English summary

The subject of this dissertation are technical signs, graphic symbols inserted in the manuscript margin in the manner of glosses and annotations. Similarly to glosses and annotations, these signs were used by ancient and medieval writers, correctors, annotators and readers to comment on the manuscript text and to provide a framework for its use. Technical signs could serve a variety of purposes, for example, to indicate passages in the text that were faulty and required checking against a different exemplar, to mark points of interest or contention, to divide the text into lesser units, or to highlight quotes from the Bible and other authoritative works. In the course of Antiquity and the Middle Ages, perhaps as many as sixty different graphic symbols were used in this fashion at various times, places and in different language contexts. The function and the pattern of use of technical signs were dictated by conventions that could be significantly different in distinct regions or in different language environments. As a result, it is not possible to ascribe a fixed meaning to a particular graphic shape when encountered in a manuscript, but rather it is necessary to describe symbols in terms of conventions they represent and thus particular communities of users that defined these conventions. Indeed, the patterns of use of technical signs should be best understood in terms of communities of users and their established practices (praxis) and discourse (doxa). These two aspects of sign use – praxis and doxa – are reflected in two types of sources studied in this dissertation, the former in manuscript marginalia and the latter in various texts devoted to technical signs. In this dissertation, both praxis and doxa were studied and analyzed, and the conclusions were synthesized to produce the first detailed study of the use of technical signs in the Early Middle Ages.

While the main subject of this dissertation are the Early Middle Ages, chapter 1 is concerned with Antiquity, the period when many of the medieval conventions originated and when the basic contours of the sign use were formed. In particular, technical signs may have developed in response to the particular physical shape of the manuscript book in Antiquity, that of the papyrus book roll. Text in the book roll was divided into columns with limited intercolumn space that could be used for corrections, additions, annotations and similar operations. Because of the limited space, it was convenient to employ symbols rather than to squeeze in words or phrases to comment on the text, particularly in the case of routinely performed operations.

While originally, the use of technical signs may have been highly idiosyncratic, that is each manuscript user devised his or her set of symbols, over the time, certain conventions became widespread and well-established as can be gleaned from the papyri excavated in Egypt and in
Several distinct communities of users who employed technical signs as a part of their professional engagement with the written text emerged in the course of Antiquity. The most dominant in terms of the manuscript and textual evidence they left behind were professional users who can be dubbed scribes and scholars.

Professional scribes who manned the ancient book workshops (and their lay emulators) employed a variety of signs used in the process of book-copying, correction and use such as correction signs indicating errors, omission signs indicating where a passage was missing and connecting this spot with a correction in the upper or the lower margin, text-structuring signs which marked the beginnings and ends of particular units of text, or attention signs, which could be placed next to a passage of interest. The users that can be described as scholars, by contrast, belonged to the intellectual elite and can be connected with the Museion in Alexandria or similar scholarly institutions, about which we are less well informed. Unlike scribes, who constituted an anonymous mass, we know them by name, and we can place them in a succession of masters and pupils at the Museion from the third century BCE until the crisis of the institution in the second century BCE. Scholars employed a particular class of technical signs, critical signs, to engage in the textual criticism of the works of Homer and other canonical authors. By the time of the most important ancient Homeric scholar, Aristarchus of Samothrace (d. 144 BCE), Alexandrian scholars developed an entire system of critical signs that can be considered the oldest tradition of sign use, that is these conventions were endowed with a narrative history connecting it to the Museion and its intellectual outlooks. A different scholarly group emerged in Late Antiquity among Christian intellectuals, who saw the potential of technical signs and adopted them for tasks specific to Christianity, for example, the textual criticism of Old Testament or assessment of the orthodoxy of particular texts. Christian writers were also responsible for the creation of the second major written tradition regarding technical signs, which connected certain signs to Origen (c. 185 – 254) and his Hexapla, a critical version of the Greek Old Testament. Other professional groups using technical signs include students of philosophy and law, but their influence on the medieval sign users was negligible compared to that of scribes and Alexandrian and Christian scholars.

The influence of scribal users is visible particularly in the manuscript evidence: many conventions that took form in ancient book workshops continued to be used in the medieval monastic scriptoria or were the direct predecessor of the conventions of medieval monastic scribes. As we lack texts dealing with scribal conventions, the continuity can be ascribed to sustained oral instruction in the scribal environment. By contrast, scholarly conventions originating in Alexandria,
which seem to have been known only to a limited audience in Antiquity and which are almost absent from the ancient manuscript evidence, were bequeathed to medieval users principally through the written text. In the first centuries CE, several grammarians trained in Alexandria and active in Rome composed technical treatises devoted to the Alexandrian tradition. Christian scholars likewise composed technical descriptions of Christian scholarly sign use in Late Antiquity and referred to it in their writings. As is shown in this dissertation, these texts, both Hellenistic and Patristic, provided the material for a number of medieval texts about signs. The most important of these were the sign treatises, which had the form of lists of technical signs with their symbols, names, and short descriptions and may be compared to other technical lists and glossaries. Chapters 2 and 3 of this dissertation are devoted to the examination of the early medieval sign treatises and to the transmission of *doxa* about technical signs between Antiquity and the Early Middle Ages.

