist, but that Text Hand 1/Notator A may have been.

Table 2.4: Chants Within Text Hand 2's Stints Written by Another Scribe or Notator

Folio	Chant	Genre	Text Hand	Notator
126v	*Delicta iuventutis me*	PSLM	2	A
134v	*Exultabo te domine*	PSLM	2	A (with repetition cue by B)
135v	*Alleluia Miserere nobis*	LDS	2	A
135v	*Vos qui transituri estis*	SCR	2	A
145r	*Deus nostrum refugium*	PSLM	1	A
146r	*Ingressus est sacerdos*	SCR	2	A
150v	*Alleluia Quis deus*	LDS	2	A
150v	*Aedificabit David altare*	SCR	2	A
151v	*Quis extendit caelum*	SNO	2 (verse by 1)	A (first 10 syllables are by B)
153r	*Quis dabit mihi*	PSLM	1	A

The study of notators in T4 is therefore closely intertwined with the study of text hands: two scribes, who worked concurrently, had the role of writing both text and musical notation. Not only is this shown in the overlapping stints between text and music scribes, but it is also supported by the working relationship between the scribes and their levels of knowledge. Text Hand 1/Notator A demonstrated their competency throughout by tackling all the different palaeographical elements on a folio and regularly beginning offices, as well as showing their detailed knowledge of musical practice through the range and quantity of chants they notated.

[71] In his *An Index to the Chant of the Mozarabic Rite* (Princeton: Princeton University Press, 1973), pp. 341–343, Randel interpreted *Alleluia spes* and *Iherusalem civitas* as having two further verses. Upon closer inspection of the rubrics, which are pluralised to say 'psallendi' or are marked with the word 'alium' meaning other, Hornby and Rojo Carrillo interpreted these chants to be a list of three separate psallendi. Hornby and others, *Understanding the Old Hispanic Office*, pp. 111–14.

[72] On these chants being regarded as soloist chants, see footnote 68, above.

Conversely, Text Hand 2/Notator B did not tend to have the responsibility of starting offices and writing specialist chants, thereby reflecting their less developed proficiency in writing and/or musical knowledge.

Conclusions

My study of scribal hands in T4 has helped to explore the possible environment in which the manuscript was written. I have demonstrated that there were four scribes present in initial copying phase of the manuscript: two who wrote both text and music, a third who added a few lines of text on two occasions, and a fourth who notated one chant as well as amending a second one. The amount and type of material contributed by each hand demonstrates different levels of knowledge amongst the scribes that further contradicts Mundó's assertion that T4 was copied by just one scribe who was well-versed in the Old Hispanic rite.

The extensive experience of Text Hand 1/Notator A is confirmed not only through the volume and variety of their work, but also through their proficiency in writing both text and music. Moreover, the regular occurrence of this hand at significant moments of the manuscript, such as the beginning of feasts, suggests that they were responsible for laying out the style of the manuscript and consequently provided an example for Text Hand 2/Notator B to follow.[73] The role and knowledge of this scribe suggests that T4 was produced in an environment that had a clear institutional structure; perhaps, as a more experienced scribe Text Hand 1/Notator A had more responsibility for producing new manuscripts, or perhaps this scribe was responsible for acting as a master or teacher to new scribes by demonstrating the traditions of Old Hispanic practices.

The continuous collaboration also points towards the production of the manuscript in a close-knit environment — from Tahkokallio's experience this environment is often a liturgical one — that had a reliable text exemplar to copy from. As each hand typically also completed the musical notation within their stint, this may suggest that this exemplar was notated. Perhaps Text Hand 2/Notator B's omission of the more complex chants implies that the notation was too complicated for them at these moments. Alternatively, it might suggest that some chants were copied from memory and that Text Hand 2/Notator B did not have sufficient knowledge to complete them. Although the number of scribes responsible for a manuscript is not always indicative of the size of a scriptorium, the number present in T4, in combination with the

[73] On the 'role of the director of the scriptorium', see Ganz, 'Can a Scriptorium', p. 57.

continuous collaboration, suggests that the scriptorium may not have been that large;[74] only four scribes were present in the initial copying phase, and one of these, Notator C, could even have copied their chant at a later date.

Palaeographical analysis has helped me not only to identify the hands, but also to explore the training and background of these individuals. Variation in the presentation of the script, orthography, neumes, and characteristics of the hands shows that the institution in which T4 was produced had multiple scribes of different backgrounds. This could result from several generations working together or could be caused by the mixing of scribes with different institutional and cultural heritages.[75] Although uniformity is not a prerequisite for manuscript production, and therefore a lack of uniformity should not be considered atypical, the presence of different traits in the work of each scribe is significant.[76] It demonstrates that, even at this late stage, the Old Hispanic rite was continuing to develop, either by training new people or welcoming those from elsewhere.

My identification of scribes in T4 has not only resulted in a new understanding of the contexts of its production, but has also furthered the practice of identifying music scribes in neumatic notations. By incorporating the horizontal Old Hispanic neumes I have identified a new set of neumes that are useful for palaeographical comparison, as well as explored how the more general characteristics of a scribe can be used to identify them. I intend to use this methodology in future projects to assess whether the Toledo corpus was all written in the same manner, and whether there were alternative understandings of how to write horizontal notation. For the more pressing matter of this thesis, the identification of several notators in T4 will allow me to explore whether certain scribes had specific musical understandings or preferences, thereby furthering our understanding of the training of individuals.

[74] For example, Teresa Webber identified at least nineteen scribes working contemporaneously in the scriptorium of Salisbury Cathedral (Group II Scribes), some of whom copied entire manuscripts on their own. Teresa Webber, *Scribes and Scholars at Salisbury Cathedral c. 1075–c. 1125* (Oxford: Oxford Historical Monographs, 1992), pp. 22–30.

[75] Ganz, 'Can a Scriptorium', p. 59.

[76] On the lack of uniformity in other corpuses, see Ganz, 'Can a Scriptorium'; Webber, *Scribes and Scholars*, p. 9.

Chapter 3: Characteristics of Horizontal Old Hispanic Notation

In this chapter I outline the characteristics of horizontal Old Hispanic notation, its common principles, and traits, using T4 as a lens. Horizontal musical notation, as opposed to vertical notation, was one of two scripts used to notate chant melodies in Old Hispanic rite manuscripts.[1] Typically, studies of Old Hispanic chant and its notation have focused on manuscripts that contain the vertical script. Most musical analyses have centred around the manuscript L8 and its comparison to other vertical manuscripts.[2] Palaeographical research has almost exclusively focused on vertical notation; for example, Herminio González Barrionuevo undertook several studies of notational signs (neumes) in the vertical notation manuscript BL50, seeking to determine the meaning of each neume.[3] Conversely, horizontal notation has received limited attention. Thus far there has been no detailed analysis of this script, nor has a horizontal notation manuscript been the focus of any study. Consequently, definitions of the horizontal script have almost exclusively been limited to one- or two-word descriptions of its appearance: its 'lying down' inclination,[4] its 'coarse' or 'thick' appearance,[5] and its 'less rich'

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[1] For an introduction to the two scripts, see Casiano Rojo and Germán Prado, *El canto Mozárabe: Estudio histórico-crítico de su antigüedad y estado actual*, Revue de Musicologie 36 (Barcelona: Diputación Provincial de Barcelona, 1929), pp. 40–58.

[2] For full a full list of manuscript sigla, see Sigla of Old Hispanic Manuscripts Consulted, p. xiii. One notable exception is Emma Hornby and Rebecca Maloy, *Music and Meaning in Old Hispanic Lenten Chants: Psalmi, Threni and the Easter Vigil Canticles* (Woodbridge: The Boydell Press, 2013). In this book the authors compared melodies preserved in vertical notation to melodies preserved in a tradition B manuscript in horizontal notation.

[3] For some examples of his work see: 'Algunos rasgos fundamentales de la notación "Mozárabe" del norte', *Revista de Musicología* 20 (1997), 37–49; 'Relación entre la notación "mozárabe" de tipo vertical y otras escrituras neumáticas', *Studi gregoriani* 11 (1995), 1–112; 'Dos grafías especiales del "scándicus" en la notación "Mozárabe" del norte de España', *Revista de Musicología* 13 (1990), 11–79. For discussions of Old Hispanic scripts in general see: Gregoire M. Suñol, *Introduction à la paléographie musicale Gregorienne* (Paris: Société de Saint Jean l'Evangeliste, 1935); Rojo and Prado, *El canto Mozárabe*, pp. 40–58.

[4] For some examples see: Agustín Millares Carlo and José Manuel Ruiz Asencio, *Tratado de paleografía española*, vol. I (Madrid: Espasa-Calpe, 1983), p. 289; Louis Brou, 'Notes de paléographie musicale Mozarabe', *Anuario musical* 10 (1955), 23–44 (p. 29); Higini Anglés, 'Hispanic Musical Culture from the 6th to the 14th Century', *The Musical Quarterly* 26 (1940), 494–528 (p. 502); Suñol, *Introduction*, p. 317; Rojo and Prado, *El canto Mozárabe*, p. 40.

[5] For example, Susana Zapke, 'Dating Neumes According to Their Morphology: The Corpus of Toledo', in *Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 91–99 (pp. 95–96 ('fast and careless')); Ángel Fernández Collado, *Códices visigóticos y Cantorales mozárabes en la Biblioteca Capitular de Toledo: notas para un catálogo* (Madrid: Sociedad Española de Musicología, 2013), p. 24 ('líneas gruesas'); Rojo and Prado, *El canto Mozárabe*, p. 40 ('basto').

neume vocabulary.[6]

Moreover, the narrative surrounding the development of horizontal notation contains several underlying assumptions. Prior to Anscari Mundó's 1965 study, which re-evaluated the dates of the Toledo corpus, horizontal notation manuscripts were thought to have been written earlier than vertical notation ones. During this period, horizontal notation was described as 'primitive', presumably referring to its earlier chronology and its apparent simplicity in comparison to vertical notation.[7] In Mundó's 1965 work, however, horizontal notation became synonymous with lateness and Mundó used the presence of horizontal notation in the Toledo corpus as one of his reasons to re-date these sources to several centuries later than initially believed.[8] After this work, some scholars began to suggest that horizontal notation developed out of vertical notation. Raquel Rojo Carrillo suggested that, based on the later copy-dates of the Toledo manuscripts 'it might be the case that the horizontal notation is just a later variety of the vertical one'.[9] Susana Zapke goes so far as to suggest that horizontal notation resulted from a breakdown of the understanding of vertical notation as it developed to a stage where the signs had 'practically symbolic value' with 'hardly any sign [being] clearly recognisable'.[10] As horizontal notation has received relatively little scholarly attention, a more detailed understanding of the script is required to establish the validity of these suggestions.

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[6] For example, Elsa De Luca, 'From Old Hispanic to Aquitanian Notation: Music Writing In Medieval Iberia', *Anuario de estudios medievales* 50 (2020), 827–64, pp. 837–38; Millares Carlo and Ruiz Asencio, *Tratado*, p. 287; Higini Anglés, 'Mozarabic Chant', in *The New Oxford History of Music: Early Medieval Music up to 1300*, ed. by Anslem Hughes (Oxford: Oxford University Press, 1954), pp. 81–91 (p. 84); Higini Anglés, 'La música medieval en Toledo hasta el siglo XI', in *Gesammelte Aufsätze zur Kulturgeschichte Spaniens 7*, ed. by M. Honecker, G. Schreiber, and H. Finke (Münster: Aschendorff 1938), pp. 1–68 (p. 41); Rojo and Prado, *El canto Mozárabe*. For an a more detailed discussion of horizontal notation, see Nancy Phillips, 'Notationen und Notationslehren von Boethius bis zum 12. Jahrhundert', in *Die Lehre vom einstimmigen liturgischen Gesang*, ed. by Thomas Ertelt and Frieder Zaminer (Darmstadt: wbg Academic, 2000), pp. 293–623 (pp. 442–457).

[7] Anglés, 'Mozarabic Chant', p. 84; 'La Música medieval', p. 41.

[8] Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25.

[9] Raquel Rojo Carrillo, 'Old Hispanic Chant Manuscripts of Toledo: Testimonies of a Local or of a Wider Tradition?', in *A Companion to Medieval Toledo: Reconsidering the Canons* ed. by Yasmine and Jason Busic Beale-Rivaya (Leiden, The Netherlands: Brill, 2018), pp. 97–139 (p. 130). Writing in 2011, Susana Zapke noted that the Coimbra fragment (dated to the 11th century) is evidence that both notational scripts coexisted; however, more recently, scholars such as Rojo Carrillo have called into question this early date for the fragment, thereby refuting Zapke's argument. Zapke, 'Dating Neumes', p. 96.

[10] Susana Zapke, 'Notation Systems in the Iberian Peninsula: From Spanish Notations to Aquitanian Notation (9th–12th Centuries)', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th Centuries)*, ed. by Susana Zapke (Bilbao: Fundación BBVA, 2007), pp. 189–244 (p. 209).

I therefore tackle two issues that arise from previous scholarship: 1) how to better define horizontal notation and 2) the relationship between horizontal and vertical notation. Due to the interrelatedness of these two questions, both will be addressed in tandem throughout this chapter. I firstly begin by problematising current definitions of vertical and horizontal scripts through an analysis of the inclination of the neumes. To further nuance definitions of horizontal notation, I also look at its unique palaeographical features, such as the use of the writing space, the method of writing the neumes, and the basic shapes used to form the notation. In the final section of the chapter, I carry out three case studies in order to highlight distinctive features of horizontal notation that contrast the norms of its vertical counterpart. In the first case study I examine the use of a fundamental element, the virga, exploring how this shape was conceptualised differently in the two scripts. In the second case study I look at the gestures present in horizontal notation, explaining how the variety of gestures results in a unique graphic diversity of the script. In the final case study I turn away from the palaeographical practices of horizontal notation, looking instead at the function of specific neumes. In this example I examine how a specific neume with a distinctive 'w' shape holds a different significance in each script. These case studies not only help to define the principles of horizontal notation, but also allow for a better understanding of how horizontal notation relates to vertical notation.

Throughout this chapter I use T4 as representative of the practices of horizontal notation used in Toledo tradition A manuscripts. T4 can only act as one window into these practices; for a full study of horizontal notation, it would be necessary to incorporate the other sources preserving the script, including the tradition B variant.[11] In my comparisons with other Old Hispanic manuscripts, I use vertical notation manuscripts from the León and the Rioja regions. Each of these regions had their own notational style, and while defining these two styles requires further work, in my work I attempt to compare horizontal notation to vertical notation of all forms.[12] For the figures in this chapter I use L8 as representative of León notation, and Santo Domingo de Silos, Biblioteca del Monasterio, MS 4 (Silos 4) as typical of the Rioja notation. Both of these manuscripts have extensive or complete neume taxonomies in the digital

[11] For a preliminary comparison with the notation preserved in tradition B, see Chapter 6.

[12] In his forthcoming PhD 'Old Hispanic Notation and the Early Written Transmission of Chant: A Study of British Library, Add. MS 30845' at the University of Bristol, Marcus Jones is further nuancing differences between the León and Rioja styles (and even nuancing differences within the Rioja style itself). I am grateful to him for illuminating discussions about this topic. See also Emma Hornby, Marcus Jones, and Emily Wride, 'Scribal Identity and Scribal Roles in Early Medieval Iberia: A Case Study of Santo Domingo De Silos, Biblioteca Del Monasterio MS 6', *Early Music History* 41 (2022), 1–50.

tool CEAP and therefore acted as rich points of comparison.[13] I also considered the vocabulary and practices of other vertical notation manuscripts throughout and, where relevant, I include further examples from these sources.

Inclination of Neumes

Horizontal notation likely takes its name from the inclination of the neumes on the folio: the neumes lean heavily to the right-hand side. Pen strokes indicating higher notes tend to be angled towards the right-hand side of the folio rather than pointing vertically, or near-vertically, up the folio as is common in vertical notation. The pen strokes indicating a lower note tend to be angled downwards and are typically inclined towards the left of the folio (Figure 3.1).[14] By contrast, vertical notation tends to represent downwards melodic movement with pen strokes that move downwards and to the right.[15] Some scholars, for example Susana Zapke and more recently Emma Hornby *et al*., consider the inclination of the neumes to be one of the main differences between vertical and horizontal notation.[16]

Figure 3.1: General Inclination of Horizontal and Vertical Neumes[17]

Horizontal (T4)	Vertical (L8)
Direction of Indicate Rising Pitches	
Direction of Falling Pitches	

[13] For the taxonomies of these manuscripts, see https://neumes.org.uk/view/neumelist/1.

[14] For an introduction to the terminology I am using to discuss Old Hispanic notations, see p. 15 of the introduction. See also Hornby and Maloy, *Music and Meaning*, pp. 315–26.

[15] For an example of an exception to this rule, see Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), p. 192.

[16] Zapke refers to the inclination of the neumes as the 'axis' of the script 'Notation Systems', p. 208. See also: Hornby and others, *Understanding the Old Hispanic Office*, pp. 191–94; Zapke, 'Dating Neumes', pp. 95–96.

[17] The images used in these examples are taken from the 'Chant Editing and Analysis Program', <https://neumes.org.uk/> [accessed 1 May 2023].

Whilst the term ‘horizontal’ gives a general impression of the inclination of the neumes, it is too simplified to be applicable to every neume. Hornby *et al.* recognised that manuscripts written in vertical notation also contain neumes that are strongly inclined to the right, sometimes with an even greater inclination than is found in horizontal sources.[18] On occasion, horizontal and vertical sources also contain neumes that have a similar inclination to one another, despite their overall tendency to differ (Figure 3.2). This demonstrates that the descriptive terms of ‘horizontal’ and ‘vertical’ do not sufficiently encompass all of the palaeographical variations within the two types of Old Hispanic notation.

Figure 3.2: Horizontal and Vertical Neumes that Share a Similar Inclination

	Horizontal (T4)	Vertical	
NS		L8:	BL45:
NSHL		L8	

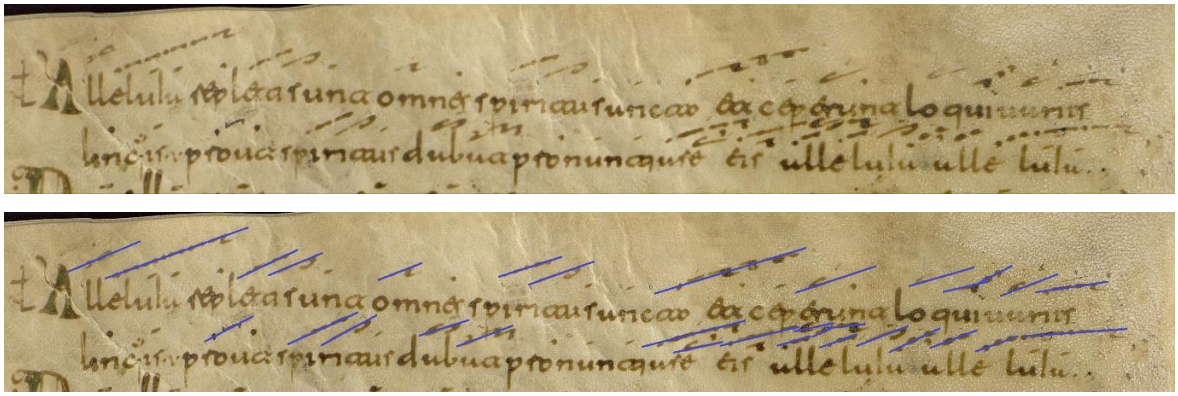
The term ‘horizontal’ also falls short in expressing the variety of inclinations found within the script itself. In T4, the inclination varies throughout the manuscript, even within one chant or on a single syllable. Often, but not always, this variation resulted from the limitations of the writing space; in instances where the writing space was limited, perhaps by text or decorative initials, the scribe changed their inclination to accommodate for the confines of the folio. For example, in Figure 3.3, the writing space available for musical notation on the second line is limited by the text above. This results in changes to the inclination of the neumes from approximately 4.25° (e.g., the final neume of the final ‘alleluia’) to nearly 30° (e.g., ‘spiritus’).[19] However, the top line of the example, which is the top line of the folio, has no limitations to the writing space and still sees variation in the writing angle from around 7° (e.g., ‘variis’) to around 27° (e.g., the second neume of ‘loqui’). There do not appear to be any codicological or palaeographical reasons for this variation. This example therefore shows variation occurring as a result of both physical constraints (i.e., the writing space) and at moments when there is no

[18] Hornby and others, *Understanding the Old Hispanic Office*, pp. 191–94.

[19] I calculated this angle by marking the direction of a neume or neumes (as represented by the blue line in Figure 3.3) and comparing this to the horizontal ruling across the folio.

restriction to the scribe; in these instances, it may be that maintaining a specific writing angle was not a priority to the scribe or that they struggled to maintain a fixed inclination.

Figure 3.3: Inclination of Neumes in *Alleluia repleti sunt omnes*, f. 73v



In vertical notation, Hornby *et al.* found that a recurring sequence of neumes in the antiphons of L8 and BL51 has a consistent appearance and inclination across both manuscripts.[20] In their example, similar variations in the inclination that occur at cognate moments across manuscripts suggest that the writing angle could, at times, have been significant to the interpretation of vertical notation. I found no indication that the writing angle held musical or functional significance at any moment in T4, but rather that inclination varied freely, sometimes due to practical explanations and at other times for no apparent reason.

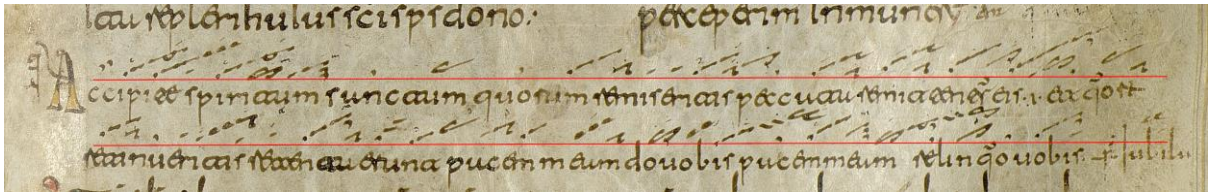
Although named for its inclination, the term ‘horizontal’ therefore has shortcomings when considering the whole of the notational style. Due to the variability of inclination in both horizontal and vertical notation, there are moments where vertical notation might be more horizontal than its eponymous counterpart, and vice versa. Moreover, inclination may have held less importance in horizontal notation than in vertical notation, as demonstrated by the variation in the writing angle in Figure 3.3 and by the repetitive melodies of antiphons in L8 and BL51. Although the two terms give an overview of the notation, the overlap in the inclination of the neumes means that further distinction is needed to define the two scripts. Despite this, I continue to use the terms ‘horizontal’ and ‘vertical’ as they offer a description that sufficiently captures the basic appearance of each script.

[20] Hornby and others, *Understanding the Old Hispanic Office*, pp. 227–33.

Use of the Writing Space

Another characteristic feature of T4's horizontal notation is the use of the space available for musical notation. In some notational systems neumes can be placed at different heights above the text, sometimes with the intention of indicating melodic contours (being diastematic).[21] This method of writing notation relies on the metaphor that the height of the writing space reflects the pitch (e.g., a neume placed higher in the writing space would be sung at a higher pitch than one placed lower in the writing space). Other notations are adiastematic: their use of the writing space does not reflect any intention to represent the pitches of the melody. In horizontal notation, which is adiastematic, the first neume of every syllable begins at a fixed height above the text and therefore does not show any relationship to the pitch of the previous neume (Figure 3.4).[22] I refer to this hypothetical line along which all horizontal notation rests as the baseline. This baseline practice is also found in vertical notation although some vertical notation manuscripts also contain other techniques for using the writing space. For example, the notation of antiphons in L8 was sometimes written with an apparent attention to the height placement of the neumes, suggesting a possible relationship to pitch.[23] Antiphons are often simple chants with few notes per syllable; however, in chants with more complex melodies, the placement of the neumes within the writing space often follows the same baseline technique also observed in T4. In contrast, T4 does not vary the height of the neumes in any type of chant, no matter how simple or complex its melody.

Figure 3.4: Use of a 'Baseline' (indicated in red) in *Accipite spiritum sanctum*, f. 73r



Despite the universal application of this writing technique to all chants in T4, there are occasional instances in which the scribe did not write on the baseline. Where the placement of

[21] See Herminio González Barrionuevo, 'La notación del Antifonario de León', in *El canto mozárabe y su entorno: estudios sobre la música de la liturgia viejo hispánica*, ed. by Ismael Fernández de la Cuesta, Rosario Álvarez Martínez and Ana Llorens Martín (Madrid: Sociedad española de musicología, 2013), pp. 98–99.

[22] For a discussion of how neumes were written in the writing space in other notational systems, see Susan Rankin, 'On the Treatment of Pitch in Early Music Writing', *Early Music History* 30 (2011), 105–75. For a discussion of this feature in Old Hispanic scripts, see Hornby and others, *Understanding the Old Hispanic Office*, pp. 227–33.

[23] Hornby and others, *Understanding the Old Hispanic Office*, pp. 227–33.

a neume is atypical and it does not begin or rest on the line, it is often explicable through the availability of space on the folio; for example, the ascender of a letter 'l' might obstruct the original starting point for the neume (see the first syllable of Figure 3.3, above).[24] I also note that some neumes do not begin with their first pen-stroke directly on this baseline, as I initially suggested, but rather rest on it. For example, the first pen-stroke of a rising curved neume begins higher than the baseline, but the bottom of the curve rests on it (for example see 'sanctum', Figure 3.4). When there is no obvious reason for the neume to begin at a place other than the baseline, there may be a number of factors affecting its placement; for example, Susan Rankin suggests that neumes that were not written along this invisible line may indicate an interplay between memory and notation, in which the scribe wrote a neume higher or lower according to their memory of the melody's contour.[25] Due to the absence of pitched transcriptions of Old Hispanic chants, it is difficult to assess the extent to which memory affected the placement of neumes along the baseline in T4, and, where there are no physical factors affecting their placement, it is often difficult to say why neumes were occasionally written above or below the baseline.

Following the first neume of a melismatic syllable, subsequent neumes were written higher and to the right of the first. Rankin identified a similar system in Sankt Gallen, Stiftsbibliothek, Cod. Sang. 359, in which the first neume on a syllable was written at a fixed height, with subsequent neumes written in a diagonally ascending direction, generally without reference to pitch content.[26] One notable difference between T4 and the Sankt Gallen manuscript is that in SG 359 the scribe tended to begin writing the next neume at the same height as the end of the previous neume; for example, if the first neume ended with a downwards stroke, the second neume began in line with the bottom of the stroke (Figure 3.5a). In T4, subsequent neumes were not placed according to the end of the previous neume, but rather they were placed with their long pen strokes ('virgae') in alignment (Figure 3.5b).[27] This 'string' of neumes then continued, changing direction according to the constraints of the writing space. Melismas in vertical notation tended to be written in a style more similar to SG 359

[24] Susan Rankin, *Writing Sounds in Carolingian Europe: The Invention of Musical Notation* (Cambridge: Cambridge University Press, 2018), p. 199.

[25] Rankin, 'On the Treatment of Pitch', 105–75 (pp. 148–49).

[26] Rankin, 'On the Treatment of Pitch', 105–75 (p. 155). For further examples, see Rankin, *Writing Sounds*, p. 194; and 'Calligraphy and the Study of Neumatic Notations', in *The Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 47–62 (p. 56).

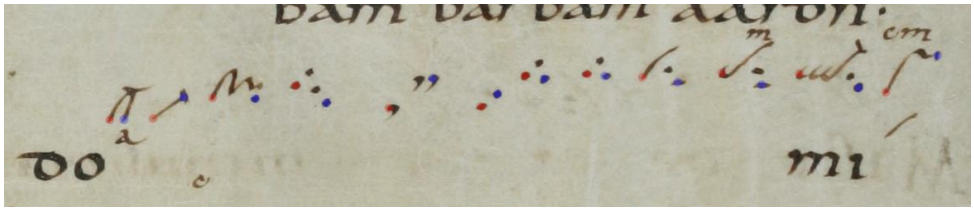
[27] I use virga here to help the reader to recognise the pen stroke being referred to. For a discussion of why I typically avoid the term, see p. 15.

(Figure 3.5c), where subsequent neumes were written with the first pen stroke beginning close to the end of the previous (the first pen stroke was sometimes placed higher or lower if the writing space was limited, or lower if it was beginning a new melodic grouping within the melisma). T4 therefore preserves a method of using the writing space not observed in vertical notation.

Figure 3.5: Placement of Neumes in T4 and Other Notational Systems

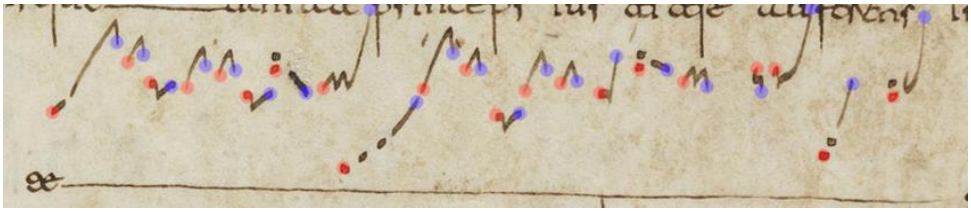
Key: Red: Point at which pen meets the folio at the start of a neume Blue: Point at which pen leaves folio at the end of a neume Green: End of the last line ('virga') in a neume

3.5a: SG 359, p. 122



3.5b: T4, f. 46r

3.5c: L8, f. 43r



This method of beginning neumes at a fixed height and continuing in a linked chain could be the result of several factors. For example, it creates a clear relationship between text and music, making it easier to identify the syllable to which each neume or section of melody belongs.[28] Further to aiding in the legibility of the text, Rankin also suggests that this type of notation may occur for several practical reasons. The first is that the text scribe did not leave sufficient horizontal space for the music on melismatic syllables; however, as the text and music

[28] Rankin, 'On the Treatment of Pitch', 105–75.

of T4 were usually written by the same person (see Chapter 2), where there is insufficient horizontal space for notation, this was likely a conscious stylistic choice by the scribe. According to Rankin, the layout of a writing space could also result from scribal habit. In T4, as all scribes use the same baseline technique for placing neumes within the writing space, I do not understand this feature to be a scribal habit but rather a stylistic feature of the notation. Rankin's final suggestion is that this practice of writing melismas in one long line was adopted to save space and materials during manuscript production. This idea supports early suggestions made by Casiano Rojo and Germán Prado that horizontal notation manuscripts demonstrate an attempt to use space economically, thereby saving on production costs.[29] When considering that T4 was likely produced after the suppression of the Old Hispanic rite in 1080, and at a time where the Old Hispanic rite was granted only limited permissions to continue, it is possible that there was scant funding to produce new manuscripts.[30] However, although I have begun to explore the *milieu* in which T4 was produced, I am not able to pinpoint the specific location or date of its production;[31] it should not, therefore, be assumed that it was produced in an environment that was attempting to save resources under economic constraints. Due to the multiple contextual layers which could have contributed to the use of the writing space in this way, I choose not to select one concrete reason. Rather I consider the use of the writing space to be a characteristic element of horizontal notation, as it was used in the same way by all scribes, thus demonstrating a consistent practice.

Palaeographical Characteristics

Writing is formed by making pen strokes on the page; in horizontal notation, some of these pen strokes have palaeographical features that contribute to the distinctive appearance of the script. As there has been no detailed study of the notation, these palaeographical features have not yet been acknowledged in the scholarship and, in some cases, it is unclear whether they have a functional purpose or whether they are stylistic. One stylistic feature which does not appear to have musical significance is the weighted ends of pen strokes (Figure 3.6).[32] These weighted ends occur on almost all straight pen strokes that have an unconnected end

[29] Rojo and Prado, *El canto Mozárabe*, p. 40.

[30] Mundó, 'La datación', 1–25. For a history of the Old Hispanic rite in Toledo, see pp. 2–10 of this thesis. See also Ramón Gonzálvez Ruiz, 'La persistencia del rito hispánico o mozárabe en Toledo después del año 1080', *Anales toledanos* 27 (1990), 9–34.

[31] This conclusion is also drawn by Rojo Carrillo in 'Old Hispanic Chant Manuscripts'.

[32] For examples in which ascending lines (virgae) develop significative 'noteheads' that aid in a more precise indication of pitch in the twelfth-century manuscript Oxford, BL, ms. Bodley 775, see Rankin, 'Calligraphy', pp. 58–60.

(i.e., at the start or end of a pen stroke that does not join to any other).[33] In contrast, vertical notation does not normally have weighted ends to its pen strokes and generally the scribes appear to have written lines in one straight movement (Figure 3.6). Furthermore, in chants that are preserved in both vertical and horizontal notation, the cognate neumes have a comparable number of notes and no further palaeographical additions. This implies that the weighted ends of pen strokes in T4 do not seem to hold musical meaning, but rather are a stylistic trait of the manuscript's notation.

Figure 3.6: Weighted Beginnings and Ends of Pen Strokes in T4

T4 **L8**

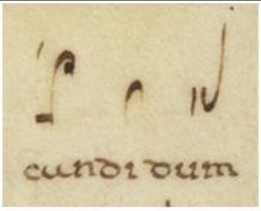
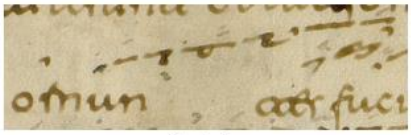
The horizontal notation in T4 also has a distinctive flick at the end of a descent in pitch: another phenomenon absent from the vertical script. These serifs are present at the end of notational shapes that have a straight descending line following an angled connection (e.g., NL:/\:a, and). They can take the form of a flick (), however, they are more frequently thicker and less defined ().[34] Serifs are not found at the end of descending neumes with a curved or gapped connection (e.g., or), or at the end of rising neumes (e.g.,). As this feature has not previously been discussed by scholars, it has thus far been unclear whether the serif represents musical information. In text scripts, for example, serifs do not provide extra information to the reader but rather have the functional purpose of keeping the reader's attention focused on the correct line of writing.[35] To determine whether serifs in T4 are melodic or functional, I compared cognate melodies in L8 and T4, looking both at examples from T4 that had serifs and examples that did not. In 52 examples of neumes which have a serif in T4, 82% had a neume containing a fall in pitch at the equivalent point in other manuscripts. The 18% that did not have a clearly comparable fall in pitch had a notably different melody

[33] This is also noted in Hornby and others, *Understanding the Old Hispanic Office*, p. 185.
[34] Where the feature has the latter appearance, sometimes this appears to be the result of the deterioration of the source or the ink bleeding.
[35] M. B. Parkes, *Their Hands Before Our Eyes: A Closer Look at Scribes* (Aldershot: Ashgate, 2008), p. 59.

and were not comparable at these points.[36] In other words, where the melodies were comparable, a serif always coincided with a fall in pitch.

Two neumes used in T4 contain an example of an angled connection and a descending pen stroke that does not have a serif (Figure 3.7). When comparing these two neumes with chants in L8, all cognate moments had NS: the neume found on 'candidam' in Figure 3.7i, which does not have a serif, is a three note neume beginning with a unison in L8 (NSH).[37] The neume on 'ornantes' in Figure 3.7ii is comparable to the neume in L8 which begins with a unison (NSHL).[38] In these examples, which have angled connections and descending lines but no serif, the equivalent neumes in other sources have a unison rather than a lower note. This suggests that there is a careful and accurate use of the serif in T4 to differentiate between neumes that have a lowering in pitch (as indicated through the presence of the serif) and should be interpreted as NL:/\:a, and angular pen strokes that should be read as N:> (with no serif present). It is therefore not simply the inclination of the pen strokes and the use of the writing space that help to define horizontal notation, but also the way in which individual elements or neumes were formed and understood by the scribes.

Figure 3.7: Cognates of Descending Angled Neumes Without Serifs in T4

	T4	L8
i	f. 1r	 f. 179v
ii	 f. 26v	f. 188v

[36] For a list of examples consulted in this study, see Appendix 3.1.

[37] For scholars who categorise the shape found in L8 as NSH, see Hornby and Maloy, *Music and Meaning*, p. 325; González Barrionuevo, 'Relación', 1–112 (pp. 69–71); Suñol, *Introduction*, pp. 320–21; Rojo and Prado, *El canto Mozárabe*, pp. 40–52.

[38] For discussions on the categorisation of this shape as an NSHL, see Hornby and Maloy, *Music and Meaning*, p. 325; González Barrionuevo, 'Relación', 1–112 (pp. 68–71); Rojo and Prado, *El canto Mozárabe*, p. 47.

Neume Components and Connections

Prior to carrying out detailed case studies of horizontal notation, it is useful to establish the basic vocabulary and principles of the script. Despite stylistic differences between vertical and horizontal notation, both scripts share many of the same notational elements; this is a result of both scripts being variations of Old Hispanic notation, a type of Frankish notation.[39] Frankish notation, which is adiastematic, has two fundamental notational signs, the punctum and the virga, that are used to represent the relative height of pitches: for example, the virga indicates a pitch comparatively higher than those around it.[40] Both these signs are present in horizontal and vertical Old Hispanic notation. Furthermore, these signs can be joined by way of several connection types (curved, angled, or gapped) in both notational scripts. In this section I look at the palaeographical construction of neumes to demonstrate that there is a shared notational vocabulary between the sources. While this work does not cover every neume used in horizontal notation, as this would require discussing over 400 distinct neumes, I offer an overall impression of horizontal notation by discussing the different gestures present in the script.

In T4 single note neumes can be written in several different ways, not all of which are present in L8 and Silos 4 (Figure 3.8). These individual notes are most commonly represented by straight rising lines (virgae: Figure 3.8, type 3) and slightly curved lines (puncta: type 2), as is typical of Frankish scripts. L8 and Silos 4 similarly use puncta and virgae, although in these vertical notation manuscripts the puncta are typically written as a square or rectangular shape (type 1). The punctum, while performing the same function in both scripts, is therefore not necessarily visually identical between the two scripts: the most common presentation of the punctum in T4 is rare in vertical notation, while the most common presentation of the punctum in vertical notation is never used in T4. The preference for certain shapes in T4 demonstrates that, further to the inclination of the neumes and the use of the writing space, the manuscript preserves a particular way of writing the basic elements of notation that differs to those found in vertical manuscripts. The semiology of one of these elements will be explored in Case Study 1.

[39] Frankish notation is a term coined by Susan Rankin in *Writing Sounds*, p. 108. It is also known as French or German notation. See, for example, David Hiley, *Western Plainchant: A Handbook* (Oxford: Oxford University Press, 1995), p. 347.

[40] Rankin, *Writing Sounds*, p. 108.

Figure 3.8: Single Note Neumes

Type	T4	L8	Silos 4
1. Dot	Not present		
2. Curved downwards line		Not present	
3. Straight line			
4. Curved upwards line		Not present	Not present
5. Curved line with open ends facing left		Not present	Not present
6. Wavy line			
7. Downwards line (‘*gravis*’)			

Aside from a largely similar vocabulary for single note neumes, Old Hispanic manuscripts combine these basic notational elements using the same connections across all sources:[41] curved (clockwise and anticlockwise), angled (,), and gapped (,). Pen strokes can also be joined together to form a loop ( ), which is again present in all sources.[42] Although shapes can be joined in various ways in each manuscript, sometimes certain neumes can be unique to a notational script, or even a single manuscript. For example, an NH in T4 can be written using three different connections (Figure 3.9, types 1, 3, and 4), but not with a loop as in L8 and Silos 4 (type 5).[43] Loops are nonetheless present in T4 in certain longer neumes.[44] While T4 does have angled connections, it does not have an NH characterised by a short, thicker line, with a longer, thinner line rising at a right angle (type 2). During my studies, I found that there was a greater preference in T4 for NH written using a gapped connection, regardless of what connection type was used in other manuscripts, and I could not discern any direct relationship between the different types of NH in T4 and other

[41] As can be seen in the neume taxonomies on CEAP, each manuscript contains every type of connection. See https://neumes.org.uk/view/neumelist/1.

[42] The looped neume used in this example contains three notes, NHH:/)°/:cc, as opposed to the two notes shown in other examples. In horizontal notation, loops are formed by drawing a straight line then lifting the pen to add a roughly semi-circular shape underneath, rather than using one long spiralling pen stroke.

[43] This is also true of T5, BN10, Coim, León F-5, and BN56. Due to the small size of fragments such as Coim and León F-5, it is possible that their extant folios do not contain a looped NH while the original manuscript may have done.

[44] For an example of these neumes, see Figure 3.14.

manuscripts. The greater preference for a gapped NH in lieu of all other variations of the contour supports previous observation that horizontal notation has a less nuanced neumatic vocabulary. However, while a gapped NH (type 4) is present in both T4 and L8, there is no gapped NH in Silos 4. This demonstrates that the Old Hispanic neumatic vocabulary varied. There are many factors that might have affected the vocabulary of a source, such as region or institution of origin, date of writing, and scribal preference. The absence of a particular neume in horizontal notation does not necessarily signify a lessened graphic diversity but could rather be a reflection of the variation in the notational vocabularies used throughout the corpus. Establishing these notational vocabularies allows for more detailed comparison in the following case studies.

