

# Runes in Action – Two South Germanic Inscriptions and the Notion of an “Epigraphic Literate Culture”

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“Runes in action” presupposes rather dynamic and active behaviour on the part of data that has been out of its historical context and stored in museum showcases or archives since the 6th century. But even if it is impossible to stir data into action, there has been a tendency in runology, especially in the current century, towards an interpretation of runic inscriptions within a broader sociocultural context, and thus also as means of acting (most recently: Looijenga 2003, Fischer 2005, Imer 2007). In these studies, runes are not only perceived and analysed as the characters of a writing system, but the material properties of the inscribed object and if possible the cultural context (anthropological and historical data) are also considered in order to reconstruct the use of runes within past cultures. The problem I see in these studies, however, is the broad focus which results from dealing with a large geographical area or a long time period, or both. Individual inscriptions are neglected and conclusions about the runic context seem over-generalised.

Regarding the South Germanic inscriptions, Düwel (1994, 2008a: 56-70; 2008b), Martin (2004) and Roth (1992, 1998) have contributed a great deal to our understanding of the social and functional context of these inscriptions, both from an archaeological and linguistic perspective. The corpus is geographically restricted to the European continent, not including the Frisian inscriptions found on the North Sea coast and the southeastern inscriptions written in East Germanic languages (Nedoma 2006: 110-111).<sup>1</sup> Most of them, however, were found in southern Germany, in the modern states of Bavaria and Baden-Württemberg. They are also quite closely grouped chronologically, as the majority of the ca. 85 inscriptions date from the 6th century. Furthermore, all the inscriptions occur on loose burial objects found in graves. The majority of these are brooches of various kinds (ca. 60%) and the second biggest group are weapons (10%). The social status of the people buried in these graves is fairly homogenous. Most belonged to the higher middle class and some were aristocrats. The South Germanic corpus therefore forms, from an archaeological point of view, a relatively uniform group of objects. The functional use of the inscriptions has mostly been deduced from their meaning which in quite many cases is not entirely clear. They have only rarely been interpreted as means of social action in connection with the objects.

All conclusions about an activity a runic inscribed object was possibly part of are of course reconstructions and therefore to a greater or lesser degree hypothetical. Nevertheless, Imer (2007) has shown that an interdisciplinary approach which takes into account both archaeological data such as the dating, social status, typology, value and origin of the inscribed object, and the semantic interpretation of the inscription, provides new insights into how runic writing was functionalised in Danish culture(s) in different archaeological periods. The action that can be reconstructed is most often the production of the object and its engraving, which is indexed by their formal characteristics. From the archaeological context further hypotheses about the object’s medial impact can be made and possible practices reconstructed.

The present study is based on a detailed analysis of what is visible on the object: the epigraphic characteristics of the inscription and the object’s material properties. The inscriptions are investigated in an autopsy<sup>2</sup> according to a catalogue of epigraphic parameters, which includes technological features such as carving profile, depth and consistency of strokes, and layout-compositional features, e.g. consistency in height and width of the characters, placing and arrangement of the carvings on the object, and guide lines.<sup>3</sup>

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<sup>1</sup> Given this geographic division I use the term “South Germanic inscriptions” rather than “Continental runic inscriptions”, understanding “South Germanic” as an areal and not a linguistic term.

<sup>2</sup> The autopsies were carried out in the museums where the objects are held, using a stereo microscope and external, flexible light sources.

<sup>3</sup> I established this catalogue primarily on the basis of Wallner’s (1999: 330-331) variables of script description and Kloos’ (1992: 53, 89-90) general epigraphic parameters. I have also taken into account the considerations of previous epigraphic studies in runology, especially Morris (1988: 143-147), Hermann (1989: 14-15) and Pieper’s principles in his various, detailed epigraphic descriptions (1989, 1999, 2003). The catalogue is presented in detail

Based on two examples from the corpus of the South Germanic inscriptions, the iron sax of Steindorf (Germany) and the disc-brooch of Bülach (Switzerland), I wish to show the diversity in runic culture that generalising studies have tended to neglect. By analysing the inscriptions in detail, different kinds of writing practices and their possible embedding can be demonstrated. In conclusion, I will discuss the notion of an “epigraphic, literate culture”.

