The *NOTAE* Project: a Research between East and West, Late Antiquity and Early Middle Ages*

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The project *NOTAE: NOT A writtEn word but graphic symbols. An evidence-based reconstruction of another written world in pragmatic literacy from Late Antiquity to early medieval Europe* is an ERC Advanced Grant (2018–2023), which represents the first attempt to investigate the presence of graphic symbols in documentary records as a historical phenomenon from Late Antiquity to early medieval Europe.

Introduction

The medieval charter of the Latin West is a complex system of written texts and graphic devices as well as material objects such as applied or pendent seals (Fig. 1). A new approach to studying the medieval charters in all such complexity was introduced in the 1990s by Peter Rück.¹ In his research in the field of diplomatics, he suggested explicating morphology, semantics, syntax, pragmatic function and changes over time of the symbolic elements of a charter, while involving also results and concepts of other disciplines—e.g. archaeology, numismatics, semiotics, anthropology.



Fig. 1. Lucca, Archivio storico diocesano, Archivio capitolare, Diplomatico, Fondo Martini, 79, privilege issued by emperor Otto II, D O. II. 277 (31 July 982), partial image of the final section, from Ghignoli, Huschner, and Jaros 2016, Beilag 3.

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- 1 See Rück 1996a. See also Worm 2006, 335–370.

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Fig. 2. Private collection of D. M.C. Díaz y Díaz, Santiago de Compostela, squeeze of a document on slate from Visigothic Spain, period of King Reccared I (586–601), selection, from Millares Carlo 1932, II, Tab. 41.



Fig. 3. The University of Manchester Library, P.Ryl. IV 609 (ChLA IV.246), authentic order from Theophanes, *comes rei militaris Thebaici limitis*, 505 CE. Signature of Theophanes—*bene uale*—preceded by a staurogram (blue). Subscription of the referendarius—*Complevi* [...]—also preceded by a staurogram (red).

The well-studied subjects in this new field have so far been the graphic symbols which are striking features of the charters of high medieval Europe (tenth to thirteenth century), and in particular of those issued by rulers and elites or written by public notaries. The few comparative analyses have so far been conducted mainly on high and late medieval western sources. It must be said at this point that diplomatics has increasingly become limited to the field of medieval studies, while its 'sister'. palaeography (both Latin and Greek, in particular when applied to literary texts), treats a far vaster time range. Scholars of diplomatics no longer quote studies in legal history regarding Roman law and vulgar Roman law, such as those of Heinrich Brunner. Artur Steinwenter, Harold

Steinacker and others, which established a bridge between the documentary practice of the early medieval West and that of the Graeco-Roman Late Antiquity.²

2 Steinwenter and Steinacker are still present in the list of references on juridical or documentary papyrology: see e.g. Keenan, Manning and Yftach-Firanko 2014. Tjäder (1955, 1982) or Classen (1977) are no longer part of the curriculum in palaeography and diplomatics, at least in Italian universities.



Fig. 4. Paris, Archives Nationales, K//2 n°10 (AE/II/11 = ChLA XIII.564), Lamorlaye, France (Merovingian Kingdom), 10 March 673, Charter of Dame Clotilde: autograph diagonal cross (or letter χ , marked in red) of Chramnino, an illiterate man; complex final sign (marked in blue) in the autograph signature of Radoberthus, where there is also an initial symbol (marked in green).

For many years I have been wondering what kind of history could connect the staurogram traced by an anonymous hand at the beginning of a document written on slate in Spain, during the reign of King Reccared (586–601) (Fig. 2), with those drawn by the *comes rei militaris Thebai*-

ci limitis, Theophanes, in year 505, at the beginning of his autograph Latin signature and by his referendarius in the same position (Fig. 3). What kind of paths could be followed, without running the risk of being naïve, in order to connect the crosses drawn all over the post-Roman West by illiterates giving their consent, testifying their presence, and expressing their identity on legal records (Fig. 4)? What kind of historical explanation could ever be possible for the structural similarity of the complex final sign we can observe in subscriptions of Greek notaries from Egypt of the sixth century, in Latin subscriptions from Ravenna of the same period, in Latin subscriptions from Frankish Gaul, or, more rarely, from Lombard Italy,³ where the author, after the last word of his signature, no matter which alphabet he has used, continues writing a text but in shorthand (Fig. 4)? In most cases he communicates again his own name, but sometimes also something else that remains almost invariably obscure to us: tachigraphic notes and crossed lines are combined elements of a unique unreadeable graphic structure. It was in order to answer these and similar questions that the project NOTAE was conceived.