Figure 3.9: Connections Used in T4, L8, and Silos 4

	T4	**L8**	**Silos 4**
1. Curved NH			
2. Angled NH	Not Present		
3. V-Shaped NH			
4. Gapped NH			Not Present
5. Looped NH	Not Present		

Case Study 1: The Virga Principle

Here, I establish the basic elements that form horizontal notation to lay the foundation for a comparison of their use and function with vertical notation. I found that while the basic shapes and connections in T4 are largely the same as in vertical notation, the meaning and use of one fundamental shape differs significantly. This shape, commonly known as the virga, was used in different ways in horizontal and vertical notation in neumes that contain rising sequences of notes and gapped connections (Figure 3.10). In previous scholarship, it has been established that the virga represents a high or higher note in this context.[45] Taking a gapped NHH as an example, vertical Old Hispanic notation has two dots (puncta) followed by one virga; the line indicates the highest note to which the other notes rise. T4 has a single punctum followed by two virgae.[46] In these instances, the virgae do not represent the highest note, but rather *higher* notes. In fact, T4 can have up to five virgae in a row within one neume.[47]

Figure 3.10: The Use of Virgae in NHH(+) Neumes

T4	L8	Silos 4
dot – line – line	dot – dot – line	dot – dot – line
(punctum – virga – virga)	(punctum – punctum – virga)	(punctum – punctum – virga)
Lines indicate *higher* notes	Line indicates *highest* note	Line indicates *highest* note

Not only does this highlight the issues with using the term virga as it holds implicit meaning for the interpretation of the shape, it also demonstrates a semiological difference between the two notational scripts that results in different practices when reading the notation.[48] For vertical notation, the line is instantly recognisable as the top of a rising melody in a neume.

[45] Leo Treitler, 'The Early History of Music Writing in the West', *Journal of the American Musicological Society* 35 (1982), 237–79 (pp. 250–51). For further discussions of this, see also Rankin, 'Calligraphy', p. 51.

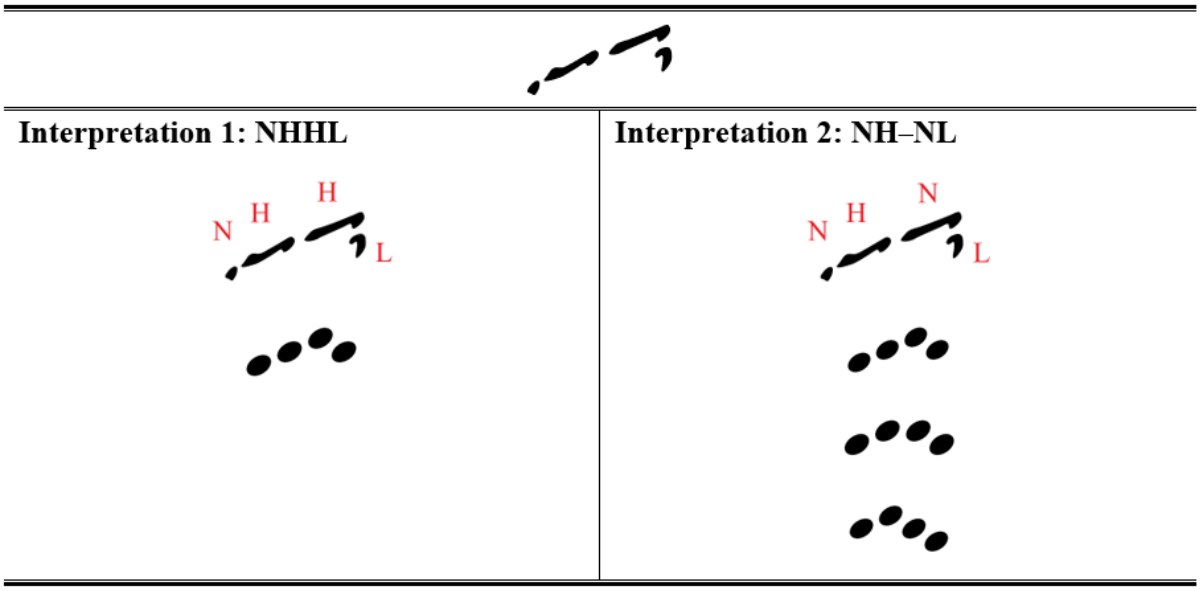
[46] This method is found exclusively in horizontal manuscripts that follow Toledo tradition A. For a more detailed discussion, see Chapter 6.

[47] See numbers 2040 and 2041 at https://neumes.org.uk/view/neumelist/1.

[48] For more on the use of traditional nomenclature, see p. 15. I use the term virga here for clarity, rather than because of its semiology.

For horizontal notation, the use of multiple consecutive lines within a single neume makes it difficult to distinguish between the end of one neume and the start of the next, as often a neume will start with a line. By way of example, Figure 3.11 shows a neume that could have one of two readings. The first could be read as an NHH with a final L; however, it could in fact be two separate neumes (NH and NL) that happen to be written one after the other. While this difference may initially seem trivial, it actually presents a significant issue for the singer: the relationship between the second and third notes could be interpreted in several completely different ways. If the continuation of the line results in the reading NHH, the third note rises from the second. However, if it is two neumes written one after the other with no relationship between the pitches, the third note could be higher, lower, or the same as the one which precedes it (Figure 3.11).[49] Difficulties in reading horizontal notation therefore result from the use of multiple virgae within one neume and the placement of the neumes in the writing space: in vertical notation, the presence of a second line would indicate the start of a new neume rather than another, higher pitch and this confusion does not exist.

Figure 3.11: Example of a Melodically Ambiguous Progression[50]



[49] On the separation between neumes and the resulting musical effects in the Gregorian repertoire, see Eugène Cardine, *Sémiologie grégorienne*, Etudes grégoriennes 11 (Sablé-sur-Sarthe: Abbaye Saint-Pierre de Solesmes, 1970), pp. 48–55.

[50] The use of modern noteheads in this example is to demonstrate the different possible melodic contours of the neume(s). As Old Hispanic notations are not known to preserve information concerning specific pitches, the intervals implied by the placement of the notes are arbitrary.

How, then, could horizontal notation have come to use such a basic notational shape so differently to vertical notation, and in a way that communicates its message much less clearly? Throughout my research, I have not found any other neumatic notations which use the line in this way. Following Zapke's suggestion that the notation changed to the point where it had a 'practically symbolic value' in the later stages of the Old Hispanic rite, it would follow that the change in meaning of the virga reflected a loss of understanding of the notation; however, it is only Toledo tradition A manuscripts which use it in this way. The other Toledo manuscripts belonging to tradition B, which are also late, use the line in the same way as in vertical notation and thus, the principle had not been forgotten by this stage.[51] It is likely that the use of the virga in this way was either a conscious decision by the scribes of the Toledo tradition A manuscripts, or it had been a practice that was, and always had been, entirely separate from that found in vertical notation. This latter option suggests that horizontal notation developed independently from vertical notation. In this possibility, the two scripts may even have developed concurrently, meaning that horizontal notation was not necessarily a later version of vertical notation as suggested by Rojo Carrillo.[52]

Case Study 2: Notational Gestures and Graphic Diversity

As music palaeographers, we may be mystified by some of the signs and unable now to reconstruct their specific meaning, but we may also see calligraphic diversity as a rich historical resource.[53]

The differences between the notational gestures of the horizontal and vertical scripts can offer insight into graphic diversity in the Old Hispanic corpus. In T4, graphic diversity can act as a 'historical resource' that nuances our understanding of the relationship between the two Old Hispanic notational scripts and a resource that helps us to explore scribal knowledge across Iberia. Rather than trying to pinpoint the meaning of specific shapes, I use graphic diversity to paint a wider picture of the horizontal script by looking at the ways shapes can be combined to form neumes.[54] As seen, horizontal notation has elements which represent a single note that can be joined by connections to form melodically longer and more complex shapes. In the

[51] For a preliminary comparison of Toledo's tradition A and B notation, see Chapter 6.
[52] Rojo Carrillo, 'Old Hispanic Chant Manuscripts', p. 130.
[53] Rankin, 'Calligraphy', p. 60.
[54] See, for example, González Barrionuevo's discussion of graphic diversity in L8 in 'La notación', pp. 99–109.

following section, I look at how the methods of forming neumes in horizontal notation differ to those used in vertical notation. This highlights two main points: 1) there are notational shapes that are not shared between the vocabularies; 2) the absence of certain palaeographical gestures in T4 results in a lessened graphic vocabulary. Both of these points allow for a more refined definition of horizontal notation and its relationship to other Old Hispanic practices.

a) Gestures Not Found in T4

The first of these points is easy to demonstrate. Figure 3.12 shows a few examples of notational shapes that do not exist in T4. The connections used in these shapes (curved, angled, or gapped) are all found in T4, as are the composite pen strokes. As such there is no clear palaeographical reason why these neumes are absent from the manuscript.

Figure 3.12: Neumes Not Present in T4

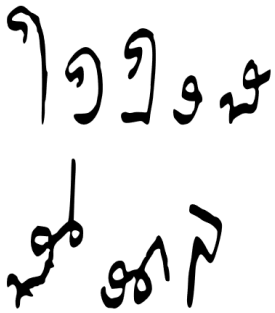
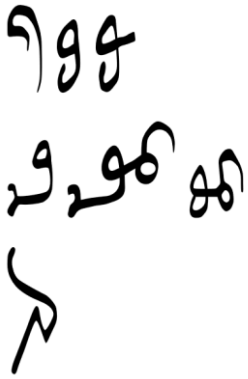
	L8	Silos 4
NHL		
V-Shaped NHH		

The second point concerns specific features of neumes that are absent from the notation of T4 or are only found in a very limited number of contexts. The first of these is the writing of a neume from right to left on a folio.[55] In L8 and Silos 4 this often creates a 'g' shaped neume and can even result in an anticlockwise loop being formed (Figure 3.13, type 1). No anticlockwise directionality is present in T4, even when taking into consideration the orientation of the neumes on the folio. This results in both the absence of neumes formed with a reverse gesture and an absence of neumes with an anticlockwise loop.

Similarly, the lack of neumes that resemble a staircase also reduces the overall vocabulary of the manuscript. In L8 and Silos 4, short straight pen strokes can be joined together by angular connections (these can also be slightly curved) to form a gesture that resembles a staircase (Figure 3.13, type 2). This 'staircase' can represent a rising sequence if

[55] While the gesture of writing from right to left is found in vertical notation, it is unusual in other European medieval notations. Rankin, *Writing Sounds*, p. 120.

Figure 3.13: Gestures in T4 Compared to L8 and Silos 4

Type	T4	L8	Silos 4
1. Right-to-Left gesture	Not present		
2. ‘Staircase’	Not Present		
3. Looped (entry and exit points in a straight line)			
4. Looped (entry and exit points <u>not</u> in a straight line)	Not Present		

it ascends to the right or can represent a descending sequence if it descends to the right. It is not present in T4 in any palaeographically comparable form.

Some gestures are present in T4 but not with the same amount of diversity as L8 and Silos 4. For example, in T4, a loop can only exist if the entry and exit points of the pen stroke are in one straight line (Figure 3.13, type 3). It is not possible to begin the loop by entering it from the top and complete the loop by exiting from the right-hand side, or to enter the loop from the left-hand side and exit vertically (Figure 3.13, type 4). It is also not possible to begin a looped gesture with a wavy line (Figure 3.13, type 4, top line). These notational principles reduce the overall neumatic vocabulary by limiting the possible movement of the pen prior to and after the loop, and result in a smaller vocabulary of looped gestures in T4.

Figure 3.14: Melodically Longest Neume in T4

NHHHLH

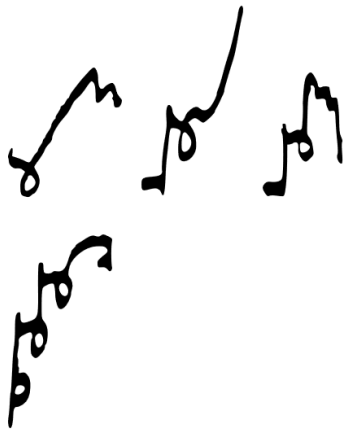
In general, the melodic contours of neumes in T4 are also shorter than in L8 and Silos 4.[56] The greatest number of notes contained in any one pen stroke (or any neume that gives the impression of being one pen stroke) is six (Figure 3.14). In L8 there can be upwards of eight notes in any one neume.[57] Often, the extraordinarily long neumes in these vertical sources seem to be formed by compounding several neumes (see Figure 3.15). This means that two or more neumes can be joined by way of an angled, curved, or looped connection to form a longer neume. Rojo and Prado recognised that horizontal notation rarely has compound neumes.[58] In my research I found only three compound neumes in T4 (Figure 3.15): the first has a looped NHH joined by way of an angled connection to a curved NH, the second follows the same principle but with an additional loop, and the third is a gapped NLL with the final 'L' forming the first stroke of a v-shaped NH. The relative lack of compound neumes in T4 limits the diversity of the neumatic vocabulary of its script, creating a further distinction with vertical notation.

[56] Longer neumes with gapped connections do exist in T4, but due to issues with the interpretation of neume boundaries outlined, discussed on p. 99, I have not included them in this section.

[57] For an early overview of this, see the tabula neumarum of Rojo and Prado, *El canto Mozárabe*, pp. 44–48.

[58] Rojo and Prado, *El canto Mozárabe*, p. 40.

Figure 3.15: Compound Neumes in T4, L8, and Silos 4

T4 (all)	L8 (examples of)	Silos 4 (examples of)
		

b) Gestures Unique to T4

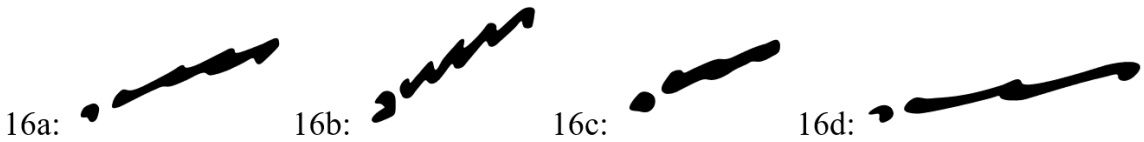
While there are a number of notational gestures that are not present in T4, there are also some which exist only in T4. For example, a rising jagged line with a variable number of notches is present in T4 but not in vertical notation (Figure 3.16). In some examples, this neume has a clearly defined number of pen strokes joined by angular connections (Figure 3.16a–b); however, many examples are less clearly defined, meaning that the shape is more amorphous, and it is difficult to distinguish the number of gestures involved (Figure 3.16c). Some scholars, such as Rojo and Prado, have suggested that this neume is equivalent to a neume often defined as a 'quilisma' in vertical notation, presumably based on its palaeographical similarities: both shapes are rising gestures that comprise multiple pen strokes joined to form one line. However, when I compared the neume in Figure 3.16 to cognate moments in other manuscripts, only 8% of examples had a 'quilisma' in at least one other source, suggesting that the two are unlikely to be equivalent.[59] Neither was there any other neume or neume type consistently used at cognate moments.[60] While this case study did not allow me to determine a specific meaning for

[59] 7/50 examples. In their neume tables Rojo and Prado and Suñol list this as a quilisma: Rojo and Prado, *El canto Mozárabe*, p. 48; see also Suñol, *Introduction*, p. 320. The term 'quilisma' has been used by many scholars in relation to Old Hispanic neumes, notably in discussions of vertical sources. For an example of a 'quilisma', see the final example of a Silos 4 neume in Figure 3.15 (specifically the section after the looped NHH). The nomenclature is problematic because it is borrowed from other European notational systems and the gestures known commonly as 'quilisma' in Old Hispanic scholarship are not direct replicas of the examples found in these systems. As a result, I use the term 'quilisma' in quotation marks to express my reservations about the currently accepted terminology.

[60] The results almost always contain rising gestures, often with different neume divisions to T4, making direct comparisons of the notation difficult. The neumes in other sources have

the T4 neume, it did demonstrate that there is no direct equivalent between the shape in Figure 3.16 and any vertical notation shape.

Figure 3.16: Joined Rising Notes in T4



Another neume found in T4 but not in vertical notation further demonstrates that there are specific neumes and connection types that do not occur in all sources. Moreover, it shows a different understanding of notational principles in T4 from the vertical notation manuscripts. The neume has previously been categorised as NHLH.[61] Although this interpretation of the neume is not explained by scholars, I suggest that it stems from interpreting each change in direction of the pen stroke as representative of a change in note, as is typical in Old Hispanic notations (see Figure 3.17i for an example).[62] However, in my own studies of the neume I found the neume to be made from just two short pen strokes: ~ and a (.[63] I therefore considered whether the musical direction of the neume could also be just two notes rather than four, with a two note interpretation having the possible contours of NH, NL, NS, NU, or ND (Figure 3.17ii).

Figure 3.17: Palaeography of Example Neume

i			
N	**H**	**L**	**H**

(continued on the next page)

varied connections (see Appendix 3.2) demonstrating that there is not a consistent type of neume used at comparable moments to the one in Figure 3.16.

[61] This melodic contour is a 'torculus resupinus'. The neume is categorised in this way in Rojo and Prado's neume tables in *El canto Mozárabe*, p. 45. It is not included in Suñol's tabula neumarum.

[62] This idea is one of the principles on which gestural notation relies. For more detail, see Hornby and Maloy, *Music and Meaning*, Appendix 1.

[63] See Guide to the NSHL System, p. 223 for an explanation of these signs.

ii

Left-hand section of neume	Right-hand section of neume
Writing direction for left-hand section of neume	Writing direction for right-hand section of neume

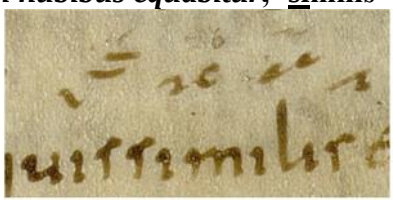
To establish the intended melodic contour, I compared the melodies containing this neume with cognate chants, beginning with those which are repeated more than once in T4. This neume occurs in five chants that are notated twice within T4. In three of those chants, the case study neume occurs in both versions of the chant. In the remaining two chants, the neume is substituted for a two note NL in one of the versions of the chant (Figure 3.18). In each repetition of these two chants (*Quis in nubibus* and *Custodite mandata domini*), the melodies are almost identical to the version of the chant that occurs elsewhere in the manuscript and there is an extremely similar palaeographical expression of the neumes throughout. They are therefore likely to have the same melody in each of their occurrences.[64] This suggests that the case study neume, which is substituted for NL in both examples, was understood to represent a descent in pitch by the scribes of T4. Furthermore, in cognate examples in other horizontal manuscripts, although the same neume occurs in almost all examples, one example in T7 also has NL in place of the case study neume (Figure 3.18). In manuscripts containing vertical notation, 62 out of 87 examples with cognates (71%) also used NL at the comparable moments in cognate chants.[65] On no occasion was there a four note NHLH, nor evidence for any other four note interpretation.

[64] There are a few minor melodic variations; *Quis in nubibus* has an additional note on the melisma of the penultimate alleluia on f. 95r (NH in lieu of N); *Custodite mandata domini* has a NHNLL on the alleluia found halfway through the chant on 84r but NHNL on f. 165r.

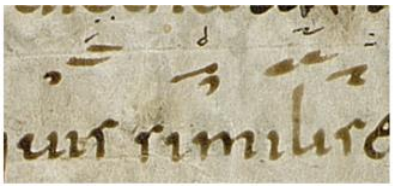
[65] Appendix 3.3.

Figure 3.18: Cognate Chants in T4 Containing the NL Neume

***Quis in nubibus equabitur*, 'similis'**

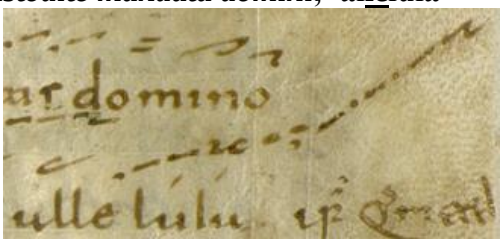


f. 65v

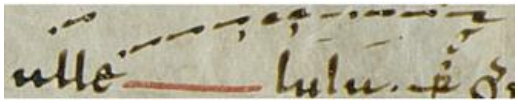


f. 94v

***Custodite mandata domini*, 'alleluia'**

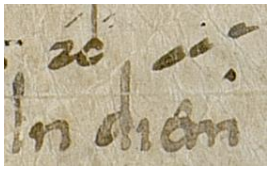


f. 84r

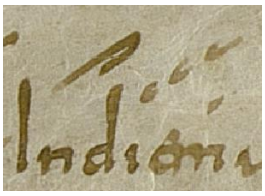


f. 165r

***Alleluia psallam nomini*, 'in'**



f. 116v



T7, f. 106r

This neume demonstrates that assumptions derived from current understandings of vertical notation can result in the misreading of horizontal notation. In this example, the neume should not be interpreted by the directionality of the pen stroke, as is common in vertical notation. Rather, the neume is formed of two shapes, a wavy stroke joined to a curved stroke, and represents an NL. In vertical notation, wavy strokes never begin an NL, making this unique to horizontal notation. It therefore demonstrates that T4 has a different vocabulary of notational principles to vertical notation and this can result in a different neume vocabulary.

The examples used in this case study highlight that the graphic diversity of horizontal notation is not simply 'less diverse' than vertical. The gestural vocabulary of the notation contributes to the overall makeup of the script: while there are many gestures that are not used or are less common in T4's script, there are also some which are unique. Furthermore, the methods of forming neumes can differ, demonstrating alternative understandings of the basic notational principles. On the whole, not only does this case study offer a more detailed definition of horizontal notation, it also offers insight into the breadth of training and interpretation surrounding musical notation in medieval Iberia.

Case Study 3: Contrasting Functional Uses of Palaeographically Similar Shapes

In the previous case studies, I highlighted the differences between horizontal and vertical notation based on the palaeographical appearance of neumes and their melodic interpretation. In this case study, I examine the functional significance of two neumes in order to establish whether they were used and conceptualised in the same way in both scripts.

Figure 3.19: 'W' Shaped Neumes

T4 **L8**

Previous scholarship has examined how certain neumes are commonly used in a particular context. For example, Hornby and Maloy have shown that neumes that end with a descent in pitch (e.g., NL or NHL) and have a 'flag' commonly occur in certain cadential contexts in L8.[66] While this particular neume is not found in horizontal notation, there are a number of other shapes that are shared between both the horizontal and vertical scripts. One example is a group of neumes that resemble the letter 'w'. Hornby, Maloy, and Rojo Carrillo found that in L8, the neume with the melodic reading NSHLH (with the final four notes written like a 'w', Figure 3.19) is usually used at cadences on the penultimate syllable. Thus, the distinctive 'w' shape likely acted as a visual cue to the users of a manuscript to remind them of a particular musical structure or pattern.[67] In vertical notation, Hornby, Maloy, and Rojo Carrillo determined that this neume commonly occurred under certain conditions (Table 3.1);[68] however, in T4, the use of a palaeographically similar shape (Figure 3.19) is not comparable. Unlike in vertical notation, this horizontal version of the neume is typically alone on a syllable rather than at the end of a melisma, is most commonly on a final or middle syllable of a phrase (87% of the time), and is not associated with a text accent.[69] The similar appearance of a neume is therefore not indicative of a shared notational function.

[66] Hornby and others, *Understanding the Old Hispanic Office*, pp. 254–55.

[67] Hornby and others, *Understanding the Old Hispanic Office*, pp. 223–26; Rebecca Maloy, *Songs of Sacrifice: Chant, Identity, and Christian Formation in Early Medieval Iberia* (New York: Oxford University Press, 2020), pp. 125–29.

[68] They also found that it is always followed by N or NH. This relates to the melodic dialects of the chant, see Chapter 4.

[69] See Appendix 3.4 for a full list of examples of the w shape in T4.

Table 3.1: Functions of the W-Neume (NSHLH) in T4 Compared to L8

Use of W-Neume	T4 (22 examples)	L8[70] (79 examples)
At a cadence	15 (68%)	76 (96%)
Last Neume of a Syllable	5 (18%)	79 (100%)
Alone on a Syllable	15 (68%)	–
Penultimate Syllable of a Phrase	1 (4%)	76 (96%)
Followed by N or NH	–	79 (100%)
Accented Penultimate Syllable of a Word	1 (4%)	63 (80%)

A comparison of cognate chants that contain the NSHLH contour demonstrates that, despite palaeographical similarities, T4 and L8 have the neume in completely different functional contexts. When T4 has the NSHLH neume with a 'w' shape, L8 consistently has the same NSHLH melodic contour, but uses a different neume to represent this melody (Figure 3.20i).[71] In T4, the 'w' shape also occurs regularly (105 times) without an initial unison (giving the reading NHLH); in L8 a 'w-shaped' NHLH without the initial unison only occurs 5 times across the 690 chants currently transcribed in CEAP.[72] At moments where T4 has this NHLH, L8 has a curved NHLH in longer melismas and at cadences, or has an NHLH that begins with a gapped connection when it is the only neume on a syllable (Figure 3.20ii).[73] T4 therefore has less nuance than L8 in this context, using just one neume where L8 uses two neumes, dependant on the functional contexts.[74] This further demonstrates that the scribes of T4 understood the functionality of the 'w' shape in a different way from how the scribes of L8 understood the 'w' shape in León notation.

[70] This data is taken from Hornby and others, *Understanding the Old Hispanic Office*, pp. 223–26. They use a total of 79 examples of the NSHLH w-neume, taken from a sample of 600 chants.

[71] Appendix 3.5.

[72] Four of these examples are found in the same chant (*Quoniam ad te*, f. 124v). The final example is found in *Sicut Christus surgens*, f. 196v. This is based on the chants transcribed in CEAP as of the 19th December 2022.

[73] See Appendix 3.5. This specific use of these neumes in this context is also noted by Hornby and others, *Understanding the Old Hispanic Office*, p. 225.

[74] There are no other neumes with the contour NHLH in the vocabulary of T4.

Figure 3.20: Equivalents of the 'W' Shape in L8

i.

T4	L8

ii.

T4	L8

Sometimes the neumes of L8 preserve nuances not found in T4; however, in particular contexts the melodic progression NSHL can be represented in two ways in T4, where L8 only uses one neume (Figure 3.21). In T4, a smaller NSHL is used at the end of a cadential melisma, while a larger NSHL is used when the neume is alone on a syllable. In L8, only one neume is used in both these contexts.[75] This evidence demonstrates that while T4 may be less diverse in some ways, such as having fewer palaeographical gestures than L8, in other ways it may preserve more nuances.

[75] The smaller NSHL in T4 is often used in the same functional contexts as L8's 'w' shaped NSHLH, and on 3 occasions these two neumes were cognate between T4 and L8. For a discussion of the implications of this, see Chapter 4, p. 135–139.

Figure 3.21: Equivalents of the 'W' Shaped Neume in T4

T4		L8	
	- Only used at the end of a syllable		- Used at the end of a syllable - **And** used alone on a syllable - No distinction in shape according to function
	- Often used alone on a syllable - Sometimes used at the end of a melisma section		

This analysis indicates two things. Firstly, that despite some neumes having a similar appearance and melodic contour in horizontal and vertical notation, they do not share the same functional significance. This further supports the contention that horizontal notation was understood and conceptualised in a different way to vertical notation. Secondly, as shown in the first case study, the relationship between vertical and horizontal notation is more complicated than previously thought; in some instances, vertical notation preserves more nuances by using a greater number of neumes for specific functions, yet in other cases, T4 has a greater notational diversity to represent different functions, like Case Study 2.

The implications of these findings are significant for the narrative surrounding the development of notation in Iberia. Where it has previously been suggested that horizontal notation developed from vertical notation, the use of ‘w’ shape contradicts this narrative. As the distinctive appearance of the neume in vertical notation may have aided singers in remembering a cadence, its visual appearance was integral to the understanding and punctuation of a melody.[76] In the horizontal sources, the use of this neume at entirely different moments means that, if horizontal notation developed out of vertical notation, the previous functional associations of the neume were entirely forgotten at some point. Moreover, if horizontal notation developed out of vertical notation, there would have to have been a conscious effort, across *all* horizontal manuscripts held in *every* institution to repurpose the neume into a new functional role — a system that would essentially require a crib sheet (either mental or physical) containing the old vertical notation and the new horizontal one, to aid in the translation from one system to the other. This seems unlikely as according to Rankin, during the process of copying, the natural interference of human memory would result in errors, yet in my study of T4 I found no instances of the horizontal ‘w’ shape following the rules of the

[76] Hornby and others, *Understanding the Old Hispanic Office*, pp. 223–26.

vertical one.[77] Through these case studies, I have shown that it is more likely that horizontal notation, while closely related to vertical notation, diverged from its counterpart early in the practice of music writing, before the role of the 'w' shape was concretely established. The resulting narrative is not a chronological one, but rather one in which the two scripts developed contemporaneously in separate geographical or institutional contexts.

Conclusions

Taking past scholarship as a starting point, I have used evidence from primary sources to build upon some of the key characteristics of horizontal Old Hispanic notation. In this work I problematised current definitions of horizontal notation that were based on inclination alone. Instead, I turned to the tendencies present in T4, looking at the inclination, the use of the writing space, and the unique palaeographical features, in order to further nuance current understandings of the script. I showed that the writing of neumes with multiple virgae in alignment and the use of the serif were also characteristic features of horizontal notation. I further enriched definitions of horizontal notation by considering the variety of shapes present in comparison to vertical notation, examining how certain gestures are and are not shared between the two scripts. Semiological interpretations of neumes, such as the virga, also differed between the two scripts, while the functional contexts of other neumes shows that they were used differently in T4. This evidence has helped to situate horizontal notation within the broader context of Old Hispanic notational practices, confirming that this script preserves evidence of unique interpretations of neumatic notation in the Iberian Peninsula.

For the narrative of notational development in Iberia, I have shifted the focus away from a chronological progression from vertical to horizontal notation, and towards a geographical, or perhaps institutional, perspective. The use of basic elements and distinctive shapes in an entirely different way in horizontal notation, such as the virga and the 'w' shape, suggests that these shapes could have been in circulation in the notational vocabulary before their respective uses were fixed in either notational style. My research therefore suggests that horizontal notation is likely to have developed in a related, but separate, environment to vertical notation as opposed to out of vertical notation.

[77] Rankin, *Writing Sounds*, p. 192.

Chapter 4: The Musical Language of T4

The musical notation in T4 articulates and documents the melodic contours of its chants.[1] In this chapter I explore how these melodic contours were used to structure the melodies; while Susana Zapke stated that horizontal notation only preserves 'the outline of a melody',[2] I aim to establish if T4's chants, whether recorded as an 'outline' or in full, were composed with clear ideas of structure. By exploring recurring patterns that make up T4's chants, I not only establish the manuscript's melodic vocabulary but I am also able to compare that vocabulary to the earlier manuscripts associated with the north of Iberia.

Thus far, no melodic study has focused exclusively on the Old Hispanic manuscripts associated with Toledo.[3] My study of T4 will act as a lens into the music of the extant Toledo sources belonging to the manuscript's liturgical tradition, tradition A, and will provide a starting point from which to analyse the Toledo corpus.[4] Significant melodic differences between the melodies preserved in the Toledo manuscripts and those from the rest of Iberia have been observed by Don Randel, and more recently Emma Hornby and Rebecca Maloy.[5] Randel observed regional groupings (dialects) of the manuscripts based on their responsory verse tones (León, Rioja, Toledo A, and Toledo B).[6] Put simply, Randel found that manuscripts from León almost always have a particular set of responsory verse tones; different sets occur in each of the other groups.[7] Hornby and Maloy identified further regional tendencies at

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[1] For an introduction to the notation of T4, see Chapter 3.

[2] Susana Zapke, 'Notation Systems in the Iberian Peninsula: From Spanish Notations to Aquitanian Notation (9th–12th Centuries)', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th Centuries)*, ed. by Susana Zapke (Bilbao: Fundación BBVA, 2007), pp. 189–244 (p. 209).

[3] In his ongoing doctoral research, David Santana Cañas is examining the relationship between chants in the Old Hispanic corpus, with a focus on Toledo.

[4] For a discussion of the two liturgical traditions in Toledo, see the pp. 7–10 of the introduction.

[5] Don M. Randel, *Responsorial Psalm Tones for the Mozarabic Office* (Princeton: Princeton University Press, 1969); Rebecca Maloy, *Songs of Sacrifice: Chant, Identity, and Christian Formation in Early Medieval Iberia* (New York: Oxford University Press, 2020), pp. 188–241 (chapter 6); Emma Hornby and Rebecca Maloy, 'Melodic Dialects in Old Hispanic Chant', *Plainsong and Medieval Music* 25 (2016), 37–72. See also Raquel Rojo Carrillo, *Text, Liturgy, and Music in the Hispanic Rite: The Vespertinus Genre* (New York: Oxford University Press, 2021), pp. 225–330. For the differences in tradition B manuscripts, see Emma Hornby and Rebecca Maloy, *Music and Meaning in Old Hispanic Lenten Chants: Psalmi, Threni and the Easter Vigil Canticles* (Woodbridge: The Boydell Press, 2013), pp. 107–54.

[6] Randel, *Responsorial Psalm Tones*. In this chapter, I do not deal with Randel's fourth group, Toledo B, which follows a different liturgical tradition. For an analysis of the notation and music of this tradition, see Chapter 6.

[7] Randel, *Responsorial Psalm Tones*.

cadences and chant openings in the León and Rioja manuscripts.[8] Predominantly, Hornby and Maloy's work has focused on the relationship between the León and Rioja regions.[9] In this chapter I explore the proximity of the León, Rioja, and Toledo A dialects, and identify other melodic markers that distinguish T4, a manuscript belonging to Randel's 'Toledo A' group, from the other regions.

Previous scholars have suggested that T4's melodies have more in common with the Rioja musical dialect than the León dialect.[10] In my analysis I explore this hypothesis by looking at three-syllable cadences and comparing their melodies with cognate chants. This work indicates that, while the musical dialect in T4 is not the same as the Rioja dialect — at times it exhibits traits of the León dialect and at others it has its own melody — it does show a relationship with the region. To establish the characteristics of cadences in T4, I also look at the use of specific neumes and recurring neume combinations (groups of two or more neumes that have the same palaeographical appearance and melodic contours when they recur). This allows me to identify common recurring melodic and notational patterns. In previous scholarship, these patterns have typically been explored in the context of the final two syllables of three-syllable cadences; I also look to the antepenultimate syllable, comparing my findings with Maloy's recent work on the melodies of the sacrificia, and using L8 and BL45 as points of comparison.[11] Understanding these recurring combinations allows me to deepen our understanding of T4's relationship to other manuscripts and to identify characteristics that may be representative of a Toledo dialect.

To further explore how melodies were structured in T4, I also turn to the manuscript's long melismas (those comprising 30 or more notes). Initially, I address some of the challenges that arise when comparing melismas written in different notational styles. As I demonstrate, a palaeographical analysis alone cannot offer a full picture of melisma structure. By combining palaeographical and musical analysis, I identify short recurring patterns that occur in melismas; as in other Old Hispanic manuscripts, these particular patterns often signify the start or end of a melisma segment. I identify these patterns by taking Maloy's work on melismas in the

[8] Hornby and Maloy, 'Melodic Dialects', 37–72; 'Fixity, Flexibility, and Compositional Process in Old Hispanic Chant', *Music and Letters* 97 (2016), 547–74; *Music and Meaning*, pp. 178–294.

[9] In their 2013 work, Hornby and Maloy explored the relationship between L8 and some melodies of the Toledo B tradition. Hornby and Maloy, *Music and Meaning*.

[10] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 45–46); Maloy, *Songs of Sacrifice*, p. 229.

[11] Maloy, *Songs of Sacrifice*, pp. 105–58 and 88–241 (chapters 4 and 6).

sacrificia of L8 and comparing her findings to T4.[12] This work not only allows me to explore whether compositional processes were the same across the Old Hispanic corpus, but also to offer insight into the processes of musical transmission in the Old Hispanic repertoire. Evidence from my research into both cadences and melismas corroborates the suggestions made in the previous chapter that the practices preserved in T4 were likely established separately to those preserved in the manuscripts from the north of Iberia, prior to the repertoire being recorded in writing.

Methodology

Analysing T4's chants firstly requires understanding the different sections of a chant melody. To visualise this, it can be helpful to think of Old Hispanic chant melodies as being composed of building blocks. These blocks of musical material can occur at openings, in the middle of a phrase, in a melisma, as a smaller section of a melisma, in the material leading up to a cadence, and as the cadence itself. Hornby and Maloy have found that each of these sections often contains material that varies according to the type of block it is used in. For example, openings and cadences typically have different musical material to one another.[13] Some of these blocks also function at several levels: an opening can be the very first material sung in a chant, or can be the opening of a phrase in the middle of a chant. Cadences can occur at the very end of a chant as the final material that is sung, or internally within the chant at the end of a textual unit. The function of a final cadence is nuanced from that of an internal one; a final cadence acts as a marker that the chant has ended and must give a sense of closure or completion, while an internal cadence can act as a marker that one phrase has ended but another is about to begin.[14] These concepts form the framework for this chapter, in which I discuss cadences (both final and internal), the material leading up to a cadence, melismas, and the material within a melisma.

My analysis of T4's melodies in this chapter is inherently linked to its notation; one method for analysing the melodies of the Old Hispanic rite is to identify recurring neume

[12] For an explanation of the differences between horizontal and vertical notation, see Chapter 3.

[13] Hornby and Maloy, 'Melodic Dialects', 37–72. On recurring melodic material that is used in multiple formal contexts, see Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), pp. 271–277.

[14] For more on the function of cadences and pauses in chant, see Emma Hornby, 'Preliminary Thoughts About Silence in Early Western Chant', in *Silence, Music, Silent Music,* ed. by Jenny Doctor and Nicky Losseff (Aldershot and Burlington: Ashgate Publishing Ltd., 2007), pp. 141–54.

combinations.[15] With such a large vocabulary of neumes in each Old Hispanic notation, a group of neumes that occurs together on multiple occasions is particularly striking and demonstrates a choice to notate sections of chant melodies in recognisable ways.[16] Recurring neume combinations can help us to explore the structure of a chant and the function of specific musical ideas, as each combination typically recurs in a particular context.[17] For example, a combination might appear frequently at the very end of a chant or show a strong relationship to the accent patterns of the text. Such functional associations help us to establish the ways in which the melodies of the rite were constructed. Moreover, they also help us to determine how recurring neume combinations directed the singer(s) in their devotion by aiding in the delivery of the text and acting as mnemonic aids.

Terminology

In this chapter I carefully distinguish between notational and musical styles to ensure that the differences between notation and music are presented with clarity. In previous studies, the terms León, Rioja, and Toledo have been used to refer to both notational style and melodic dialect. For example, in his work on responsory verse tones, Don Randel uses the terms León, Rioja, Toledo (A and B) to refer to the melodic dialects of the tones, yet also refers to the musical notation in the Toledo corpus as 'Toledan'.[18] However, a chant written in the León notation does not always have a León melodic contour.[19] I therefore differentiate between

[15] This approach to Old Hispanic chant was first used by Randel, *Responsorial Psalm Tones*. It has also been explored in Emma Hornby and others, *Understanding the Old Hispanic*, pp. 235–94; Maloy, *Songs of Sacrifice*, pp. 105–58; Hornby and Maloy, 'Fixity', 547–74; , 'Melodic Dialects', 37–72; *Music and Meaning*, pp. 107–54; Rojo Carrillo, *Text, Liturgy, and Music*, pp. 225–330; 'The Vespertini as Witnesses to the Transmission of Old Hispanic Chant in Traditions A and B', *Cantus Planus 28 July–1 August 2014*, Venice 2014); see also Nils Andre Nadeau, '"Pro sonorum diversitate vel novitate": The Singing of Scripture in the Hispano-Visigothic Votive Masses' (unpublished doctoral thesis, University of Michigan, 2000).

[16] As noted by Hornby and Maloy in their 2013 work, despite recurring neume combinations, we cannot know whether the melodic intervals and pitches were the same in each occurrence. Hornby and Maloy, *Music and Meaning*, p. 14; Hornby and others, *Understanding the Old Hispanic Office*, pp. 286–291.

[17] Recurring neume combinations also help us to explore exegesis and compositional process (see Hornby and Maloy, 'Fixity', 547–74; Maloy, *Songs of Sacrifice*, pp. 105–241), the work of individual scribes and habits (see Emma Hornby, Marcus Jones, and Emily Wride, 'Scribal Identity and Scribal Roles in Early Medieval Iberia: A Case Study of Santo Domingo De Silos, Biblioteca Del Monasterio MS 6', *Early Music History* 41 (2022), 1–50), and regional melodic dialects (see Randel, *Responsorial Psalm Tones*; Hornby and Maloy, 'Melodic Dialects', 37–72).