## **Writing as part of a visual composition: Iron sax of Steindorf, Germany**

The iron sax of Steindorf (inventory number 1953,379) dates from the middle of the 6th century and was discovered as a single burial object in a man’s grave.<sup>4</sup> Despite serious corrosion, carvings are visible on both sides of the blade.<sup>5</sup> The carvings have been manufactured by a metal removing technique: one side bears runes together with interlace ornaments, the other only ornaments. A third carved element, the “blood groove”, runs the length of the blade on both sides parallel to its lower edge. Interestingly enough, each of these three features, the runes (writing), the ornaments and the “blood groove”, exhibits a particular carving profile. For the ornaments on both sides, a chisel or stylus with a rounded blade was used, resulting in a u-shaped carving profile. The “blood groove” also shows a u-shaped profile, but is broader and deeper than the engravings of the ornaments. The runes, however, were carved with a more pointed instrument, as the carving profile is triangular.

Despite these differences, the placement of the components suggests that the ornaments and writing on one side of the blade and the ornaments alone on the other side make up a single composition. Both the runes and the ornaments are carefully arranged in the space between the “blood groove” and the blade’s upper edge. The runes are even consistently placed within that zone. Individual epigraphic parameters are not in every case easy to judge due to the corrosion. But a few characteristics can nevertheless be observed. Each vertical stroke begins some millimetres below the top edge and ends either slightly above or in the “blood groove”. The characters are thus of fairly consistent height, and the same can be said of their width. Furthermore, the spacing between the characters is to a large extent consistent across the whole inscription.<sup>6</sup> Finally, the most eye-catching feature of this runic inscription compared to others is the doubling of the strokes. This has been carried out consistently in all the characters that can still be detected. All in all, the technological and layout-compositional analysis strongly suggests both painstaking design and professional carving of the runes. And in my opinion, the same is true of the ornaments.<sup>7</sup> Due to corrosion the intersection between the writing and the ornaments is unfortunately no longer visible. But given the fact that the ornaments on both sides were produced by the same technique and therefore probably also by only one person, it is likely that the engravings on both sides were designed together. In other words, the runes were probably intentionally embedded within the ornaments on one side and the carvings can therefore be seen as one composition. I do not consider the “blood groove” a part of the composition as it is a typical element of saxes in general. Most likely it was manufactured in the course of the weapon’s fabrication and therefore was already present when the runes and the ornaments were added later. However, as the runes and the ornaments exhibit different carving-profiles, they must have been produced in two different procedures using different tools. The curves of the ornaments needed a more flexible instrument to be carved cleanly. The change of tool was clearly a decision driven by aesthetic principles. The “blood groove” functioned as a guide-line for placing of the runes and the ornaments.

To sum up, the production of the engravings was a multi-stage process: the writing and the

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in Waldispühl (forthcoming).

<sup>4</sup> For the archaeological data see Zeiss and Arntz (1936: 350-351). In the secondary literature, there is disagreement about the grave’s number (no 8 vs 10). According to Dr. Brigitte Haas-Gebhard from the Archäologische Staatssammlung München (e-mail of 17 March 2010) it is definitely grave no 10. I thank Dr. Haas-Gebhard for this information.

<sup>5</sup> The investigations are based on two autopsies (8 October 2007, 8 August 2008) at the Archäologische Staatssammlung München.

<sup>6</sup> One exception is the space between characters no. 6 and 7 (marked red in fig. 1), see below.

<sup>7</sup> Contra Zeiss (in Zeiss and Arntz 1936: 127), who considers the ornament to be “unbeholfen eingeritzt”, but neither gives criteria for this judgement nor expands the point.

ornaments were carefully engraved using two distinct instruments, possibly even by different persons. Furthermore, the runes and the ornaments are laid out in a composition, which implies that a design phase preceded engraving. This planned and professional production might index that the owner wanted to individualise his sax, i.e. to make it special. Furthermore, the weapon might have been something its owner displayed and the engravings raised its value as a representative object. In this context, Graf (2010: 104) even considers the possibility of a “magische Wirkung”.