3 Among several examples, see for comparison: Sonderkamp 1996, 108 Abb. 1–3 (Hermopolites and Arsinoites, Egypt, sixth to seventh centuries, subscriptions of notaries); Città del Vaticano, Biblioteca Apostolica Vaticana, Pap. Lat. 11 (P.Ital. 1,6 = ChLA XXI.714, Ravenna, Italy, 25 February 575, autograph subscription of the witness *Iohannis vir strenuus*); Paris, Archives Nationales, K//2 n°10 (AE/II/11 = ChLA XIII.564, Lamorlaye, France, 10 March 673, autograph subscription of Radoberthus, see Fig. 4); Pisa, Archivio storico diocesano, Archivio arcivescovile, Diplomatico 29 (ChLA XXVI.803, Pisa, Italy, 17 February–13 March 748, autograph subscription of the Lombard bishop of Pisa *Iohannis*).

Recent years have seen a renewed interest in the graphic aspects of early medieval written sources, both literary and documentary, as the research of Ildar Garipzanov on the rise of graphicacy demonstrates.⁴ Other works edited and authored by him have shown the connection between Late Antiquity and early Middle Ages and the efficacy of an interdisciplinary collaboration between historians, art historians, and archaeologists.⁵ They have dealt, however, only with cross signs, christograms, and monograms selected in advance as graphic signs of identity, faith, and power and disseminated in diverse media—but not in documentary records. The project NOTAE represents therefore the first attempt to conduct a research on graphic symbols in documentary records from Late Antiquity to early medieval Europe.

About terminology

In the research approaches promoted by Rück and Garipzanov, different terms are employed to indicate the respective objects of investigation: 'symbol' and 'sign', respectively,⁶ even though the two terms slightly overlap sometimes. But the objects are not so different; what is different is the typology of the media involved in the respective investigations.

Problems of terminology do exist indeed in the field of human communication: according to the distinction proposed by Edmund Leach, the use of a particular signum determines wheter it is to be regarded as a symbol or as a sign.⁷ Since the media that the NOTAE project investigates are written contexts—that is texts formed by letters used as 'signs' according to the terminology proposed by Leach—, it seemed appropriate to follow Rück by using the term 'graphic symbol' to indicate the object of research.⁸ 'Graphic symbols' are meant as graphic entities (composed by graphic signs, including alphabetical ones) drawn as a visual unit whithin a written text but communicating something other or something more than a word of that text. The message they carry is to discover, because there is no intrinsic prior relationship between the message-bearing graphic entity and the informations it conveys.

About sources

We use the term 'document' in a wider sense, for any written source containing texts generated for pragmatic purposes. Such sources are expressions of 'pragmatic literacy',⁹ and include documentary records of all possible kinds:

- 4 Garipzanov 2015.
- 5 Garipzanov, Goodson, and Maguire 2017; Garipzanov 2018.
- 6 As emphasized by the respective book titles; see above notes 1 and 4.
- 7 Leach 1976, 12-16.
- 8 For the arguments to support such a choice see Rück 1996b, 14–15.
- 9 In the meaning proposed by Malcom B. Parkes (1991, 275): 'literacy of one who has to read or write in the course of transacting any kind of business'.