[18] Randel, *Responsorial Psalm Tones*.

[19] For an example, see Hornby, Jones, and Wride, 'Scribal Identity', pp. 40–42.

notational and musical styles throughout this thesis by specifying 'León notation/style' and 'Rioja notation/style' to refer to the visual appearance of the music on the folio and I use the terms León, Rioja, and Toledo dialect to refer to the melodic contours.

Cadences

a) Final Neumes at Final Cadences

When analysing cadences, we can take one of several approaches. For example, one can look at the broader use of cadential strategies (e.g., how many syllables make up a cadence) or one can focus on the melodies used at the cadences, especially those which recur. To begin my analysis, I start by looking at the melodies of the final syllable of cadences; how do cadences end? Do they have a similar number of notes on the final syllable? Are there different practices at final and internal cadences? By asking these simple questions, I show that the treatment of the closing notes of a cadence was almost identical across the Old Hispanic corpus, regardless of melodic dialect. This demonstrates that the chants of T4 follow some of the most fundamental traits of the Old Hispanic melodic language.

For example, in T4 and across the Old Hispanic corpus, the number of possible melodic gestures at the end of a chant is limited. The final syllables of all but one of T4's cadences contain just one note or end with a fall in pitch (Table 4.1). The one anomalous example that ends with a rise (NLH, *Vidi agnum*, f. 12r–v) may result from scribal error or may be an exceptional case. In a study of the vespertinus genre that encompassed the whole Old Hispanic manuscript corpus, Raquel Rojo Carrillo did not find any chants that ended with a rise in pitch, demonstrating a shared understanding across the corpus of how a chant should end.[20] In her research, Rojo Carrillo also identified a bounded range of melodic gestures at the final cadences of the vespertini.[21] Although I found additional contours to Rojo Carrillo (T4 also has NS, NLH, and NHLL), the rarity of these contours could explain their absence from Rojo Carrillo's data set. The conventions of how to end a chant were thus largely similar across all sources: almost all final cadences end with a single note or a fall in pitch and have a relatively limited melodic vocabulary.

[20] Rojo Carrillo, *Text, Liturgy, and Music*, p. 265.
[21] Raquel Rojo Carrillo, 'Text, Liturgy and Music in the Old Hispanic Rite: The Vespertinus Genre' (unpublished doctoral thesis, University of Bristol, 2017), pp. 473–80.

Table 4.1: Melodic Contours of the Final Neumes of Chants in T4[22]

Melodic Contour	Rate of Occurrence (611 total examples)		Melodic Contour	Rate of Occurrence (611 total examples)	
N	481	78%	**NLHL**	27	4%
NHL	20	3%	**NLL**	2	<1%
NHLHL	4	1%	**NS**	2	<1%
NHLL	1	<1%	**NSHL**	6	1%
NL	64	10%	**NUHL**	3	<1%
NLH	1	<1%			

The final syllables of chants are also usually modest across the whole Old Hispanic repertoire. Elaborate final syllables occur in one-syllable cadences (cadences that have melismas on the final syllable).[23] Maloy found that in the sacrificia of L8, final cadences were unlikely to end with this cadential strategy (only 7% of her examples).[24] In T4, across all genres, this strategy also occurs just 7% of the time;[25] typically the final syllable of a chant in T4 has just one neume.[26] Both L8 and T4, therefore, usually have few notes on the final syllable and a more elaborate melody on the penultimate or antepenultimate syllable. This further confirms that there is a strong set of conventions governing T4's cadences, conventions that are also present across the Old Hispanic corpus.

b) Final Neumes at Internal Cadences

In T4, the closing notes of internal cadences have a great deal more variety than found at final cadences, both in their melodic contours and in their neumatic representation. This further parallels Rojo Carrillo's findings.[27] As there are several thousand internal cadences in T4, I limited my study by looking at cadences that occur at the end of a verse, at the end of a sentence or clause, and before a point of repetition. I did not consider smaller textual divisions, such as before and after prepositional phrases, as it was not always clear whether these were cadential. I found 31 different melodic contours on the final syllable of internal cadences, compared to just 11 at final cadences (see Table 4.2). There are also differences in the melodic direction of the final note. Notably, many internal cadences end with a rise or with a unison; this is exceptionally rare at final cadences. The number of notes on the final syllable is also

[22] The data in Table 4.1 is based on all the legible final cadences in CEAP. For a list of the cadences consulted in this chapter, see Appendix 4.1.1 (final cadences in bold).
[23] Hornby and Maloy, *Music and Meaning*, p. 120; Maloy, *Songs of Sacrifice*, pp. 111–12.
[24] Maloy, *Songs of Sacrifice*, pp. 111–12.
[25] 44 out of 611 legible final cadences.
[26] 481 out of 611 legible final cadences (78%).
[27] Rojo Carrillo, 'Text, Liturgy and Music', pp. 473–80.

greatly affected by the location of the cadence. At final cadences, it is almost twice as likely for there to be just one note on the final syllable than at internal cadences.[28] These differences in melodic language likely helped to structure the chant, signifying the continuation of the text and melody. Looking at the treatment of final syllables therefore demonstrates that cadences follow a set of rules depending on their location in the chant — rules that were consistent across the Old Hispanic corpus.

Table 4.2: Comparison of Melodies on Final Syllables of Internal and Final Cadences[29]

Melodic Contour	Rate of Occurrence		Melodic Contour	Rate of Occurrence	
	Final	Internal		Final	Internal
N	78%	40%	**NLLH**	–	<1%
NH	–	14%	**NS**	<1%	2%
NHH	–	3%	**NSH**	–	3%
NHHH	–	<1%	**NSHL**	<1%	3%
NHHHH	–	<1%	**NSHLH**	–	1%
NHHL	–	<1%	**NUH**	–	<1%
NHHLH	–	<1%	**NUHL**	<1%	2%
NHL	3%	4%	**NUHLH**	–	<1%
NHLH	–	1%	**NUL**	–	1%
NHLHL	1%	1%	**NULL**	–	1%
NHLL	<1%	1%	**NUS**	–	<1%
NL	10%	14%	**NUSHL**	–	<1%
NLH	<1%	3%	**NUUL**	–	<1%
NLHL	4%	5%	**NUUU**	–	<1%
NLHLH	–	1%	**NUUUL**	–	<1%
NLL	<1%	1%			

Cadential Strategies

In this section, I turn to the strategies used at cadences to identify the practices contained in T4 and to explore the manuscript's relationship with León and Rioja sources. A cadential strategy is the number of syllables involved in a cadence; in Old Hispanic chant cadences tend to span between one and four syllables.[30] The strategy used at a cadence does not refer to the number of syllables in the final word of the phrase. Rather, the structure of the musical material used during the cadence defines the strategy being used. This musical material often comprises neume combinations that recur throughout a manuscript, notational style, or region. By

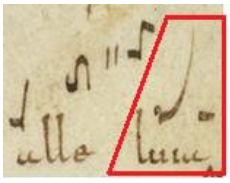
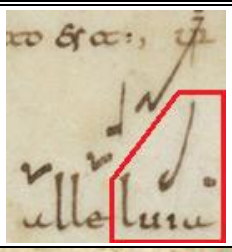
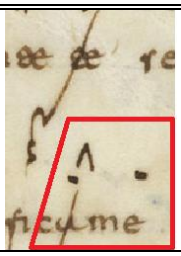
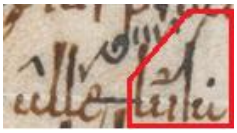
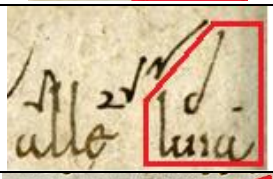
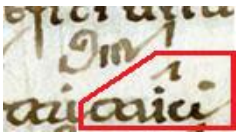
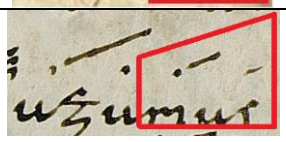
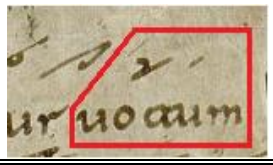
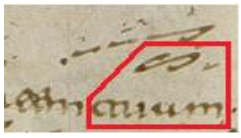
[28] 79% at final cadences compared to 40% at internal cadences.

[29] For a list of the cadences consulted in this chapter, see Appendix 4.1.1 (final cadences in bold).

[30] For a discussion of cadential strategies see: Hornby and others, *Understanding the Old Hispanic Office*, pp. 252–67; Maloy, *Songs of Sacrifice*, pp. 110–29; Hornby and Maloy, 'Melodic Dialects', 37–72 (p. 42).

identifying these recurring neume combinations, it is then possible to identify which cadential strategy is being used. For example, Hornby and Maloy found that three-syllable cadences are generally formed of relatively simple neumes on each of the final two syllables and material on the antepenultimate syllable that is often one of several recurring combinations. In L8, for example, these cadences commonly present as [recurring combination]+rounded NH+N or [recurring combination]+v-shaped NHH+N (Figure 4.1). A two-syllable cadence could be [recurring combination]+N, and a one-syllable cadence has the recurring combination in a melisma on the final syllable. Hornby and Maloy also noted that the Toledo manuscripts have a preference for a single note on the penultimate syllable in three-syllable cadences (e.g., [recurring combination]+N+N).[31] Here, I consider the similarities between the recurring combinations used in different types of cadence in T4 to better understand how the manuscript relates to other sources. As T4 contains horizontal notation while manuscripts from León and La Rioja contain vertical notation, I consider whether manuscripts share the same recurring melodic contours, rather than recurring neume combinations, as much of the neume vocabulary is not shared between the two neumatic scripts.

Figure 4.1: Different Ways of Ending Three-Syllable Cadences

	NHH+N	NH+N	NHL+N
León			
Rioja			
Toledo A (T4)		 	

[31] Hornby and Maloy, 'Melodic Dialects', 37–72 (p. 45).

a) Three-Syllable Cadences

Despite using the same cadential strategies as other manuscripts, T4 exhibits a preference for different melodic contours to other regions. This is particularly evident in three-syllable cadences. Hornby and Maloy found that internal three-syllable cadences tend to have melodic progressions that are particular to each regional dialect; in the León dialect, if the antepenultimate syllable ends with a fall in pitch or has a single note, there is a v-shaped NHH on the penultimate syllable (i.e., …L+NHH+N or N+NHH+N; Figure 4.1). The Rioja dialect has a tendency to use a gapped NHL at this moment (i.e., ...L+NHL+N or N+NHL+N).[32] The final syllable of these cadences can also vary: there might be an NH or NL instead of a single note on the last syllable.

In T4's three-syllable cadences there is a slightly higher preference for NHL+N, perhaps suggesting closer ties to the Rioja dialect than to the León dialect (Table 4.3).[33] At final cadences, the NHH+N or NH+N endings are not an indicator of dialect in León and Rioja manuscripts. They are, however, still common in these sources whilst in T4 they are rare. The melodies used during this cadential strategy thus provide initial evidence that T4 does not preserve the same melodic preferences as sources with León and Rioja dialects at internal or final cadences.

Table 4.3: Number of Instances of NHH, NH, or NHL Cadences in T4

	Total number of cadences	NHH+N		NH+N		NHL+N	
With N on the final syllable							
Internal	1683	13	(<1%)	50	(3%)	41	(2%)
Final	611	3	(<1%)	26	(4%)	20	(3%)
Total	2294	16	(1%)	76	(3%)	61	(3%)
With N, NH, or NL on the final syllable							
Internal		19	(1%)	101	(6%)	83	(5%)
Final		3	(<1%)	29	(5%)	36	(6%)
Total		22	(1%)	130	(6%)	119	(5%)

Neither does T4 follow the same rules of melodic grammar as León and Rioja dialects in these contexts. The choice of material at three-syllable internal cadences in León and Rioja sources is strongly associated with the preceding melodic contour; if the antepenultimate

[32] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 42–52).
[33] Hornby and Maloy also found NHL to be more common in T4 than NHH, 'Melodic Dialects', 37–72 (pp. 45–46). Maloy also noted this *Songs of Sacrifice*, p. 229.

syllable has a single N or ends with a fall in pitch (i.e., ...L), then the penultimate syllable is either NHH or NHL (in León and Rioja respectively). Hornby and Maloy found L8 to follow this rule at 97% of the time at internal cadences.[34] In T4, when the penultimate syllable is NHH, the contour rule is applied consistently (84% of instances, Table 4.4). However, when the penultimate syllable follows the Rioja contour (NHL), this rule is only applicable 69% of the time. Both the León and Rioja dialects tend to have NH if the antepenultimate syllable ends with a rise.[35] In T4, this contour rule is followed only 20% of the time. The contour rule does not seem to be consistently applied in T4, especially when the penultimate syllable is NH or NHL; perhaps, unlike in the León and Rioja dialects, it was not understood or not considered an important part of compositional practice.

Table 4.4: The Application of the Contour Rule in T4's Internal Cadences

Melody on Final Two Syllables	**Melody on Antepenultimate Syllable**					**Total Following Expected Rules of Melodic Grammar**
	N	**...H**	**...L**	**...S**	**...U**	
NH+N	27	2	17	3	1	2/50
NH+NH	6	10	12	1	1	10/30
NH+NL	5	9	4		3	9/21
					NH+N/NH/NL total	**21/101 (20%)**
NHH+N	7	2	4			11/13
NHH+NH	-	-	-	-	-	-
NHH+NL	2	1	3			5/6
					NHH+N/NH/NL total	**16/19 (84%)**
NHL+N	14	6	20		1	34/41
NHL+NH	3	3	1	1		4/8
NHL+NL	3	11	16		4	19/34
					NHL+N/NH/NL total	**57/83 (69%)**

b) N+N Cadences

In T4, the most common type of three-syllable cadence is rarely found in sources associated with León; it is more frequent in those from Rioja, suggesting a closer relationship with the latter.[36] Characterised by a single N on each of the two final syllables of a phrase, this N+N ending often has a recurring neume combination on the antepenultimate syllable.[37] While,

[34] Hornby and Maloy, 'Melodic Dialects', 37–72 (p. 45).
[35] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 42–52).
[36] In T4 this accounts for 23% of final and internal cadences. For a discussion of N+N cadences in Hornby, Jones, and Wride, 'Scribal Identity', 1–50 (pp. 15–16); Hornby and Maloy, 'Melodic Dialects', 37–72 (p. 45).
[37] On these recurring neume combinations on the antepenultimate syllable, see the discussion below on page 131.

unlike the dialect tells of León and Rioja, this cadence neither seems to follow any contour rules nor relate to textual accent, its use is still informed by musical grammar.[38] For example, the antepenultimate syllable of three-syllable N+N cadences is more likely to be preceded by a melisma of ten or more notes than two-syllable cadences ending with an N (Table 4.5). There are also differences in the melodic density of this antepenultimate syllable depending on whether the cadence is final or internal: final cadences are much more likely to have a melisma of 10 or more notes on the antepenultimate syllable than internal ones (Table 4.5). The appearance of an N+N cadence therefore seems to correlate to the melodic density of the material that comes before it. This suggests that despite the apparent simplicity of the N+N cadence in T4, it was, like the cadences in the Rioja and León regions, a melodic device bound by rules.

Table 4.5: Melodic Density of Syllables in Two- and Three-Syllable Cadences

	Percentage with 10 or more notes: Three-syllable cadences (N+N) (antepenultimate syllable)		**Two-syllable cadences (ending N) (penultimate syllable)**	
Internal	14%	(33/239)	8%	(15/197)
Final	46%	(139/294)	10%	(5/47)

c) Domine Cadences

Another type of three-syllable cadence has a clear format in the León and Rioja dialects; it is formulaic in both melodic contour and often in choice of notational shape.[39] Examining this type of cadence in T4 can help to further understandings of the musical relationship with other practices in Iberia. In the León dialect, the melody commonly takes the form N(X)+NL+N(H), with the antepenultimate syllable frequently reading NH or N (Figure 4.2).[40] In the Rioja dialect, there is a different melodic preference: N(X)+NHL+N(H). Despite different melodic contours in each dialect, these progressions frequently occur at comparable moments in cognate chants, indicating that they are functionally equivalent to one another. As these progressions are often found on words beginning ‘domin-’ (e.g., ‘domine’ or ‘dominus’),

[38] At internal cadences 37% (86/239) follow the contour …H+N+N and 53% (127/239) follow …L+N+N. The remaining 20% are made up of N+N+N, …S+N+N, or …U+N+N.

[39] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 48–50); Hornby and Maloy, 'Fixity', 547–74 (pp. 562–65). See also Maloy’s discussion of ‘Type 4’ cadences in *Songs of Sacrifice*, pp. 123–24.

[40] The first syllable, here called ‘N(X)’ is usually N or NH, although Maloy further included examples containing NHHH, NHHLH, NHL, NL, NSH, and NS in *Songs of Sacrifice*, appendix 3d. Hornby and Maloy also noted that in rare instances, the final syllable is sometimes NSH, 'Fixity', 547–74 (pp. 564, n. 56).

I will follow Hornby and Maloy in using the term ‘domine cadences’, with further specification of León or Rioja to indicate their melodic contour.

Figure 4.2: Neumes Used to Write Domine Cadences

León Domine Cadence	**NH**	**NL**	**N**
Vertical[41]			
Horizontal			
Rioja Domine Cadence	**N**	**NHL**	**N**
Vertical[42]			
Horizontal			

In this study, I collected examples of cadences using the criteria outlined above (p. 118) that have cognates in a León or Rioja manuscript. I discounted cadences found in ferial antiphons; Hornby and Maloy found that, when used at the end of ferial antiphons, the León domine cadence tended to be used in all manuscripts.[43] In a brief study of the ferial antiphons that are present in a Rioja and a León manuscript, I found that there was a tendency to use the León version at internal cadences in all manuscripts.[44] The examples taken from ferial antiphons therefore do not show a preference for the León dialect, but rather reflect the different practices in the antiphons of the Old Hispanic rite, and are thus excluded from this study.[45]

Domine cadences in T4 exhibit characteristics of both regions. Although there is a higher preference for the León domine cadence than the Rioja in T4 (33 examples compared to 21 respectively), the patterns in cognates chants suggest a closer tie to the Rioja than the

[41] Images taken from L8.
[42] Images taken from BL45.
[43] Hornby and others, *Understanding the Old Hispanic Office*, pp. 259–65.
[44] In 4/6 examples that have a domine cadence in both a León and a Rioja manuscript, all manuscripts follow the León dialect (*Ego clamavi*; *Antiqua ne intueamini*; *Vivificabit nos dominus*; *In templo domini*). In the remaining two examples, the melody is N+N+N (*Deus tu convertens*; *Mirabilis elatio*).
[45] In a brief study of antiphons that are not ferial in Silos 6, I found that domine cadences *do* reflect dialect and have thus kept non-ferial antiphons in this sample. This study was based on Hornby, Jones, and Wride’s Appendix 2 in, 'Scribal Identity', 1–50. The understanding of domine cadences in antiphons would benefit from a detailed study.

León dialect (Table 4.6).[46] When T4 has a Rioja version of a domine cadence, if manuscripts with the Rioja dialect also have this version, but manuscripts with the León dialect have a León version, this shows a closer relationship with Rioja sources. However, there are only five examples with cognates in a Rioja manuscript, only two of which have a Rioja domine in the cognate chant; this does not provide enough data to determine how closely T4 aligns with the Rioja dialect. When T4 has a Rioja cadence, 11 of the 21 examples in a León manuscript use the León domine. This suggests that T4 preserves a different practice at these moments, perhaps one influenced by the Rioja dialect. Three cognates in León manuscripts in fact follow the Rioja dialect in both L8 and T4; these cadences act as a reminder that melodic dialects were followed with a degree of flexibility and there may therefore be traits from one dialect in a manuscript that is rooted in another. The remaining seven cadences with cognates in a León manuscript do not present any clear dialect tells: four have NHLH on the penultimate syllable, one has NH, one has NHH, and one has NLH. In total then, domine cadences in T4 show a closer relationship to the Rioja dialect than the León dialect through their preference for NHL in 13 out of 26 cognates (50%).[47]

Table 4.6: Cognates of Examples with a Rioja Domine Cadence in T4[48]

Typical Regional Associations of Manuscripts with Cognates	Total Number of Cognates	Number with the Expected Version of the Domine Cadence According to Their Region	Number with Domine Cadence of the Opposite Region to Expected	Number without a Regionalised Domine Cadence
Rioja	5	2	3	
León	21	11	3	7

There is less evidence that T4 frequently used the León dialect. While the León domine cadences account for just under a third of examples (33 out of 111), many of these are the same in all manuscripts or do not have a Rioja cognate as a point of comparison (Table 4.7). Of the 33 examples of a León domine cadence in T4, cognate moments in a León manuscript have a León domine cadence on 28 occasions. However, 6 out of 9 cognates in a Rioja manuscript also have a León domine cadence at comparable moments. In these six examples, the presence

[46] The preference for the Rioja dialect in T4 has also been noted by Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 45–46); Maloy, *Songs of Sacrifice*, p. 229.

[47] This number is made up of 2 examples with Rioja domine cognates in T4 and a Rioja manuscript and 11 examples with a León domine in León manuscripts where T4 has a Rioja domine.

[48] See the Appendix 4.1.2: Domine Cadences.

of a León domine cadence does not show a close relationship between T4 and the León dialect, but rather shows that there was a stable melodic tradition across the repertoire at these moments. The number of examples from manuscripts associated with the Rioja is also small due to the limited number of cognates; this prevents analysis of how many examples of the León domine cadence in T4 were the result of a stable melodic tradition throughout the corpus and how many were choices to adhere to the León tradition at points where a Rioja domine cadence was commonly used in the Rioja tradition. This lack of cognates in Rioja sources leads to an uncertainty in the dialect preferences of T4; between 0 and 27 domine cadences in T4 (0%–24%) could show genuine León tendencies.[49] Nonetheless, even if these 27 cadences had León tendencies, the preference for this dialect is still lower than for the Rioja.

Table 4.7: Cognates of Examples with a León Domine Cadence in T4[50]

Typical Regional Associations of Manuscripts with Cognates	Total Number of Cognates	Number with the Expected Version of the Domine Cadence According to Their Region	Number with Domine Cadence of the Opposite Region to Expected	Number without a Regionalised Domine Cadence
Rioja	9	0	6	3
León	33	28	1	4

The most common type of domine cadence in T4 follows neither the León nor Rioja dialect. This cadence, formed of a single note on each of its syllables, has an extremely simple N+N+N contour.[51] In the 40 examples of this progression in this study, 37 exhibit a marked difference from León manuscripts: in manuscripts associated with León, 22 cognates use the León domine cadence and a further 15 have an N+NHH+N cadence (Hornby and Maloy note this ending as common in L8's proparoxytonic cadences).[52] N+N+N is more common in manuscripts from the Rioja. For example, it is also present in Silos 6 (Table 4.8). However, this cadence type is more common in T4 than in Silos 6 (36% compared to 14% respectively).[53]

[49] This number is the total number of León domines (excluding ferial antiphons) minus the 6 examples from Rioja manuscripts that also have a León cadence (suggesting the melody was uniform across the corpus).
[50] See the Appendix 4.1.2: Domine Cadences.
[51] We are not able to know the relative pitches of these notes.
[52] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 47–48).
[53] Hornby, Jones, and Wride have identified different scribes in Silos 6, some of whom use the León dialect and others the Rioja dialect. 14% is the average use of N+N+N cadences across all scribes. See Hornby, Jones, and Wride's Appendix 2 in 'Scribal Identity', 1–50.

A similar variation of the N+N+N domine cadence has NH on the final syllable. Again, most cognates in León manuscripts either have a León domine cadence or show a preference for NHH on the penultimate syllable.[54] Five of these examples also have cognates in Rioja manuscripts; like T4, two have N+N+NH in the Rioja manuscripts. This shows that not only does T4 have a different cadential progression to L8, but that this progression can be found in sources preserving the Rioja dialect. Overall, the almost entire absence of this progression from León manuscripts, and its comparatively more frequent use in ones preserving the Rioja dialect, further links the musical practices of T4 more closely to the Rioja than to León.

Table 4.8: Rate of Occurrence of N+N+N and N+N+NH Cadences in T4 and Silos 6

	Number of occurrences	
	T4[55] **(total no. of domine cadences: 111)**	**Silos 6**[56] **(total no. of domine cadences: 28)**
N+N+N	40 (36%)	4 (14%)
N+N+NH	14 (13%)	2 (7%)

In T4, domine cadences have examples of all known dialects. The use of a particular version is neither limited by scribe nor within one chant. This suggests that at the time of writing T4, there was no clear association between melodic dialects and the particular melodic choices used at domine cadences. For example, Hand 1 used the León, Rioja, and N+N+N(H) versions.[57] Moreover, in *Haec dicit dominus* (f. 53v), there is both the León and the N+N+N domine cadence. The only notated cognate of this chant is in L8, which uses the León version in both instances. The scribe of T4 used a 'mixed' melodic dialect that was not directly copied from a 'pure' León or Rioja exemplar. Alternatively, they may not have been aware of, or concerned by, the regional implications of the melody at domine cadences, either copying the 'mixed' dialect from their exemplar or inserting the version of the domine cadence they deemed most appropriate. Regardless, the mixed melodic traits contained in this chant indicate that at some point during its transmission, there was a complex interplay between regionality, scribal and institutional identity, memory, and scribal initiative; the singers and/or scribes of the chant

[54] Appendix 4.1.2: Domine Cadences.
[55] See Appendix 4.1.2: Domine Cadences.
[56] See Appendix 2 in Hornby, Jones, and Wride, 'Scribal Identity', 1–50.
[57] For a discussion of the different hands in T4, see Chapter 2.

adapted its melody to one with which they better identified, either consciously or unconsciously.[58]

d) Three-Syllable Cadences: Concluding Thoughts

The ability to identify regional traits in three-syllable cadences makes them a valuable starting point for my study of T4's dialect. Not only do the variations of the NHH/NHL/N+N cadence suggest that T4 has a closer melodic relationship with the Rioja region than with the León region, so too do the domine cadences.[59] T4, however, still shows some connection to the León region; there are moments where the melodies do not follow Rioja tendencies. Perhaps this shows a transmission that was not directly from the Rioja, but one which combined elements of each dialect. The presence of multiple dialects throughout the work of each notator suggests that this fusion of musical practices was not a result of the choices of one particular scribe but rather represents an assimilation of Old Hispanic melodic dialects. This ultimately resulted in a musical language that was particular to T4, and possibly Toledo more widely.

Recurring Neume Combinations

As identified by Maloy, in a three-syllable cadence it is not only the NHH+N, N+N, or NHL+N on the final two syllables that can be formulaic, but also the progression on the antepenultimate syllable (e.g., [recurring combination]+N+N).[60] These recurring melodic combinations often use the same neumes, suggesting that they were perceived as a recurring notational or melodic unit.[61] By identifying recurring combinations in the sacrificia of L8, Maloy established a vocabulary of patterns used in the León dialect. Her work therefore serves a twofold purpose: to inform the methodologies I use in this section and to act as a point of comparison for T4.

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[58] For discussions of how memory can interact with the writing of a musical notation, see Susan Rankin, 'From Memory to Record: Musical Notations in Manuscripts from Exeter', *Anglo-Saxon England* 13 (1984), 97–112.

[59] This follows Hornby and Maloy's findings in Hornby and Maloy, 'Melodic Dialects', 37–72. For a specific example of the relationship between the Toledo manuscripts and a Rioja manuscript (A30), see pp. 49–50.

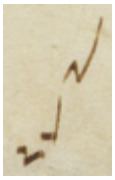
[60] Maloy, *Songs of Sacrifice*, pp. 105–58 (chapter 4). Maloy's work pays close attention to L8 and, although a study of one genre cannot represent the cadential diversity of a whole manuscript, the volume of material considered undoubtedly reflects a substantial portion of the León musical practice. A full analysis of all of L8's final cadences may offer different results and would likely present more melodic patterns.

[61] On identifying patterns, see Hornby and Maloy, 'Melodic Dialects', 37–72; Hornby and Maloy, 'Fixity', 547–74; Hornby and others, *Understanding the Old Hispanic Office*, pp. 237–58; Rojo Carrillo, *Text, Liturgy, and Music*, pp. 232–45.

In this section I examine several progressions that recur in T4, beginning with two formulas previously identified by Hornby and Maloy, and comparing their use in T4 to other manuscripts. I then turn to recurring neume combinations in three-syllable cadences, which I directly compare to Maloy's findings in L8 and to the cadences in BL45. This establishes the degree to which the manuscripts share musical material. Finally, I look at progressions in T4 that are not found, or not found as commonly, in the León and Rioja dialects. This establishes traits that could be particular to the Toledo manuscripts and lays the groundwork for expanding the definition of Randel's Toledo A dialect.

a) Formulas A and B

Figure 4.3: Formula A



L8

T4

Two recurring combinations offer examples of how some patterns retained their functional and melodic traits across León, Rioja, and Toledo. The first, Formula A, is present in nearly all vertical manuscripts from the 9th to 11th centuries, and in all genres.[62] In vertical manuscripts, it is characterised by the melodic shape NH–NH–NLH (all on one syllable) and written using specific neumes (Figure 4.3). The same melodic pattern is also present in T4, albeit with visual differences as a result of the different notational scripts. Hornby and Maloy suggested that this recurring neume combination in horizontal notation could reasonably be interpreted as Formula A.[63] I found that the T4's recurring neume combination in Figure 4.3 is used in a nearly identical way to Formula A in vertical manuscripts, which indeed confirms it as the same formula. For example, 71% of examples in T4 that have a legible, comparable cognate have Formula A in at least one vertical manuscript.[64] The use of Formula A in T4 is also extremely similar to its use in vertical sources. Hornby and Maloy found that in the responsories, Formula A is used on the antepenultimate syllable 82% of the time when it is at

[62] Hornby and Maloy, 'Fixity', 547–74 (p. 556).

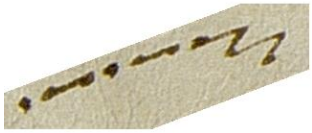
[63] Hornby and others, *Understanding the Old Hispanic Office*, p. 242. They found that tradition B manuscripts T5 and BN10 only use Formula A once. The common cadential strategies of these manuscripts merit further study.

[64] 82/115 cognates in other manuscripts. This data is based on the examples of Formula A in T4 (see Appendix 4.1.3, Formula A Cognates, for a list of these examples)

the end of a chant or sentence; across T4 it is used 81% of the time in this context.[65] At smaller divisions in the responsories in vertical notation, it occurs 72% of the time on the penultimate syllable; across T4 this happens 68% of the time.[66] The consistency of the use of Formula A across manuscripts from different regions suggests that its specific melodic or structural function that did not vary within the tradition A repertoire.

Figure 4.4: Formula B

L8



T4

A second progression, Formula B, is also used in comparable contexts across manuscripts; however, this formula is not used as often in T4 as in the vertical notation manuscripts. In T4, all occasions of Formula B, which has the melody NH–NH–NLHL (Figure 4.4), are either at the end of a word (especially when alone on a syllable) or part of a melisma. This is identical to its use in vertical sources.[67] Although functionally equivalent, the specific moments of Formula B's use are not consistent throughout the corpus. Unlike Formula A, when Formula B occurs in T4, only 53% (34/64) of comparable cadences in cognate chants also have Formula B. Similarly, when Formula B occurs in other manuscripts, T4 does not always have the formula at the comparable moment.[68] From this evidence it is apparent that although Formula B has the same function across the tradition A corpus, the specific moments of its use are not paralleled between T4 and manuscripts with the León or Rioja dialects. The flexibility in the use of Formula B implies that it was a compositional component that could be used with flexibility during chant composition. This may indicate that the formula entered into the musical vocabulary before the chants melodies were recorded in writing, or that even when entering into the written vocabulary, the specific use of Formula B was not wholly fixed, thus resulting in variation across the Old Hispanic chant repertoire.[69]

[65] 42/52 occurrences. I have chosen to use data from across the whole of T4 as there were only eight examples of it occurring at these moments in the responsories.

[66] 28/41. In the responsories it occurs on the penultimate syllable in 5/7 cases (71%).

[67] This data was collected by carrying out a search for Formula B in CEAP (see Appendix 4.1.4).

[68] See, for example, *Splenduit lucerna tua*, which uses Formula B in L8 and NHH–NLHLH in T4 ('ambulabimus', f. 100r and f. 41r respectively).

[69] For a discussion of flexibility and oral transmission in Old Hispanic chant, see Hornby and Maloy, 'Fixity', 547–74.

b) Other Recurring Neume Combinations

Some of the melodic material Maloy identified as common in the sacrificia's final cadences in L8 is shared with T4's final cadences — naturally the specific notational shapes differ slightly — although each manuscript has additional patterns particular to their respective melodic vocabularies (Table 4.9).[70] When also comparing with BL45's final cadences (as typical of a Rioja manuscript), I found that the most common ending to the antepenultimate syllable of three-syllable final cadences is NLH in all manuscripts, regardless of melodic dialect. The manuscripts, however, are not always similar; a common ending in L8, NULH, does not occur in T4. Similarly, one of the most common endings in T4, NUU, is never used in L8 or BL45.[71] NL is significantly more common in T4 (16% of the time) than in L8 (1%) and it is moderately common in BL45 (7%). This shows that each melodic dialect preserves its own practices and preferences at cadences; the choices made by scribes of T4 therefore differ to those of L8 and BL45, likely as a result of their training and exposure to a particular culture or environment.

Table 4.9: Three-Syllable Final Cadences: Closing Neumes on Antepenultimate Syllables

1. Closing Neume	2. Number of Instances		
	T4	L8[72]	BL45[73]
N	21 (5%)		24 (9%)
NH	27 (7%)	4 (6%)	26 (9%)
NHH	12 (3%)	1 (1%)	7 (3%)
NHHH	3 (1%)		3 (1%)
NHHHL	1 (<1%)		5 (2%)
NHHHLH			2 (1%)
NHHL	5 (1%)	2 (3%)	5 (2%)
NHHLH	5 (1%)		
NHHLHL			4 (1%)
NHL	66 (16%)	16 (22%)	56 (20%)
NHLH		1 (1%)	13 (5%)
NHLHL		1 (1%)	3 (1%)
NHLHLLH			1 (<1%)
NHLL	1 (<1%)		2 (1%)
NHLLH	1 (<1%)		
NL	64 (16%)	1 (1%)	20 (7%)

[70] Particularly in Maloy's 'Type 1' cadences. *Songs of Sacrifice*, pp. 105–58 (chapter 4).

[71] While NUU might be compared to a quilisma, the comparative data suggests that these neumes are not comparable. See Chapter 3, p. 104.

[72] The data for L8 is copied from Maloy, *Songs of Sacrifice*, pp. 114–17.

[73] For a transcription of all BL45 chants (transcribed by Marcus Jones), see https://neumes.org.uk/view/found/v9aKSTAflPJZ0Hc5IzpuHsQKZvMV8h_e6p059upHCOI.

1. Closing Neume	2. Number of Instances		
	T4	**L8**[72]	**BL45**[73]
NLH	97 (24%)	18 (25%)	66 (24%)
NLL	2 (<1%)		2 (1%)
NLLH	1 (<1%)	1 (1%)	
NS	10 (2%)		2 (1%)
NSH	1 (<1%)		1 (<1%)
NUHL/NSHL	34 (8%)	6 (8%)	17 (6%)
NSHLH			1 (<1%)
NUL	2 (<1%)	1 (1%)	1 (<1%)
NULH		12 (17%)	3 (1%)
NULHH			1 (<1%)
NULHL		1 (1%)	3 (1%)
NULHLH			1 (<1%)
NUS	1 (<1%)		
NUSH			3 (1%)
NUU	39 (10%)		
NUUL	8 (2%)		
NUUU	2 (<1%)		
Ascending notes (in the style of a quilisma)		5 (7%)	4 (1%)
Ascending notes (in the style of a quilisma) + descent		2 (3%)	4 (1%)
Total	**403**	**72**	**280**

It might be tempting to suggest that the different melodic material on the antepenultimate syllable could be a result of the different choices made in the final two syllables of the cadence. Perhaps, if T4 had more NHH+N or NH+N cadences, there would be a closer relationship between the melodic contours used on the antepenultimate syllables in L8 and T4. However, in the 29 examples at final cadences where there are NHH+N or NH+N cadences in T4, 18 of these are preceded by progressions that are not found in L8. This suggests that the material on the antepenultimate syllable does not differ because of the melody of the final two syllables, but rather because the choice of material for the antepenultimate syllable was typically different in T4. Some of this material, as will be discussed below, can help to establish traits common to the Toledo A melodic dialect.

Some recurring neume combinations used in three-syllable cadences are also used in two-syllable cadences on the penultimate syllable (e.g., [recurring combination]+N). Through studying two-syllable cadences, I was able to identify which combinations recur regularly and could thus be part of the Toledo A dialect. Furthermore, the melodies at both two- and three-syllable cadences help to inform us about the structure of the chants; although the melodic

contours on the syllable immediately preceding the N or N+N ending are largely similar, sometimes the choice of material on the relevant syllable may have been related to the proceeding cadential strategy (e.g., two- or three-syllable). For example, prior to an N+N cadence, the most common neume is NLH (27%); this is only used 2% of the time in two-syllable cadences with N on the final syllable (Table 4.10). Another example can be seen in two-syllable cadences, where the syllable prior to the N commonly ends with NL while in three-syllable cadences this was less common. These differences in approach show that, while there was some material that could be used in either two- or three-syllable cadences, there were also recurring combinations that were unique to each cadential strategy. The association of these combinations with particular cadential strategies would likely have helped singers to remember certain words, phrases, or melodies.

Table 4.10: Neumes Used in The Approach to Two-Syllable and Three-Syllable Cadences

	Two-syllable cadences ending with an N		**Three-syllable cadences ending N+N**	
NH	13%	(32)	5%	(24)
NHH	6%	(15)	1%	(6)
NHHH	1%	(3)	<1%	(2)
NHHHL	<1%	(1)	<1%	(1)
NHHL	<1%	(1)	<1%	(1)
NHHLH	–		2%	(12)
NHL	8%	(19)	13%	(71)
NHLH	<1%	(1)	<1%	(2)
NHLL	–		1%	(3)
NHLLH	–		<1%	(1)
NL	31%	(76)	17%	(91)
NLH	2%	(6)	27%	(146)
NLHL	–		<1%	(1)
NLL	–		<1%	(2)
NLLH	–		<1%	(1)
NS	10%	(24)	4%	(21)
NSH	3%	(7)	<1%	(2)
NSHL	10%	(25)	8%	(44)
NUHHHL	<1%	(1)	–	
NUHL	4%	(10)	5%	(29)
NUL	<1%	(1)	1%	(4)
NUS	3%	(7)	<1%	(2)
NUSHL	<1%	(1)	<1%	(2)
NUU	5%	(13)	9%	(46)
NUUL	<1%	(1)	3%	(14)
NUUU	–		1%	(3)
Total		244		531

The differences between L8 and T4 are quite pronounced at two-syllable cadences. For example, on the penultimate syllable, the most common final neumes differ in each manuscript (Table 4.11); NL, NS, or NSH in T4, and NHLH and NSHLH in L8. T4's most common melodic progressions are in fact exceptionally rare in L8. Even when certain combinations are commonly substituted for a different progression in L8, the preference for the respective combination in each manuscript is not always shared. For example, as discussed in Chapter 3, NSHLH (the w-shaped neume) is not used in the same contexts in T4 as in L8. Instead, T4 tends to have NSHL at moments where L8 would likely have NSHLH (omitting the final rise). In this sample, T4 its NSHL version of the cadence occurs 10% of the time; this is somewhat lower than the 19% of NSHLH endings in L8. This shows that the melody of T4 uses different melodic contours that are not substituted for those in L8 like-for-like. As seen in three-syllable cadences, it is clear that T4's two-syllable cadences have their own range of recurring progressions that helped to create a distinct musical language.

Table 4.11: Final Neumes on the Penultimate Syllable of Two-Syllable Cadences

Closing neume	T4		L8[74]	
NH	32	(13%)		
NHH	15	(6%)		
NHHH	3	(1%)		
NHHHL	1	(<1%)		
NHHL	1	(<1%)	1	(4%)
NHL	19	(8%)	3	(11%)
NHLH	1	(<1%)	**11**	**(41%)**[75]
NL	**76**	**(31%)**		
NLH	6	(2%)	3	(11%)
NS	24	(10%)	1	(4%)
NSH	7	(3%)		
NSHL	**25**	**(10%)**		
NSHLH			**5**	**(19%)**
NUHHHL	1	(<1%)		
NUHL	10	(4%)		
NUHLH			1	(4%)
NUL	1	(<1%)		
NULH			2	(8%)
NUS	7	(3%)		
NUSHL	1	(<1%)		
NUU	13	(5%)		
NUUL	1	(<1%)		
	244 total		27 total	

[74] The data for L8 is copied from Maloy, *Songs of Sacrifice*, pp. 114–17.
[75] The two most common final neumes of each manuscript are in bold.

c) The Toledo A Dialect?