In previous research, the inscription has usually been interpreted as a personal name *Husibald* or *Husiwald*. Its function was therefore predominantly seen as being to signify the weapon’s owner, maker or some other person (Düwel 1981: 158; Grünzweig 2004: 137; KJ 158; Nedoma 2004: 335). On a closer look, however, the interpretation as a personal name *Husibald* or *Husiwald* must be rejected. The most discussed passage is the space between characters no 6 and 7 (marked red in fig. 1). It has so far been read as either a **b** or **w**. As this part of the sax is badly corroded, it is not possible to definitely determine if there was once a carving at this point or not; a vertical stroke (a stave) of another rune can, however, be excluded. Moreover, neither a **b**- nor a **w**-rune is possible in my opinion. In both runes, **ᚷ** and **ᚹ**, the beginnings of the diagonal element (twig) at the top of the stave would be visible in the graph because corrosion at this point is not as severe (see for a similar appraisal Arntz and Zeiss 1939: 354). The only possible rune from an epigraphic perspective is **ᚰ**. More likely however is an interspace. Furthermore, there are marks of two more graphs visible after the **ᚰ** which cannot be identified anymore, however. As a consequence, I cannot support the so far established interpretation of a personal name *Husi[b]ald* or *Husi[w]ald* (Nedoma 2004: 335-340). My reading is: →≡**husix aᚰxx**[---?]. A linguistic interpretation of this is not possible. A further problem is presented by the first, non-runic sign. Its symbolic meaning is obscure and has been interpreted as a “Kennzeichen, gleichsam ein Markenzeichen des Waffenschmiedes” (Düwel 1981: 159) or as an element that was included “in arkanisierender oder aber auch beglaubigender Absicht” (Graf 2010: 104-105).

The fact that a linguistic interpretation is not possible is here thanks to the object’s poor state of preservation. Thus, the inscription could have had a verbal communicative function even if this can no longer be determined. What is certain, however, is that in addition to that verbal communication, the visual aspects of the script were emphasised to increase the weapon’s impact as a high-value object.

[Fig. 1. Iron sax of Steindorf.]

## Different inscriptions and different levels of writing skills: Silver disc-brooch of Bülach, Switzerland

The disc-brooch with runic inscription (inventory number 30849) from a woman’s grave in a row-grave field<sup>8</sup> has been widely discussed in previous research. Its three-line inscription has challenged and inspired many a scholar resulting either in rather imaginative and unconvincing interpretations (Klingenberg 1976) or tentative proposals that remain unsatisfactory (KJ 165, Nedoma 2004: 297-303).<sup>9</sup> Nedoma (2004: 298) concludes that only the first line can be decoded, namely in his opinion as a male personal name *Frifrīdil*. The rest of the inscription he considers to be uninterpretable. The meaning of the whole inscription and the use of the inscribed object is unclear according to current research and cannot be assessed from a linguistic perspective.

But if we shift our attention from the graphemic and semantic levels most popular in commentaries to date and undertake instead an epigraphic analysis, this object and its inscription reveal some interesting facts about writing, its different levels of complexity and its possible use. A detailed analysis of the above named epigraphic features (see page 2) demonstrates that the Bülach inscription cannot be seen as a homogenous “work”. The three

<sup>8</sup> For the archaeological data see Werner (1953).

<sup>9</sup> It is beyond the scope of this paper to discuss all the previous readings and interpretations. For a summary see Nedoma (2004: 298).

lines show different technological characteristics, as follows:<sup>10</sup>

The strokes of the first seven characters in the first line, runographically identifiable as **frifrid**, are perfectly straight. The beginnings and the endings of the various strokes are clearly demarcated. All in all, the strokes are so meticulously made that I consider a supporting instrument such as a rule must have been used in the carving process. Compared to these characters, the strokes in the second and third lines are not as straight, clear and well-made.

Of particular note are the first line's last two characters S7 and S8 (see fig. 3). Although they are certainly not scratches but rather intentionally written, they are nowhere near as carefully and confidently executed as the other characters in this line.<sup>11</sup> Their form is so unclear that I cannot support the established runographic reading of these two characters as **il**. On the basis of the technological divergence in this first line, I rather consider these two characters to have been executed in a different process than the other seven characters. As a consequence, the first line cannot be seen as a single complex. For the linguistic analysis, I therefore only take the first seven characters into account (see below). Whether the last two characters are the outcome of an unsuccessful or uninterpretable linguistic communication or just scribbles must remain open. Their poor level of handicraft might not only indicate a lesser degree of carving experience but also a lack of knowledge about the runic writing system, resulting in graphemically indistinct characters.

The last point from an epigraphic perspective concerns the layout of the three lines. Considering the "picture" of the whole inscription, it is striking that again the first line is distinctive in its linear arrangement and relative consistent in height of characters – if one ignores the first character and the last one. Compared to the first line, it is not even appropriate to call the group of characters below the pinholder a line. Several characters deviate from a hypothetical line and they also vary in height.<sup>12</sup>