Chapter 2 is dedicated to the most influential sign treatise, the 21-sign treatise discernible because of its core of twenty-one items presented in a specific order. The 21-sign treatise cannot be considered a single text with an archetype because of its pragmatic nature – text versions of this written tradition were transmitted anonymously in miscellanies and compendia and susceptible to constant interventions as they suited their immediate users. It is a rather a dynamic entity, the oldest layer of which may go back to one or more of the Hellenistic technical texts composed by Alexandrian grammarians in Rome, and which developed through several intermediary stages until it reached a more stable form in Late Antiquity. Nevertheless, it continued to develop beyond its twenty-one-sign form in the Early Middle Ages. For example, the 21-sign treatise was known to Isidore of Seville, who incorporated it into his encyclopedia, the *Etymologiae* as the chapter *De notis sententiarum* (1.21), adding five more items, reshuffling the order of items and making other changes to the text he received. Because of the influence of the *Etymologiae* in the Middle Ages, and particularly in the Carolingian period, the 21-sign treatise became widely known to early medieval thinkers in the text version compiled by Isidore. It continued to develop further in the Carolingian territory, for example in the form of various abbreviated text versions, and in England where several text versions belonging to this textual tradition survive. In southern Italy, a different text version which retained twenty-one signs was known in the Beneventan area and in northern Spain a third version which also contained only twenty-one signs circulated until the mid-tenth century.

Other sign treatises discussed in chapter 3 never reached the same degree of dissemination as the 21-sign treatise, but have similar traits and history – they were transmitted anonymously in various collections, subjected to constant rewriting and adaptation, and they contain in many cases
very old material that points to their ancient origin, although their specific list-like format seems to be a late antique or early medieval innovation. This development can be particularly demonstrated on certain Patristic texts discussing technical signs that became transmitted as independent, anonymous sign treatises in the course of the Early Middle Ages, for example, the preface of Cassiodorus’ *Expositio psalmorum* that contains a set of thirteen indexing signs. A score of sign treatises unknown elsewhere survived in southern Italy and was preserved by monks of Monte Cassino. A separate category is represented by sign treatises preserved in Greek in Byzantine environment. They reflect more closely the ancient Greek material, which was also used as a basis of the oldest Latin sign treatises, and thus provide an invaluable supplement to the inquiry into technical signs in the Latin West.

In chapters 4, 5 and 6, this dissertation moves to the situation in the Carolingian period more specifically. As in Antiquity, two important groups of sign users can be identified on the basis of the manuscript and textual evidence – scribes and scholars. However, unlike in Antiquity, these two groups are not distinct professional groups with separate training tracks and identities. Rather, the Carolingian scribal and scholarly sign users were members of a single Christian literary elite. They can be, nevertheless, distinguished on the basis of sources they use and their recourse to writing or complete reliance on oral transmission. In short, it seems that all or most members of the wider Christian literary elite acquired a basic package of technical signs together with Latin literacy. These signs had, for the most part, regional character and may be linked with regional scripts so that insular sign users can be easily discerned from Frankish sign users. Conventions regulating the use of these scribal technical signs were principally transmitted orally in scriptoria as a part of the scribal training (although mimetic learning seems to have played some role, too) and can be directly related to the ancient scribal conventions. In the ninth century, just like in Classical Antiquity, the bulk of technical signs encountered in manuscript evidence, in this case in parchment codices rather than papyrus book rolls, can be categorized as correction, attention, quotation and text-structuring signs that reflect the activities of scribes. Two major differences between Antiquity and the Early Middle Ages are: a) regionalization of scribal conventions (e.g. Frankish, insular, Byzantine etc.) which replaced the rather uniform ancient conventions; and b) changing preferences for the usage of technical signs for certain operations (for example, the use of text-structuring signs decreased significantly, as they were replaced by other methods of structuring the text, while the use of quotation signs increased, as they overshadowed other forms of highlighting quoted text).
Apart from the basic set of scribal conventions, some members of the Christian literary elite seem to have adopted an additional set of conventions that did not derive from the ancient scribal conventions, but rather can be connected with ancient scholarly conventions, both Hellenistic and Patristic, and with sign treatises and similar texts about signs as the chief source. In chapter 4, this dissertation shows that scholarly conventions were rediscovered in the context of Carolingian reforms in the last decades of the eighth century and attained some popularity among the intellectual elite of the Carolingian empire during the ninth century. This reinvigoration had most probably its roots in the reform of the Gallican Psalter, which was endorsed in the course of the eighth century by Carolingian rulers. As a part of its text, the Gallican Psalter contained critical signs designed in the third century by Origen to mark passages found only in the Hebrew Psalter or only in the Septuagint. These critical signs were discussed at length in the works of Patristic authors, in particular of Jerome, but many codices available to the Carolingian users either lacked them altogether or the signs were misplaced and missing. Carolingian reformers attempted to reinsert the critical signs into their copies of the Gallican Psalter and in the process studied texts that discussed these critical signs, familiarized themselves with textual criticism of this type, and became aware of their usefulness for a variety of tasks unrelated to liturgical reforms. As an effect of this development, critical signs originally intended for the comparison of various text versions of the Old Testament were adapted by Carolingian scholars in the ninth century for the textual criticism of texts other than the Old Testament such as the Rule of Benedict and Isidore’s *Etymologiae*.