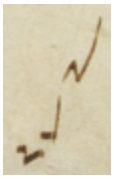
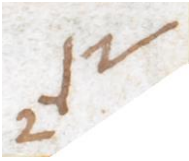
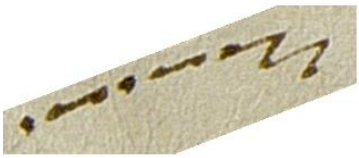
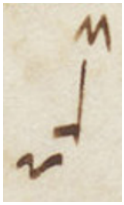
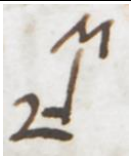
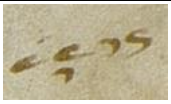
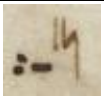
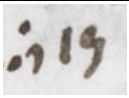
Melodic dialects have thus far helped to establish a relationship between the Rioja region and T4. Following the work of Hornby and Maloy I have used markers of the melodic dialects in León and the Rioja sources to situate T4 within the wider context of Old Hispanic manuscripts; however, I have not commented on any markers of melodic dialect that may be exclusive, or nearly exclusive, to the Toledo corpus as represented by T4. In previous scholarship, Randel identified the Toledo A responsory verse tones and Hornby and Maloy noted the preference in Toledo manuscripts for having a single note on the penultimate syllable of a cadence; however, no further cadential Toledo dialect tells have been identified.[76] In this section I identify four potential markers of this dialect by using T4 as a case study.

Looking more closely at the recurring combinations used at T4's two- and three-syllable cadences, possible dialect tells start to emerge (Figure 4.5). Some material, like Formula A, is melodically and functionally comparable across the León, Rioja, and Toledo manuscripts (as exemplified by L8, BL45, and T4), suggesting that it was a melodically stable progression and offers no insight into dialect (Figure 4.5a). Other patterns are functionally the same and frequently found in the same place in cognate chants, but are melodically different (Figure 4.5b). These patterns point to a related, but not identical dialect. For example, the progression NL–NHH can often be found in T4's cadences (Figure 4.5b.1). In my MA thesis, which centred on one neume in L8, I found that T4 used the NL–NHH progression at moments where my MA case-study neume was used in L8.[77] In L8 and all other vertical sources, I found that the melodic reading of the neume in question was NSH or NLUH; regardless of the reading of the neume in vertical sources, T4 has at least one extra note, likely a rise, giving T4 a more elaborate melody than in the vertical manuscripts.

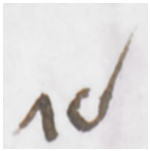
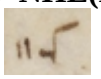
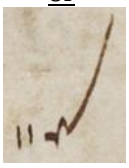
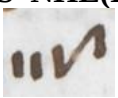
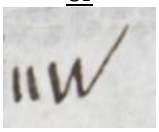
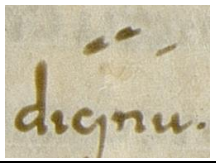
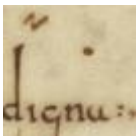
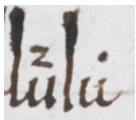
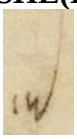
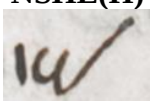
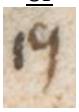
[76] Randel, *Responsorial Psalm Tones*, p. 47; Hornby and Maloy, 'Melodic Dialects', 37–72 (p. 45).

[77] Emily Wride, 'Old Hispanic Notation: A Palaeographical Case Study' (unpublished MA thesis, University of Bristol, 2018), pp. 44–45.

Figure 4.5a: Recurring Neume Combinations that are not Dialect Tells

	T4	León (L8)	Rioja (BL45)
NH–NH–NLH (Formula A)			
NH–NH–NLHL (Formula B)			
NUL–NSHL			

b: Possible Dialect Tells in T4

	T4	León	Rioja
5b.1	**NL–NHH**	**NSH or NLUH**	**NSH or NLUH** 
5b.2	**NS–NL**	**NS–NHL(H)**  or 	**NS–NHL(H)**  or 
5b.3	**NS+N** 	**NLH+N** 	**NLH+N** 
5b.4	**NSHL**	**NSHL(H)**  or	**NSHL(H)**  or 

On the other hand, T4 does not always have a more elaborate melody: sometimes it has fewer notes. For example, the neume NS–NL at the end of a melisma in T4 is usually comparable to two neumes in León and Rioja manuscripts with at least one extra note: NS–NHL(H) (Figure 4.5b.2). This occurs in 23/33 cognates in L8 and in 34/49 cognates in Rioja.[78] Across both dialects, NS–NHLH is typically used at two-syllable cadences and NS–NHL at three-syllable cadences;[79] in this study T4 shows no distinction at these moments and only preserves the NS–NL progression.[80] Only one cognate in this sample shared the same NS–NL melody as T4 suggesting that, although occasionally present in other melodic dialects, this progression is not common to them.[81] This suggests that NS–NL and NS–NHL(H) are used comparably across the corpus with a consistent function, despite having regional variations in their melody.

A further common combination at T4's cadences is the melodic combination NS+N on the final two syllables (Figure 4.5b.3). This happens 56 times in T4[82] compared to 4 times in L8[83] and 4 in BL45.[84] In 22/47 examples which have a cognate in L8, when NS is alone on the penultimate syllable in T4, an NLH is used in L8. Out of the 13 Rioja cognates, 12 have a variety of melodies on the penultimate syllable, including NLH. Only 1 has NS.[85] This shows that NS is a more common cadential ending in T4, and when it does occur, it is often comparable with NLH in León manuscripts. Even when NLH is not present in León and Rioja manuscripts, NS remains uncommon. This suggests that it was a recurring combination that was likely to be more frequent in the Toledo A melodic dialect.

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[78] This data was collected from all occurrences of NS–NL in CEAP (see Appendix 4.1.5) and was calculated by comparing all the NS–NL neumes at the end of a melisma that had a legible cognate in a Rioja manuscript and a León manuscript.

[79] For a discussion of this progression, see Hornby and others, *Understanding the Old Hispanic Office*, pp. 245–50.

[80] Some NS–NL neumes in T4 have been edited by a later hand to have an additional pen stroke at the start of the NL, perhaps rendering it NHL. These instances are not considered in this case study. Understanding the significance of this pen stroke is challenging, as cognates with León and Rioja are often rare, or differ melodically, and therefore new methodological approaches may be needed that are not so dependent on palaeographical and musical cognates.

[81] This was found in the sacrificium *Venite benedicti patris* (f. 34v) in BL45.

[82] Based on the cadential criteria on page 118 (see Appendix 4.1.6) and the chants transcribed in CEAP as of 1 Feb 2023.

[83] Based on a search of the 762 chants transcribed in CEAP as of 1 Feb 2023. The chants were: *Deus misereatur*, f. 119v; *Lex domini*, f. 226v; *Benedicta tu*, f. 255r; *A timore nuntiorum*, f. 256r.

[84] Based on a search of the 418 chants transcribed in CEAP as of 1 Feb 2023. The chants were: *Ponam te in exultation*, f. 14v; *Offerte domino*, f. 50v; *Alleluia Salvum fac*, f. 50v; *Alleluia abundare te*, f. 141r.

[85] See Appendix 4.1.6.

As explored in Chapter 3, the example in Figure 4.5b.4 is often present in T4 at moments where the w-shaped neume appears in León or Rioja manuscripts.[86] This is also true of T7: in my study of the examples of the w-shape neume contained in CEAP, there were eleven comparable cognates between T7 and L8, eight of which used the NSHL neume in T7.[87] However, NSHL in the Toledo manuscripts sometimes occurs at the same moment as the identical contour in León and Rioja manuscripts. The contour NSHL is therefore not necessarily exclusive to Toledo, but rather the absence of the w-shaped neume and the higher preference for NSHL are symptomatic of the Toledo dialect. Only in combination with the other recurring combinations does this help to establish the dialect of T4.

Cadences: Conclusion

My study of T4's cadences has shown that there are recurring neume combinations that are consistently used throughout the manuscript, some of which are also found in manuscripts containing the León and Rioja melodic dialects. The presence of recurring melodic patterns across different manuscripts demonstrates their consistent functional significance across the repertoire, showing shared practices between T4's chants and those of the León and Rioja regions.

Recurring neume combinations at cadences can also indicate melodic dialects. These regional dialects permeate the cadences of the extant Old Hispanic manuscripts; I have shown this is also true for T4. In most contexts, T4 shows a closer relationship to the Rioja manuscripts, often with similar preferences for NHL at three-syllable and domine cadences. The occasional moments where the León dialect is present in T4 but not in a Rioja manuscript suggest that the dialect used in T4 is neither purely León nor Rioja. T4 also has melodic progressions that are not found in the León and Rioja manuscripts; these suggest that T4 could be following a different musical dialect, perhaps one common to the Toledo manuscripts. To confirm these recurring combinations as an indicator of dialect, it would be necessary to compare their presence and use in the other manuscripts of the Toledo corpus.

[86] For a detailed discussion of this shape and the frequency of its occurrence, see p. 108 and Appendices 3.4 and 3.5.

[87] These were found in: *Inluminans tu mirabilis*, 'alleluia', 'alleluia', 'alleluia'; *Intende domine procede*, 'meam'; *Parabi lucernam Christo*, 'eius', 'ipsum'; *Populus qui sedebat*, 'magnam'; *Prope est dies*, 'sacrificium'. The two examples which did not have NSHL were: *Dilectus a domino*, 'Christi'; *Dominus dixit ad me filius*, 'tuam'.

Melismas

Melismas, several notes sung over a single syllable, often have complex melodies formed of several sections. Like cadences, these sections are sometimes marked by recurring notational and/or melodic combinations. Repetitive material, both within a single melisma and throughout the melismas of the entire manuscript, therefore provides insight into compositional process and the vocabulary of gestures preserved in T4. In this section, I analyse the structure and melodies of long melismas in the manuscript (melismas with 30 or more notes) to see how closely they relate to the León and Rioja cognates.[88] This allows me to explore whether the melismas in T4 were composed using the same sections and structures as found in other manuscripts, or whether they preserve a different, perhaps more ad hoc, tradition.

a) Issues Analysing Melismas in T4

Studying melismas in T4 presents several problems. Firstly, the use of the writing space means that it is difficult to differentiate between the sections of a melisma, and at first glance they often look as if they were written without structure. The reason that this uncertainty occurs is best explained by turning to L8. In L8, at the end of a melisma section the scribe typically started writing the new section at a lower point in the writing space.[89] This makes it clear to users of the manuscript where the melismas are conceptually and/or musically divided. Such methods of writing also facilitate our understanding of recurring melodic patterns at the beginnings and ends of melisma sections. In T4, identifying melisma sections is challenging; the use of the writing space, as discussed in Chapter 3, means that all neumes are written in a single diagonal line with no variation in the height of the neumes relative to one another. As such, melisma sections, if present, are not recognisable without an in-depth knowledge of the melisma or a knowledge of which neumes act as markers of the end of a melisma section (or indeed the start of the next section).[90]

One way to access the structure of melismas is, quite simply, to look at where the scribes themselves marked the division. In T4, during a melisma scribes marked the divisions between some sections — but not all — with a cross or line (or). These symbols often occur

[88] For a list of the melismas consulted, see Appendix 4.2.1.

[89] In the long melismas found in the margins of L8, which are written in a vertical column of neumes from the bottom of the folio to the top, melisma sections are also made clear; the end of a section protrudes to the right of the column. On the use of the writing space in neumatic notations, see Susan Rankin, 'On the Treatment of Pitch in Early Music Writing', *Early Music History* 30 (2011), 105–75.

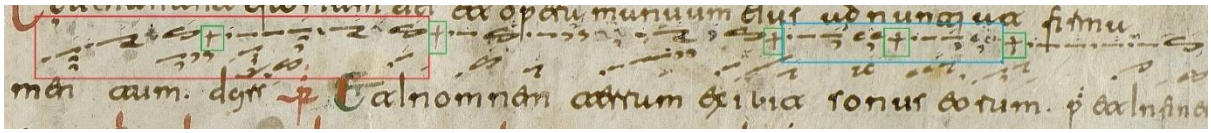
[90] On specific neumes as markers of the end of melisma sections, see Maloy, *Songs of Sacrifice*, p. 141.

interchangeably at the end of recognisable patterns (such as Formula A or B), or they directly follow one of the neumes commonly used to mark the end of a melisma segment.[91] These neumes were identified by Maloy in *Songs of Sacrifice*, who found that three melodic contours, which are often represented by specific neumes in vertical notation, frequently occur at the end of melisma segments: NLHL (m-shaped), NUL (trigon), and NHL (written using a variety of shapes).[92] In T4's horizontal notation, neumes with the same melodic contours and comparable shapes are used directly prior to the cross or line. This helps to confirm that the crosses and lines are not neumes, but rather are non-melodic symbols that act as a markers of division.

I then considered whether these symbols, which only occur in melismas, could be equivalent to the 'd' found at the end of sections in some vertical notation manuscripts.[93] The letter 'd', meaning 'duplicatur', indicates a repetition of the material directly prior to it. However, this is unlikely to be the case for T4 as often a melisma with a cross dividing it has similar material before and after the cross. In Figure 4.6, if the cross indicated a repetition, this would give the melisma the structure $AAA^1A^1BBCCCCD$ (134 notes); the length and excessively repetitive nature of this structure seems unlikely.[94] Neither does the cross align with any use of the letter 'd' in L8, but it does align with the ends of melisma sections as implied by the variation in the height of the neumes in vertical manuscripts.[95]

Figure 4.6: *Caeli enarrant*, f. 47r

(repeating consecutive sections are outlined and repetition signs are outlined in green)



[91] I found no fundamental difference between the use of these two signs, nor did I find a difference in their use between scribes (the same scribe used both signs, and sometimes within the same chant, for example *Domini est terra* (f. 55v)).

[92] Maloy, *Songs of Sacrifice*, p. 141.

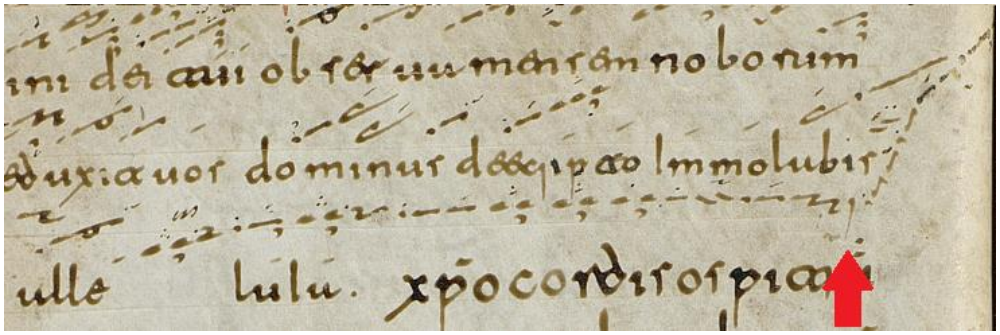
[93] Some of the 'd' markings also have a cross through them, for example T6, *Doce nos domine* (f. 102r).

[94] Other examples of material that is either identical before and after a section marker, or is extremely similar can be found in: *Exitus matutini* (f. 95r), and *Venite benedicti* (f. 48r). On repetition structures of melismas, see Maloy, *Songs of Sacrifice*, pp. 135–136; Hornby and others, *Understanding the Old Hispanic Office*, pp. 277–286.

[95] On the use of the writing space, see Chapter 3, p. 89.

Furthermore, due to the sporadic use of these signs, there are many instances in which it would be unclear as to where the repetition would begin. In Figure 4.7, if the line were to indicate a repetition, the entirety of the first section of the melisma would be repeated. This is considerably longer than a normal melisma section;[96] if the line does mark a repetition, the scribe also assumed that all future users of the manuscript would have had an intimate knowledge of the melisma and would know where to repeat from. There is no other sign used in the notation of T4 that could indicate a repetition. Therefore, as the line and cross are more likely to indicate a break in sections than to indicate a repeat, it may be that repeats were always written out in full, that the singers knew to repeat sections as a result of their training, or that melismas in T4 did not have the same repeat structures as those found in vertical sources.

Figure 4.7: *Audi Israhel*, f. 30v



b) Issues Arising from Differences in Notation

As its chants were written using horizontal notation, T4 has different neumes from manuscripts with vertical notation.[97] This means that the notation of melismas can be strikingly different between the sources, even where the melodies are extremely similar. In some instances, if looking at each manuscript individually, this can lead to a different understanding of a melisma and its respective sections. For example, in the sono *Alleluia postquam* (f. 36v) the notation of the melisma on the final 'alleluia' suggests a different structure in T4 to L8 (Figure 4.8). The melodies of the melisma, however, are nearly identical; using Hornby and Maloy's formula for calculating the degree of similarity between two melodies (the relationship ratio), I calculated that these two melodies are very nearly the same as one another.[98] The relationship ratio indicates the degree of similarity between the two chants, measured on a scale between 0 and 1, using the calculation:

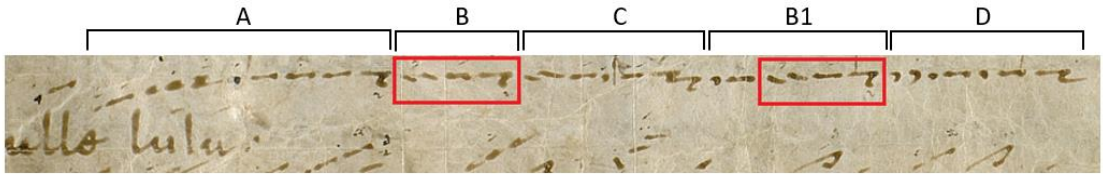
[96] For detailed discussions on melisma segments, see Maloy, *Songs of Sacrifice*, pp. 133–48.
[97] See Chapter 3.
[98] Hornby and Maloy, *Music and Meaning*, p. 20.

$$\frac{\text{number of pitches in common between two melodies x 2}}{\text{number of pitches in melody 1 + number of pitches in melody 2}}$$

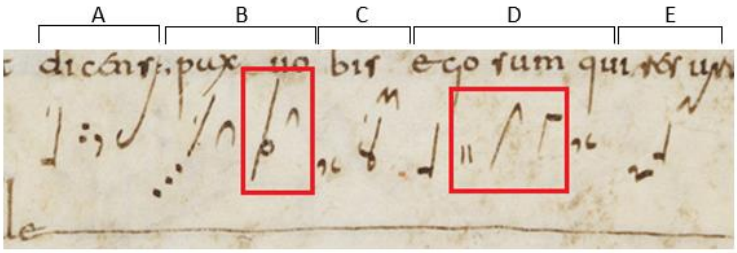
The closer this ratio is to 1, the closer the melodies are to being identical, while the closer it is to 0.5, the closer the melodies are to being related by no more than chance. If a chant has an additional word or verse, I do not consider this in the comparison as it would result in a low relationship ratio across the whole chant, despite the fact that the comparable sections of the chant might be exceptionally similar. In this sono (*Alleluia postquam*) the ratio is 0.88, which indicates that these two melismas were likely to be largely the same.[99] The notation and melody of the melisma, however, varies slightly giving a different structure. In T4, a repeating pattern of neumes suggests that there is a repeating section of the melody. Based on the notation of T4 alone, the melody could be analysed broadly with an A B C B1 D structure (Figure 4.8).[100] In L8, there are no repeated patterns of notation, and unlike T4, the user of the manuscript would not be likely to observe any visual relationship between the two moments outlined in red. Owing to the placement of neumes in the writing space and the presence of neumes that are commonly used at the end of a melisma section, the L8 melody could be given the structure A B C D E. It is strange that the two melismas can be melodically similar overall but, based on notation alone, would present a completely different structure.

Figure 4.8: *Alleluia postquam*, Structure of Melisma on 'alleluia'

T4, f. 36v



L8, f. 193



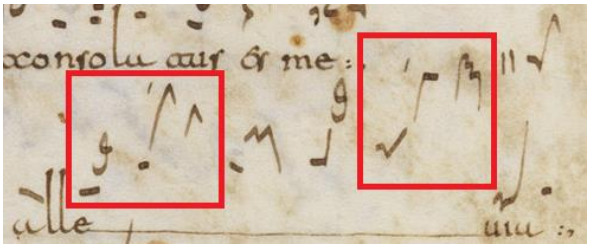
[99] Appendix 4.2.2.

[100] If examining T4 and L8 side by side, it could be inferred based on the height of neumes in L8 that section A in T4 comprises two sections.

While in the case of *Alleluia postquam* T4 may indeed have a slightly different melody that emphasises repeats within the melisma, in some cases there may not be differences in the melody between manuscripts, yet notational variation still occurs. For example, *Venite exultemus* has a melisma of 30 notes in T4. While it does not contain a direct repeat, the notation at the end of the melisma is reminiscent of that used at the beginning, perhaps suggesting a relationship between the two moments (Figure 4.9). In L8, the comparable moments begin with the same melodic contour and have the same number of notes but are notated differently each time. This means that, while T4's notation suggests a near-repetition, L8 again gives the impression of no repetition whatsoever. It is not possible to say whether one version of notation is more 'correct' than the other; perhaps T4's repetitive notation aided recall of the melody, while L8 might present a version with greater musical detail. This suggests that the purpose of notation in T4 does not always parallel that of other manuscripts — the limited neume vocabulary here might act in favour of the scribe's intentions of aiding recall. The lack of variation in T4 might stem from a more limited range of suitable neumes available to represent these contours; there are, for example, only two ways of writing NUHL in T4 compared to six in L8.[101] Regardless of the specific reasons for the difference in notation, this limited notational vocabulary might help to explain why T4 sometimes appears to have recurring neume combinations where L8 does not.

Figure 4.9: *Venite exultemus*, Structure of Melisma on 'alleluia'

T4, f. 129r



L8, f. 283r

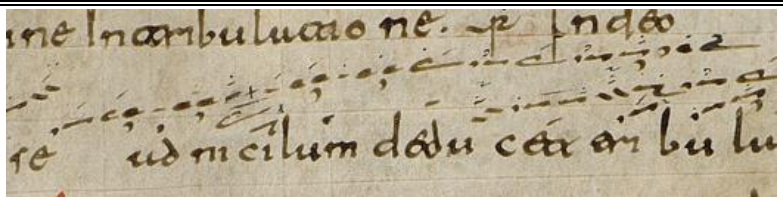
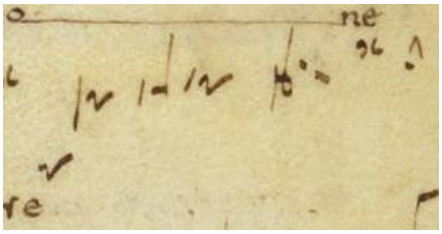
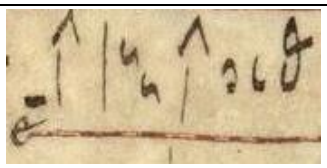
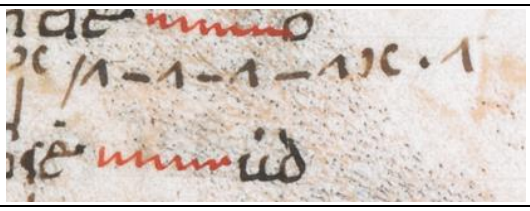
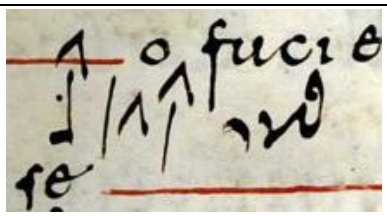
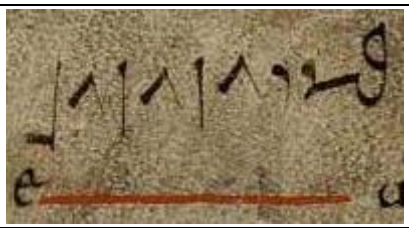
[101] In this context I am referring to the different gestural ways of writing NUHL, rather than variations that might appear in the same shape written by a different scribe. For the T4 examples, see https://neumes.org.uk/view/neumelist/1 numbers 2172 and 2374. For the L8 examples, see numbers 1049, 1053, 1055, 611, 1106, 1149.

Structural analysis, therefore, cannot confirm whether melismas in two or more manuscripts are related. A combination of melodic, notational, and structural similarities must be taken into consideration. For example, the psalmus *Da nobis auxilium* is preserved in seven manuscripts including T4 (Figure 4.10). The melisma in T4 is not particularly similar to any others, although some Rioja manuscripts are nearly identical to one another. T4's melody is most similar to BL45 and Silos 3; however, both of these manuscripts have different structures in the melisma. Unusually, the structure of T4's melisma is the same as in L8, despite the fact the relationship ratio suggests these two melismas are the least musically related. What this demonstrates is that a closely related structure does not always mean a similar melody, and, likewise, a melody that is somewhat related may not always have the same notational structure. This suggests that this melisma is not likely to have been transmitted in writing between the León and Toledo branches of the Old Hispanic tradition; if it were, one might expect to see more alignment between melodic and structural similarities across the corpus. Moreover, T4's more elaborate melisma could be from an earlier, different melodic tradition to those in the other manuscripts, or could indicate that the Old Hispanic rite continued to involve creative engagement in its later stages.[102]

My study of the structure of T4's melismas raises issues for current methods of analysis in Old Hispanic chant studies, even those used in this chapter. Hornby and Maloy, for example, have based their findings on the recurrence of specific combinations of neumes; however, this study has suggested that sometimes a melisma can be notated using recurring or similar neume combinations in one manuscript but not in others, despite being melodically similar. It is currently not clear why a scribe chose, or chose not, to use recurring neume combinations in a melisma; perhaps notational consistency was not always a necessity or perhaps the melodies differed significantly enough between manuscripts that they could not be notated in the same ways. One possible solution to this may be the method used by Rojo Carrillo in her work on the vespertini.[103] Rojo Carrillo does not base her analysis on the palaeographical appearance of neumes, but rather on their melodic contours — a method with may prove to be better suited for melisma analysis across manuscripts and notational styles. It is likely that a combination of melodic contour and notation will prove most useful for understanding melismas across the Old Hispanic repertoire.

[102] For a discussion of how variations in melismas might demonstrate the 'continuing creative activity in the ninth to eleventh century', see Hornby and Maloy, 'Fixity', 547–74 (p. 567).
[103] Rojo Carrillo, *Text, Liturgy, and Music*, pp. 247–330.

Figure 4.10: *Da nobis auxilium*, Melisma on 'ipse'[104]

Manuscript	Melisma	Structure	Relationship Ratio with T4
T4 f. 160v		A A1 B	
L8 f. 239v		A A1 B	0.60
A56 f. 135v		A B A1 C	0.63
BL45 f. 132r		A B B B C	0.68
Silos 3 f. 90r		A B B B B C	0.75
Silos 4 f. 255v		A B B C	0.63
SJP f. 8r		A B B C	0.63

[104] See Appendix 4.2.3 for the analysis of the relationship ratios in this chant.

c) Melisma Sections

Although there are issues in comparing melismas between sources, a study of T4's melismas nonetheless helps to explore the manuscript's relationship with other Old Hispanic sources. As seen at cadences, some recurring neume combinations have musical parallels in other manuscripts, while others exist only in T4. For example, some combinations are consistently similar musically, notationally, and functionally across dialects (Figure 4.11a). Despite having an extra note in the initial rise in T4, the progression in Figure 4.11a is essentially a short series of rising pitches followed by two repeated notes (and occasionally preceded by an additional NH). When it occurs, this opens a melisma or melisma section 82% of the time in T4 and 78% in L8.[105] Other evidence for shared recurring combinations in melismas can be seen in the neumes used to end a melisma section across the corpus. Maloy identified common neumes at the end of melisma sections, all of which are also the most common neumes at the end of melisma sections in T4.[106] As in the cadences, some recurring neume combinations retain their melodic and functional traits in all melodic dialects.

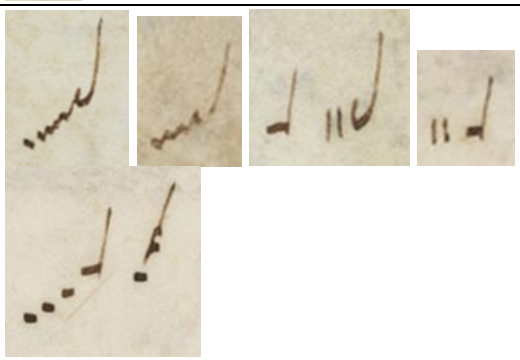
However, the vocabulary of recurring combinations in the melismas of T4 and L8 does differ. Some combinations have similar melodic contours between the manuscripts but are not consistently notated in L8 (Figure 4.11, b and c): in 4.11b, for example, cognates of T4's recurring combination also have a series of repeating notes and end with a final rise but are notated in a number of different ways. In each manuscript, their respective versions of example 4.11b typically occur at the end of a melisma or melisma section. This suggests that some recurring melisma sections, although functionally equivalent across the repertoire, are likely to have been more melodically and notationally consistent in T4's vocabulary.

T4 also has recurring combinations that are not present in L8's vocabulary. In cognate chants, 4.11d and 4.11e neither have a comparable melody in L8 nor is there a consistent combination of neumes that occurs at cognate points. Both 4.11d and 4.11e have a clear function, almost always occurring at the start of a melisma.[107] The presence of recurring neume combinations in T4, even when L8 does not have one, demonstrates that T4's melismas often comprise multiple sections that could be formed using a specific melodic and notational vocabulary. This offers evidence in contrast to Zapke's view that horizontal notation only

[105] 14/17 and 44/57 respectively (see Appendix 4.2.4a).
[106] See p. 140.
[107] 11d occurs at the start of a melisma in 5/6 cases; 11e occurs at the start of a melisma in 15/18 cases.

represents the ‘outline of a melody’ and instead demonstrates that it is capable of preserving intricate and clearly structured melodies.[108]

Figure 4.11: Recurring Neume Combinations in Melisma Sections in T4[109]

	T4	Common Versions in Cognates in L8
11a		
11b		
11c		
11d		n/a
11e		n/a

[108] Zapke, 'Notation Systems', p. 209.

[109] For a list of the presence of these recurring neume combinations in T4, see Appendix 4.2.4a–e.

d) Melismatic Composition in T4: Mass Laudes (case study)

It is not just the presence of repeated material within a melisma that can inform us about melismatic composition in T4, but also the repetition of melismas throughout the manuscript. Through a brief case study of the opening melismas of the Mass laudes across the corpus, I demonstrate that T4 contains as much melodic diversity as other manuscripts. In the Mass laudes of T4, there are five chants that share the same opening melisma on 'Alleluia' (Figure 4.12a).[110] This melisma is quite long, containing 36 notes, and its repetition is almost identical in each chant. It is not, however, unique to T4; L8, A30, Silos 4, and SJP also preserve this melisma.[111] These manuscripts have a near identical melody to T4, with only one extra note before the unison in the middle (Figure 4.12b–e). They also use the melisma more than once; it occurs 4 times in the Mass laudes in L8, and twice in each A30 and Silos 4.[112] Sometimes L8 does not use this melisma where T4 does, perhaps suggesting an interchangeability of the alleluia melodies used at the start of a Mass laudes.[113] The repetition of the melisma in T4 is therefore not unusual and does not suggest a limited repertory of melismas.[114] Instead, it suggests that, like in León and Rioja manuscripts, the opening alleluias of Mass laudes chants are often repeated. The concept that the opening alleluias of Mass laudes chants could be taken from a repertory of pre-existing melismas — even if not used at specifically the same moments — suggests a degree of flexibility in the composition of chant melodies. This flexibility perhaps stems from processes of oral transmission, in which the specific melodic ideas circulated in the repertoire but were not fixed to one particular chant. The differences between T4's use of this Mass laudes melisma and those in León and Rioja manuscripts further supports my contention that the melodies in T4 stem from practices that diverged from those preserved in northern manuscripts prior to the repertoire being widely circulated in written form. Melismas that are present in L8 and T4 but that are used at different moments demonstrate that T4 was drawing

[110] *Alleluia Emitte domine* (f. 77r); *Alleluia Expectans expectavi dominum* (f. 132r); *Alleluia Te decet hymnus* (f. 139r); *Alleluia Laudabo nomen dei* (f. 142v); *Alleluia Quis deus* (f. 150v).

[111] In L8 these chants are: *Alleluia Quis deus* (f. 302v); *Alleluia Venite* (f. 302v); *Alleluia Sicut* (f. 302v); *Alleluia Expectans expectavi* (f. 302v). In Silos 4 they are: *Alleluia De profundis* (f. 180v); *Alleluia Miserere ei* (f. 302r). In A30 they are: *Alleluia Adtende popule* (f. 228v); *Alleluia Ex quo* (f. 138v). And in SJP: *Alleluia Ex quo* (f. 7r). I did not find it in the Mass laudes of BL45, A56, or Silos 3.

[112] Even though just a fragment, SJP preserves the melisma. It may well have been used more in the full manuscript.

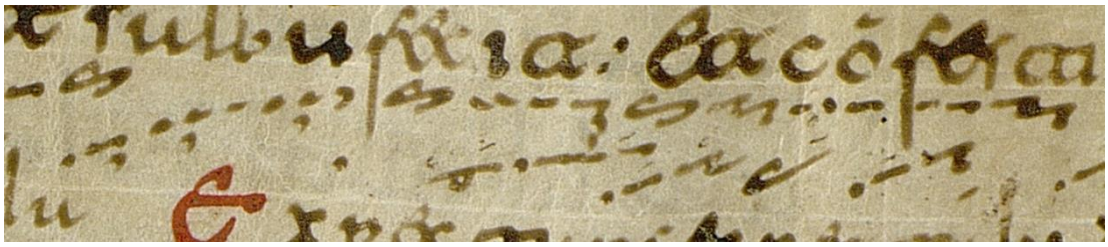
[113] *Alleluia Emitte domine*, f. 210r in L8 and f. 77r in T4.

[114] In my survey of the opening melismas of L8's Mass laudes, I found that other melismas are also repeated multiple times, with the most common being repeated nine times.

on a melismatic vocabulary that had been in existence for at least 200 years.[115] This case study therefore reminds us of the possibility that other melismas in T4 could also have been in circulation several centuries before the manuscript was written.

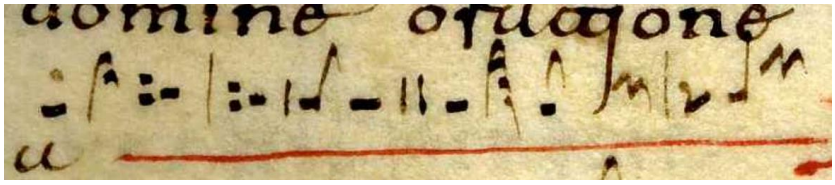
Figure 4.12: ***Alleluia Expectans expectavi dominum*****, Melisma on 'alleluia'**

a) T4, f. 132r

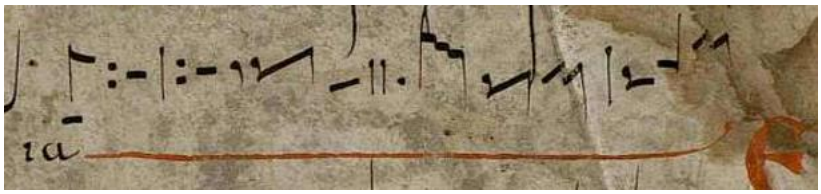


b) L8, f. 302v

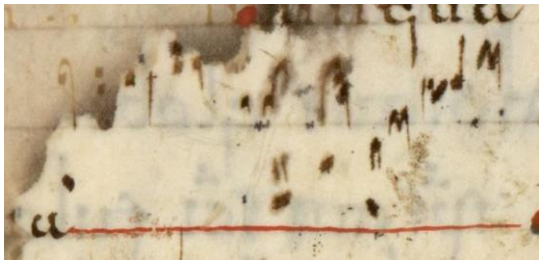
c) Silos 4, f. 180v



d) SJP, f. 7r



e) A30, f. 228v



[115] On the dating of L8, see Carmen Julia Gutiérrez, 'Librum de auratum conspice pinctum: sobre la datación y la procedencia del Antifonario de León', *Revista de Musicología* 43 (2020), 19–76.

Melismas: Conclusion

Structure, melody, and notation are all integral to understanding T4's melismas. While structure would be the easiest way of exploring whether T4's melismas were composed using the same processes as in other manuscripts, horizontal notation makes it extremely difficult to compare the structure of T4's melismas with other sources. Identifying melisma sections therefore requires an in-depth knowledge of the musical and notational conventions of T4. Having established some of these conventions, I have shown that some elements of T4's melismas may have been transmitted in writing; their similar melodic and notational structures, especially those used to mark the end of a melisma section, point to a written relationship at some point during the transmission of the melody. Occasionally melismas, such as the one seen in *Da nobis auxilium*, differ across the extant sources. This suggests that other melismas were much less stable across the repertoire.

In attempting to pin down the relationship between T4 and other extant Old Hispanic manuscripts more precisely, exploring the sections that comprise a melisma demonstrates that there are some melodic contours that are consistently notated in T4. These may well be common across the whole Toledo corpus. Generally, despite melodic and notational differences, compositional process seems to be similar in T4 and northern manuscripts; this is seen in the repetition of melisma sections and entire melismas, as well as the flexible use of melisma sections in the same way across all manuscripts. What a study of melismas helps to highlight is that the transmission of the Old Hispanic melodies involved using a vocabulary of common structures and melodies; their melodic variability suggests that this transmission occurred, to a degree, outside of purely written exemplars.

Conclusions

Cadences and melismas offer valuable insights into how recurring melodic and notational progressions give structure to the musical repertoire of T4. By using particular neumes, recurring melodic and notational combinations, and rules of melodic grammar, the scribes of T4 created clear structure within chants. The importance of accurate notation is evident in the recurring neume combinations used to notate recurring melodic progressions, like those used at the end of melisma sections or within a particular melodic formula. This demonstrates that T4's chants are not just an 'outline of a melody' but are in fact a detailed representation of the Old Hispanic practices in Toledo.

In my attempt to situate T4 within the wider repertoire, I discovered that there are closer musical ties with the Rioja manuscripts than the León ones. Comparisons with cognate chants

show that at cadences that contain markers of melodic dialect, T4 is more likely to align with manuscripts that preserve the Rioja dialect. Both domine and three-syllable cadences show a higher preference for the NHL contour on their penultimate syllable than the León contours. However, T4 ultimately offers evidence that the manuscript had a different musical dialect that was neither León nor Rioja through its preference for specific cadences and recurring neume combinations (e.g., N+N+N(H) or NS–NL). As suggested by Randel's study of responsory verse tones, some melodic progressions may be particular to a wider Toledo A dialect. I support Randel's findings by incorporating a wider spectrum of melodic evidence that shows a strong similarity between León and Rioja manuscripts, at both cadences and melismas, yet distinct melodies in T4. While the music of T4 does have elements that are shared with the northern dialects, recurring differences suggest that it was not simply copied from northern exemplars, but rather was understood and written within a different musical and notational *milieu*.

My analysis of T4's melodies also offers insight into the transmission of chant melodies across the Old Hispanic corpus. The use of particular formulas (e.g., Formula A) throughout all manuscripts demonstrates the importance of that formula to the structure of Old Hispanic chant. As suggested by Hornby and Maloy, the use of recurring patterns at different moments across the repertoire (such as Formula B in T4) might speak to the different chant melodies being transmitted orally from a common ancestor, before being recorded in writing. My analysis of T4's melismas also supports this: the variation in notational choice and melismatic structures across manuscripts, even in melodies that are extremely similar, could indicate that the melodies were not purely passed on through a written tradition. For T4, this evidence of oral transmission suggests that the chants preserved in the manuscript may have been composed prior to their being recorded in writing, and therefore they may have existed contemporaneously or even prior to the versions of the chants preserved in the northern manuscripts. This also mirrors my findings in Chapter 3, in which I found that the variation in the functionality of the w-shaped neume suggests that vertical and horizontal notation preserve long-standing and deep-rooted differences, as opposed to horizontal notation preserving a practice that developed out of vertical notation. My research thus brings into question the traditional chronological narrative of Old Hispanic chant development, in which the Toledo corpus preserves a later iteration of Old Hispanic chant, and instead suggests that the differences in the chants in T4 could stem from geographical or cultural differences.