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Fig. 5. Munich, Bayerische Staatsbibliothek, Pap.graec. mon 100 (P.Muench. 1.11), fragment, Syene, Egypt, 7 October 586, staurogram at l. 1 (beginning of dating formula) and at l. 4 (beginning of the address formula).

petitions, official letters, private letters, lists, authentics from relics etc. Legal documents and contracts (the focus of classical diplomatics) are included, of course, in the concept of pragmatic literacy. The documents may have survived in original or

have been transmitted in contemporary copies on papyrus, wooden tablet, slate, or parchment (inscriptions and graffiti are excluded) during the long historical period in question. We therefore have to consider different levels of literacy and of documentary practice, and consequently raise different questions about production, use, storage, and transmission of records. This wider approach offers the possibility of investigating literacy and writing practice from a diverse, complementary angle, connecting graphic symbols and illiterate people.

The increasing use of papyrus and the gradual introduction of signature in the legal documentary practice of the late Roman state between the end of the fourth and fifth centuries were an effect of the influence of the hellenistic practice on the Roman legal system. The introduction of autograph signatures, in particular, represented a turning point as regards the value of a document as evidence.¹⁰ And it could be seen as an important link between Late Antiquity and early Middle Ages: it is the basis of the development of the legal documentary practice in the post-Roman Kingdoms.

The introduction of autograph signatures involved also an increasing use of graphic symbols in the written context of legal documents. Usually graphic symbols were traced as distinctive signs at the beginning or at the end of the document (or of significant parts of it) (Fig. 5). In the contemporary practice of writing letters similar symbols—which are often Christian symbols—appear in analogue positions.¹¹

With the introduction of the signature, graphic symbols are now drawn also at the beginning or at the end of autograph subscriptions written by persons participating in the legal contract. But what is really new in the question of literacy is that also illiterates performed graphic symbols by their own hands. Persons who were not able to write a *subscriptio* to a legal do-

10 Saupe 1983, 17.

11 Blumell 2012, Appendix 310, Table 4.



Fig. 6 London, British Library Add MS 5412 (P.Ital. II.35 = ChLA III.181), Ravenna, Italy, 572, autograph symbol of the illiterate seller Domninus.



Fig. 7. Rome, Basilica di San Clemente al Laterano, pluteus, from Hilberg 2000, Abb. 5b.

a single monogrammatic structure (the vertical stroke is, at the same time, the Greek letter *iota* and the vertical stroke of the cross), connecting their extremities through a circle. In other words, Domninus could have chosen not a sign but a symbol, a Christian symbol suggested by widespread models (Fig. 7).

Premises

Two premises form the necessary basis of the research. The first one concerns one of the broadest and most pervasive themes ever discussed in western historiography: the relationship between the end of the Roman state and the beginning of the early middle ages in Europe and the conceptualization of the period of 'Late Antiquity'. The notion of a long Late Antiquity, from the third to the eighth century, is well argumented by Averil Cameron.¹² On the other hand, medievalists refer to the period from the fifth to the eighth or tenth century as Early Middle Ages. But, whatever the interpretation of the period from

12 Cameron 2015, 3-22.

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cument could still take part in the writing process of the document-as author of the written contract or as witness—by drawing a *signum* in the empty space left for it in the line written by the scribe or by a delegated third-party literate person. So did the illiterate seller Domninus, a hayward (agellarius) and vir honestus, on 6 June 572 in Ravenna (Fig. 6): the shape of his signum seems to evoke the wheel of a cart, so that one can conclude that he chose to express his identity through his work: the 'wheel' is a graphic 'sign' in Leach's terminology, a metonymy for the work activity of Domninus. But there could be another explanation: Domninus could have joined a *iota-chi* monogram (\mathbf{X}) and the symbol of the cross within

the fifth century onwards may be—radical change or continuity, or both change and continuity, depending on regional differences¹³—in the period from the third to the tenth century, covered by the terms Late Antiquity and early Middle Ages, some historical phenomenons can be studied in continuity, and the documentary practice is one of them. The basic textual frame of the barbarian documents is recognizable as part of a Roman discourse: this fact gives fundamental evidence for the derivation of the early medieval documentary practice in the West from the late Roman world,¹⁴ even though this constitutes, at the same time, the main obstacle for understanding the process of derivation in all its aspects.¹⁵

The second important premise concerns the linguistic relationship between spoken language and written language, illiterate and written word. In the late Roman empire, the network of communication in general was based on a linguistic and graphic koine of two dominant metropolitan tongues, Greek and Latin.¹⁶

What was the situation in post-Roman kingdoms? The barbarian aristocracies did not ignore the written medium as a tool both of government and of economic relations: they certainly used it in much more simplified ways, even though we assume this on the basis of a documentary transmission that is problematic. The language of their written word was Latin, apart from exceptions like the rare use of Gothic in Ostrogothic Italy attested twice in Latin papyri. The script of the barbarians' written word (in its various aspects, formal or cursive), was inherited from the late Roman world.