Probably as a result of this initial impetus related to the Gallican Psalter, Carolingian intellectuals ‘discovered’ Isidore’s *De notis sententiariarum*, perhaps because this text described the critical signs used by Origen. However, Isidore’s sign treatise also contained information about other conventions, notably about the Alexandrian tradition of scholarly sign use, which seems to have been unknown (or only marginally known) in the Latin West since Antiquity. *De notis sententiariarum* initiated another wave of scholarly engagement with various inherited ancient conventions and stimulated experimentation with technical signs described by Isidore as well as a search for other sign treatises. Isidorian influence is particularly evident among the most important Carolingian thinkers of the eighth and the ninth centuries, who quote him regularly as an authority on technical signs and seek inspiration in his *De notis sententiariarum* for their sign use. This is true, for example, about Alcuin, Hraban Maur, Hincmar of Reims, Prudentius of Troyes and two anonymous revisers of the Gallican Psalters, who employed signs taken from *De notis sententiariarum*. A different strain of evidence for the central role of *De notis sententiariarum* in the Carolingian intellectual landscape are
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Notam superponere studui: The use of technical signs in the early Middle Ages

several abbreviated sign treatises derived from Isidore’s sign treatise which may reflect an attempt to appropriate the lengthy and impractical list provided by Isidore for practical use in the Carolingian context.

Two other types of evidence that position Isidore’s De notis sententiarum in the center of Carolingian scholarly interest are presented in chapters 5 and 6 of this dissertation. In chapter 5, manuscript transmission of De notis sententiarum is discussed in greater detail. Examination of manuscripts containing this text revealed in particular that Carolingian copies of the Etymologiae show traces of the active reception of this sign treatise that cannot be found in manuscripts from other periods and areas or which are more prominent in the Carolingian manuscripts of this work. De notis sententiarum was equipped with glosses and annotations in the Carolingian area. Manuscripts from this region also contain changes in the layout of this chapter that facilitated reading to a degree larger than in other regions. Finally, only in the Carolingian area circulated the first book of the Etymologiae, of which De notis sententiarum is a part, as a separate entity and seems to have been used as a handbook of grammar. The inclusion of the first book of the Etymologiae, and thus potentially also of De notis sententiarum in classroom curriculum may also explain a phenomenon described in chapter 6, namely that certain conventions described by Isidore of Seville began to appear in the Carolingian praxis. As these conventions do not seem to reflect historically attested sign use – in at least three cases the signs or their meaning seem to have been invented or corrupted by Isidore -, the presence of these technical signs in the Carolingian manuscripts can be taken for Isidorian influence. The inclusion of technical signs as a subject into the teaching of grammar in the Carolingian period is also suggested by Alcuin’s De grammatica, which explicitly mentions technical signs as a part of the curriculum.

Apart from Jerome’s discussion of Origenian critical signs and Isidore’s De notis sententiarum, other influential texts referring to technical signs studied by Carolingian thinkers may have been Cassiodorus’ Institutiones, in which Cassiodorus described technical signs used for the assessment of orthodoxy of theologically relevant texts, and his Expositio psalmorum, in which Cassiodorus describes technical signs used for topical indexing. Technical signs assessing the orthodoxy or heterodoxy of particular theological statements can be found in several Carolingian manuscripts, notably in the acts of councils, where they mark statements of heretics, but also in theological works produced in the heat of Carolingian theological controversies.