In this chapter I have contributed to current studies of Old Hispanic melodies by looking closely at the entirety of a single manuscript. I have demonstrated that studies of entire manuscripts allow for a comparison with the musical language of other manuscripts, facilitate

explorations of the relationship between manuscripts and nuance understandings of what it means to have a regional dialect. This novel approach not only allowed me to understand the manuscript within the context of the melodic regional traditions but also as a self-contained object. However, the melodies of T4 are just one window into the Toledo corpus. To further our understanding of the possible Toledo A dialect and its relation to those of León and Rioja, it will be necessary to confirm the suggested dialect tells in other Toledo tradition A sources.

Chapter 5: Additional Notation

Surrounding the main musical notation of T4, small symbols and letters occupy the writing space. These marks, termed 'additional notation' by Clyde Brockett,[1] comprise 55 different signs that are written in close proximity to the main neumes, and they occur on almost every folio. Their placement alongside the main notation implies that the two relate to one another; this has caused scholars to hypothesise that the additional signs either alter or explain the horizontal notation.[2] For example, Nancy Phillips suggested that they could have a dynamic or rhythmic meaning, or they could be the personal marks of the cantor.[3] Brockett laid out some of the vocabulary of the additional signs, without further discussion, by compiling a short table of the additional signs present on a single folio of each T4 and T7 (two of the three sources containing additional notation).[4] So far, no detailed studies of additional notation have been carried out. As a result, its meaning and purpose is entirely speculative. In this chapter, I carry out a preliminary study of T4's additional notation, attempting to determine the meaning of each notational sign in order to understand why they were written. Through palaeographical and comparative analysis, I determine that some of the signs in T4, especially those that have similar shapes to horizontal neumes, are likely to be correcting the main notation. The remaining signs are likely to offer further information about how the neumes should be performed — although the meaning of these is challenging to recover.

Additional signs are not uncommon in Old Hispanic manuscripts; in 1952, Louis Brou identified the 'bâtonnet' as a short pen stroke that is often placed above and to the left of neumes in L8.[5] The bâtonnet is common to a number of other Old Hispanic manuscripts; however, it is often the only additional notational shape used in these manuscripts. These manuscripts therefore do not contain the breadth and intricacies of the additional notation found in T4, T7,

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[1] Clyde W. Brockett, *Antiphons, Responsories, and Other Chants of the Mozarabic Rite* (Brooklyn: Institute of Mediaeval Music, 1968), pp. 100–01.

[2] Susana Zapke, 'Notation Systems in the Iberian Peninsula: From Spanish Notations to Aquitanian Notation (9th–12th Centuries)', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th Centuries)*, ed. by Susana Zapke (Bilbao: Fundación BBVA, 2007), pp. 189–244 (p. 209).

[3] Nancy Phillips, 'Notationen und Notationslehren von Boethius bis zum 12. Jahrhundert', in *Die Lehre vom einstimmigen liturgischen Gesang*, ed. by Thomas Ertelt and Frieder Zaminer (Darmstadt: wbg Academic, 2000), pp. 293–623 (pp. 452–53).

[4] The other source containing additional notation is Cincinnati, Hebrew Union College, MS Acc 484 (Cinc). Further research is required of the three manuscripts to identify the similarities and differences between their vocabulary and use of additional notation.

[5] Louis Brou, 'Notes de paléographie musicale Mozarabe', *Anuario musical* 7 (1952), 51–76 (pp. 73–76).

or Cinc. Nonetheless, Brou's study of the bâtonnet offers a useful starting point for my research. Brou discussed the palaeographical appearance of the sign and its placement in relation to the main notation, listed manuscripts that it occurred in, and noted where it was used within a chant (in melismas and in syllabic passages). In recent unpublished work, Elsa De Luca studied the recurrence of the bâtonnet alongside particular neumes, finding that it often occurs below and to the right of a neume and almost always at the start of a melisma with the combination N–NS.[6] While these studies only focused on one particular sign common in vertical notation, and did not examine any of the 55 signs used in horizontal notation, the approaches developed within them form an essential starting point for this chapter.

Herminio González Barrionuevo sought to provide a more concrete definition of the function of bâtonnets by carrying out a case study of their occurrence in BL50.[7] González Barrionuevo compared the vertical notation in BL50 to cognate chants in other manuscripts that are not from Iberia. These other manuscripts contain systems of musical notation from elsewhere in Europe and include the Hartker Antiphonary from St Gall, as well as some sources containing pitched notation.[8] He concluded that the bâtonnet, whether written above or below a neume, has a melodic quality; it often indicates an interval of a third, sometimes occurs below a neume to show the lowest note of a phrase, and can also occur above or below a neume to draw the singer's attention to the fact that the note is respectively higher or lower than those around it.[9] In this chapter, I cannot confirm whether González Barrionuevo's findings apply to any comparable shape in T4 as there are no cognate chants preserved in pitched notation.[10]

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[6] See Emma Hornby *et al.*'s discussion of De Luca's work in Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), p. 189.

[7] Herminio González Barrionuevo, 'Présence de signes additionels de type mélodique dans la notation "mozarabe" du nord de l'Espagne', *Etudes grégoriennes* 23 (1989), 141–51. González Barrionuevo also discussed the presence of this sign around a neume he defined as a porrectus (NLH) in 'Una grafía particular del porrectus en la notación "Mozárabe" de tipo vertical', in *España en la música de Occidente: actas del congreso internacional celebrado en Salamanca, 29 de octubre–5 de noviembre de 1985*, ed. by Ismael Fernández de la Cuesta, Emilio Casares Rodicio, and José López-Calo (Madrid: Instituto Nacional de las Artes Escénicas y de la Musica, 1987), pp. 75–90. For an alternative interpretation of this sign, see Emma Hornby and Rebecca Maloy, *Music and Meaning in Old Hispanic Lenten Chants: Psalmi, Threni and the Easter Vigil Canticles* (Woodbridge: The Boydell Press, 2013), p. 324.

[8] González Barrionuevo, 'Una grafía particular del porrectus'.

[9] González Barrionuevo, 'Présence de signes', 141–51.

[10] For a list of the chants found in the Old Hispanic liturgy that are preserved in pitched notation, see Casiano Rojo and Germán Prado, *El canto Mozárabe: Estudio histórico-crítico de su antigüedad y estado actual*, Revue de Musicologie 36 (Barcelona: Diputación Provincial de Barcelona, 1929).

Nonetheless, I take inspiration from González Barrionuevo's comparative approach, turning to cognate chants in other Old Hispanic manuscripts to further our understandings of additional notation.[11] Despite the fact that most Old Hispanic manuscripts do not have additional notation like that found in T4, a comparison of their melodies with T4's additional notation allows me to suggest likely interpretations of several signs.

While González Barrionuevo suggested that some signs had the function of clarifying the main neumes, Brou carried out a further study of L8 in which he found that other additional signs had the purpose of correcting the main notation.[12] He determined that two additional signs that resemble vertical Old Hispanic neumes (albeit smaller), and that frequently occur below the text in L8, typically relate to specific neumes in the main notation; for example, when an NUL occurs in L8's main notation, a small NLHL sign is often placed directly below it, under the line of text.[13] With this evidence Brou concluded that, although written in a smaller module and with a different placement in the interlinear space, these additional signs likely serve as corrections to the melody. Brou's examples therefore demonstrate that additional signs may not only be adding supplementary information, but that some may also be a correction to the musical contours. His work therefore acts as a starting point from which I am able to consider the motivations behind writing the additional notation based on the situations and frequency of its occurrence.

Methodology

To explore the function and interpretation of additional notation, I separate this chapter into several parts. Firstly, I describe the process of identifying additional notation and the difficulties in its identification. By examining multiple chants with additional notation, I am able to explore the situation in which it was written: was it written by the same scribes as the main notation or was it added later? Analysing the relative chronology of additional notation and the presence of different scribes also sheds light on the motivations behind writing it, demonstrating that it had a dual purpose of correction and providing supplementary information. This provides direction for the remainder of the chapter, in which I explore each notational sign with a view to determining its meaning and purpose. I begin with signs that are

[11] This is the same comparative methodology that I applied in my analysis of neumes and cadences in T4. See Chapter 3 and Chapter 4.

[12] Louis Brou, *Le Joyau des antiphonaires latins : le manuscrit 8 des Archives de la Cathédrale de León* (León: Imprenta católica, 1954), pp. 56–58.

[13] Brou called the NLHL a double clivis and the NUL a trigon.

likely to be correcting the main notation, before considering signs that likely provide supplementary information, and finally turning to those which have an indeterminable function.

Due to the prevalence of additional notation, when carrying out a case study of each sign I limit the sample size; for signs with over 100 examples in T4, I take only 100 examples of each sign. To choose these examples, I selected 100 random instances of the sign using Excel's 'Rand' feature. I used this feature to generate a random number for each occurrence of the sign and then took the 100 examples with the lowest values to generate my sample. This gives an overview of the use of the sign across the manuscript and reduces any inherent bias. For signs with fewer than 100 examples in T4, I carried out a study of all the examples. In the case studies below, I analyse the use of each sign, looking at whether it was consistently written with other neumes or additional notational signs, whether it always occurs at a certain point in a phrase, and whether it has a particular placement alongside the main notation. Although this analysis does not always lead to a definition of a sign, it does allow me to explore how some signs functioned in additional notation. In an attempt to determine the meaning of the signs, I also carry out melodic comparisons with cognate chants in other manuscripts. I compare the syllable that has the additional sign of interest in T4 with the melodies present in other sources. The manuscripts that contain cognate chants do not have additional notation. As such, all the points of comparison are with the 'main' (and only) notation of other manuscripts.[14] This approach is based on the hypothesis that if the additional notation was being used as a correction, other manuscripts might preserve the 'correct' version of a melody. This comparative analysis helps me to establish which signs were used to re-notate or correct the existing melodies of T4 and which were providing additional information.

Having explored the vocabulary and function of this unique notational system, I then consider whether this practice was derived from other medieval scripts; this forms part of my attempt to understand where it might have originated. To this end, I draw comparisons between palaeographically similar signs in other Western scripts, such as Palaeofrankish, Frankish, Lotharingian, Lorraine, Italian, Aquitanian, and Catalan.[15] Prior to work by González

[14] T7 and Cinc do have additional notation but did not have any cognate chants relevant to this study.

[15] The different types of notation have been given different names by different scholars. For example, David Hiley called the two former groups French and German. Some well-known scripts are a subsection of these categories, for example, the notation used in manuscripts from St Gall is considered East Frankish/German. See David Hiley, *Western Plainchant: A Handbook* (Oxford: Oxford University Press, 1995), p. 347; Susan Rankin, *Writing Sounds in Carolingian Europe: The Invention of Musical Notation* (Cambridge: Cambridge University Press, 2018).

Barrionuevo, some scholars also claimed that Old Hispanic neumes were related to Byzantine notation, specifically the Palaeobyzantine notational system.[16] As additional notation has signs that do not occur in Western scripts, I broaden my study to incorporate Byzantine notation in order to fully explore the possible influences on the notation and address the wider implications of any connections between the different systems.

What is Additional Notation?

a) Identifying Additional Notation

Occurring on almost every folio, the additional notation, while small, is hard to miss. It was written in the space surrounding the horizontal notation, usually just above the main neumes, only a few millimetres away. It consists of combinations of thin lines and small dots, joined by curves and angles or separated by gaps, in a similar way to Old Hispanic scripts (although not all of the signs can be found in horizontal and vertical scripts). Written using the same thin nib and placed above the neumes are also letters of the alphabet. The placement of these signs and letters, and their characteristically thin appearance, make them easy to distinguish from the main horizontal neumes of T4.

However, the degradation of the manuscript, the small module of the notation, and the fading of ink can make it difficult, even impossible, to read. Furthermore, accidental splashes of ink, the grain of the parchment, and even dust on the lens of a camera can trick the eye into seeing shapes where they never really existed.[17] Reading the additional notation can therefore be challenging. When identifying it in T4, I took several factors into consideration (Figure 5.1):

- **The placement of the mark:** most symbols occur directly above the neumes, or, when a syllable has a single punctum, the additional notation was typically written above and slightly to the right of the neume (Figure 5.1a–b). Some specific signs commonly occur

[16] Herminio González Barrionuevo, 'Relación entre la notación "mozárabe" de tipo vertical y otras escrituras neumáticas', *Studi gregoriani* 11 (1995), 1–112. See also Jean-Baptiste Thibaut, *Origine Byzantine de la notation neumatique de l'église Latine* (Hildesheim: Olms Verlag, 1975), pp. 16 and 71–72; Peter Wagner, *Neumenkunde: Palaeographie des gregorianischen Gesanges* (Freiburg: Kommissionsverlag der Universitäts-Buchhandlung, 1905), pp. 174–75; Higini Anglés, 'La música medieval en Toledo hasta el siglo XI', in *Gesammelte Aufsätze zur Kulturgeschichte Spaniens 7*, ed. by M. Honecker, G. Schreiber, and H. Finke (Münster: Aschendorff 1938), pp. 1–68 (p. 251).

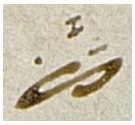
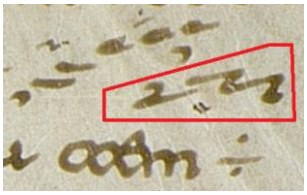
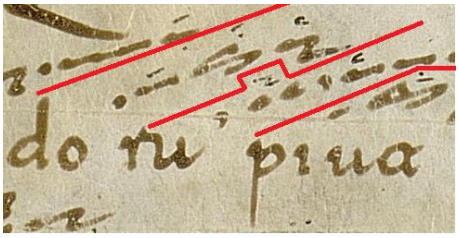
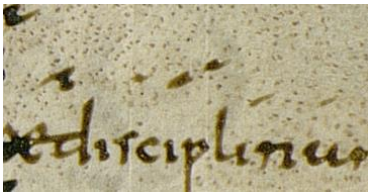
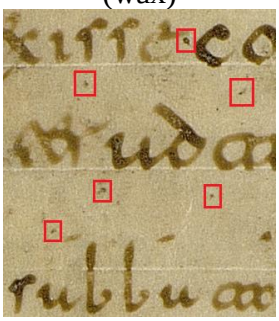
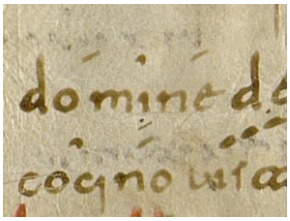
[17] I am fortunate to have had access to high quality digital images and to have viewed the manuscript in person. This means that I could consult both the digital images and the physical manuscript for any queries, resulting in a more secure identification of the additional signs.

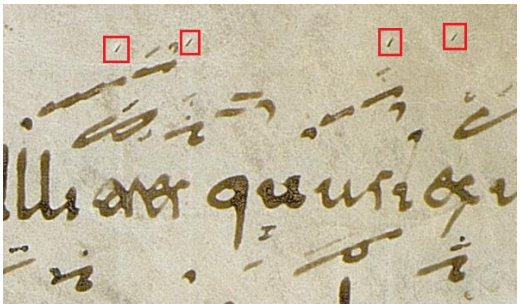
below the neumes instead (e.g., Figure 5.1c. This is #34 in Table 5.1 below). Acknowledging the common placement of additional signs helps to establish how a sign relates to specific neumes in the main notation. For example, in horizontal notation, many neumes occur in close proximity to one another, even if they relate to different syllables.[18] Due to the proximity of the neumes, it can be difficult to determine to which neume the additional notation belongs. Having established that most additional notation occurs above the main neumes, I was therefore able to more accurately associate the additional signs with the main signs where these relationships might otherwise be ambiguous (Figure 5.1e). Exceptions to this rule occur when a sign is usually written below a neume, or when the placement of an additional sign is atypical but abnormally close to a particular neume (Figure 5.1d).

- **The size and colour of the additional notation:** sometimes, when a mark is caused by a hair follicle in the parchment or by a spill of ink, the marks are darker, abnormally shaped, and found in unusual locations (Figure 5.1f–g). In these cases, I considered whether the mark resembles other elements on the folio, such as patterns in the grain of the manuscript, the ink bleeding through from the reverse of the folio, or splashes of ink within the text space, or whether it aligns more closely with the patterns of the additional notation.
- **The codicology of the folio:** for music written on the top line of the folio, the pricking marks used to rule the page can look like additional notation, especially when working with digital images. Considering the ruling structure of the folio helps to avoid confusion between these and additional notation: there are two columns, each bounded by two vertical lines on either side, giving a total of eight vertical lines and eight pricking marks. The lines ruled from these pricking marks are usually visible, which aids in their identification (Figure 5.1h).

[18] See Chapter 3, p. 89 for a more detailed description of the use of the writing space in horizontal notation.

Figure 5.1: Identifying Additional Notation

a	Additional notation above a neume containing multiple notes	
b	Additional notation above a neume containing one note	
c	Additional notation that is typically found below a neume	
d	Additional notation below a neume but associated with the neume based on proximity	
e	Additional notation in examples where there are multiple neumes in close proximity	
f	Hair follicles on a folio	
g	Marks caused by other factors	(wax)  (small marks of ink across a folio)  (ink bleeding through a folio)

h	Pricking marks at the top of a folio (vertical dry point lines might also be visible)	

While some of these criteria are largely subjective, and while the notation that has become illegible over time cannot be recovered, through this approach I have attempted to capture the presence of additional notation as accurately as possible with the available evidence. Moreover, when transcribing chants in CEAP, all chants were verified by at least two people: a person who entered the chant and a person who checked it was correct.[19] Any discrepancies in the identification of the additional notation were discussed. This approach allowed for greater accuracy than could be achieved by one person alone.

Nomenclature

Having identified the additional notation, it was then possible to establish the signs used within it (Table 5.1).[20] As there is no established nomenclature for the additional notation, I have chosen to label the signs with numbers. I deliberately avoid using pre-existing terminology for several reasons. Firstly, we do not know the origins of additional notation. If it developed from Byzantine notation then using the term virga, a term used for Frankish neumes, to describe a short, diagonally ascending line would ultimately be incongruous (the correct term would be *oxeía)*. Secondly, signs that are palaeographically similar can have different meanings in different notational systems. For example, a clivis (NL) in Old Hispanic scripts can look like a torculus (NHL) in Palaeofrankish scripts.[21] By using numbers, I aim to avoid imposing *a priori* meaning onto a symbol.

[19] The majority of chants were entered by myself and checked by Emma Hornby. I am grateful to Esther Bersweden, Caia Buckeridge, Sharifah Dania, Paul Marlow, and Seb Waddington for their work in transcribing a number of chants. These chants were checked by me as well as Emma Hornby, meaning that they were checked a total of three times.

[20] This table is ordered based on each sign's similarity to Old Hispanic neumes. I do not assume that similar signs have the same meaning, but rather use the signs as a point of departure: 1–29 have comparable versions in horizontal notation; 30–50 have no comparable versions in horizontal notation (with 41–50 resembling significative letters); 51–55 are 'problematic'— they share notational principles with horizontal notation but do not exist within the script.

[21] For an overview of the difference between notational systems, see Hiley, *Western Plainchant*, pp. 340–56.

Table 5.1: List of Additional Signs

Ref.	Image	Number of Occurrences[22]	Ref.	Image	Number of Occurrences
1		4843	**30**		181
2		4233	**31**		379
3		376	**32**		15
4		443	**33**		481
5		454	**34**		125
6		9	**35**		1131
7		6	**36**		3865
8		4	**37**		1
9		24	**38**		3
10		1	**39**		29
11		1	**40**		2
12		2			
13		7			
14		7	**41**		1300
15		8	**42**		736
16		1	**43**		133
17		5	**44**		14
18		307	**45**		70
19		4	**46**		1068
20		323	**47**		12
21		9	**48**		283
22		3	**49**		34
23		10	**50**		1
24		1			
25		5	**51**		167
26		4	**52**		2
27		342	**53**		39
28		13	**54**		8
29		1	**55**		1

[22] This number is correct as of 8 March 2023. On this date, all chants had been transcribed on CEAP but had not all been examined by two people. The total numbers of each shape may therefore change slightly as chants are reviewed and approved.

b) The Presence of Additional Notation

It is useful to consider not only the vocabulary of additional notation, but also where it was used and who was responsible for writing it. Both of these areas offer insight into scribal practices, whilst also helping to establish the purpose of additional notation in T4. Moreover, understanding the contexts in which the signs were written helps to demonstrate that additional notation was a unified system of notation that was understood by multiple scribes.

As almost eighty percent of the chants in T4 have additional notation, those that lack it can inform us about the role of additional notation in T4.[23] Some types of chant or moments in a chant never have additional notation added: incipits, responsory verse tones, and verses to antiphons and alleluiatici. This might suggest that for simple or formulaic melodies, perhaps those that were easier to memorise, singers did not require the details provided by additional notation. One exception to this rule corroborates this theory; the responsory *Magnus dominus noster* is the only responsory not to use a standard verse tone in T4.[24] In this case, additional notation was included, perhaps to clarify the unusual melody.

However, if additional notation was written later than the main notation, its absence from an entire chant might suggest that the chant was no longer being used (and therefore did not need to receive the additional signs). For example, the verses of some sacrificia and soni did not receive additional notation. In contrast to antiphon and responsory verses, these are complex melodic compositions that, following the logic in the paragraph above, would likely require additional notation for clarity. In some earlier manuscripts, these verses are omitted in their entirety; for example, *Deprecatus est populus* does not have a verse in Silos 3 (f. 49), while in T4 the verse is present but does not have additional notation (f. 158v). This might suggest that T4 was originally notated or copied from an exemplar that was made when the verse was still in circulation, yet by the time the additional notation came to be added it had fallen out of favour.[25] The lack of the additional notation therefore might offer insight into a different liturgical practice from that observed at the time when T4 was originally written.

Identifying who wrote the additional notation complicates this argument. Susana Zapke suggested that it was written by ‘a second copyist’, presumably after the first layer of notation

[23] 561/706 chants.

[24] Don M. Randel, *Responsorial Psalm Tones for the Mozarabic Office* (Princeton: Princeton University Press, 1969). Randel assigned this verse tone as tone X (i.e., not standard).

[25] Other chants that do not have additional notation often occur in lists, for example, ANTs and ALLs in the ferial missas (ff. 6r–14r) and the majority of the psalmi and the benedictiones in the lists on ff. 168r–170r.

was added.[26] On the other hand, Brockett stated that it was written 'in the same moment the music was copied'.[27] Following Zapke's hypothesis, the absence of additional notation could confirm that chants or verses had fallen out of favour by the time additional notation was written, while ones that were in use were edited. In contrast, if, following Brockett's suggestion, the additional notation was written contemporaneously to the main notation, it would mean that a scribe would have spent time and resources copying the main notation for a chant that they knew would never be sung.

An analysis of the corrections made to chants confirms that sometimes the additional notation was added by a second copyist. In a sample of 100 chants chosen at random, 50 with additional notation and 50 without, there is a strong correlation between the presence of additional notation and of corrections to the main notation (either by erasure or by altering the existing main neume) (Table 5.2).[28] Corrections are likely to have been made after the chant was originally written when a subsequent manuscript user came across an error or wanted to alter the chant melody; their correlation with additional notation suggests that this notation was also added after the original writing of the main notation, perhaps by the same people who were correcting the chants. This also supports the narrative that the absence of additional notation meant that a chant was not used; the comparative lack of corrections in chants without additional notation implies that there was a lesser concern with their melodies, perhaps due to their infrequent use.

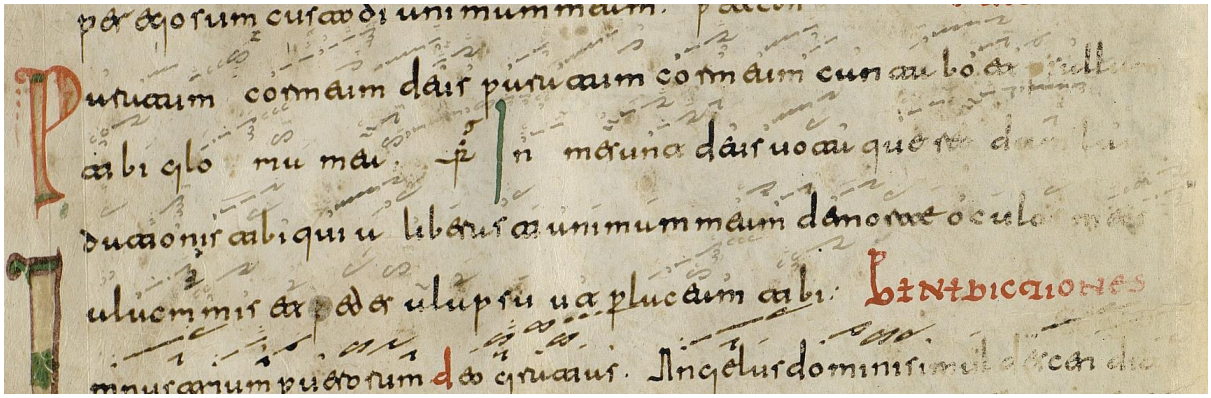
Table 5.2: Number of Corrections in Chants With and Without Additional Notation[29]

	Number of Chants with Corrections	**Total Number of Corrections all Chants**	**Of Which are Erasures**
Chants Without Additional Notation	5/50	6	3
Chants With Additional Notation	41/50	189	66

[26] Zapke, 'Notation Systems', p. 209.
[27] Brockett, *Antiphons*, p. 102.
[28] An erasure is where a scribe removed an error by scraping the top layer of parchment with a knife or razor. New text or notation could then be written on top. Bernhard Bischoff, *Latin Palaeography: Antiquity and the Middle Ages* (Cambridge: Cambridge University Press, 1990), p. 18.
[29]These chants were chosen at random using the 'Rand' function of Excel. See p. 156 for a description of the methodology. See Appendices 5.1 and 5.2 for a list of chants considered in this study and where the corrections/erasures occur.

However, sometimes the scribe who wrote the main notation is one and the same as the scribe who wrote the additional notation. While I do not carry out a complete analysis of all the additional notation scribes in this chapter, here I offer an analysis of a few who are clearly identifiable. Studying both notations in *Paratum cor meum* reveals that both systems were written by the same scribe — in this case Notator C (Figure 5.2).[30] The main neumes of this hand have a distinct grey ink colour and are formed with unusually curved pen strokes, especially in the puncta (see for example the N on 'Paratum').[31] In this chant, the additional notation also has the same ink colour and has the puncta with exaggerated curves (see, for example, 'cor'). Moreover, the remainder of the chants on the folio, which were notated by a different scribe, rarely have additional notation; it is only present on the first line of *Hymnus trium puerorum* (see the final line of Figure 5.2). This additional notation was not written by Notator C; it is very thin, does not have curved gestures, and was written using a dark ink. *Paratum cor meum* thus demonstrates that at least some of the additional notation scribes had a clear grasp on the main notation, being able to read and write it, and they possibly added both at the same time. As Notator C understood the main notation, it is possible that they chose not to add additional notation to a chant where they could infer enough musical information from the main notation alone. The absence of additional notation is thus not necessarily an indication that a chant was not used, but could indicate that users of the manuscript did not require the additional musical information to perform the chant.

Figure 5.2: Additional Notation in *Paratum cor meum*, f. 168v

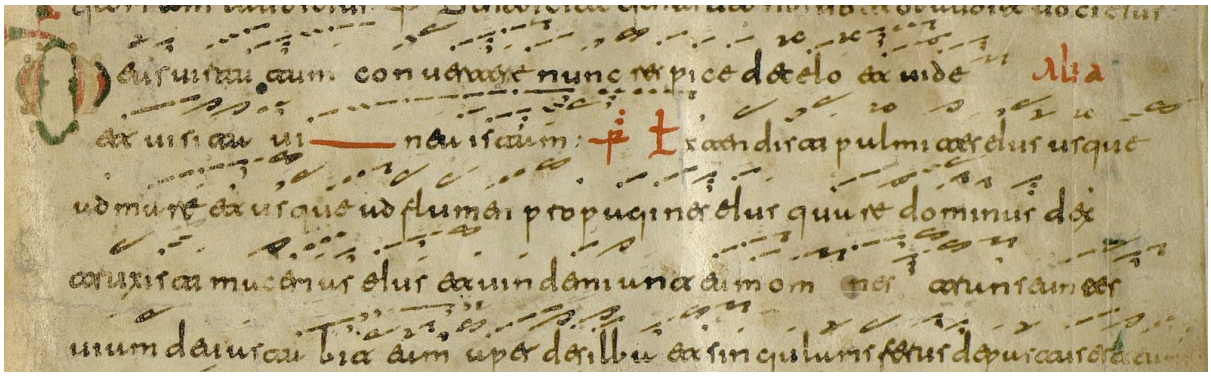


[30] For a discussion of Notator C, see Chapter 2, p. 72. It is evident that the additional notation was added prior to 1753 as it is included in Palomares's transcription of f. 168r in Madrid, Biblioteca Nacional de España, MS 13053.

[31] For a discussion of other features of this hand, see Chapter 2, p. 72.

In other cases, we can confirm that the additional notation scribe is not the same scribe as that of the main neumes. On the recto of the same folio, *Deus virtutum* (f. 168r) contains a stark contrast between the dark brown ink of the main notation and the faint additional notation in a watery grey ink (Figure 5.3). While ink colour alone cannot be used to determine scribes with certainty, it is an initial indicator that multiple people may have been at work. A comparison with *Paratum cor meum* confirms that the notation written in grey ink belongs to Notator C: in the additional notation there are the same curved puncta and a similar thickness of stroke. In corrections to the main notation, there is a tendency to curve the top of a straight pen stroke (see the final line on ‘quare’) as common in the work of Notator C. This shows that additional notation was sometimes added after the main notation by a second scribe. These two examples offer evidence in support of both Zapke and Brockett’s views and demonstrate that additional notation could not only have been written contemporaneously with the main notation, but could also have been added at a later stage as required.

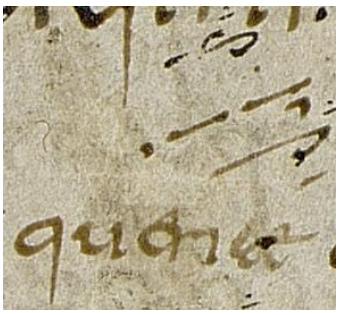
Figure 5.3: Additional Notation in *Deus virtutum*, f. 168r



Knowing whether a scribe was responsible for the main notation and the additional notation within one chant can help to establish the function of the latter. In both of the above examples, the scribe was likely providing additional information: in the first example, the scribe is unlikely to have been correcting their own notation. In the second, they also corrected the main notation. While the corrections in the second example were carried out by amending the main notation directly, scribal analysis shows that additional notation could also be used to correct the notation. In *Alleluia Quaerite dominum* (Figure 5.4) the main neume on ‘querite’ was corrected by the additional notation scribe who re-wrote the melodic contour by employing a different sign in a thin, dark ink (#29). In contrast, the neume by the original scribe was written in a browner ink with a thicker nib. Even after correcting the horizontal notation,

the scribe was not satisfied with the information conveyed by the additional sign; they also added sign a further sign (#36 ⸗) above to nuance their correction. This shows that at times, additional notation could serve as a palaeographical or melodic correction to the main notation (e.g., #29), while at others additional signs likely add further nuances (e.g., #36).

Figure 5.4: *Alleluia Quaerite dominum*, f. 95r



Purpose of Additional Notation

My identification of scribes has hinted at the possible motivations behind writing additional notation. Interpreting the purpose of additional notation is key to understanding its function in T4, and to understanding whether it was a unified system employed in a similar manner by all its practitioners. Zapke, while speculating about the marks in T7, stated that the additional notation is 'a probable attempt to interpret the neumes drawn by the first hand. The additions to some extent gloss the basic musical text, possibly with a view to clarifying its meaning'.[32] The implication is that the meaning of some of the main neumes had become obscured and that the additional notation provided the information to reinterpret them, perhaps as a means of preserving the melodies for future generations. Additional notation would therefore likely be melodic in nature and could even provide an alternative means of restating melodic contours. Brockett suggested that, in the context of Cinc, additional notation did not alter the musical content of the main notation, but rather affected its 'vocal execution'.[33] In Brockett's statement, two ideas presented in my analysis of scribes are present: the concept of providing additional information and the concept of correcting the palaeography of existing neumes. Medieval manuscripts were often updated and changed throughout their lifespan. Sometimes this was done by adding materials that were absent, and sometimes by correcting those that already existed. In the following section, I determine the purpose of further signs in the additional notation of T4.

[32] Zapke, 'Notation Systems', p. 209.
[33] Brockett, *Antiphons*, p. 100.

a) Signs that Correct the Main Notation

As shown by Brou's study of signs in L8 and by my brief study of #29, some of the additional notation may have been written with the intention of correcting the main notation.[34] In musical notation, correction was a common practice. At the moment of writing, a scribe might accidentally have written an incorrect neume and, having realised their error, corrected their own work.[35] Later when the manuscript was being used by someone else, correction might have happened for a number of reasons: the user of the manuscript noticed an error, they wanted to notate the version of the melody they were more familiar with, or they altered the notation to reflect current institutional practices. Although notation was commonly corrected by way of an erasure in T4, it is also possible that corrections to the main notation were carried out by using additional notation (as seen in #29). In this section I discuss signs that are likely to be correcting the main notation of T4, demonstrating that many of the signs that have the purpose of giving the 'correct' melody are related to palaeographically similar signs in horizontal Old Hispanic notation.

As with #29, sometimes evidence from within T4 can strongly imply that an additional sign is a correction. For example, although #8 occurs just four times, the evidence within T4 indicates that it has the contour NH (as its palaeography implies); three of the four examples occur alongside a gapped NH, suggesting that the additional notation offers an alternative, 'correct' palaeographical version of the melodic contour. Likewise, #17 is a palaeographically similar version of an NL neume from the main notation, albeit smaller.[36] Though it occurs just five times, four of these are above a different form of NL in the main notation; as seen in the case of #8, it appears to be a reiteration of the main notation in the 'correct' form.

Another example, #22 , which would be a way of writing NS in main notation, occurs three times. Two of the examples provide strong evidence that it was used to correct the main notation: in *Curvati sunt caeli* (f. 58r), the sign is used above an NS with the curves facing in the opposite direction. Perhaps in this instance, the scribe was correcting a notational error,

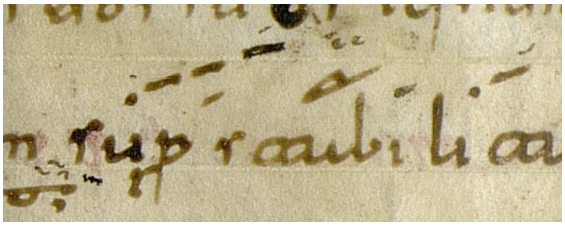
[34] See the discussion above on p. 155. On corrections in L8, see Elsa De Luca and Océane Boudeau, 'Erreur, variante et correction : l'exemple du plain-chant médiéval', *Textus et Musica* 1 (2020).

[35] One example of this can be seen in Silos 6, f. 16v, where the scribe originally wrote NLL on 'sanctitas'. They likely intended to write a single N, but had copied the NLL incorrectly from the word 'sanctite' that occurs later in the chant. A simple error in reading here lead the scribe to confuse the two words and resulted in the scribe correcting their own work by crossing out the NLL on 'sanctitas'.

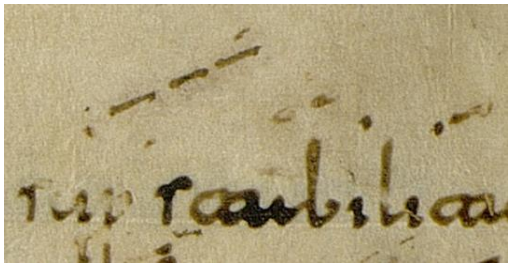
[36] For a discussion of this shape, see pp. 105–108.

demonstrating that the palaeographical appearance of NS was important for conveying the correct nuance. In the second example in *Qui extendi caelum* (f. 108r), #22 was written above an NH. On f. 151v, this chant is written out again. In parallel with the additional notation on f. 108r, the second iteration of the chant has NS in its main notation (Figure 5.5). Here, the NS sign written by the additional notator on f. 108r was likely a correction to the erroneous NH.

Figure 5.5: #22 in *Qui extendit caelum*



f. 108r



f. 151v

Cognate chants in other manuscripts can also help to establish certain additional signs as corrections. For example, #21 , which also signifies NS in the main notation, has comparable cognates for seven of its nine occurrences. In six of those cognates, while T4's main notation preserves a different melodic contour, at least one other manuscript has the melody NS, as in the additional notation. For #19 , four chants contain this sign. The three which have cognates all have NLH at the comparable moment. The fourth example of #19 is also likely to be a correction to NLH; two examples of #19 occur at the beginning of verses for the chant *Laudaverunt*.[37] Despite having different texts, the verse of this chant often begin with the same melody. As the example with a cognate is likely to be a correction to NLH, it is highly probable that the final example without a cognate is also a correction to NLH.

[37] For a melodic analysis of this chant across manuscripts, see Raquel Rojo Carrillo, *Text, Liturgy, and Music in the Hispanic Rite: The Vespertinus Genre* (New York: Oxford University Press, 2021), Appendix I (online) and pp. 82–93.

Similarly, cognates also help to determine the meaning of a third sign. 24% of cognates for #9 (5/21) have NHH in at least one source, as implied by the palaeography of the sign. The main notation of one chant, *Audi popule meus*, has NHH in all extant sources except T4, implying that T4's additional notation was written to correct the melody to the one that was used elsewhere. A number of cognates have NH in some manuscripts but NHH in others (for example, *Alleluia Salvum fac domine*, 'hereditati'), confirming that both versions of the melody were in circulation. In these chants that show variation, certain manuscripts align more closely with T4's additional notation than others; for example, in each coincidence with Silos 4 and A56, these manuscripts always have NHH, as do two out of four coincidences with Silos 3. In contrast, L8 only has NHH 10% of the time. Preliminary (but limited) evidence, therefore suggests that the additional notation is likely to have been correcting the main notation; the corrected melodies may have been closer to those preserved in Silos 4, A56 and Silos 3, than to those in L8. This is further evidence that T4 may have had contact with the Rioja tradition, as found in Chapter 4. Overall, in the case of each of these signs, comparison with cognate melodies in other manuscripts suggests that the main notation in T4 was being corrected to an alternative version of the melody by the additional notation.

It is not possible to determine whether all such signs were corrections, although initial evidence indicates that they might be. For example, if #26 has the same interpretation as the palaeographically comparable version in the main notation, it would read NSH. Of the four examples in T4, only one has a cognate with a comparable melody. This cognate, *Hic est dies*, has NSH at the comparable moment, just as the palaeographical analysis of the shape indicates; however, no firm conclusions can be drawn from a single example. Similarly, there are limited examples of #12 and #55 . #12, which resembles NHL, occurs just twice in T4. One of these occurrences is above an alternative, gapped form of the same contour. This is an initial suggestion that it may have been used, like #8 and #17, to give the correct palaeographical form of the neume. #55, which resembles an NUL with an extra punctum above, occurs just once. The example is written above NHHL; the cognate melody in L8 is NUL. This might suggest that the additional notation in T4 is indeed a correction to the main notation to give the contour NUL, as in L8. If this is the case, the dot could be additional notation to the correction, as seen in #29 (discussed above), although this is unclear. In each of these examples, although initial evidence suggests that the signs are acting as corrections to the main notation, more substantial data would be required to confirm this hypothesis.

There are also examples that appear to be correcting the melody to a different melodic practice. Although only one of the seven cognates of #13 has NHL in another manuscript (thereby presenting the same melodic contour as suggested by the sign's palaeography), considering the location of the sign within a chant helped me to draw some conclusions about its function. Six of these examples are found on the penultimate syllable of a cadence, and often alongside NS (5/6). NHL is common on this syllable of a cadence, particularly in the Rioja manuscripts.[38] Perhaps the scribe writing the additional notation was amending the cadences — regularly a cadence with an NS on the penultimate syllable — to a version they were more familiar with that used NHL.

A second example, the NL-like #15 , is also mostly used in cadential contexts.[39] The main notation has N, NS, or NH in these instances. If the additional notation is a correction, this would result in an NL+N cadence, rather than the NS+N cadence (which we saw in #13 was commonly corrected), or an NH+N cadence (uncommon in T4).[40] NL+N as a cadential progression occurs 154 times in the main notation of T4, and it is therefore plausible that this is a correction to the melody.[41] However, NL is only used once in the extant cognates, all of which are found in L8. As there were multiple musical dialects in use across the Old Hispanic corpus it is nonetheless possible that the surviving melodies in L8 do not represent the dialect the scribe of the additional notation was recording, although this cannot be ascertained from this case study.