The epigraphic analysis shows that the carvings clearly were not one composition, but rather are products of several processes probably carried out by more than one person at different times. Based on carving technique alone I cannot establish a chronology of the inscriptions. But taking into account the placing and alignment direction from top left to bottom right, which is dominant in the runic inscriptions of the elder fupark (Morris 1988: 131), I consider **frifrid** to represent the first inscription and all the other carvings to be secondary. The carving profile indicates that all the strokes may have been carved with a similar tool, but in contrast to the first inscription, the carver(s) of the secondary inscription(s) did not use a supporting instrument and applied less pressure. The first inscription **frifrid** I take as an adjective *frifrid* < GERM \**frīda-* 'beautiful, fair, pretty; satisfied' (Orel 2003: 115) with a reduplicating first syllable functioning as an intensifier,<sup>13</sup> resulting in the possible meaning 'very beautiful, very pretty'. The Germanic adjective \**frīda-* is a verbal derivative with the suffix \*-*da/pa-* (< IE \*-*to-*) from IE \**prī-* 'to love' (Krahe and Meid 1967: III 142; Heidemanns 1993: 75, 214-215). In the Germanic languages there are the following records: OHG *frīt-lich* 'comfortable' (Karg-Gasterstädt et al. 1971: 1272; see Kluge and Seebold 2004: 316 ModHG *Friedhof*), ON *frīðr* 'fair, beautiful; peaceful, secure' (de Vries 1961: 143; see Bjorvand and Lindeman 2007: 306 ModNO *frid*) and in the OE compound noun *frīd-hengestas* acc. pl. 'stately horses' (Holthausen 1974: 116). *frifrid* is a pre-OHG form not (yet) showing the sound-shift pre-OHG *d* > OHG *t*. The adjective can be nom. sg. in all three genders (masc., fem., neut.) or acc. sg. (neut.) and therefore refer to anything. Most plausible from the context seems to me a reference to the object itself or perhaps to the person the object was dedicated to. As mentioned above, the secondary inscriptions cannot be interpreted linguistically. Still, from a runographic perspective, most of the characters show distinct features.<sup>14</sup> These graphs definitely are runic characters and because they are different from

<sup>10</sup> My reading is marked in fig. 2 below. In fig. 3, I encode the different characters. For the different lines I use ZI-III, for the single characters Sx. The analysis is based on an autopsy (7 June 2006, Landesmuseum Zürich) and digital images.

<sup>11</sup> This observation is not new: both Arntz and Zeiss (1939: 170) and Looijenga (2003: 235) mention these irregularities. But neither takes it into account in their interpretation.

<sup>12</sup> Klingenberg (1976: 310, 315) and KJ 185 group the characters below the pinholder into not one but two lines.

<sup>13</sup> For reduplication in this function see Henzen (1964: 258).

<sup>14</sup> The following signs cannot definitely be identified as runic characters (for numbering refer to fig. 3): S2 in

the runes in the first line, I do not consider them to be merely “script imitation” or random scribbles. The person(s) who wrote them had an idea about the fuþark, but only about its visual features, the graphic form of the written signs. Knowledge about the linguistic reference, i.e. the sound value, of the writing system had possibly been lost. This could explain why no linguistic meaning can be established for the sequences below the pinholder. The inscriptions on the disc-brooch thus display several levels of technical writing skills, and runographic (the distinct shape of the characters) and graphemic (the symbolic value of the characters) knowledge.

The inscribed object was involved in different practices where the notion of writing played a role. But this notion might have varied from practice to practice. Brooches are loose objects and were used as pins to hold cloth together, but also as prestige objects indicating social rank (Martin 2004: 171). The silver disc-brooch from Bülach has almandine inlays on the front (see fig. 4). Judging by scratches on both the front and back, the brooch had been in use for a number of years. During this period, the inscribed object might have changed hands at least once. As a consequence, we have to reckon with the possibility that the material form of the brooch changed in the course of its use and that it did not always exist in the form in which it has been handed down to us. Being a prestigious object, the brooch was passed down or sold to another person, or maybe to more than one, who lived in other contexts.<sup>15</sup> For the engraving processes, the following scenario might be assumed: the object was initially inscribed **frifrid** by a skilled carver who could either apply runographic knowledge himself or copied the text from a template written by a literate person. Here, writing was quite likely functionalised or at least intended as a means of verbal communication. We do not have any clear indications as to what social actions the inscribed object was embedded in. As not only the brooch as a whole but also the writing shows signs of use, the inscribed brooch probably still functioned as a fixing pin. Hence, the first inscription did not have an influence on the object’s use, but might have personalised it for the user, possibly also as a mark of the donor. After that, the object with the inscription **frifrid** changed owners, and the other carvings were produced in this new context. Here knowledge about the writing system was not as widespread as in the original context. Writing, or at least the secondary carvings, did not function as a means of verbal communication but performed other functions. According to Graf (2010: 150-153), these secondary carvings could have been “schreibmagische[r] Vehikel, die der Beeinflussung der subjektiven oder objektiven Realität dienen”. In this context, not the script’s linguistic meaning but its mere graphic appearance is important, and Graf considers the inscribing process to have been part of an “arcane” or “cult” practice.