The reintroduction of ancient scholarly conventions and introduction of new conventions inspired by ancient scholarly conventions in the Carolingian period can be ascribed to the study of
written texts by certain strata of the Carolingian literary elite. As the use of technical signs for scholarly purposes in Antiquity, Carolingian scholarly use of technical signs seems to have been restricted to a small number of elite users and appear to have been relatively fragile, particularly in contrast to the scribal sign use. It seems not to have lasted significantly beyond the Carolingian period and did not leave a deeper trace in the praxis beyond a few technical signs derived from Isidore’s *De notis sententiarum*. Nevertheless, Carolingian period deserves attention as the third golden age of the technical signs beside Hellenistic period and Late Antiquity. Its salient feature was blending of both strains of scholarly use inherited from Antiquity and transmitted via written word – the Hellenistic conventions described in texts such as Isidore’s *De notis sententiarum* and other sign treatises, and the Patristic conventions accessible in particular via the writings of Jerome and Cassiodorus.

The examination of Carolingian manuscript evidence in chapter 6 revealed several additional aspects of early medieval sign use, primarily by scribal users. In the first place, the comparison of the two corpora analyzed in this chapter – the Latin manuscripts produced before 800 described in the *Codices latini antiquiores* and a set of over 150 manuscripts produced in the course of the second half of the eighth and the ninth centuries in Bavaria and kept there in the course of the Middle Ages, which are available as digital facsimiles at the website of the Bayerische Staatsbibliothek – indicated that the volume of some types of technical signs in manuscripts increased significantly between Late Antiquity and the ninth century. Quotation signs, in particular, became widespread to the extent that suggests that they may have been increasingly viewed as a necessary feature of the manuscript book rather than as a personal form of annotation. Second, the examination allowed to establish that two regional sets of scribal conventions were used in Bavaria in the course of the eighth and the ninth centuries – an older insular set that seems to have been replaced in the course of the ninth century almost entirely by a Frankish set. This transformation can be correlated with the change in the script used in the region and the growing cultural and intellectual influence of the Carolingian centers. Third, while some Bavarian manuscripts also contain traces of Isidorian influence in the form of technical signs derived from *De notis sententiarum*, these signs appear relatively late in Bavaria and only in minuscule amounts (although usually together in the same manuscripts), particularly in comparison with northern France. Together with the evidence of the manuscripts of the *Etymologiae* presented in chapter 5, this observation can be taken to indicate that this innovation – the introduction of several new technical signs on the basis of *De notis sententiarum* – had the point of origin in northern France, the core region of the Carolingian empire, and spread from there into
regions such as Bavaria at a later date together with other aspects of Carolingian book culture. Fourth, the examination of the Bavarian manuscripts showed that the majority of manuscripts, in Bavaria as many as 75%, contains at least some technical signs, although the most of them were annotated rather lightly and only by four or five basic sign types (e.g. correction, attention and quotation signs). This proportion is particularly significant given that the examination of these manuscripts also revealed that the use of textual annotations was rather limited in the same region, and the signs were by far the most common form of marginalia found in the manuscripts. Fifth, a smaller part of the manuscripts, approximately 17% of the same set, was annotated relatively densely and seems to reflect activities that went beyond the standard pattern of annotation with technical signs in Bavaria. Particularly outstanding are five manuscripts from the monastery of St. Emmeram in Regensburg that contain excerption signs suggesting a local intellectual project which may have been left unfinished, and a manuscript richly annotated by a Celtic annotator, also in Regensburg. Other manuscripts from the same group are harder to place, but all seem to suggest that technical signs were used in some cases for annotation that was programmatic in character. Finally, only a tiny fragment of the Bavarian manuscript set contains technical signs reflecting scholarly conventions, again in agreement with other evidence, which indicates that the Carolingian revival of scholarly sign use took place principally in France.

To sum up, the most important conclusion of this dissertation is that the use of technical signs did not cease after the end of Antiquity, as is sometimes still asserted by scholars, nor was the use of signs in decline. On the contrary, the Carolingian period saw a revival of the use of technical signs, including conventions that can be clearly connected with the activities of leading scholars. If early medieval technical signs are harder to spot than their ancient counterparts, it is perhaps because of the much larger amount of manuscripts surviving from the Early Middle Ages that need to be scanned and because the traces of early medieval engagement with the *doxa* about technical signs often have the form of annotations and glosses (e.g. in the case of the *Etymologiae*) or reworking of extant texts (e.g. in the case of the 21-sign treatise). To study these signs is, nevertheless, vital, since they reveal the activities of scholars for which we would otherwise have little evidence and in some cases they allow us to track their movement, they enable us to pinpoint changing intellectual trends and identify regional intellectual projects.