It is possible to establish the function of other notational signs by considering the contexts in which they occur. #14 , which is comparable to a horizontal neume with the interpretation NHLHL, is used in particular situations: it occurs alongside NUL on 5 out of 7 occasions, all of which are in a melisma, suggesting that it may have been a correction to the melody in these cases. When it is not in a melisma, it occurs on the penultimate or antepenultimate syllable of a cadence alongside NSHL. In cognate chants in other manuscripts, only one of the cognates has NHLHL (as implied by the shape of #14). The other cognates are not melodically comparable in any way. Thus, while the melodic comparisons are inconclusive, the consistent use of #14 in particular contexts implies that it could have been a common correction to a particular melodic idea in the main notation.

[38] See Emma Hornby and Rebecca Maloy, 'Melodic Dialects in Old Hispanic Chant', *Plainsong and Medieval Music* 25 (2016), 37–72.
[39] 5 out of 8 occasions.
[40] See Chapter 4, p. 121.
[41] This is from the sample of cadences outlined in Chapter 4, p. 118.

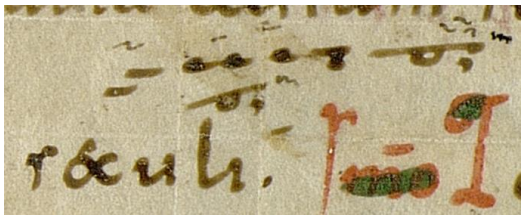
The context in which #53 is used also helps to determine its function. While #53 has no comparable equivalent in horizontal notation, it resembles horizontal neumes that have an NHL contour with an additional a praepunctum. The entirety of the sign would thus be NUHL. This sign most commonly occurs next to an NS://:g (22/39 occasions).[42] In cognate chants, the melody at these moments is usually NSH (23/31 examples).[43] Although the palaeography of the additional notation does not imply NSH, these cognates could nonetheless help to determine the interpretation of the additional notation. As seen in Chapter 4, T4 has consistent melodic differences with other sources.[44] Due to the consistency of NSH at cognate moments, it could be that the additional notation is correcting the main notation to a melody that is a variation of the NSH, albeit with an additional L in T4.

An analysis of the contexts in which #18 and #54 occur allows me to build on González Barrionuevo's study in which he found that in some instances, signs that have typically been considered as NS are in fact NLH.[45] In horizontal notation, #18 would read NLH and #54 would have the same interpretation with an additional line above that does not have a clear significance. Both of these signs are commonly used alongside NS://:g (e.g., for #18 this occurs in 92/100 examples). Other manuscripts also typically have NS in cognate chants. Following González Barrionuevo's work, this might suggest that the additional notation was clarifying the ambiguous contour of a neume that resembled NS. It could also show that NLH was a common alternative contour for NS melodies at cadences, rather than necessarily the interpretation of the NS neumes. In either case, it appears to be a correction to the notation, whether musical or palaeographical.

For #28 , only contextual evidence suggests it may have been a correction. This sign, which resembles an NUL formed with two wavy pen strokes rather than straight ones, occurs alongside an NHHL and at the end of a melisma or syllable with over five notes in all but one example (Figure 5.6). Although the melismas in cognate chants are not comparable, the consistent placement of this sign allows us to hypothesise that the scribe(s) was making changes to a particular way of ending a melisma that was no longer used.

[42] Some of these are preceded by praepuncta.
[43] Or NSH preceded by a praepunctum.
[44] Chapter 4, p. 117–139.
[45] González Barrionuevo, 'Una grafía particular del porrectus'. The interpretation of this sign as NS is not universally accepted. For a summary of discussions concerning this shape, see Hornby and Maloy, *Music and Meaning*, p. 324.

Figure 5.6: #28 in Context (*Qui extendit caelum*, f. 108r)



The examples discussed in this section exhibit parallels with the corrective neumes in L8, demonstrating that at least some of the additional signs have the purpose of correcting the main melodies. The majority of these signs (with the exception of #53) resemble horizontal Old Hispanic neumes; it is possible that when a sign is extremely palaeographically similar to a complex horizontal neume (i.e., one with more than one note), it was intended to be used as a correction to the melody, rather than giving additional information that does not relate to the melodic contour. Some signs, however, resemble horizontal notation yet cannot be confirmed to be correcting the notation. It is possible then, that they were used as a means of providing supplementary information.

b) Signs that Provide Additional Information

Some signs, such as the bâtonnet in Old Hispanic manuscripts, were added to neumatic notation with the apparent intention of providing additional information about the performance of the neumes. They might further specify information not encoded into the neumes, like a particular interval, rhythmic quality, or other nuance.[46] However, with the exception of T7 and Cinc, other Old Hispanic manuscripts have a much sparser use of additional signs and a significantly limited vocabulary, often of only one or two signs.[47] In other Western notations, supplementary information was notably added in the form of significative letters. These letters, which were written in close proximity to the neumes, represent a word that gives a rhythmic, performance, or melodic nuance: for example, *c* can indicate *cito* or *celeriter*, meaning quickly.[48] This method of adding nuance to neumatic notation is more commonly found in

[46] See the discussion on p. 155.

[47] Brockett also commented that the range of markings in the Toledo sources was 'far more extensive' than in other manuscripts in *Antiphons*, pp. 100–01.

[48] 'C ut cito uel celeriter dicatur certificat' in Notker's letter to Lantbert, St. Gallen, Stiftsbibliothek, Cod. Sang. 381, p. 8. See also Hiley, *Western Plainchant*, p. 374; Gregoire M. Suñol, *Introduction à la paléographie musicale Gregorienne* (Paris: Société de Saint Jean l'Evangeliste, 1935), pp. 134–46.

manuscripts from the 9th and 10th centuries, especially sources from St. Gall,[49] Laon,[50] and Chartres.[51] It became less prevalent in the 11th century.[52] Neither are they found in the majority of Old Hispanic manuscripts (with the exception of Cinc, T4, and T7).

Table 5.3: Comparison of Significative Letters Used in European Notations

Additional Notation in T4	St Gall	Laon	Chartres
	a	*a*	
	b		
c	*c*	*c*	*c*
d	*d*		*d*
	e		
		eq	
f	*f*	*f*	*f*
g	*g*		
		h	*h*
i	*i*		
	k		
	l	*l*	*l*
m	*m*	*m*	
		n	*n*
			nl
	o		
	p		
			q
	r		
s	*s*	*s*	*s*
t	*t*	*t*	*t*
x	*x*		
y			

The presence of significative letters in T4 indicates that some of the additional notation signs add information to the main notation. These letters are unlikely to refer to specific pitches between A and G as they include the letters *x* and *y*.[53] A simple comparison of the choice of letters shows that the overall vocabulary of letters in T4 is not as extensive as in other regions; St Gall has a total of 17 different letters, while T4 has just 10 (Table 5.3). Although the set of

[49] These sources contain East Frankish/German notation.
[50] These sources contain Lotharingian/Messine notation.
[51] These sources contain Breton notation.
[52] Ian D. Bent and others, 'Notation', <10.1093/gmo/9781561592630.article.20114> [accessed 4 August 2022].
[53] Some medieval notations used letters to state pitch. See for example the 'Dijon Tonary', Montpellier, Bibliothèque interuniversitaire de Médecine, Ms. H159. This manuscript uses the letters a–p to describe the degrees of the scale.

letters used in T4 aligns more closely with those used in St Gall than it does with manuscripts from other regions — some of the letters used in T4's additional notation are only found in manuscripts from St Gall (*d*, *x*, *i*) — it does not align completely with any region: common letters, such as *l*, which is used in St Gall, Laon, and Chartres, are not found in T4. *Y* is only found in T4. This might initially suggest that the significative letters in T4 are more closely related to practices from St Gall rather than from Laon or Chartres — a relationship that will further be explored below.

b.i Analysis of Significative Letters in T4

By studying the significative letters of T4, I hoped to determine the similarities between T4 and other Western uses of the letters; however, pinpointing the specific meaning of each letter proved to be difficult. This is in part due to the absence of a contemporary source explaining the meaning of each letter. In St Gall, the meaning of each letter was recorded in Notker's letter to Lantbert.[54] Joseph Smits van Waesberghe interrogated the meaning of the significative letters in the St Gall manuscripts by contextualising Notker's descriptions of the letters within case studies on their placement and use. While these interpretations are a useful starting point for my study of T4's significative letters, as the meaning of the letters can vary between regions, Smits van Waesberghe's findings do not necessarily apply to their use in T4.[55]

Several letters are potentially comparable with those used in St Gall. The letter *d* seems to have a similar use in T4 to Notker's description and Smits van Waesberghe's findings. In 96 out of 100 examples of #42 , which I interpret as *d*, the sign occurs alongside a neume with a fall in pitch and is often directly above the part of the neume which indicates the fall in pitch.[56] It therefore appears that *d* in T4 is related to the lowering of pitch (although it is not possible to determine a more precise interpretation from the evidence). In St Gall, *d* stood for *deprimatur*, meaning to decrease.[57] Smits van Waesberghe suggested that *d* was sometimes used to alert the reader to a lowering in pitch.[58] While *d* is significantly more common in T4's

[54] Joseph Smits van Waesberghe, *Muziekgeschiedenis der middeleeuwen: Verklaring der letterteekens (litterae significativae) in het gregoriaansche neumenschrift van Sint Gallen*, vol. 2 (Nijmegen: Bergmans, 1938). A copy of this letter can be found in the 10th-century manuscript SG 381. https://www.e-codices.unifr.ch/en/list/one/csg/0381, pp. 6–9.

[55] For a description of the use of significative letters in different regions see: Bent and others, 'Notation', [accessed 4 August 2022]; Suñol, *Introduction*, pp. 134–46.

[56] The four remaining examples are above N twice, NH once, and NHHH once.

[57] Suñol, *Introduction*, p. 135. In Chartres notation, Suñol believed that it had the meaning *depresse*, which has the literal meaning 'to press down', p. 143–46.

[58] Smits van Waesberghe, *Muziekgeschiedenis*, p. 550.

notation than in that of St Gall — it is one of the most common letters in T4 but rarely used in St Gall's manuscripts —[59] its meaning initially seems consistent across the two practices.

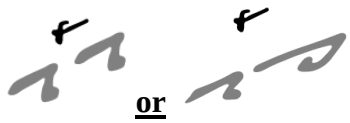
Other letters may have consistent meanings in both notation systems, although this is harder to confirm. This is because, rather than relating directly to the palaeographical appearance and melodic contour of a neume, these letters relate to qualities that are not always encoded into the musical notation. Nonetheless, the letters *c*, *f*, *t*, and *x* may all have similar meanings to those outlined by Notker. For example, *c* stood for stood for *celeriter* or *cito* (quickly) in St. Gall, Laon, and Chartres. Smits van Waesberghe found that *c* has several different functions: either affecting the connection between neumes or affecting the performance of a single neume.[60] In T4, *c* (#41) is sometimes written above and to the right of an N, implying it could share the latter function. However, there is no clear relationship between the use of *c* and the connection between neumes. When affecting the connection between neumes, Smits van Waesberghe noted that *c* is written between two neumes.[61] In T4, *c* is usually at the beginning of a neume. Brockett stated that it often occurs at the beginning of a looped NHH.[62] I add that it also occurs at the beginning of many other neumes (NHL, NLH, NHHLH, NHLH, NS, NHLL, etc.). It is possible that, due to some of the additional notation being written after the main notation — in some manuscripts from St Gall the significative letters seem to be written at the same time as the musical notation — the *c* was written above the neume rather than in between neumes due to spacing issues. However, sometimes *c* is above the first neume of a chant or verse, and therefore cannot be referring to the connection between neumes.[63] While the placement of *c* may not be directly comparable to other manuscripts, its function may nonetheless be comparable, although this is difficult to ascertain from the extant evidence.

Similarly, it is difficult to confirm that *f* shares the same function in T4 as in other notations. In the 100 case studies, *f* (#43) occurs in one of two places: above the middle of two neumes or above a neume with a unison (or possible unison) in the middle (e.g., NSHL or NUL). In the case of the former, it almost always follows a neume with a fall in pitch, most commonly found NL–NL or NL–NHH (Figure 5.7).[64] In St Gall, *f* stood for *cum fragore* (with

[59] Smits van Waesberghe, *Muziekgeschiedenis*, pp. 546–51.
[60] Smits van Waesberghe, *Muziekgeschiedenis*, pp. 593–94.
[61] Smits van Waesberghe, *Muziekgeschiedenis*, p. 594.
[62] Brockett, *Antiphons*, pp. 99–104.
[63] It is used on the first neume of the verse of *Tibi derelictus est* (f. 101r), for example.
[64] For a discussion of the progression NL–NHH, see Emily Wride, 'Old Hispanic Notation: A Palaeographical Case Study' (unpublished MA thesis, Bristol, 2018). Other possible progressions are NL–NH (once), NL–NLL (twice).

force).[65] Smits van Waesberghe noted that *f* normally occurs with certain neumes, particularly ornamental ones such as the quassus or salicus.[66] In additional notation, *f* sometimes appears with particular neumes (for example NUL, Figure 5.7, row 3), although these neumes are not typically considered ornamental.[67] Its more frequent use between neumes seems to suggest that it was being used in a different way to in St. Gall: a way that primarily referred to the relationship between notes. Its consistent use between neumes suggests that it might also indicate *cum fragore* — perhaps emphasising the appropriate way to perform the subsequent neumes — or its use alongside NUL might instead imply that it indicates a repercussion of the pitch, although this is difficult to prove from the extant evidence.

Figure 5.7: Common Uses of the Significative Letter *f*

Appearance	No. of Appearances in 100 Examples
	34
	22
	10

Sometimes, the inconsistency in the use of a letter means that it is difficult to confirm similarities with notation from St Gall. For example, aside from most commonly being used alongside a single note (48/100 examples), *t* (#48) does not seem to occur consistently with any other melodic contour.[68] Like most other letters, it is typically placed above and to the main neume, often towards the end of it. In other western systems, *t* stood for *trahere* or

[65] Suñol, *Introduction*, p. 134; Hiley, *Western Plainchant*, p. 374; Smits van Waesberghe, *Muziekgeschiedenis*, p. 300.
[66] Smits van Waesberghe, *Muziekgeschiedenis*, p. 536.
[67] For a summary of the literature on these shapes, and a discussion of their meanings, see Hornby and Maloy, *Music and Meaning*, p. 324.
[68] It appears in closest proximity to the rise of a neume 24 times, the fall of a neume 21 times, and a unison 5 times. On two occasions the original neume is illegible.

tenete meaning to hold or drag out.[69] Likewise, *x* (#49) [70] occurs roughly 50% of the time (18/34 examples) with an N but shows no other relationship to a particular melodic contour or to the accent of the text. In St Gall, *x* was used for *expectare*: to wait.[71] The inconsistency of the melodic contours of the main notation for both *t* and *x* implies that they do not relate to the melodic direction of the music. However, it is not possible to establish whether they specifically refer to rhythmic qualities; despite the placement of *t* towards the end of a neume, as this is a common trait in additional notation, it is not clear whether this placement referred to the lengthening of a neume's final note (as implied by *trahere*) or whether the placement was merely coincidental.

For the remaining letters, I found that the letters used in T4 were highly unlikely to align with Notker's definitions. This concurs with Brockett's assertion that the letters in T4 do not share the same meaning as those used in St Gall.[72] For example, *i* (#45)[73] and *s* (#47) are both considered to relate to pitch in Notker's letter to Lantbert. *i* stood for *iusum* or *inferius*, implying a lowering in pitch, while *s* stood for *sursum*, meaning 'higher'.[74] In T4, however, *i* is found at the end of many neumes, including those which end in a rise or include only rising pitches. Its placement at the end of a neume may suggest that the following pitch is lower; due to the lack of pitched cognates, it is not possible to determine whether this is the case. Occasionally, *i* is also found directly above the middle of a gesture that does not contain a fall, such as NHH (2/51 examples). Without a correction to the main notation, if the intention was *inferius* this would be a source of confusion for the singer. Likewise, *s* always begins the first syllable of a word, which is also usually the beginning of a phrase (10/12 instances). It is

[69] 'T trahere uel tenere debere testatur' in Notker's letter to Lantbert, SG 381, p. 8. See also Smits van Waesberghe, *Muziekgeschiedenis*, pp. 629–61; Hiley, *Western Plainchant*, p. 374; Suñol, *Introduction*, p. 134.

[70] Sometimes it is difficult to distinguish *x* from *t* due to the similar shape of the letters, especially when the scribe was particularly limited on space, or when the final stoke of the letter rises dramatically, thus blurring the distinction between the two.

[71] 'X Quamuis Latina perse uerba non inchoet, tamen expectare expetit' in Notker's letter to Lantbert, SG 381, p. 8. See also Smits van Waesberghe, *Muziekgeschiedenis*, pp. 678–705; Hiley, *Western Plainchant*, p. 374; Suñol, *Introduction*, p. 134.

[72] Brockett, *Antiphons*, p. 102.

[73] One unusual element of the sign is its appearance. In Old Hispanic script, the letter *i*, either in its majuscule or minuscule form, does not have the horizontal crossbars at the top and bottom of the shape. I have not been able to find this form of the letter in any contemporary western scripts of the period. Perhaps then, *i* is an anachronistic interpretation of the sign, although its interpretation otherwise is unclear.

[74] 'I iusum uel inferius insinuat, grauitudinemque pro g interdum indicat' and 'S susum uel sursum scandere sibilat' in Notker's letter to Lantbert, SG 381, pp. 7–8. See also Smits van Waesberghe, *Muziekgeschiedenis*, pp. 318–497; Hiley, *Western Plainchant*, p. 374; Suñol, *Introduction*, p. 135.

written high in the writing space, at a distance from the neume and seemingly not referring to any specific pitch, although it could serve as a general warning that the whole phrase was comparatively 'higher' than the rest of the chant. In St Gall, *s* tended to be written close to the specific pitch that it affected and was not limited to the beginning of a phrase. The difference in use of these two letters between St Gall and T4 makes it seem unlikely that they held precisely the same meaning across the sources.

Neither does *m* seem to have the same meaning. In T4, *m* (#46,) has a clear use; it is almost always used at the end of a neume (82/100 examples) and in 78/100 cases it is used with a neume that ends with a descent in pitch. Typically, it is above the final pen stroke, although in a few instances it occurs below it.[75] It therefore seems to have a similar use to the letter *d*. In St Gall and Laon notation, however, the letter *m* stood for *mediocriter*, which Hiley described as 'moderately', either in reference to pitch or rhythm.[76] Perhaps, if relating to pitch in T4, it indicated that the singer should descend moderately (i.e., by a small interval). Despite not being able to ascertain the specific interpretation of the letter, it does not appear to share exactly the same meaning as in other systems as it relates strongly to descents in pitch and shows no indication that it relates to rhythm.

One letter, *y* (#50,) is extremely uncommon in T4, occurring just once. Nonetheless, it has a clearly different meaning from that given by Notker. Notker stated that *y* signs to Latin speakers that no hymn is to be sung; in the one example of *y* in T4, it is used in the middle of a phrase and this definition seems highly unlikely.[77] Despite being aware of Notker's definitions, Suñol suggested that *y* does not have any meaning as a significative letter and neither have I found it mentioned in other scholarship. Although it is not possible to determine its meaning from this occurrence, it clearly holds a different meaning in T4 to St Gall, one that was understood by at least one of the manuscript's additional notation scribes.

The final letter used in T4's additional notation also seems likely to have had a different interpretation in T4 based on its placement in the writing space and its association with particular neumes. The letter *g* (#44,) is also found high in the writing space, often appearing dissociated from the neume below. Notker gave an obscure meaning for *g* describing it as 'ut in gutture gradatim garruletur genuine gratulatur' and does not specify which of the various

[75] See, for example, *Paratum panem*, f. 166v.

[76] 'M mediocriter melodiam moderari mendicando memorat' in Notker's letter to Lantbert, SG 381, p. 7. See also Hiley, *Western Plainchant*, p. 374; Suñol, *Introduction*, p. 134; Smits van Waesberghe, *Muziekgeschiedenis*, pp. 351–497; Bent and others, 'Notation', [accessed 4 August 2022], Table 5.

[77] 'Y apud latinos nihil ymnizat' in Notker's letter to Lantbert, SG 381, p. 8.

words beginning with the letter *g* applied.[78] Smits van Waesberghe suggested that in manuscripts from St Gall, *g* represents a guttural (*in guttere*) quality based on its occurrence with ornamental neumes, and therefore concluded it has a similar meaning to *f*.[79] This seems inconsistent with the placement of the letter *g* in T4 and the use of the sign in extremely different contexts to the letter *f*. While the context of the letter *g* makes it seem unlikely it was similar to the letter *f*, if the two letters did have a similar meaning, they also had very specific contextual uses.

Studying the significative letters of T4 therefore highlights several aspects for broader consideration in the additional notation. It demonstrates that at least some of the notation was providing supplementary information rather than necessarily correcting the neumes. Some of these signs, and at least the letters, were acting symbolically — that is, they did not represent a melodic contour through their palaeographical appearance. Furthermore, a study of significative letters allows for a comparison between T4's notation and the additional signs in St Gall, Laon, and Chartres. In my initial investigations, I have suggested that the additional notation in T4 is unlikely to have developed out of close contact with any of these sources.

b.ii Other Signs That Provide Additional Information

Further to significative letters, some other additional signs may also be providing extra information, rather than correcting the notation. For example, in horizontal notation, one of the most prevalent signs, #2 ⁄ , resembles a bâtonnet and occurs in a similar position (although in horizontal notation, due to the inclination of the neumes, it is more accurate to describe the location of the sign as being above and towards the end of a neume, rather than above and to the left).[80] In the same way that it is difficult to pinpoint the meaning of the bâtonnet, it is equally difficult to determine the meaning of #2. Like the bâtonnet, #2 is usually only used once within a neume and alongside a variety of neumes (Table 5.4).[81] However, in chants with a cognate in L8, the bâtonnet rarely occurs at comparable moments to #2, suggesting the two signs may not have been equivalent across the manuscripts.

[78] SG 381, p. 7.
[79] In Smits van Waesberghe, *Muziekgeschiedenis*, p. 540.
[80] It only occurs below the neume in 1 of the 100 examples.
[81] No examples in the 100 from T4 have #2 more than once within a neume. Occasionally, some examples in L8 have more than one bâtonnet alongside a neume. For example, see L8, *Sanctificabit rex templum*, f. 260v, 'alleluia'.

Table 5.4: Main Notation Neumes #2 is Used Alongside

Melodic Contour	Image (number of occurrences in this sample in brackets)			
N	(1)			
NH	(18)	(13)	(2)	
NHH	(4)	(5)		
NHHH(+)	(2)	(2)	(4)	(2)
	(1)	(1)	(1)	
NHL(L)	(7)	(3)	(1)	
NL	(3)	(2)	(7)	(2)
NLH	(2)			
NLL(H)	(5)	(1)		
NS(H+)	(1)	(1)	(1)	(1)
NUS	(1)			
NUU(+)	(4)	(1)	(1)	

In T4, the sign does not seem to be indicating a specific pitch, suggesting that it is not a correction to the main notation. Despite resembling a virga (a sign used to represent subsequent higher pitches or the highest pitch in a neume), #2 is not always positioned above the highest point in a rise. Sometimes it is even positioned at the start of a rising neume; it is therefore not likely to have the same signification as the virga. Although it is one of the most prevalent signs in T4, the meaning of #2 is nonetheless difficult to ascertain; while it resembles a virga it does not seem to be fulfilling this role. While it also resembles a bâtonnet, its use may or may not be different to the use of the bâtonnet in L8. It therefore seems that this sign is not a correction to the notation, but the specificity of the information it is adding remains unclear.

#30 resembles a sign that González Barrionuevo suggested had melodic significance in BL50 when used above or below a porrectus (NLH).[82] When written above the neume he suggests that the final note in a porrectus, which could either be higher or a unison, should be higher.[83] In the 100 examples of my sample, it is almost always written above the neume; but the main neume can have one of several different melodic interpretations, including ones ending in a rise. González Barrionuevo's theory therefore seems unlikely to fit the meaning of this sign as the rise is already signalled in the main notation. The cognate melodies offer no insight into the interpretation of this sign; if it were a correction, I would expect to find some correlation between the melodies of the additional notation and of the main notation in other sources. This sample does not seem to demonstrate a means of correcting the notation (as suggested by Barrionuevo's study), thereby implying that it was instead providing additional information.

Some signs that are consistently used in particular contexts are also likely to have been providing supplementary information. In the main notation, a sign like #5 is used to represent N, either alone on a syllable or as a praepunctum. In additional notation, although the sign is palaeographically comparable, its use seems to be quite different. #5 is predominantly used at the end of a neume (Figure 5.8): it is above the end of a rising gesture or underneath a falling one. Sometimes it is also above the gap of a neume beginning NS, and very occasionally it is closer to the N of neumes beginning NS. The sign is never written twice within one neume.

[82] Hornby and Maloy interpreted this shape as NS in BL50, rather than NLH. Hornby and Maloy, *Music and Meaning*, p. 324.

[83] When written below the neume, González Barrionuevo interpreted the sign as indicating a descent of at least a third. 'Una grafía particular del porrectus', p. 89.

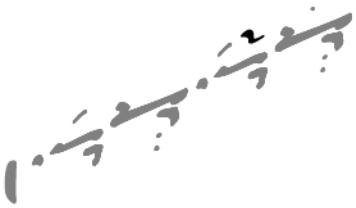
Figure 5.8: Placement of #5 in Relation to Main Notation

Rising Gesture	Falling Gesture	NS Gesture	N

The use of this sign in a variety of contexts, alongside rising and falling gestures, unisons and single notes, makes it hard to see any relationship between this sign and a particular melodic contour. While a palaeographical analysis suggests just one note, it is consistently placed at the end of a neume; in the main notation, the comparable neume is extremely unlikely to occur in this position. This renders a direct correlation between the signs unlikely, further suggesting that the sign in the additional notation may not have developed out of the comparable sign in the main notation. Rather, the placement of #5 at the end of a neume or in between two shapes separated by a gapped connection, could suggest that it relates to the relationship between two notes. This relationship could be one of several things: dynamic, rhythmic, or a vocal technique. It might be natural to think a sign at the end of a neume might be indicating a pause, however, I suggest that this is unlikely. In *Audi Israhel* (f. 30v), the neume is used before a non-melodic sign that indicates the end of a melisma section (Figure 5.9a). The concept of a 'pause' is therefore already recorded in the main notation. In *Vos qui transituri estis* (f. 135v), it is also used midway through the second repeat of a six-note phrase (Figure 5.9b). A pause in such a short phrase, and variation from the first iteration that directly precedes it, seems unlikely. The meaning of #5, despite its use in particular functional contexts, therefore remains ambiguous,

Figure 5.9: Examples of #5

a)

b) 

Other neumes also occur in particular contexts: for example, #33 always occurs with rising gestures, often ones comprising three or more notes (with any type of connection), and #35 is commonly alongside a neume with a falling gesture (95% of the time). In the case of #33, as it spans multiple notes it seems unlikely that it is correcting the melody to be a single note; in cognate chants, none of the melodies have a single note here. #35, despite its presence predominantly alongside neumes with a fall in pitch, only occurs near to the palaeographical point marking the fall in pitch in 71% of cases. As the main notation already indicates a fall in pitch and, as evidenced by the study of scribes above, the scribes of the additional notation understood the meaning of the main notation, this could suggest that this type of additional notation was not correcting the notation. Rather it might have been highlighting an upcoming fall in pitch, similar to the use of *d* in the significative letters, or it might convey other information about how to perform the upcoming descent.

The different contexts of two additional signs also lead me to hypothesise that they have different interpretations. I differentiate between #3 and #31 depending on where they are placed in relation to the neume (Figure 5.10). While these two signs are palaeographically similar (they are both curving lines, often in a similar orientation) I categorise signs as #3 based on their placement above a neume, typically one which ends with the contour N or NH (there are 19 and 58 respective examples of these contours).[84] #31 is consistently placed to the bottom right of a neume, usually one that ends with a fall in pitch (90/100 examples). #32 is a similar sign, albeit more curved, that occurs above the neume. It is also likely to be associated with neumes that fall in pitch, as it occurs alongside one in 13 out of 15 instances. Despite having clear formal contexts, the meaning of these signs is unclear; none seem likely to be correcting the melody to a single note and cognate chants offer no further information. It is therefore possible that each is instead providing supplementary information.

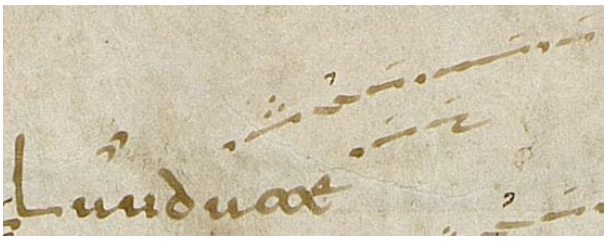
Figure 5.10: Example Placement of #3 and #31

#3		
#31		

[84] Its occurrence alongside an N also means that it is not comparable to the bâtonnet, which only occurs alongside neumes containing multiple notes.

Some additional signs commonly occur alongside specific neumes, although this does not always offer insight into their interpretation. #27 ∴ commonly occurs next to the melodic contour NUL;[85] this is the same contour as suggested by its palaeography. This makes its interpretation ambiguous. If correcting the melody, why simply re-write the melodic contour already present? Rather, the sign does not seem to be correcting the melodic contour. In the 33 cases that are not alongside NUL and that have cognates, other manuscripts never have NUL. Furthermore, on f. 20v, it appears that on two occasions the scribe responsible for the main notation wrote #27 themselves, directly above the NH they had just written (Figure 5.11). As it seems unlikely that the scribe was correcting the notation they were presently writing, and as the cognates offer no evidence that comparable moments had an NUL melody, it is likely that this neume is providing additional information rather than correcting the main notation.

Figure 5.11: ***Benedictus es domine deus patrum*, 'Laudate', f. 20r–v**



Likewise, #51 ⸰ is visually similar to a gapped NH in horizontal notation with a curved final pen stroke. When it occurs in T4 it is most commonly alongside NH (49/100), although it is alongside an N nearly as often (37/100). In a comparison with cognate chants, the examples that did not have NH in the main notation of T4 only had NH in a cognate 8% of the time.[86] The frequent occurrence of #51 next to an NH, and the limited evidence offered by cognate comparisons, do not support this sign being a correction, rendering it possible that it instead provides additional information.

For many signs, the data does not show that they occur in a particular context, but it is nonetheless possible to speculate about their purpose. For example, #1 ˙ occurs alongside a plethora of neumes in T4 and seemingly with no relationship to the shape of the neumes (Table 5.5).[87] This suggests that it did not have a strong association with a particular neume or type of pen stroke in the main notation. Moreover, while it resembles a punctum, its use alongside any

[85] In 64% of cases.
[86] 4 out of 48.
[87] Table 5.5 show the neumes found in this study of 100 examples. There are many more.

melodic progression in any context makes it seem unlikely that it was presenting a correction to the melody.

Table 5.5: Main Notation Neumes #1 is Used Alongside

Melodic Contour	Image (number of occurrences in this sample in brackets)			
N	(3)	(5)		
NH	(29)	(2)	(1)	
NHH	(4)	(1)		
NHHH	(1)	(1)		
NHHHH	(1)			
NHL	(1)	(2)	(1)	(4)
NHLL	(1)			
NL	(1)	(10)		
NLH	(3)			
NLHL(H)	(1)	(1)		
NS	(4)	(4)	(2)	(2)
NSH(L)	(2)	(1)		
NUH(L)	(1)	(1)	(1)	
NUL	(3)			
NUU	(6)			

Its position in relation to the main notation can also vary, even within the same graphic variation of a neume, meaning that it is not clear how the sign affects a note or neume. For instance, Table 5.6 shows that #1 was added to NS in several ways: twice within one neume; once above the middle of the two pen strokes, once above the left-hand stroke; once above or to the right of the right-hand pen stroke; and once directly below the neume. If #1 represents a note, it would imply that the NS of the main notation was being corrected to a single N on some occasions. It is also plausible that this sign applies to just one note in the neume, presumably the one to which it is closest; although, when it is placed above the middle of the two pen strokes this theory seems untenable. The diversity in the use of this sign only allows me to conclude that it is unlikely to be correcting the melody, and therefore is more likely to be providing additional information.

Table 5.6: Possible Positions of #1 Alongside NS

Variation	Image	Number of Occurrences in All of CEAP
Twice: above each pen stroke		14
Once: above the middle of the neume		23
Once: above the left-hand pen stroke		7
Once: above the right-hand pen stroke		25
Once: below the middle of the neume		2
	Total	**71**

The data is equally inconclusive for other common signs. Although it occurs 443 times, #4 ٬ shows no clear patterns in its use; it can be found at the beginning, middle, or end of a neume, with a rise or fall in pitch, and sometimes with a single note.[88] The cognates offer no further insight into the use of the sign. #36 ٮ is also used in a wide range of contexts. In 36% of examples, it occurs alongside exclusively rising neumes (either at the beginning, middle, or

[88] There are two different palaeographical presentations of the sign that I consider to be #4 (see numbers 2301 and 2303 at https://neumes.org.uk/view/neumelist/1). I have considered them as one sign here as the palaeography of the two signs is very similar. It may be that there is only one version of this sign, which is at times unintentionally more angular and at times more curved, although this has no bearing on its meaning.

end of the neume). 20% are exclusively falling. If its position above the neume is assumed to relate to the relevant part of the neume's melody (rather than the whole neume), the sign might indicate a change in melodic direction; the melody lowers in pitch immediately after #36 in 50% of cases, with a further 38% of occurrences happening at the end of a neume or syllable. As such, somewhere between 50 and 88% of examples could be followed by a fall in pitch. There is therefore a degree of uncertainty as to whether #36 is associated with a rise or fall in the melody. The inconsistency of its use suggests that it is not re-notating the melody, or not re-notating it consistently, thus implying that it is likely to be modifying or adding another quality to the main notation.

While the meaning of many of these signs is inconclusive, where they do not appear to be correcting the main notation, it is likely they were providing additional information. Like significative letters, they therefore act as symbolic representations of a musical quality (rhythm, dynamics, vocal techniques, etc.), or perhaps alert to the reader to an upcoming moment in the chant, such as a change in melodic direction (e.g., *d*, or perhaps #35). This could partly confirm Brockett's suggestion that additional notation affected the vocal execution of the melodies. It also partly supports Zapke's statement that the additional notation was clarifying the main notation, although, as evidenced by Notator C writing both main and additional notation, the main notation was also understood by the scribes. It was not, therefore, a clarification out of the risk of misinterpreting the main neumes, but rather an addition to provide extra information, perhaps to result in more consistent performance practices or perhaps to facilitate the reading of the main notation for the scribes and other singers.

b.iii <u>Signs with an Ambiguous Function</u>

It is not clear whether some of the additional notation has the function of correcting the notation or adding to it. One reason for this is, quite simply, a lack of evidence. Several signs occur a limited number of times in the manuscript, meaning that there is insufficient data to confirm their purpose or meaning. For example, despite resembling horizontal neumes, it is not possible to say that #10 and #11 are corrections as they occur just once in the manuscript. #10 is not in a chant with an extant cognate, and #11 is in a chant that has a melody with an identical melodic contour in T4's main notation and in L8 on the relevant syllable. Similarly, the paucity of other signs, a lack of resemblance to any other Old Hispanic neumes, and a lack of cognates allow me to come to no conclusions about the interpretation of #16, #25, #37, #38, #40, or #52.

The purpose of additional notation is also obscured when the additional notation and the main notation would essentially convey the same information. For example, #20 and #23 both resemble NS, yet 48 of the 100 examples of #20 are written alongside NS, as are 7 out of the 10 examples of #23. In the remaining examples, cognate chants typically have the same melody as T4's main notation;[89] there is therefore no evidence that these NS signs in the additional notation were a correction, though neither does it provide evidence that they were adding supplementary information. These examples raise the question of why re-notate something that looks essentially the same?

Other signs occur with more frequency but do not present any clear patterns in their data. For example, #6 and #7 both closely resemble NH in the main notation, suggesting they might be corrections. There is, however, no evidence for this. In the cognate melodies, the comparable neumes are either the same as in the main notation of T4, or present a different melody entirely. Some common additional signs that do not resemble Old Hispanic neumes can also be ambiguous. #34 occurs alongside neumes with a fall in 92/100 examples. It is also commonly placed below the neumes (81/100 examples). This might imply that the two dots represent a fall in pitch (NL); however, 24% of the neumes it occurs with have more than one fall in pitch, suggesting that the two dots might be correcting the contour to a single fall or might not directly be representing the number of notes, but perhaps some further quality of the fall — an intervallic, rhythmic, or performance nuance, perhaps.

Similarly, #39 does not resemble any Old Hispanic neume, nor does it follow the notational principles of Old Hispanic scripts. It could be considered as one symbol or several written in close proximity: either a virga with two separate puncta above, a virga with an NS above, or all three forming one symbol. When considering whether this was one symbol, the frequent use of all three signs in a consistent formation alongside particular neumes or melodic progressions led me to identify them as one symbol. If assuming it has a melodic quality, it might therefore be interpreted as N–NS or NS–N. In the examples, it occurs alongside neumes with a unison (NS://:g or NS preceded by a praepunctum) and alongside rising neumes (NH, NHH, and NHHH). Functionally, this sign has a strong association with accent or the start of a word/phrase. It is on the first syllable of a word in 24/29 instances, and on an accent in 19/29. This suggests it may have an association with openings, perhaps with the melody of the opening, however, it is unclear whether this association is melodic (with the

[89] #24 would have the same melodic contour as #23 but is written at a different angle. In the single cognate in L8, the melody is also the same as in the main notation of T4.

alternative melody being notated using different notational principles) or whether it provides additional information.

By looking closely at each notational sign, I have begun to establish their individual functions. Although some remain impossible to determine, those that resemble Old Hispanic neumes are often used to correct the melody, while those that do not resemble Old Hispanic neumes seem to be used to provide additional information. This demonstrates that additional notation was a complex system that engaged with the main notation on multiple levels. Ultimately, whether a sign is adding information or correcting a melody, their presence demonstrates a concern with facilitating accurate renditions of chant melodies, either by amending outdated melodic contours, or by giving more precise information about how to perform the existing melodies.

Comparisons to Other Notational Systems

Exploring each of the signs used in additional notation and drawing comparisons with other Old Hispanic manuscripts therefore offers insight into their purpose and, for some, their meaning. Considering the relationship between the signs and other notational systems may offer further insight into their meaning. As seen in comparisons of the significative letters, it is possible that the meaning of certain additional signs relates to their connection to other notational systems. A study of the other signs more broadly might therefore help to either establish a relationship with other notational systems or, equally, might help to establish *no* relationship to other notational systems. Not only do such comparisons have the potential to better our understandings of the signs, but also to shed light on their potential origins, thereby offering insight into cultural links and the educational training of the scribes responsible for writing the additional notation.

a) Old Hispanic scripts

Naturally, the first point of comparison is the Old Hispanic scripts. Signs #1–29 all have a similar appearance to horizontal neumes. Horizontal notation falls into the broader category of Frankish notation; Frankish scripts are adiastematic and therefore are characterised by their use of puncta and virgae that can signify the relative pitch of the notes (lower and higher respectively). Susan Rankin uses the term Frankish to refer to several scripts: West Frankish, East Frankish, Old Hispanic, and (northern) Italian.[90] The use of a punctum or virga

[90] Rankin, *Writing Sounds*, pp. 108–22.

could therefore show a relationship to any Frankish script; nonetheless some signs in additional notation have a distinctive Old Hispanic appearance. #10 , for example, contains a looped gesture — a shape that is far more common in Old Hispanic sources than in other notations.[91] #11 and #17 are shapes found exclusively in horizontal notation. Some signs are similar to ones in horizontal notation but have an additional element, for example #54 resembles NLH with a line above, and #55 resembles NUL with a dot above. Through studying the corrections to T4, it became apparent that the signs that resemble complex Old Hispanic neumes are highly likely to be correcting the main notation.[92]

However, while there are similarities to horizontal notation, not all signs originate in this script (#30–55). For example, #36 and #39 do not resemble any horizontal neume, nor do they follow the notational principles used in horizontal notation. In horizontal notation, lower notes are placed comparatively lower in the interlinear space.[93] In the case of #36 and #39 the lowest shape is a virga — a sign that means a high or higher note in neumatic notation.[94] As such, if the line in these signs is a virga, the notational principles of horizontal notation do not apply, suggesting a limited relationship between these signs and Old Hispanic neumes. Similarly, the letters used in the additional notation (#41–49) are not used within the main notation of horizontal or vertical manuscripts.[95] Additional notation therefore does not share the entirety of its vocabulary with horizontal notation; it seems to contain a combination of signs that resemble Old Hispanic neumes and of signs that are unlikely to have developed out of Old Hispanic notations.

b) Western Notations

Due to the use of puncta and virgae in the additional signs that resemble Old Hispanic neumes, we can also hypothesise that additional notation could be related to other Frankish scripts. #1 • and #2 resemble the punctum and the virga, and they are used both

[91] Rankin, *Writing Sounds*, p. 120.