Latin remained the common language of communication for a long time in the West; it ceased to have any effect as a language of 'communication verticale'¹⁷ between the eighth and ninth centuries, at different times and phases in different parts of Europe.¹⁸ So illiterate people participating in legal proceedings could understand documents written in Latin when they were read out to them: the 'Latin parlé tardif' always emerges, at least, in the part of the document containing the essential details of the transaction. Assuming the ability of illiterate listeners in the early medieval Europe to understand Latin

- 13 As well argued in Wickham 2005, 12-14.
- 14 Classen 1977 and 1977b.
- 15 Ghignoli 2009; Ghignoli and Bougard 2001; Rio 2001.
- 16 Cavallo 1970; 1990. From the perspective of a transformation of the Late Roman world into the post-Roman kingdoms of the early medieval West, the cases of Greek-Coptic and Greek-Syriac bilinguism (respectively in Roman Egypt and in Roman Near East) can be left aside, although extremely significant in framing the literacy of the Graeco-Roman East: Bagnall 2011, 75–94, 95–116.
- 17 Banniard 1992, 38.
- 18 Banniard 1993, 9.

texts read aloud implies that illiterate people participating in legal proceedings in Merovingian France or in Lombard Italy or in Visigothic Spain were like illiterates of the late Roman state and that graphic symbols drawn by illiterates in those circumstances in the historical span in question are comparable.

Methods

The research requires of course more than one analysis method. First, the methods of (juridical) papyrology and diplomatics are necessary to investigate graphic symbols in their context, since they appear drawn in legal documents in most cases. In the context of legal contracts-if not fragmentarygraphic symbols are never anonymous, thus the 'host' texts represent primary sources, from which we can assume social and economic status of the authors of the symbols as well as their level of literacy. For that, we apply the historical method of research. It is moreover implicit in facing any kind of issue raised by the documentary transmission. For the late antique documents, it may overlap with the method of the 'archeology of papyrology'.¹⁹ Finally, the palaeographical method (Greek and Latin palaeography) is needed to analyse both the host texts and the graphic symbols, which are graphic signs often organized in graphic chains by means of ligatures and which involve also the question if they are an autograph or not. For the period in question the external feature of graphic symbols is not particularly noticeable within the texture of the written text in Greek or Latin cursive: the technology requested in drawing them is the same as for writing a text, i.e. a human hand tracing thin lines.

New in this project is also the idea of considering the graphic execution of these symbols as a matter of the scribal culture, as—we could say—the other side of the written world, and consequently as an object of palaeographical analysis. But a tendency toward alphabetocentric bias characterizes palaeographical studies in general, and it happens far too often that what appears as something other than a written line is classified as a 'doodle' whenever its elements are not immediately recognizable as alphabetical signs. 'Doodles' are thus implicitly elevated by palaeographers to a fixed category of graphic objects, characterized by their certain ahistorical nature. The late antique and early medieval pragmatic literacy is, however, a historical issue, and not a single written line on a document should to be presumed a priori merely decorative or superfluous, drawn by literates or illiterates who were bored or thinking about something else rather than writing something significant.