[92] See above discussion of #8, 9, 12–19, 21, 22, 26, 28, 53–55. We can also form the same hypothesis for #6, 7, 10, 11, 16, 20, 23–25, 52, although not enough data is available to confirm this.

[93] See p. 86.

[94] See Chapter 3, p. 98 for a discussion of the virga principle in horizontal notation.

[95] Letters are found exceptionally rarely within Old Hispanic manuscripts. Concerning letters in L8, see Brou, *Le Joyau des antiphonaires latins : le manuscrit 8 des Archives de la Cathédrale de León*, pp. 46–49; Louis Brou, 'Fragments d'un antiphonaire mozarabe du monastère de San Juan de la Peña', *Hispania Sacra* 5 (1952), 35–65 (p. 63). BL45 f. 4r is also an exception to this. This inserted leaf uses the letter *a* below the text.

independently and as an essential element of other signs, such as #9 ; this is comparable to their use in Frankish scripts. However, as shown above, while #1 and #2 resemble a punctum and a virga, there is no evidence that they act to correct the notation in this way. Similarly, #27 is comparable to an NUL (trigon), although evidence suggests that in additional notation it is unlikely to have this role.[96] Where several ambiguous signs are visually comparable to other notations (for example, #34 indicates a two note rise in Catalan notation),[97] visual similarities between the notational styles should not lead to assumptions about the function of a shape or the relationship between notational styles as it is unclear whether signs that are palaeographically similar between Old Hispanic notations and other notations share the same meaning. This is further evidenced by the significative letters that are found in T4 and in manuscripts from St Gall but that are likely to have a different meaning. The greater number of signs that are directly comparable to uniquely Old Hispanic neumes (and the limited evidence linking additional notation and other Frankish scripts), suggests that additional notation was much more likely to have developed out of exposure to horizontal Old Hispanic notation than through exposure to other Frankish scripts.

Other western neumatic notations, which include Palaeofrankish, Breton, Lotharingian,[98] and Aquitanian, do not show a close relationship to additional notation. These notations differ from Frankish scripts in that they have a relative amount of diastematy; neumes are placed higher or lower in the writing space according to the pitch they represent.[99] In contrast, Frankish notation does not tend to show this level of precision, usually beginning each syllable at a similar height in the writing space regardless of pitch.[100] In additional notation, there is no diastematic precision, but rather each sign is placed at a consistent height relative to the neume it refers to. While this is not like the aforementioned notations, neither is it exactly like Frankish notation, as the placement of the sign seems to be dependent on the presence of a main neume. Sometimes, its precise placement around the neume even depends on the point in the melody that it affects (e.g., the significative letter *f*).

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[96] For an example of a trigon in a manuscript from St Gall, see St. Gallen, Stiftsbibliothek, Cod. Sang, MS 339, p. 39: *Qui regis Israhel*, first line of music, 'intende'. https://www.e-codices.unifr.ch/en/csg/0339/39/0/.

[97] Hiley, *Western Plainchant*, p. 351.

[98] This script is also known as 'Messine'. See Hiley, *Western Plainchant*, pp. 347–51; Rankin, *Writing Sounds*, pp. 102–06.

[99] Rankin, *Writing Sounds*, pp. 94–95.

[100] For more on the definition of Frankish script, see Rankin, *Writing Sounds*, p. 108. For more on the use of the writing space in T4, see Chapter 3, p. 89.

Two further distinctions between western notations are that in Lotharingian script, the virga is (1) only used in compound neumes and (2) has curved ends.[101] These two characteristics make it unlike T4's additional notation, which has an abundance of short, straight lines, both written on their own and in compound neumes (e.g., #2 and #9). Palaeofrankish notation does not use a straight line to represent a single note; instead, a single rising pen stroke represents NH (pes) and a falling one NL (clivis), as opposed to two distinct movements like in Frankish notations.[102] #3 ⸝ would therefore resemble NH in Palaeofrankish notation, although out of the 19 cognates of #3 that have an N in the main notation, only one has NH in another source.[103] This suggests that #3 was not likely to be correcting the melody to NH, implying that the sign does not represent the NH contour as it does in Palaeofrankish notation.

While in general, the comparisons between these scripts and the additional notation of T4 are few, there are a limited number of signs that are comparable. For example, Breton and Aquitanian notation can represent multiple descending notes using vertically aligned dots, perhaps drawing parallels with #34 — the opposite of how this sign would be read in Catalan notation. This single sign does not confirm a relationship between Breton or Aquitanian notation and additional notation; however, it suggests that there may have been influences on additional notation that originated outside the Old Hispanic sphere.

Western notations, aside from Old Hispanic ones, therefore share a few similarities with additional notation. Frankish scripts seem to be the most similar due to the relationship between additional notation and horizontal Old Hispanic notation. Nonetheless, no western system is directly comparable to additional notation, suggesting that it may have been influenced by a number of notational scripts; the nature of this influence may become more visible in future work that encompasses the other sources containing additional notation (T7 and Cinc).

c) Byzantine Notation

Prior to the work of González Barrionuevo, some scholars believed Old Hispanic scripts had Byzantine influences.[104] However, González Barrionuevo showed that vertical Old

[101] Rankin, *Writing Sounds*, pp. 102–03; Hiley, *Western Plainchant*, p. 349.
[102] Hiley, *Western Plainchant*, p. 348..
[103] *Ad praedam domine*, 'virtute': L8 has NH. BL51 and BN01 have N.
[104] Thibaut, *Origine*; Amédée Gastoué, *Introduction á la paléographie musicale byzantine : catalogue des manuscrits de musique byzantine de la Bibliothèque nationale de Paris et des bibliothèque publiques de France* (Paris: Impressions artistiques L. Marcel Fortin & cie., 1908); Wagner, *Neumenkunde*; Anglés, 'La Música medieval'; Higini Anglés, *La*

Hispanic notation was more closely related to Frankish notations than to Byzantine notation.[105] As some of T4's additional signs do not use typical principles found in Western notations (e.g., #36 and #39), it is also important to entertain the possibility that it could be related to other notational systems. Concerning Byzantine notation, the Palaeobyzantine[106] (10th–12th centuries) and the Middle Byzantine[107] (mid-12th century–ca.1815) periods are most relevant; the New Method[108] (from 1814 onwards) is, naturally, not relevant to a 12th-century manuscript. Palaeobyzantine notation would have been a well-established script by the time T4 was written. This system of notation is characterised by its use of adiastematic neumes that give the relative height of notes, but not specific intervals or pitches. There are also several styles of notation in this period: of most interest are the Coislin and Chartres styles, which have a relatively large group of basic signs and also use 'letter neumes' to add further nuances. Ecphonetic and Theta notation are not likely to be relevant to T4's additional notation as these have a very limited range of signs and, unlike additional notation, neumes are absent from most syllables (for example they might only be used to mark a cadence).[109] Some early Palaeobyzantine signs also have palaeographically comparable signs in additional notation; for example, in H.J.W. Tillyard's comparison of Coislin notation and Middle Byzantine melodies, a sign that is comparable to #39 often coincides with a rising second.[110] Tillyard also hypothesised that some subsidiary signs (Hypostases) in Coislin notation gave a loose interpretation that allowed a chant to be sung from memory or invented in the moment; in contrast, additional notation gives more precision to the 'loose' melody preserved in the horizontal notation.[111] Constantin Floros discussed the use of significative letters in Chartres

música de las Cantigas de Santa María, del rey Alfonso el Sabio (Barcelona: Diputación Provincial de Barcelona: Biblioteca Central, 1943). For a summary of this literature, see González Barrionuevo, 'Relación', 1–112.

[105] González Barrionuevo, 'Relación', 1–112.

[106] Also referred to as Early Byzantine, 'stroke-dot', or linear notation by Egon Wellesz in *A History of Byzantine Music and Hymnography* (Oxford: Oxford University Press, 1961), p. 262.

[107] Sometimes called 'Round' notation or Hagiopolite.

[108] Also known as Chrysanthine. Christian Troelsgård, *Byzantine Neumes: A New Introduction to the Middle Byzantine Musical Notation* (Copenhagen: Museum Tusculanum Press, 2011), p. 33. Wellesz uses the term Late Byzantine, noting that Koukouzelean and Hagiopolite-psaltique are also terms for this period. Wellesz, *A History*, p. 262.

[109] Troelsgård, *Byzantine Neumes*; Kenneth Levy and Christian Troelsgård, 'Byzantine Chant', <10.1093/gmo/9781561592630.article.04494> [accessed 17 June].

[110] H. J. W. Tillyard, 'Byzantine Neumes: The Coislin Notation', *Byzantinische Zeitschrift* 37 (1937), 345–58. This is similar to the opinions of Wellesz and Troelsgård in the Middle Byzantine period. Wellesz, *A History*, pp. 312–15; Troelsgård, *Byzantine Neumes*, p. 45.

[111] Tillyard, 'Byzantine Neumes', 345–58 (p. 346).

notation; significative letters in Chartres notation use the Greek alphabet and are therefore not comparable to the Latin equivalents found in T4.[112] Based on the limited overlap of notational signs and the different functions of notation, the relationship between additional notation and Palaeobyzantine notation seems unlikely.

A relationship to the Middle Byzantine period may also be unlikely.[113] Additional notation is preserved in T4, Cinc, and T7; Anscari Mundó suggested the latter of these to be from the late 11th century, perhaps around 50 years before our earliest evidence for Middle Byzantine notation.[114] As some additional notation may have been written after the manuscripts were initially notated, it is possible there may be a relationship between the two; this would also establish additional notation as dating from the mid-12th century onwards. Middle Byzantine notation is characterised by a number of signs that refer to the relationship with the preceding note. These signs often indicate the size of the interval, direction of melodic movement, dynamic, and rhythmic qualities — all qualities that could also be implied by the additional notation in T4. Byzantine signs can also be combined to represent different intervals (e.g., a *hypselé* , which on its own represents a fifth, with a *petasthé* , which on its own represents a 2nd, written like so represents the summative total interval of a sixth with the accentuated qualities of the *petasthé*). However, it seems unlikely that additional notation is used in this way; signs are rarely combined to form compound symbols and they are most commonly used in isolation.

Only a few signs are shared with Middle Byzantine notation. #2 , for example, looks like an *oxeía* , and #4 could be compared to an *apostrophos* . Unlike Tillyard, Floros considered the Middle Byzantine sign to be equivalent to the Western pes quassus ('a turbulent note performed with a trembling and shaky voice').[115] This sign shares similarities with #39, and according to Floros this 'seisma I' is used also at the start of a phrase; additionally, it typically appears in chants of the third mode (deuteros). It is not possible to know whether this sign has the same function in additional notation (although a relationship to the Byzantine modes seems unlikely). Moreover, palaeographical differences may make this possibility untenable; in #39 the line ascends, whereas in Byzantine notation, Floros considered

[112] Constantin Floros, *The Origins of Western Notation* (Frankfurt am Main: Peter Lang, 2011), pp. 169–213.
[113] For a detailed study of Middle Byzantine notation, see Troelsgård, *Byzantine Neumes*.
[114] Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25.
[115] Walter Odington, *Summa de speculation musicae*, 95 in Floros, *The Origins*.

the sign to be formed using a *bareia* ⸌ (a shape whose orientation is essential to its meaning, indicating a lower note) and a *dyo kentemata* ⸎.[116] The inclination of the shapes used to form the signs therefore results in a juxtaposition between the Byzantine interpretation and the palaeographical appearance of the #39 in T4. The limited number of comparable signs between additional and Middle Byzantine notation, and the difference in how the signs are used (i.e., the act of combining neumes) suggest that any relationship to Middle Byzantine notation may be limited; this system was likely not the origins of additional notation.

d) Arabic Diacritical Marks

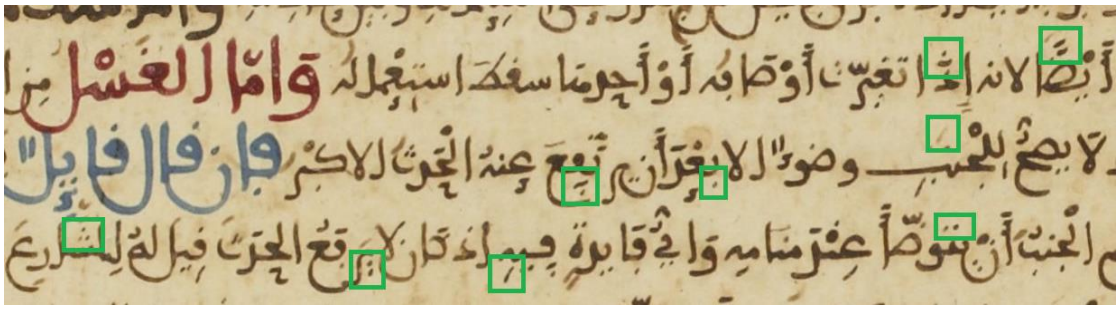
It is not only musical notation that provides supplementary information in the form of additional signs; in written language, some scripts use diacritical marks to provide further information about the text. Some of these marks look like the signs used in additional notation. For example, Figure 5.12 shows part of a manuscript written in Arabic in 1183 using a Spanish-Moorish script.[117] In this image there are signs that look like numbers #1, #2, #20, #23, #27, and #34–36 (outlined in green). Each of these signs provides information about how to read the Arabic text. For example, the sign that looks like #2 is known as *fatḥa* when placed above the letter. In this context it represents a short 'a' sound like in 'hat'. When it is placed below the letter it is known as *kasra* and represents a short 'i' sound like in 'dip'.[118] For additional notation, it seems unlikely that there is a relationship to Arabic diacritical marks (despite the scribes being familiar with the Arabic script, see p. 39). The proximity of the additional notation to the neumes implies that it relates to the music rather than to the text. Moreover, #2, for example does not have any relationship to the vowel sounds of words, nor does it relate to the accent of the text. The nature of the relationship between additional notation and the musical qualities of the neumes therefore suggest that palaeographical similarities with Arabic diacritics are no more than coincidental.

[116] Floros, *The Origins*, pp. 31 and 111–17. Floros's interpretation differs to Wellesz and Troelsgård who considered the sign to be formed of an *oligon* and a *dyo kentamata*, and to represent an ascending second. Wellesz, *A History*, pp. 312–15; Troelsgård, *Byzantine Neumes*, p. 45.

[117] https://archivesetmanuscrits.bnf.fr/ark:/12148/cc38685f.

[118] Mahdi Alosh, 'Appendix A: Arabic Alphabet and Diacritical Marks', in *Ahlan wa Sahlan: Letters and Sounds of the Arabic Language* (New Haven: Yale University Press, 2021), pp. 149–51.

Figure 5.12: Diacritical marks in Bibliothèque nationale de France, Arabe 1451[119]



Conclusions

By carrying out a detailed study of additional notation I have offered new insights into its meaning, function, and origins. Initial identification of multiple scribes in the additional notation demonstrates that, despite the notation initially seeming sporadic and unplanned, it is in fact a unified system of musical notation that complements the main notation. In this system, signs can have one of two functions; some correct the notation, while others provide additional information. Neumes used to correct the main notation are typically those that resemble horizontal neumes such as #29. The signs that resemble horizontal neumes, particularly those that the data suggests might be corrections, also tend to occur less frequently than those that do not; this further implies that these neumes may have been used occasionally, as and when needed, to correct the main notation. At least some of the additional notation provided information further to the main notation, as also indicated by the presence of significative letters. Determining their meaning proved difficult based on the data in this study. Perhaps, like significative letters, these marks were an attempt towards a more precise means of expressing musical qualities — rhythm, pitch, and style.

The origins of additional notation are still unclear. Chronologically, the scribe of *Paratum cor meum* proves that horizontal notation and additional notation were used contemporaneously; contrary to Zapke's suggestion that the additional notation was an attempt to interpret the main notation, this chant demonstrates that a single scribe understood the musical qualities of both notational systems.[120] Palaeographically, additional notation is rooted in horizontal Old Hispanic origins but has a significant number of signs that cannot be explained through this relationship alone. Many of the imported signs cannot be found in other notational systems. Even when signs appear palaeographically similar, the relationship

[119] https://gallica.bnf.fr/ark:/12148/btv1b8419211m.
[120] Zapke, 'Notation Systems', p. 209.

between two systems seems highly unlikely based on several factors; the different contexts of a sign's use (e.g., #2 and Arabic diacritics), the different signification of its composite parts (e.g., #39 in Byzantine notations), or the lack of correlation between the information known to be conveyed in other notational systems and the results of my study (e.g., #3 and Palaeofrankish notation). It would also be easy to assume that the significative letters of T4 derive from, or relate to, those used in St Gall's manuscripts; however, case studies show this is not the case. Determining the origins of additional signs therefore requires further investigations; ones that consider not only palaeographical relationships, but also historical, political, and geographical ones, as these may offer further insight into the influences that led to the creation of additional notation.

In a study of this size on a repertoire of signs so large, it was not possible for me to draw concrete conclusions about every sign and many avenues remain open for future work. One avenue would be to investigate how each sign is used in relation to one another; for example, the letter *g* can be used with the letter *s*. This implies that *g* and *s* cannot have the same meaning. Studying the combination of signs used above one single horizontal neume would further our understanding of how signs work together, and what the implications are for the interpretation of these signs. Examining the possible combinations of the 55 signs is unfortunately beyond the scope of this thesis. A further direction would be to examine the use of the additional notation in T7 and Cinc and to compare the vocabulary of signs and their use. This would result in a greater understanding of how the system of additional notation worked, how these manuscripts might relate to one another, and how large the community was that was practising it. In the expanse of possibilities for further research, the initial studies I have carried out in this chapter will provide a stepping stone for future work.

Chapter 6: T4 in the Context of Toledan Musical and Notational Practices

Musical-liturgical manuscripts that preserve the Old Hispanic rite attest to the presence of two separate strains of the liturgy in Toledo (tradition A and tradition B). Having established the melodic and notational practices of T4, I am now able to further explore how the manuscript relates to its Toledan context. In previous research, scholars have shown that each tradition had its own unique liturgical and musical practices; Jordi Pinell initially noted the liturgical differences between the two traditions, suggesting that tradition B preserved more archaic elements and was likely brought to Toledo from the south of the peninsula.[1] More recently, the differences between chant genres and the liturgical day in the two traditions have been explored in detail by Emma Hornby and Raquel Rojo Carrillo.[2] When examining the musical practices of Old Hispanic responsories in Toledo manuscripts, Don Randel observed that the set of responsory verse tones in tradition A manuscripts was distinct from tradition B manuscripts, thus concluding that the two traditions follow different musical dialects (Toledo A and B respectively).[3] In a recent study of the sacrificia, Rebecca Maloy identified differences between the musical grammar of Toledo tradition A and B manuscripts, as well as observing some of their unique recurring melodic contours and neume combinations.[4] These scholars considered Toledo's two practices as distinct from one another; however, in her essay on the morphology of horizontal notation — one of the most substantial works on the Toledo corpus to date —

[1] Jordi Pinell, 'El problema de las dos tradiciones del antiguo rito hispánico: valoración documental de la tradición B, en vistas a una eventual revisión del ordinario de la misa mozárabe', in *Liturgia y música mozárabes: Ponencias y comunicaciones presentadas al I Congreso Internacional de Estudios Mozárabes, Toledo 1975*, ed. by Jordi Pinell and others (Toledo: Insituto de Estudios Visigótico-Mozárabes de San Eugenio, 1978), pp. 3–44 (pp. 26–27); 'Unité et diversité dans la liturgie hispanique' in *Liturgie de l'Eglise particulière de l'Eglise universelle : Conférences Saint-Serge, XXIIe Semaine d'études liturgiques, Paris, 30 Juin–3 Juillet 1975* (Rome: Edizioni Liturgiche, 1976), pp. 245–260; *Liturgia hispánica* (Barcelona: Centre de Pastoral Litúrgica, 1998), pp. 39–40. See also Ramón Gonzálvez Ruiz, 'La persistencia del rito hispánico o mozárabe en Toledo después del año 1080', *Anales toledanos* 27 (1990), 9–34 (p. 29); and 'Los origenes de la liturgia hispano-mozárabe', *Anales toledanos* 35 (1998), 33–54 (pp. 51–54); Andrey A. Volkov, 'Spanish-Mozarabic Rite: on the Question of Two Liturgical Traditions', *Theology, Philosophy, History* 1 (2017), 75–86.

[2] Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), pp. 77–133.

[3] Don M. Randel, *Responsorial Psalm Tones for the Mozarabic Office* (Princeton: Princeton University Press, 1969), pp. 80–101.

[4] Rebecca Maloy, *Songs of Sacrifice: Chant, Identity, and Christian Formation in Early Medieval Iberia* (New York: Oxford University Press, 2020), pp. 227–39.

Susana Zapke made no distinction between the two liturgical and musical practices of the city.[5] Rojo Carrillo was hesitant to assume that the two traditions existed throughout the liturgical year as the extant manuscripts preserving tradition B only pertain to Lent.[6] In this chapter, I offer evidence that the manuscripts preserved in Toledo bear witness not only to two distinct musical and liturgical practices for the entire year, but also that they contain two separate musical scripts.

Only three sources preserving tradition B practices survive: two mostly complete manuscripts (BN10 and T5) and part of a third manuscript (TM25-1).[7] By drawing the first detailed comparison between a Toledo tradition A manuscript (T4) and the tradition B corpus, and by examining the similarities between the music and notation of each tradition, I nuance current understandings of the relationship between tradition A and B. Some of the melodic contours that I established as common in T4 in Chapter 4, and therefore a possible marker of the Toledo A dialect, are not present in the tradition B manuscripts. Other patterns are more common in the Toledo manuscripts of both traditions than in the earlier sources from the north of Iberia. This demonstrates that the musical dialect of T4 resulted not only from its origins in the tradition A liturgy, but also, in part, out of cultural or geographical practices that were more common in the Toledo corpus than in manuscripts from the north of the Iberian Peninsula. Subsequently, I carry out a notational comparison between the traditions. Both traditions have previously been assumed to use the same 'horizontal' script. Although similar, I conclude that they in fact use different notational scripts. This creates issues for Anscari Mundó's dating of the Toledo manuscripts as Mundó used the presence of horizontal notation in a tradition B manuscript as proof that horizontal notation was a late phenomenon.[8] Mundó then used horizontal notation (as an umbrella term) to confirm the lateness of the Toledo manuscripts. My work therefore complicates this approach; as I conclude that the notation used in Toledo

[5] Susana Zapke, 'Dating Neumes According to Their Morphology: The Corpus of Toledo', in *Calligraphy of Medieval Music*, ed. by John Haines (Turnhout: Brepols, 2011), pp. 91–99.

[6] Raquel Rojo Carrillo, 'Old Hispanic Chant Manuscripts of Toledo: Testimonies of a Local or of a Wider Tradition?', in *A Companion to Medieval Toledo: Reconsidering the Canons* ed. by Yasmine and Jason Busic Beale-Rivaya (Leiden, The Netherlands: Brill, 2018), pp. 97–139 (pp. 108–09).

[7] For a brief introduction to each of these manuscripts and their editions see: (BN10) José Janini, *Liber misticus de Cuaresma: (Cod. Toledo 35.2, hoy en Madrid, Bibl. Nac. 10.110)* (Toledo: Instituto de Estudios Visigótico-Mozárabes, 1979); (TM25-1) *Liber missarum de Toledo y libros místicos*, vol. II (Toledo: Instituto de Estudios visigótico-mozárabes, 1983), pp. 303–20; (T5) *Liber misticus de Cuaresma y Pascua* (Toledo: Insitutio de Estudios Visigótico-Mozárabes, 1980).

[8] Anscari M. Mundó, 'La datación de los códices litúrgicos visigóticos toledanos', *Hispania Sacra* 18 (1965), 1–25.

tradition A and B manuscripts is not directly comparable and was likely practised by different groups of people, this suggests the presence of horizontal notation cannot be used to confirm the dates of the Toledo corpus. This opens avenues for future research into the dates of other Toledo manuscripts, especially those belonging to tradition A.

While this chapter covers new ground for notational and musical understandings of the two Old Hispanic rite traditions in Toledo, it is not possible here to study tradition B in detail. Neither do I look to establish the origins of the two traditions; this topic requires a detailed study that encompasses liturgical, musical, palaeographical, codicological, and historical evidence. Instead, I focus on two of the fields explored in this thesis (music and notation) to situate T4 within the wider notational and musical context of the Toledo corpus.

Musical Comparison

Comparisons of the chant melodies preserved in T4 and the tradition B manuscripts demonstrate a lack of uniformity across the Old Hispanic musical practices of Toledo. Despite the two traditions being practised in close proximity to one another (the parish of Santa Eulalia, which practised tradition A, is less than a ten-minute walk from the parish of Santas Justa y Rufina, which practised tradition B), my findings correlate with Randel's conclusions that each tradition had its own melodic tendencies.[9] To explore the relatedness of the two traditions I firstly compare the melodies of cognate chants between T4 and the tradition B manuscripts. I establish that T4 aligns more closely with the tradition A melodic practice across the Iberian Peninsula than with a specifically 'Toledan' practice. I then build on current definitions of the Toledo tradition A and B musical dialects by examining the recurring melodic contours used at cadences, especially those which I consider to be indicative of a Toledo tradition A dialect (see Chapter 4, p. 135). Taking Randel's identification of the tradition A and B dialects in responsory verses in Toledo as a starting point, I further understandings of these dialects by highlighting traits that occur in multiple musical genres. My work also agrees with Hornby and Maloy's more recent study in which they identified that the two traditions each had different melodic preferences at cadences and I establish a more detailed repertory of those preferences.[10]

[9] Randel, *Responsorial Psalm Tones*, pp. 80–101.
[10] Emma Hornby and Rebecca Maloy, 'Melodic Dialects in Old Hispanic Chant', *Plainsong and Medieval Music* 25 (2016), 37–72 (pp. 45–47).

a) Comparison of Melodies in Cognate Chants

A limited number of chants are preserved in both T4 and a tradition B manuscript (Table 6.1). By comparing the melodies of these chants, we can gain insight into the relationship between the two traditions. In her 2020 book, Maloy suggested that in Toledo tradition A and B chants, the structure was often similar (e.g., the placement of melismas), but the specific melodic contours differed.[11] To explore this within the context of T4, I looked at the relationship ratio between cognate chants. As discussed in Chapter 4, the relationship ratio (a number between 0 and 1) assesses how many pitches between two melodies are likely to be shared.[12] Hornby and Maloy suggested that a close relationship between Toledo tradition A and B melodies (0.9 or above) would imply that the two traditions were musically indistinguishable from one another, indicating a unified musical practice in the city. A low relationship between the chants (a ratio of 0.5 occurs when melodies are related by no more than chance) might suggest that tradition B was equally likely to have developed through contact with northern practices of tradition A as through contact with Toledan practices.[13]

Table 6.1: Chants in T4 and at Least One Tradition B Manuscript

		Folio			
Chant	**Genre**	**T4**	**BN10**	**TM25-1**	**T5**
Alleluia Adtende	LDS	119r			3v
Alleluia Iubilate	LDS	67v			203r
Alleluia O domine	LDS	166v		21v	
Dicite in nationibus	PRLG	33r			195r
Ego dormivi	SNO	18v			184v
Ego dormivi	PSLM	25v			210v
Inquirentes dominum	ALL	99v, 143v	96r		110r
Sacrificate sacrificium	VPR	81v			37r
Stabat maria	RS	7v			184v
Surrexit Christus	ALL	28v			185v
Tulerunt dominum	ALL	11v			194r
Venite benedicti	SCR	48r		21v	

None of the cognate chants between T4 and tradition B are especially melodically similar. The alleluiaticus *Surrexit Christus* has the highest relationship ratio (0.86, see Table 6.2), indicating that there was a close relationship between this chant in T4 and T5, but the two

[11] Maloy, *Songs of Sacrifice*, p. 189.
[12] See Chapter 4, p. 141.
[13] Emma Hornby and Rebecca Maloy, *Music and Meaning in Old Hispanic Lenten Chants: Psalmi, Threni and the Easter Vigil Canticles* (Woodbridge: The Boydell Press, 2013), p. 308.

manuscripts do not preserve identical melodies.[14] *Dicite in nationibus* is also closely related (0.84); however, all other cognate melodies score between 0.47 and 0.76. This suggests that, although some chants demonstrate close relationships with one another across the Toledo corpus, there are many examples that are only distantly related, if at all. If these manuscripts all originated in Toledo, there was no uniform melodic practice in the city.

Table 6.2: Relationship Ratios Between T4 and Tradition B

Chant	Manuscripts	Relationship Ratio
Alleluia Iubilate	T4 & T5	0.65
Alleluia O domine	T4 & TM25-1	0.60
Dicite in nationibus	T4 & T5	0.84
Ego dormivi (SNO)	T4 & T5	0.75
Ego dormivi (PSLM)	T4 & T5	0.47
Inquirentes dominum	T4 & T5	0.63
	T4 & BN10	0.64
Sacrificate sacrificium	T4 & T5	0.72
Stabat maria	T4 & T5	0.76
Surrexit Christus	T4 & T5	0.86
Tulerunt dominum	T4 & T5	0.76
Venite benedicti	T4 & TM25-1	0.71

T4 is, in fact, more closely related to the northern tradition A practices than to the tradition B practices. Ten of the cognate chants studied above are also in L8, and a comparison of these chants demonstrates that, on all but one occasion, T4 and L8 are the most similar manuscripts.[15] Nine chants have a ratio of 0.8 or higher, and the tenth, *Alleluia O domine*, has a ratio of 0.71, making it the least similar of L8 and T4's shared chants in this sample. On the one occasion in which T4 is more similar to a tradition B manuscript than to L8 (T5, *Surrexit Christus*), all three manuscripts have a relationship ratio between 0.85 and 0.86, demonstrating the uniformity of the chant across the repertoire. These ratios are similar to those calculated by Hornby and Maloy in their comparison of the Lenten psalmi between tradition B (T5) and L8.[16] This suggests that the relationship between T4 and L8 might be no closer than the relationship between tradition B and L8 in certain contexts.

[14] For a detailed analysis of the relationship ratios in these chants, see Appendix 6.2.
[15] See Appendix 6.2.
[16] Hornby and Maloy, *Music and Meaning*, 'Online Appendix', pp. 150–301.

It was not possible to rank the relationship between all manuscripts hierarchically as it is not clear whether tradition B is more closely related to T4 or L8: tradition B is more like L8 than it is like T4 in barely more than half of the examples (6/10). The relationship between the three traditions is therefore complex. A study that encompasses all the tradition B chants would be required to fully explore the relationship between tradition B, Toledo tradition A, and the northern tradition A practices.[17]

For the purposes of this study, the relationship ratios shed light onto the relationship between tradition A and B manuscripts in Toledo. For T4, the melodies are more consistent with the practices of tradition A across the Iberian Peninsula than with a melodic practice unique to the city of Toledo; essentially, the main musical practices of the manuscript result from their liturgical context rather than a Toledo-specific practice. As the relationship ratios only give a broad overview, in the following section I turn to a more detailed analysis of specific recurring musical contours in order to explore whether there were shared musical ideas, despite an overarching tendency to differ.

b) Recurring Melodic Contours in Tradition B

The recurring material used in tradition B manuscripts offers an opportunity to further examine the extent of the relationship between Toledo tradition A and B manuscripts. In Chapter 4, I identified recurring melodic contours that were common in T4 and possibly symptomatic of a Toledo tradition A dialect (NL–NHH, NS–NL, and NSHL at the end of a melisma on the penultimate or antepenultimate syllables of a cadence, and NS+N on the final two syllables of a cadence).[18] In this section I look at whether these patterns are representative of a wider Toledo dialect or whether they are more specific to T4 (and Toledo tradition A). If the recurring combinations preserved in the tradition B manuscripts resemble those of T4 but vary by one or two notes, it is possible that the two traditions are closely related. Maloy noted that consistent differences in tradition B's melodic patterns may be indicative of a separate melodic dialect.[19] An analysis of the recurring melodic contours could therefore further nuance the definitions of the tradition A and B dialects in Toledo. In the following discussion I identify

[17] In his doctoral research, David Santana Cañas is undertaking a detailed comparison of relationship ratios, the melodic density, and the contours of chants in tradition A and B manuscripts from across the Old Hispanic repertoire (including earlier manuscripts from the north). For the purposes of my study, I am concerned only with the traits of the melodies that help me to establish the existence of a Toledo practice, and subsequently to situate T4 within that Toledan *milieu*.

[18] See p. 135.

[19] Maloy, *Songs of Sacrifice*, pp. 229–30.

recurring melodic contours that were frequently used across the sample folios of the tradition B sources. While a study of this size cannot comprehensively cover the entirety of tradition B's cadential practices, my work acts as an initial step towards the identification of possible dialect tells in the tradition B repertoire. For the purpose of this thesis, my analysis helps to situate T4 within the broader Toledan context, ultimately establishing it as being firmly rooted in the tradition A dialect, although highlighting that there are a limited number of melodic patterns that could be considered as specific to Toledo.

One of the recurring melodic contours common to T4's cadences was also common in tradition B manuscripts. NL–NHH was used in a tradition B manuscript on 12 occasions across the sample folios and cognate chants. In my MA thesis, I identified this contour as specific to the Toledo corpus, although there I looked only at the tradition A manuscripts.[20] I further noted that it commonly occurred on the final syllable of a cadence, especially when northern manuscripts contained a specific neume with the contour NLUH.[21] In the present case study, I found that tradition B manuscripts also follow the Toledo NL–NHH contour in these contexts; NL–NHH falls on the final syllable of a cadence in 9 out of the 12 examples. However, while Toledo tradition A and B manuscripts seem to use NL–NHH in the same functional context, only 1 of 6 cognate examples has NL–NHH at precisely the same moment. This suggests that although each tradition contains the progression within its melodic vocabulary, the specific moment of its use is not mirrored across traditions. A recurring pattern that has a clear function, yet was used at different moments across repertoires, might suggest that it was integrated into the musical vocabulary prior to the melodies being recorded in writing; when the chants were eventually written down, the recurring combination was likely one of a pool of options that shared the same or a similar function.[22] For T4 and tradition B this process of transmission suggests that the two traditions were not likely to have copied their melodies from one another, or even developed out of one another, but are more likely to have developed independently albeit with a common, and somewhat distant, oral ancestor.

None of the other recurring combinations that I identified in T4 were common in my study of BN10, TM25-1, or T5. As the sample size of my study was limited, it is possible that the combinations might occur in the tradition B manuscripts on other folios. However, in my

[20] Emily Wride, 'Old Hispanic Notation: A Palaeographical Case Study' (unpublished MA thesis, Bristol, 2018), pp. 44–45.
[21] Wride, 'Old Hispanic Notation', p. 57.
[22] On the flexibility of Old Hispanic chant, see Emma Hornby and Rebecca Maloy, 'Fixity, Flexibility, and Compositional Process in Old Hispanic Chant', *Music and Letters* 97 (2016), 547–74.

sample, neither NS–NL nor NSHL occur.[23] The comparable León and La Rioja equivalents (NS–NHL[H] and NSHLH) are also absent, meaning that while tradition B does not share tendencies with Toledo tradition A, neither does it relate more closely to the other Old Hispanic practices. Likewise, NS+N offers no conclusions as to whether tradition B is closely related to T4. While it occurs twice in my tradition B sample, so too does the version more common in León and Rioja manuscripts (NLH+N). These recurring patterns, which I identified as a specific to Toledo in Chapter 4, are therefore pertinent only to the Toledo tradition A dialect. This likely means that the two traditions had audibly different musical traits.

As the recurring patterns of T4 are not common in tradition B, I decided to explore melodic vocabulary of tradition B by examining its recurring melodic contours. This then offered further points of comparison with T4. While this shows some similarities between the two traditions, it emphasizes a greater number of differences. For example, in their work on three-syllable cadences, Hornby and Maloy identified three common cadential endings in Old Hispanic manuscripts: NH+N, NHH+N, and NHL+N.[24] The former two are present in tradition B manuscripts and T4.[25] Hornby and Maloy further found that NHH+N was used in particular melodic contexts at internal cadences (following a syllable containing just one note or after a syllable ending with …L). T4 and the tradition B manuscripts all follow this contour rule, demonstrating a shared understanding of this cadential gesture.[26] However, the melodic vocabulary is not entirely shared between the two traditions: NHL+N, which is over five times more common at T4's three-syllable cadences than NHH+N (see Chapter 4, Table 4.3), did not occur in my sample of tradition B manuscripts. This is further evidence that the two Toledo traditions did not necessarily have a unified Toledan sound.

As seen in the NHH+N cadences, some recurring melodic contours occur in both traditions. However, they are sometimes more common in one than the other. One example of this occurs in cadences ending with NHLH as their last neume or as their last 'interesting neume' (i.e., one that was not a single note). Almost 15% of cadences in the tradition B sample (23/160) sample have the NHLH contour. In comparison, T4 had NHLH in this context in less than 1% of examples (17/2294). Similarly, NLLH+N[+N] occurred 3 times in T4's cadences, but six times in the considerably smaller sample of tradition B cadences, meaning it is likely to

[23] Appendix 6.3.
[24] Hornby and Maloy, 'Melodic Dialects', 37–72.
[25] NH+N occurs 14/160 times; NHH+N occurs 8/160 times. See Chapter 4, 'Three-Syllable Cadences', p. 121 for a discussion of these progressions in T4.
[26] See Chapter 4, Table 4.4 for an analysis of this rule in T4.

be much more frequent in tradition B. These examples demonstrate that the preferences for a particular kind of cadence could vary between the traditions.

Similarly, T4 exhibits different choices at three-syllable cadences that commonly have a proparoxytonic accent (domine cadences, see p. 123). I established that T4 has a single note on each syllable more frequently than it has the León or Rioja version of the cadence (around 49% of the time). The sample from tradition B manuscripts also reflects this preference: of 27 domine cadences, 12 follow the N+N+N contour, six have NL on the penultimate syllable (León domine cadence) and seven have NHL (Rioja domine cadence). The two Toledo traditions therefore both have a roughly 50% preference for the N+N+N[H] domine cadence and share a comparatively lower preference for the León and Rioja versions.

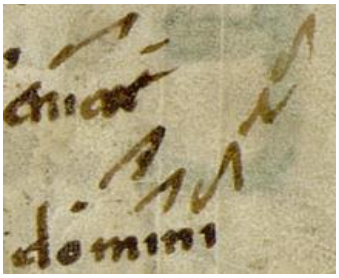
However, as observed in the use of the NL–NHH gesture above, the use of domine cadences in tradition B does not always occur at directly comparable moments with T4. There are three domine cadences in cognate chants between the manuscripts. Two of these follow the León dialect in T4; in tradition B manuscripts, the cognates have a significantly different melody that follow neither the León and Rioja dialects, nor any other identifiable domine cadence (Figure 6.1). In these cases, when T4 has the León domine, tradition B does not necessarily employ the same progression. This may have been a conscious decision by the scribes or singers to avoid regional associations with León, or, based on these examples, it could also suggest that the use of a domine cadence at these moments was never fixed in their practice. The third example likely has N+N+N in both T4 and T5, suggesting that this domine cadence was shared (in L8, this domine has N+NHH+N — a common proparoxytonic cadence according to Hornby and Maloy).[27] This might suggest that the N+N+N domine cadence was sometimes used at comparable moments across the Toledo repertoire. The two traditions therefore may have shared some similar melodic choices at their domine cadences but differed on numerous occasions. The shared preference for N+N+N, in combination with its use at some cognate moments, suggests that the two Toledo traditions developed in a related *milieu*. However, the use of different cadential progressions at cognate moments might also suggest that prior to being recorded in writing, the two traditions diverged from one another, or might imply that at any point in the traditions' history there was a conscious effort in one of the traditions to move away from certain traits preserved in the other.

[27] Hornby and Maloy, 'Fixity', 547–574.

Figure 6.1: Domine Cadences in Cognate Toledo Tradition A and B Chants

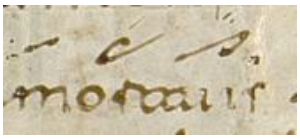
Inquirentes dominum

T4, f. 99v

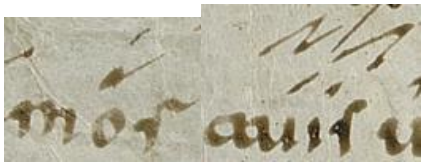


T5 f. 110
(and same melody in BN10, f. 96)

Surrexit Christus



T4, f. 28v



T5, f. 185v

Ego dormivi

T4, 18v

T5, 185v

Further differences in the preferences for certain progressions can be seen in three-syllable cadences that end N+N.[28] Hornby and Maloy found that tradition B tended to use NH or NHH on the penultimate syllable of three-syllable cadences, as opposed to the single note common to Toledo tradition A.[29] Like Hornby and Maloy, I also found that there was a reduced preference in this context for a single note on the penultimate syllable of a three-syllable cadence. In T4, this single note most commonly occurs in N+N cadences (22% of the time at cadences throughout the manuscript), with an even greater frequency at final cadences (48% of the time).[30] In the sample of folios from BN10, TM25-1, and T5, there were 160 cadences (Appendix 6.1). N+N was a less common cadential ending than in T4 overall (only 10% of the time, 16/160) and was significantly less common at final cadences, occurring just 7% of the

[28] On this cadence type, see p. 122.
[29] Hornby and Maloy, 'Melodic Dialects', 37–72 (pp. 45–47).
[30] 294 out of the 611 legible final cadences of T4. See Appendix 4.1.1.

time (3/42) compared to T4's 48%. Unlike in T4, the tradition B manuscripts seem to follow a set of rules on the syllable prior to the N+N: all but one example was preceded by a melisma ending in a rise. In T4, I found no correlation between the direction of the melody directly prior to the N+N (Chapter 4, p. 122). This initial comparison suggests that not only did the melodic tendencies of T4 and the tradition B manuscripts differ, but also that progressions which initially appear similar in both manuscripts were in fact subject to different grammatical rules.

A second recurring melodic contour also occurs in different contexts in each tradition. Using NLH on the penultimate syllable of a two-syllable cadence or the antepenultimate syllable of a three-syllable cadence is common in both traditions: it occurs 6% of the time in the tradition B sample (11/160) and 10% of the time in T4's cadences (230/2294). In T4, 77 of these examples are within the context of a common melodic formula, Formula A.[31] In my sample of tradition B sources, no melodically-comparable progression occurs. This mirrors Hornby and Maloy's research in which they noted the rarity of Formula A in tradition B manuscripts as it only occurred once across the responsories of the sources.[32] Neither does there seem to be a near equivalent to Formula A in my dataset; of the eleven examples of NLH in the cadences of tradition B, NLH is alone on a syllable eight times and not in the context of a melisma or recurring pattern. By way of comparison, NLH is only alone on a syllable thirteen times in T4's significantly larger dataset. Essentially, there is no comparable recurring pattern to Formula A at two- and three-syllable cadences. As such, even though the use of NLH at cadences is common to both traditions, the contexts of its use differ considerably.

Comparison of the melodies and melodic tendencies of T4 and tradition B manuscripts has therefore confirmed that the melodies between the two Toledo traditions are not especially similar. While there are some shared traits not common in León and Rioja manuscripts (N+N+N domine cadences and NL–NHH), T4 more closely resembles the broader tradition A dialect practised across the Iberian Peninsula than it does a specific Toledo practice. Even when T4 and the tradition B manuscripts appear to have similar tendencies at cadences, these are sometimes governed by different rules of melodic grammar (e.g., the melodic contour on the syllable preceding N+N cadences, or the use of NHL). I have also established that tradition B contains recurring melodic contours with specific functions; for a full understanding of the

[31] See p. 129 for a discussion of this formula in T4. For further information, see Hornby and Maloy, 'Fixity', 547–74; Hornby and others, *Understanding the Old Hispanic Office*, p. 242.

[32] Hornby and others, *Understanding the Old Hispanic Office*, p. 242; Maloy, *Songs of Sacrifice*, pp. 229–30.

repertoire, each of these requires further study. For T4, my identification of melodic patterns in tradition B manuscripts helps to confirm the presence of two musical dialects in Toledo (as initially identified by Randel, and later supported by Hornby and Maloy). The structural and functional integrity of recurring melodic contours in tradition B manuscripts, and notably TM25-1, also provides contrasting evidence to Zapke's view that TM25-1 is not a genuine representation of the melodies of the Old Hispanic rite.[33] T4 therefore firmly sits within the context of a tradition A manuscript and its cadential and melodic practices would have created a distinct and complex Toledo tradition A sound; some elements are closely related to tradition A practices from across the peninsula, and some confirm a relationship to the Toledo corpus.

Notational Comparison

Typically, the notation of Toledo tradition A and B manuscripts has been discussed as if it were identical; in the following palaeographical comparison of T4 and the tradition B manuscripts I question this narrative, further complicating the definition of horizontal notation.[34] While the notation superficially appears similar across these manuscripts, owing to its inclination towards the right of the folio (see Figure 6.2 for a comparison of Toledo tradition A and B notation), the two traditions are separated by a number of palaeographical features. However, as shown in this thesis, an individual manuscript contains a wealth of information that deserves a detailed study. In a single chapter it would not be possible to undertake a full analysis of each manuscript and I therefore chose to limit the scope of my notational analysis to ten folios from each complete manuscript and to the twenty-four extant folios of TM25-1. To choose the folios for this sample I generated a random number for each folio containing music (using Excel's 'Rand' function) and selected the ten folios with the lowest values.[35] The purpose of this was to remove any inherent bias whilst covering a manageable, yet representative, portion of each manuscript. Although this approach does not encompass the entirety of the tradition B corpus, I found that it offered a comprehensive sample. For example, when looking at the notational vocabulary of each tradition B manuscript, the neume taxonomy

[33] Susana Zapke, 'Notation Systems in the Iberian Peninsula: From Spanish Notations to Aquitanian Notation (9th–12th Centuries)', in *Hispania Vetus: Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th Centuries)*, ed. by Susana Zapke (Bilbao: Fundación BBVA, 2007), pp. 189–244 (p. 209).

[34] For a detailed definition of horizontal notation, see Chapter 3.

[35] These folios were: BN10: 4r, 11v, 15v, 32v, 45r, 47v, 62v, 77r, 107r, and 107v; and in T5: 37r, 48r, 94r, 113v, 120r, 129r, 159r, 162r, 168r, and 177v.

was largely complete by the time I was examining the fifth folio in the sample, meaning that by the tenth folio I was rarely encountering any different neumes.

The presence of two different notational practices in Toledo manuscripts has not been identified in previous scholarship. For example, Nancy Phillips, when discussing the 'Toledan' (horizontal) neumes, does not mention any difference between the traditions.[36] In their 2013 book, Hornby and Maloy implied that the type of notation preserved in T5 (tradition B) is found in other manuscripts in Toledo *and* the Coimbra fragment (Toledo tradition A).[37] As noted above, the presence of two notational practices raises questions about Mundó's dating of these manuscripts.[38] In the following analysis I warn against the conflation of the two practices.

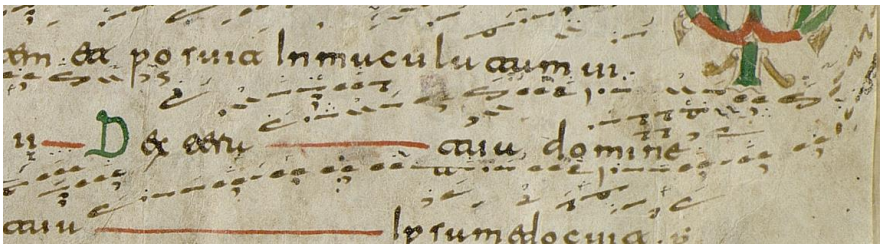
Further to sharing a strong inclination towards the right of the folio, T4 and the tradition B manuscripts have other comparable notational traits, such as the use of the writing space. For example, as discussed in the context of T4 in Chapter 3, tradition B manuscripts also have melismas that are written in strings of neumes with their virgae in alignment (see Chapter 3, Figure 3.5). Long melismas also trail up the side of the folio, changing their inclination as they do so (see also p. 86) and the notation for each new syllable begins at a fixed height above the text (see also Chapter 3, Figure 3.4). The punctum is also slightly curved or like a dot, rather than a short horizontal line as in vertical notation (see Chapter 3, Figure 3.8). Even the neume taxonomies initially appear similar; tradition B manuscripts also lack neumes written using right-to-left gestures, 'staircases', looped NH neumes, and longer compound neumes (an exploration of these shapes within T4's vocabulary can be found on p. 102). There are, therefore, many similarities between the notation of T4 and of the tradition B manuscripts.

[36] Nancy Phillips, 'Notationen und Notationslehren von Boethius bis zum 12. Jahrhundert', in *Die Lehre vom einstimmigen liturgischen Gesang*, ed. by Thomas Ertelt and Frieder Zaminer (Darmstadt: wbg Academic, 2000), pp. 293–623. Randel also considers the notation of Toledo tradition A and B manuscripts to be the same in *Responsorial Psalm Tones*, p. 101.

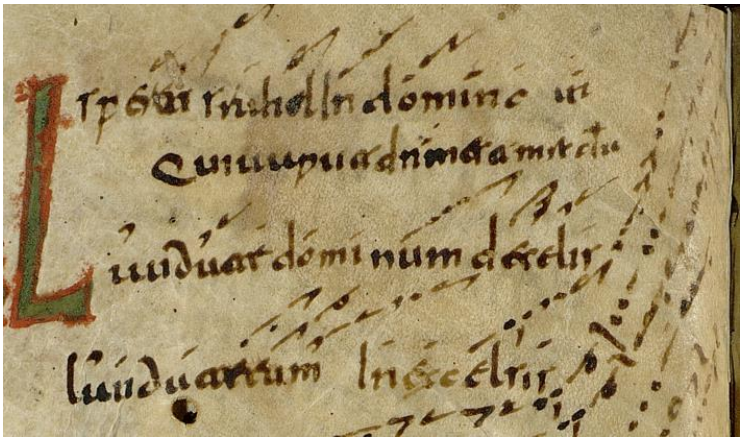
[37] Hornby and Maloy, *Music and Meaning*, p. 320.

[38] Mundó, 'La datación', 1–25.

Figure 6.2: Example of Notational Practices in T4 and T5



T4, f. 99r



T5, f. 17v

However, some fundamental notational principles differ between T4 and the tradition B manuscripts. The most notable is that there is only one line (virga) in rising gapped neumes in tradition B manuscripts. Tradition B manuscripts use the virga in the same way as in vertical notation, with the single line being used to represent the *highest* note within a neume.[39] In contrast, I found that T4 has multiple virgae in one neume, with each line representing *higher* notes. Following a consultation of all horizontal tradition A manuscripts, I can also conclude that this latter method is present across the entirety of the horizontal tradition A corpus. The consistently different use of the virga in tradition A and B manuscripts indicates that, while the styles appear similar, there was a different understanding of this fundamental notational shape. This also suggests that the scribes who wrote Toledo tradition A and B manuscripts were trained in different environments, with each environment preserving its own understanding of neumatic notation, and ultimately indicates that tradition A and B were practised by two different groups of people in Toledo.

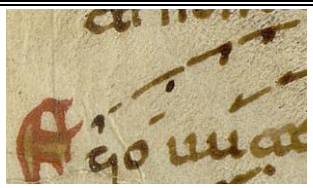
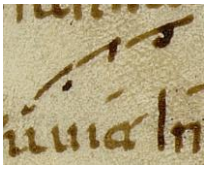
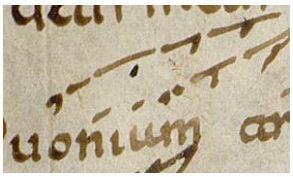
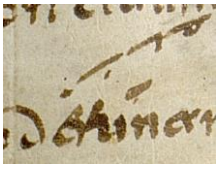
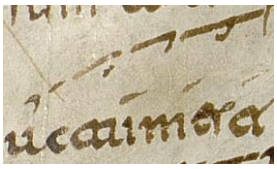
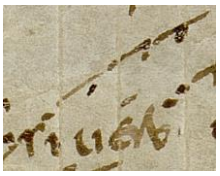
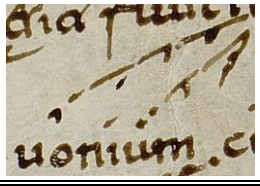
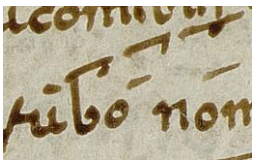
[39] See Chapter 3, Figure 3.10.

Figure 6.3: A Neume Unique to Tradition B

T5, f. 48r

There are also differences in the construction of specific neumes between T4 and tradition B manuscripts. For example, the neume in Figure 6.3 is not written in a comparable way to any found in T4. Hornby and Maloy suggested that it represents an NL (based on its palaeographical composition from a virga and a gravis).[40] In my comparative work, I found that on folios 152r–153r in T5, the neume in Figure 6.3 is used interchangeably with a looped NHH in two different repeating phrase openings (Figure 6.4). This suggests that it instead represents a rising sequence of notes and, despite palaeographical differences, is likely to be similar to the looped NHH common in T4. This attenuated loop shows that, unlike in T4, the shape of a complete loop was not essential to understanding the interpretation of the neume in T5; the semiological interpretation of neumes and the palaeographical principles that govern how they were written in tradition B manuscripts therefore differs to T4, even in neumes that have the same melodic contour.

Figure 6.4: Presentation of a 'Looped' Neume in Opening Melismas in T5[41]

Phrase Opening 1	Phrase Opening 2
	
	
	
	

[40] Hornby and Maloy, *Music and Meaning*, p. 322.
[41] The neume in question is the final neume on the first syllable of each example.

There is also a greater preference for certain neumes and neume types in each notational practice. For example, T4 shows a strong preference for gapped neumes when representing the melodic contour NH, while the tradition B manuscripts tend to use joined neumes (Table 6.3).[42] Other Toledo tradition A manuscripts seem to be closer in preference to T4 than to the tradition B manuscripts: for example, 70% of NH neumes in the Coimbra fragment have a gapped connection, and 81% of NH neumes in the first ten folios of T33-3 have a gapped connection.[43] Similarly, T4 uses the curved NL neume 1754 times, while the only tradition B manuscript to use it in this study was T5, in which it appeared twice. This suggests that, while the horizontal manuscripts may have similar neume taxonomies, the preference for certain types of neume varies between the two traditions.

Table 6.3: Connection Preferences in NH Neumes

	Gapped	Other shape	Total NH contours
T4 (whole MS)	5688 (75.4%)	1853 (24.6%)	7541
T5 (10 folios)	18 (6.8%)	245 (93.2%)	263
TM25-1 (whole MS)	30 (11.6%)	229 (88.4%)	259
BN10 (10 folios)	5 (3.2%)	152 (96.8%)	157

Despite their similarities, the neume vocabulary of the two traditions is not identical; some specific neumes are absent from tradition B (Figure 6.5). Wavy puncta, the NL unique to horizontal tradition A manuscripts, and most neumes containing NS gestures are missing from the vocabulary of the tradition B manuscripts. In Chapter 3, I identified characteristic elements of T4's horizontal notation. In tradition B, however, several of these elements are missing: the NL, the use of serifs, and the jagged connection in a rising sequence of notes.[44]

[42] These chants were chosen at random from the selected case study folios of the tradition B manuscripts. For T4, they were chosen at random from all the chants of the manuscript.

[43] Coimbra: 19/27; T33-3: 108/133.

[44] Rising gestures are written using different neumes in the tradition B manuscripts. In T5 and TM25-1, they are formed using right hand curves, while in BN10 they are formed by joining several tick-like pen strokes (the resulting neume thus has several protrusions).

Figure 6.5: Neumes Present in T4 but not Tradition B Manuscripts

N:~:

NL

W-Shaped Neumes

Some NS Neumes

Neumes Beginning NS

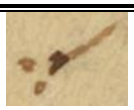
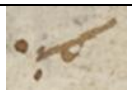
Serifs

Jagged Connections

The exact opposite phenomenon is present in tradition B manuscripts. Some neumes that are found in the tradition B manuscripts are not present in T4. With the exception of the three-note neume used for NUL (commonly called a trigon in traditional nomenclature), neumes beginning with two puncta and followed by another common shape (i.e., NUL+) do not exist in T4 (Figure 6.6).[45] These neumes are common in tradition B manuscripts, often with the contours NULH, NULHH, NULHL, and NULUU. Similarly, for the contour NLL T4 uses exclusively gapped connections; by contrast, tradition B manuscripts use gapped connections and angled connections. The apparent similarities of the notation across the two traditions are therefore not as straightforward as initially thought; it is clear that each tradition has its own unified scribal practices and therefore required scribes specifically trained in that tradition to compile its manuscripts.

[45] Hornby and Maloy, *Music and Meaning*, p. 325.

Figure 6.6: Neumes Present in Tradition B Manuscripts but not in T4

NULH(+)	 (BN10) (TM25-1, T5)
NULHH	 (BN10, TM25-1)
NULHL	(BN10, TM25-1, T5)
NULUU	(T5)
NLL	(BN10, TM25-1, T5)

The manuscripts preserving horizontal notation contain two notational practices: one belonging to tradition A and one to tradition B. Both have their own neume vocabularies, set of notational principles, and preferences, despite initially appearing similar. There are, however, some shared principles across both horizontal notations that could be considered as essential to the script: for example, the use of the writing space, the inclination of the neumes, or the absence of right-to-left gestures. My study of tradition B notation therefore nuances earlier definitions of horizontal notation. Moreover, it attests to the presence of multiple distinct notational traditions in Toledo. It is likely that these two traditions were written and used in different environments, and each required specialised training. We should be careful not to conflate the two practices, as their differences indicate that they developed out of different environments and were practised by people with specific training and knowledge.

Conclusions

My comparative work has been an initial step towards understanding the relationship between tradition A and B within the context of Toledo. I have identified further musical traits that support Randel's identification of two dialects within the city. By bringing notation into the conversation, I have also identified that the two traditions were not only musically and liturgically divergent but were also presented in different ways. Despite Rojo Carrillo's caution

surrounding the assumption that tradition B existed throughout the entire liturgical year, the evidence that the tradition B manuscripts were written by scribes who had a different understanding of notation to those who wrote Toledo tradition A manuscripts strongly implies that the two traditions existed year round; not only does it seems implausible that there would be a specific notational style for a particular season (and people who were specifically trained to write that style), but there are also Toledo manuscripts preserving the Lenten materials that do not preserve tradition B notation.

Importantly for our knowledge of medieval Toledo, this offers new evidence that there were two separate groups of Christians practising the Old Hispanic rite in the city, each with their own understanding of musical composition and notational technologies. Within each of these groups the scribes appear to have had a different education in music and notation, meaning each tradition likely had its own scriptorium (either in the sense of a physical location or in the sense of a group of scribes). The training of scribes in a particular manner means that a Toledo tradition A chant would not only have a characteristic sound but would also be instantly recognisable on the page. This understanding helps me to contextualise T4 not just as an Old Hispanic manuscript, but as one that recognisably belonged to Toledo's tradition A liturgy and community.

Despite Toledo tradition A and B manuscripts being clearly distinguishable from one another, they do offer evidence that some traits were common across the Toledo corpus. For example, the NL–NHH melody in lieu of the NLUH found in manuscripts from the north of the peninsula would have given chants a Toledan quality. Similarly, the inclination of the notation, in combination with the presence or absence of specific gestures, is found almost exclusively in the Toledo corpus. This suggests that there was a level of interaction between the two traditions that resulted in the sharing of melodic and notational ideas. However, the consistent use of different recurring patterns and notational principles demonstrates that each tradition preserved its own practices and also had its own identity. While this overlap of knowledge did not create a unified practice in Toledo, it did result in tendencies that are specific to the Toledo manuscripts of the Old Hispanic rite.

Tradition B offers fertile ground for further research; in future, I hope to advance our understanding of the relationship between tradition B and tradition A across the peninsula by examining a more complete section of the corpus. Comparison between all the extant horizontal notation sources will be necessary to define the relationship between the two traditions more closely and to better understand their cultural and geographical origins.

Conclusion

Studies of the music and manuscripts of the Old Hispanic rite have largely focused on manuscripts attributed to northern Iberia that date from the 10th to 11th centuries; the practice of the Old Hispanic rite in Toledo has received limited scholarly attention. In this thesis, I explored the *milieu* in which the manuscripts associated with Toledo were produced and used, using Toledo, Cathedral Archive MS 35-4 (T4) as a case study. My aim in this study was to understand the musical and notational practices of T4 and subsequently situate them amongst current scholarly understandings of the Old Hispanic repertoire, particularly in relation to the better-understood practices found in manuscripts associated with León and La Rioja. In my research, which is the first study dedicated to an Old Hispanic manuscript from Toledo, I engaged with multiple disciplines (codicology, palaeography, and musicology). By combining several methodological approaches, I was able to offer insight into the culture of the Old Hispanic rite in Toledo, establishing elements of its musical and notational practices that are unique to the Toledo tradition A corpus. This further allowed me to compare these practices with those contained in manuscripts from the north of the Iberian Peninsula and explore the relationship between the different regions. Contrary to the opinions of previous scholars (e.g., Anscari Mundó and Susana Zapke), I have suggested that the different practices preserved in Toledo likely stemmed from geographical, rather than chronological, factors.

Summary of Research

In this thesis I set out to understand the contents of T4 and to ground these understandings in the wider context of Old Hispanic notational and musical practice throughout the Iberian Peninsula. In my research I used evidence from T4 to establish the common practices of the manuscript and to explore how these exemplified its links to the Toledo corpus and the city itself. Identifying notational and musical traits, from the use of the virga in horizontal notation to the specific recurring patterns that permeate T4's chants, allowed me to confirm that T4 contains different regional practices to those found in manuscripts associated with León and La Rioja.[1] Within the context of Toledo, I showed that T4's practices are typical of a tradition A manuscript; tradition B manuscripts contain their own unique vocabulary of neumes and recurring musical contours.[2] This provides further evidence that, from the

[1] See Chapter 3 and Chapter 4.
[2] See Chapter 6.

appearance of the musical notation to the audible sounds of its chants, T4 preserves a practice that was identifiably associated with Toledo *and* identifiably tradition A.

I was able to corroborate a likely 12th-century dating for T4 by exploring liturgical additions to the manuscript and palaeographical criteria.[3] This differs from Mundó's approach, which relied on the colophon and the conflation of the two types of horizontal notation across tradition A and B manuscripts.[4] It raises questions for the dating of the other manuscripts in the Toledo corpus: if some of Mundó's initial criteria for dating the corpus are insubstantial, how can we then support the late dating of these sources? Although my attribution of T4 to the 12th century is not as precise as Mundó's 1192–1208, it follows a similar chronology, and while Mundó's proposed dates for the corpus should be considered critically, they remain reasonable estimates. Further codicological, palaeographical, and liturgical comparisons of other manuscripts from the Toledo corpus will likely help to concretise when they were originally written.

My dating of T4 offers new insight into the continuation of the Old Hispanic rite in Toledo. I have provided evidence that many people engaged with the manuscript throughout its active life (likely until the end of the 13th century).[5] In the initial phase of its composition, at least four scribes were responsible for the text and notation of the manuscript, and in the later phases of its lifespan further scribes contributed additional notation and marginal additions to the manuscript.[6] This demonstrates that there were differing levels of knowledge amongst the people who contributed to T4; in the first layer of production there is evidence that Text Hand 1/Notator A was more competent in writing and had a more intimate knowledge of complex chant genres than Text Hand 2/Notator B, who tended to complete the simpler work. In the later layers of intervention, the use of additional notation may suggest that there was either a limited understanding of Old Hispanic writing technologies, or that there were changing demands upon the notation that required manuscripts to present a greater level of musical detail. This level of engagement with the manuscript demonstrates an active life in a liturgical institution, with numerous people who were capable of writing and editing the liturgy and its chants, from a time when we have little other extant written evidence about Old Hispanic practices. Moreover, it demonstrates that these people were deeply concerned with the preservation and correct practice of their faith; whether it was through training new members

[3] See Chapter 1, pp. 21–35.
[4] See Chapter 1, pp. 21–29 and Chapter 6.
[5] See Chapter 1, pp. 35–40.
[6] See Chapter 2 and Chapter 5.

or through ensuring the clarity of the notation, they helped the Old Hispanic rite to develop in new ways in the 12th century and beyond.

Despite the manuscript likely being written after the suppression of the Old Hispanic rite, it provides evidence that musical and notational practice continued to follow clear conventions that were understood by all scribes. I showed that all of T4's scribes used particular neumes in specific functional contexts, in both the main notation and the additional notation. This offers evidence that the notational systems were well understood by the multiple scribes of T4. The presence of recurring neume combinations and melodic contours, especially those with strong rules of melodic grammar, also demonstrates that there were deeply rooted musical traditions. A tradition that was unified across multiple disciplines and by multiple scribes suggests that there was both a long-standing history to the tradition, and also that its practitioners were part of a well-trained and knowledgeable community.

Importantly, T4 offers a new narrative for the development of the Old Hispanic rite. Typically, scholars have believed that the notational and musical practices of the Toledo manuscripts were the result of a chronological development (or even degeneration) of the earlier northern practices. The musical and notational evidence of T4 suggests that the Toledo manuscripts in fact preserve several practices that developed of their own accord, likely in a separate cultural or geographical context to the northern practices. For example, the w-shaped neume and its distinctive shape demonstrates that the integral understanding of notational shapes differed across the cultures: it seems improbable that this sign entirely changed in function and meaning, without any scribal errors, and perhaps within as little as a century. Moreover, while some formulas (such as Formulas A and B) occur frequently across the Old Hispanic corpus, these formulas sometimes occur at different moments in the cognate chants preserved in other manuscripts. This is also true for particular cadential gestures and dialect tells, which might suggest that these recurring melodic contours and neume combinations were in circulation before the repertoire was recorded in writing. The chants of T4 therefore likely developed separately to those of the northern manuscripts, using some shared musical vocabulary and some of its own musical dialect. Although we lack confirmed early evidence of horizontal notation and of the Toledo tradition A prior to 1085, this evidence suggests it is possible that it existed and developed long before the extant manuscripts were written, perhaps even contemporaneously to the northern manuscripts.

Contributions to the Field

In the field of Old Hispanic chant studies, this thesis offers the first investigation into a manuscript from Toledo, its music, and the horizontal notation that it preserves. For studies of this notational script, I have shown that while seemingly 'unrefined', or even 'primitive' to some, horizontal notation was a sophisticated script that had clear rules concerning the principles and function of notation. I also established the musical and notational traits of T4 that are distinct to the manuscript, and likely representative of Toledo tradition A, as well a establishing how these differ to the tradition B manuscripts. This not only nuances understandings of tradition A, but also offers a unique insight into the musical environment of Toledo, confirming that the two strains of the Old Hispanic liturgy in the city were practised by different groups of people with different educations. The city therefore had not one group of Mozarabic Christians who practised the Old Hispanic rite, but two, and undoubtedly more research is needed into how both of these communities came to be in the city.

More broadly, my work contributes to understandings about the development of notation. By being the first study into the additional notation in T4 — a system that is unique to horizontal notation manuscripts — I determined that this layer of notation had a dual purpose: sometimes to correct the existing melodies, and sometimes to offer further nuance to the neumes. This demonstrates that there were new demands on neumatic notation in the late medieval period. While in some European institutions, including in Toledo Cathedral where the Roman rite was practised, these demands led to the development of pitch- and rhythm-specific notations, the additional notation in T4 offers a narrative in which the scribes of the Old Hispanic rite attempted to find a compromise between retaining their cultural identity and providing precise musical information. We can speculate that this may have occurred as a result of a desire to continue practising the Old Hispanic liturgy and to preserve its melodies for the future, but to also retain its unique identity in a city where the Roman rite was the predominant liturgical practice.

My interdisciplinary approach can act as methodological model for future studies of musical-liturgical manuscripts. Combining the disciplines of codicology, musicology, and palaeography of text and notation, helped to shift the narrative from the contents of T4 to the contexts of its production and use. By understanding the processes of book production and the practices of writing, I was not only able to explore the culture of musical and notational literacy, but also the history of a manuscript about which little else is known. This method can also contribute to narratives of repertoire transmission and the relationship between sources. T4 demonstrates that the influences on a manuscript can derive from several factors; in this case,

liturgical practice (tradition A) and geographical or cultural *milieu* shape the manuscript's notation, music, and liturgy. An in-depth approach that considers how the manuscript was made and kept can therefore be one way to access the history of a manuscript.

Avenues for Future Research

As I only focus on one manuscript, I cannot generalise from my findings for the whole Toledo corpus. Through this initial exploration into the notational and musical practices preserved in Toledo, I hope to have presented a discourse that will facilitate future discussions of horizontal notation and the music it preserves, the Toledo manuscripts, and late Old Hispanic practices. As I have predominantly focused on a manuscript from tradition A, I do not give a complete picture of all the practices preserved in the Toledo corpus. In a future collaborative project, I intend to explore the relationship between Toledo tradition A and B by drawing liturgical, musical, and notational comparisons across *all* the extant Toledo manuscripts. This will more concretely establish the different tendencies and dialects across the traditions, and will offer a more detailed exploration of the relationship between the two.

To further expand upon current understandings of the development of musical writing technologies in the late medieval period, I also aim to compare the practices of all manuscripts containing additional notation (T7 and Cinc). This will offer insight into the demands of singers upon notation in the late medieval period and the changing technology of musical notation, as well as nuancing understandings of the influences upon Old Hispanic practices.

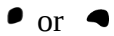
Concluding Thoughts

In my study of T4 I have used the manuscript to inform current understandings of the practice of the Old Hispanic rite in its late period. Through this work I have been able to explore the active and informed practice of the Old Hispanic rite by its multiple practitioners in a culture that continued to develop. Within the Iberian Peninsula, I have established that T4 preserves evidence of a unique and long-standing Toledo A tradition that had its own musical and notational practices. Overall, I present a new narrative for the Toledo corpus: despite the suppression of the Old Hispanic rite in 1085 in the city of Toledo, the evidence presented by T4 does not reflect a liturgical practice that was resigned to its moribund fate. Rather, it bears witness to a long-standing tradition that continued to develop thanks to the engagement of its numerous practitioners.

Guide to the NSHL System

This system was developed by Emma Hornby and Rebecca Maloy and is currently used in the Chant Editing and Analysis Program.[1]

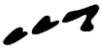
Relative Pitch	
N	Neutral: the first pitch of a neume. Its relationship to the previous note is unknown
S	Same: a pitch that is the same as the previous one
H	Higher: a pitch that is higher than the previous one
L	Lower: a pitch that is lower than the previous one
U	Uncertain (Up): a pitch that could be the same or higher than the previous one
D	Uncertain (Down): a pitch that could be the same or lower than the previous one

Palaeographical Shape		**Examples**
/	A long, straight shape that is inclined upwards. In horizontal notation this shape sometimes has weighted ends (see p. 93)	
\	A long, straight shape that is inclined downwards	
*	A short, dot-like shape. In horizontal notation, this shape can also be slightly curved (see p. 96)	
(	A curved shape with the open ends of the curve on the right	
)	A curved shape with the open ends of the curve on the left	
<	An angled shape with the open ends of the curve on the right	
>	A angled shape with the open ends of the curve on the left	
~	A wavy shape	
o	A loop within a neume	
’	A hook at the end of a neume	

(continues on next page)

[1] For a recent description of this system in their work, see Emma Hornby and others, *Understanding the Old Hispanic Office: Texts, Melodies, and Devotion in Early Medieval Iberia* (Cambridge: Cambridge University Press, 2022), p. 184.

Connection		
g	Gapped: the type of connection between two shapes that are separated by a small gap, but form part of the same neume	or
a	Angled: two pen strokes that form one neume and are joined together with an angle	
c	Curved: two pen strokes that form one neume and are joined together with a curve	
w	Anticlockwise (‘widdershins’): two pen strokes that form one neume and are joined together with an anticlockwise curve	

Text Boundary				
+	Marks a division between two text syllables			
		do-	mi-	ne
		N+N+N		
–	Marks a division between two neumes on the same syllable			
		me		
		NS–NL		

Plates

Plate 1: Text Hand 1, ff. 70v–71r

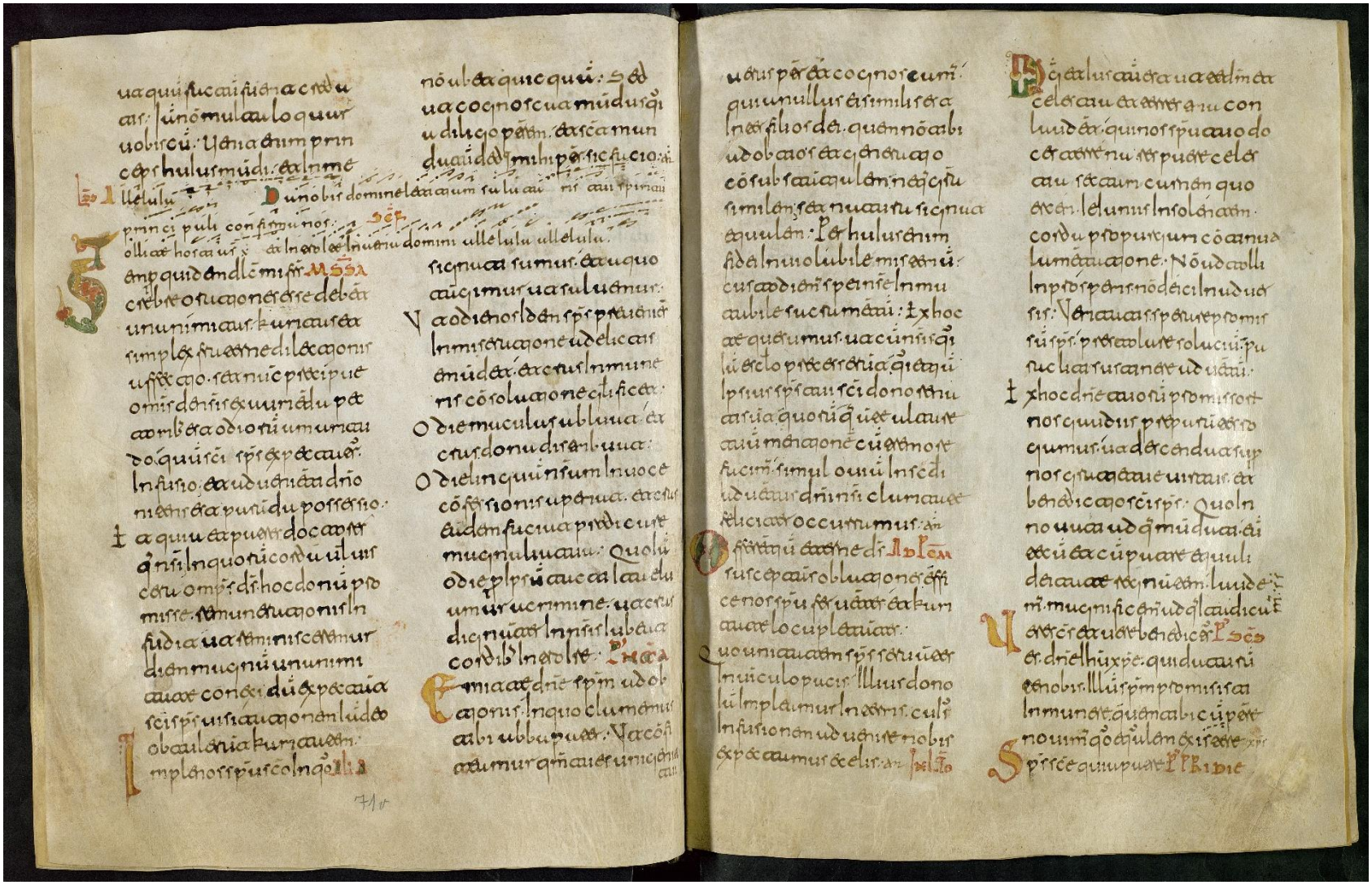


Plate 2: Text Hand 2, ff. 133v–134r

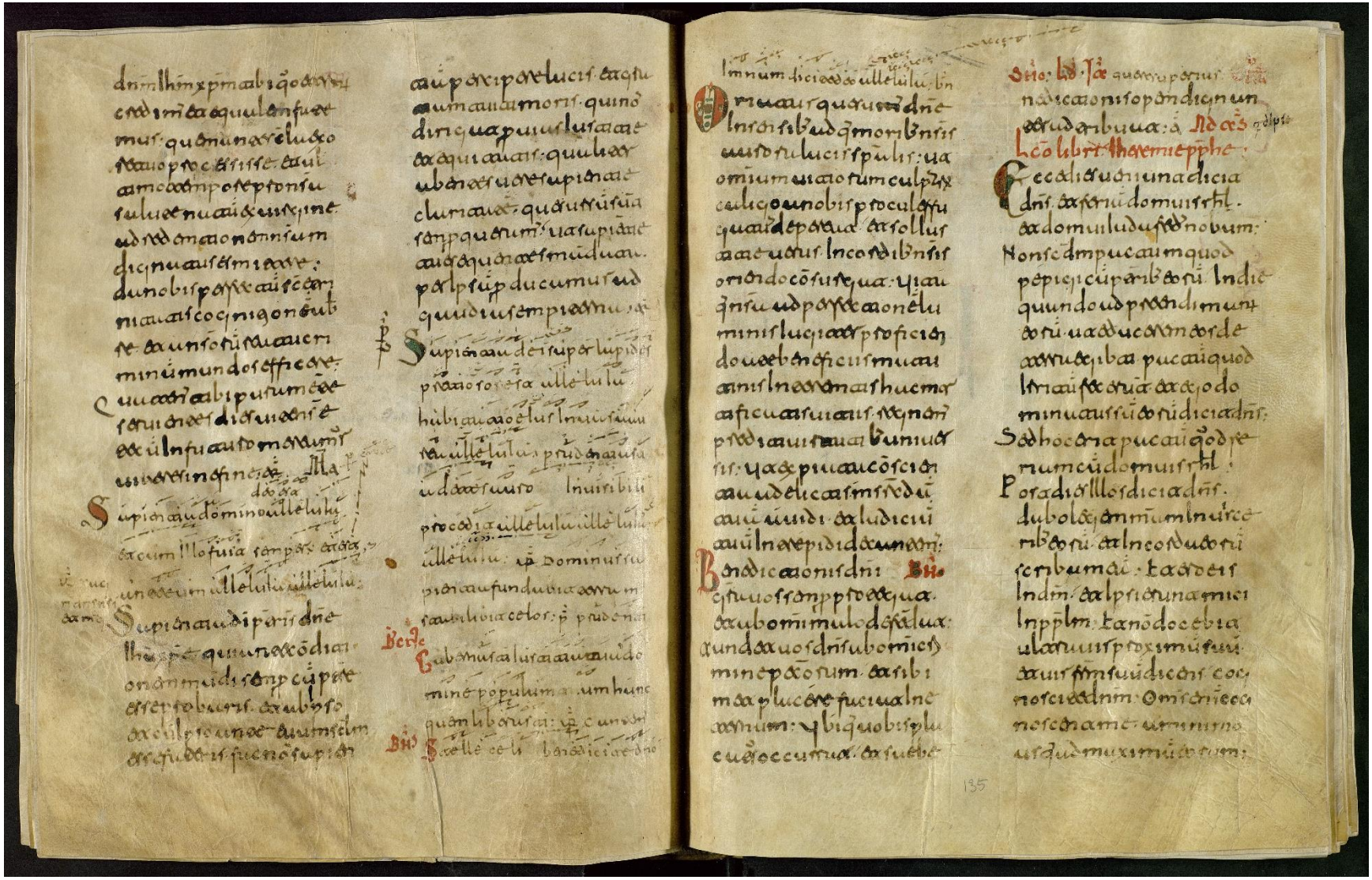


Plate 3a: Text Hand 3, f. 118r (top 3 lines only)

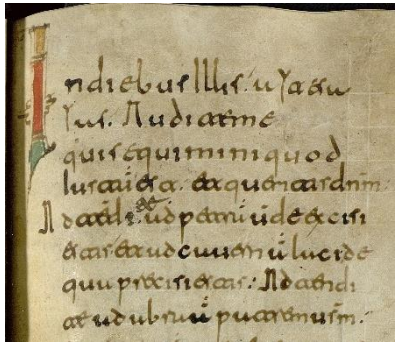
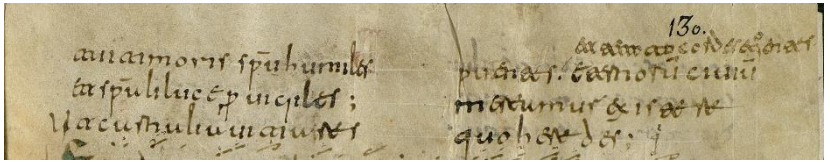


Plate 3b: Text Hand 3, f. 130r



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St. Gallen, Stiftsbibliothek, Cod. Sang. 339
St. Gallen, Stiftsbibliothek, Cod. Sang. 381
Toledo, Cathedral Archive, MS 14-23
Toledo, Cathedral Archive, MS 44-2
Toledo, Cathedral Archive, MS 99-30
Valenciennes, Bibliothèque municipale 114

Online Resources

Cantus Index: Catalogue of Chant Texts and Melodies, http://cantusindex.org/
Chant Editing and Analysis Program, https://neumes.org.uk/
Musica Hispanica: Spanish Early Music Manuscripts Database, http://musicahispanica.eu/

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