I have demonstrated the feasibility of such approach by showing the graphic transformation of the late antique $\chi\mu\gamma$ -group from a graphic symbol with a certain religious meaning in the documentary practice of the Grae-

19 Bagnall 2011, 4.

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Fig. 8. (1) Monogram $\tau \alpha \upsilon + \rho$ (†): (a) circle+ 2 strokes; (b) semi-circle + 2 strokes; (c) 2 strokes (loop towards right= *rho*). (2) From monogram $\tau \alpha \upsilon + \rho$ to a particular shape of the cross: 2 strokes (direction of the first stroke inverted and loop towards left = lost of the letter *rho*); sketch by Antonella Ghignoli.

co-Roman East to a graphic symbol with the same meaning and function but drawn in the form of a chain of circles in ligature (i.e. in the form of a 'doo-dle') in the documentary practice of Ostrogothic Italy.²⁰

Two important factors of the evolution of letter forms in palaeography are 'morphology' and 'ductus'. Morphology is a form in a visual sense: the final result of one or more movements of the hand. Ductus is the movement by which a certain form is produced and it is defined as a sequence of strokes traced in a certain direction. The analysis of the ductus of the graphic symbols in a diachronic perspective may be a proper methodological angle to observe changes in their morphology and to follow, in some cases, their transformation to another symbol. It could be the case of the staurogram, which is a case currently under study (Fig. 8).

It is important to remember that from the ninth century onwards—from the beginning of the Carolingian age in Europe—there is no more 'vertical communication' in Latin language between literate elités and the illiterates. Following the Carolingian reform, Latin becomes an elitist language, fatally severed, with its reformed clerical pronunciation, from the living language of the laity. Only clerics as scribes of a ruler or the few laymen as public notaries of a kingdom have now competence and ability to write documents in Latin and to understand them when read out. They only have the responsibility to draw into them selected graphic devices, which are now easy to see within the graphic texture of the written text, having the distinctive, opposite morphology of a picture. The text of a document has now to be translated in vernacular, both to the issuer and the addressee if they were laymen or laywomen, while the graphic symbols can communicate a message to anyone more or less immediately. This is precisely the fundamental question in understanding the communication function of the graphic symbols in the charters of high Middle Ages.

Aims and objectives

The physical act of drawing symbols put both literates (professional scribes, bureaucrats, economic élites etc.) and illiterates (who were they?) on the same footing. The project NOTAE aims to investigate the graphic symbols in order to capture all the possible historical implications by studying their graphic execution as well as their models and cross-influences, their contexts and transmissions, and with the purpose to frame the category of illiterates for each significant period and region involved in the wide historical and geographical span with which the project is engaged; archaeology, sociolinguistics, social anthropology, history of christianity will also provide important methodological angles and specific attention will be devoted also to the results of the studies about the presence of symbols in manuscripts of the literary tradition, which represents one of the most interesting research topics in recent years.²¹

Within this general aim, the project pursues four main objectives: (1) to provide an inventory as complete as possible of graphic symbols and a collection of their images, through the systematic inspection of all the documentary sources available for the period in question; (2) to study each graphic symbol in its context through a complete synchronic analysis, in order to classify, to interpret and to relate each symbol to its author, to the host document, to the historical geographical context; (3) to create the NOTAE system, which will be primarily designed and implemented in order to work as a research tool of the Project; (4) to conduct comparative and diachronic studies on the basis of the results of the objective 2 and employing the NOTAE system. Starting from the purpose to know 'who drew what', 'when and where', 'how and why', the project aims to historicizing graphic symbols as material traces left by human hands on the border between written and oral culture, educated literacy and poor graphic abilities of illitterates.

Significant contributions are expected also about two unsolved problems in the specific field of palaeography: the meaning of the complex graphic symbol, consisting of tachigraphic notes and crossed lines drawn as interlocking pieces, which appears in the notarial subscriptions of the Greek private documents; the survival of tachigraphic notes and Tironian notes in the pragmatic literacy of the post-Roman West.

Conclusion

The NOTAE project covers a long time span, from the Late Antiquity to the Early Middle Ages, and considers the use of graphic symbols in pragmatic literacy by both literate and illiterate people, in contexts in which a clear gap between written and spoken language did not exist at all (Late Antiquity)

21 See, for example, Steinová 2018.

or still was not complete (post-Roman western kingdoms till the eighth or ninth centuries). It shall therefore produce new knowledge, needed to attain a deeper historical comprehension of the graphic symbols known and used by the elites in the immediate aftermath of post-Roman kingdoms. Against this background, the NOTAE project is expected to impact greatly on the studies in diplomatic semiotics of the High Middle Ages.

References

- Bagnall, R. S. 2011. Everyday Writing in the Græco-Roman East, Sather Classical Lectures, 69 (Berkeley, CA, Los Angeles, CA, London: University of California Press, 2011).
- Banniard, M. 1992. Viva voce. Communication écrite et communication orale du IV^e au IX^e siècle en Occident Latin, Collection des Études Augustiniennes: Moyen Âge et Temps modernes, 25 (Paris: Institut des études augustiniennes, 1992).
- —1993. 'La voix et l'écriture: émergences médiévales', Médiévales, 25 (1993), 5–6.
- Blumell, L. 2012. Lettered Christians. Christians, Letters, and Late Antique Oxyrhynchus, New Testament Tools, Studies and Documents, 39 (Leiden: Brill, 2012).
- Cameron, A. 2015. 'Christian Conversion in Late Antiquity: Some Issues', in A. Papaconstantinou, N. McLynn, and D. L. Schwartz, eds, *Conversion in Late Antiquity: Christianity, Islam and Beyond. Papers from the Andrew W. Mellon Foundation Sawyer Seminar, University of Oxford, 2009–2010* (Farnham: Ashgate, 2015), 3–22.
- Cavallo, G. 1970. 'La κοινή scrittoria greco-romana nella prassi documentale di età bizantina', *Jahrbuch der Österreichischen Byzantinistik*, 19 (1970), 1–31.
- —1990. 'Écriture grecque et écriture latine en situation de "multigrafismo assoluto", in C. Sirat, J. Irigoin, and E. Poulle, eds, L'écriture: le cerveau, l'oeil et la main. Actes du colloque international du Centre National de la Recherche Scientifique, Paris, Collège de France, le 2, 3 et 4 mai 1988, Bibliologia, 10 (Turnhout: Brepols, 1990), 349–362.
- ChLA = A. Bruckner and R. Marichal, eds, *Chartae Latinae Antiquiores. Facsimile-Edition of the Latin Charters Prior to the Ninth Century*, III: *British Museum London*, eds A. Bruckner and R. Marichal (Olten–Lausanne: Urs Graf, 1963); IV: *Great Britain (without British Museum, London)*, eds A. Bruckner and R. Marichal (Olten–Lausanne: Urs Graf, 1967); XIII: *France 1*, eds H. Atsma and J. Vezin (Dietikon–Zurich: Urs Graf, 1981); XXI: *Italy 2*, eds A. Petrucci and J.-O. Tjäder (Dietikon–Zurich: Urs Graf, 1987).

- Classen, P. 1977. 'Fortleben und Wandel spätrömischen Urkundenwesens im Frühmittelalter', in P. Classen, ed., *Recht und Schrift im Mittelalter*, Vorträge und Forschungen, 23 (Sigmaringen: Thorbecke, 1977), 13–54.
- 1977b. Kaiserreskript und Königsurkunden. Diplomatische Studien zum Problem der Kontinuitat zwischen Altertum und Mittelalter, Byzantina keimena kai meletes, 15 (Thessaloníke: Kentron Vyzantinön Ereunön, 1977).
- Garipzanov, I. 2015. 'The Rise of Graphicacy in Late Antiquity and the Early Middle Ages', *Viator*, 46/2 (2015), 1–22.
- 2018. Graphic Signs of Authority in Late Antiquity and the Early Middle Ages, Oxford Studies in Medieval European History (Oxford: Oxford University Press, 2018).
- —, C. Goodson, and H. Maguire 2017. Graphic Signs of Identity, Faith, and Power in Late Antiquity and the Early Middle Ages, Cursor Mundi, 27 (Turnhout: Brepols, 2017).
- Ghignoli, A. 2009. 'Koinè, influenze, importazioni transalpine nella documentazione 'privata' dei secoli VII–VIII: lo stato dell'arte', in L. Pani and C. Scalon, eds, Le Alpi porta d'Europa. Scritture, uomini, idee da Giustiniano al Barbarossa. Atti del convegno di studio (Cividale del Friuli, 5-7 ottobre 2006) (Spoleto: Fondazione CISAM, 2009), 83–110.
- 2016, 'Writing Texts, Drawing Signs. On Some Non-alphabetical Signs in Charters of the Early Medieval West', Archiv für Diplomatik, 62 (2016), 11–40.
- and F. Bougard 2011. 'Elementi romani nei documenti longobardi?', in J.-M. Martin, A. Peters-Custot, and V. Prigent, eds, *L'héritage byzantin en Italie (VIII^e-XII^e siècle)*, I: *La fabrique documentaire*, Collection de l'École française de Rome, 449 (Rome: École française de Rome, 2011), 241–301.
- Ghignoli A., W. Huschner, and M. U. Jaros, eds 2016. Europäische Herrscher und die Toskana im Spiegel der urkundlichen Überlieferung (800–1100), Italia Regia, 1 (Leipzig: Eudora Verlag, 2016).
- Hilberg, V. 2000. 'Monogrammverwendung und Schriflichkeit in merowingischen Frankreich', in E. Eisenlohr, P. Worm, eds, Arbeiten aus dem Marburger hilfswissenschaftlichen Institut, Elementa diplomatica, 8 (Wetter/Hessen: Druckerei Schröder, 2000), 63–122.
- Keenan, J. G., J. G. Manning, and U. Yftach-Firanko, eds, 2014. Law and Legal Practic in Egypt from Alexander to the Arab Conquest: A Selection of Papyrological Sources in Translation, with Introductions and Commentary (Cambridge: Cambridge University Press, 2014).
- Leach, E. 1976. Culture and Communication. The Logic by which Symbols Are Connected. An Introduction to the Use of Structuralist Analysis in Social Anthropology (Cambridge: Cambridge University Press, 1976).

- Millares Carlo, A. 1932. *Tratado de paleografia espanola*, I–III (Madrid: Librería General de Victoriano Suárez, 1932).
- Parkes, M. B. 1991. Scribes, Scripts and Readers. Studies in the Communication, Presentation and Dissemination of Medieval Texts (London: Hambledon Press, 1991).
- Rio, A. 2001. Legal Practice and the Written Word in the Early Middle Ages. Frankish Formulae, c. 500–1000, Cambridge Studies in Medieval Life and Thought, 4th Series, 75 (Cambridge: Cambridge University Press, 2011).
- Rück, P., ed. 1996a. Graphische Symbole in mittelalterlichen Urkunden. Beiträge zur diplomatischen Semiotik, Historische Hilfswissenschaften, 3 (Sigmaringen: Thorbecke, 1996).
- 1996b. 'Beiträge zur diplomatischen Semiotik', in Graphische Symbole in mittelalterlichen Urkunden. Beiträge zur diplomatischen Semiotik, Historische Hilfswissenschaften, 3 (Sigmaringen: Thorbecke, 1996), 13–48.
- Saupe, L. 1983. Die Unterfertigung der lateinischen Urkunden aus den Nachfolgestaaten des Weströmischen Reiches, Münchener historische Studien. Geschichtliche Hilfswissenschaften, 20 (Kallmünz: M. Lassleben, 1983).
- Sonderkamp, J.A.M. 1996. 'Die byzantinische Privaturkunde', in Rück 1996, 107– 114.
- Steinová E. 2018. Notam superponere studui. The Use of Annotation Symbols in the Early Middle Ages, Bibliologia, 52 (Turnhout: Brepols, 2018).
- Tjäder, J. O. 1955, 1982. Die nichtliterarischen lateinischen Papyri Italiens aus der Zeit 445–700, I, II, Skrifter utgivna av Svenska institutet i Rom, 4 ser., 19 (Lund and Stockholm: C.W.K. Gleerup, 1955, 1982).
- Wickham, Ch. J. 2005. Framing the Early Middle Ages. Europe and the Mediterranean 400–800 (Oxford: Oxford University Press, 2005).
- Worm, P. 2006. 'Ein neues Bild von der Urkunde: Peter Rück und seine Schüler', Archiv für Diplomatik, 52 (2006), 335–370.