[Fig. 2. Deliberate carvings on the disc-brooch of Bülach, Switzerland (back).]

[Fig. 3. Encoding of the different signs on the disc-brooch of Bülach, Switzerland (back).]

[Fig. 4. Disc-brooch of Bülach, Switzerland (front).]

## **Conclusion: Speculations about the notion of an “epigraphic literate culture”**

Runic writing in the period of the older fuþark is limited to epigraphic practices and was used rather sparsely. As a consequence, writing covered only a few domains of social interaction. South Germanic runic practices do not fulfil Scholz’ (1994: 555) criteria for a “Schriftkultur”, as there is only very limited evidence of literary use. However, to claim literary practices as a basic condition for a past literate culture is an anachronistic judgement in my opinion. We have to consider that past literate cultures cannot be compared to modern ones and that they potentially developed functions that are not part of modern literate practice.

As demonstrated in the two examples, the writing practices and possible actions that

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the second line (ZI), S5 and S6 in the third line (ZIII). A special problem is the “comb-like” symbol (S6) in the third line. According to Graf (2010: 152), this sign cannot be decoded as a symbol, but might be significant from a magic-pragmatic perspective.

<sup>15</sup> The fact that this fibula-type occurs predominantly in the region of Worms/Niederrhein (Windler 2006: 11), hence possibly was manufactured in this region, and found as a burial object in an Alemannic grave, supports this assumption.

inscribed objects were involved in can differ considerably, even within this rather limited range of uses. The writing on the sax of Steindorf was most likely composed as an element of an “image” together with the ornaments. It was a reflective action to combine writing with other visual elements and further to emphasise the visual characteristics of writing by doubling the single strokes. This indicates both reflective planning and professional execution of the writing. The sax of Steindorf is an example of a technologically elaborate inscription. The carvings on the Bülach disc-brooch on the other hand rather form a conglomerate of engraved elements written at various times in various contexts, displaying different notions of writing.

The material functions of the object initially lead to different uses of writing in as much as the material properties play a particularly important role for and in writing production. The Steindorf sax was probably professionally inscribed because the object already had a representative function as a weapon. The intention behind this engraving could have been to make this sax stand out or even to support its “magic” power. But the reverse is also possible, namely that writing influences the material use of the object, or at least temporarily shifts attention away from the common material use to a “new” and more conspicuous use as a script bearer. The Bülach disc-brooch might have been handed down with a first runic inscription to another person. In this new context, writing attracted attention and was supplemented by further carvings.

Writing was involved in various practices which not only exploited the writing system’s symbolic potential as a representative of language, but also put its visual, “pictorial” characteristics to use. Both verbal and visual communication must therefore be considered as components of (epigraphic) literate cultures.

## Bibliography

- Arntz, Helmut, and Hans Zeiss, 1939: *Die einheimischen Runendenkmäler des Festlandes*. Leipzig.
- Bjorvand, Harald, and Fredrik Otto Lindeman, 2001: *Våre arveord: Etymologisk ordbok*. Oslo.
- Düwel, Klaus, 1981: "Runeninschriften auf Waffen". In *Wörter und Sachen im Lichte der Bezeichnungsforschung*, ed. Ruth Schmidt-Wiegand, 128-67. Berlin/New York.
- , 1994: “Runische und lateinische Epigraphik im süddeutschen Raum zur Merowingerzeit.” In *Runische Schriftkultur in kontinental-skandinavischer und -angelsächsischer Wechselbeziehung: Internationales Symposium in der Werner-Reimers-Stiftung vom 24.-27. Juni 1992 in Bad Homburg*, ed. Klaus Düwel, 229-308. Berlin/New York.
- , 2008: *Runenkunde*. 4th ed. Sammlung Metzler 72. Stuttgart.
- , 2008: “Runen als Phänomen der oberen Schichten.” In *Studien zu Literatur, Sprache und Geschichte in Europa: Wolfgang Haubrichs zum 65. Geburtstag gewidmet*, eds. Albrecht Greule et al., 63-76. St. Ingbert.
- Fischer, Svante, 2005: *Roman Imperialism and Runic Literacy. The Westernization of Northern Europe (150-800 AD)*. Uppsala.
- Graf, Martin H., 2010: *Paraschriftliche Zeichen in südgermanischen Runeninschriften: Studien zur Schriftkultur des kontinentalgermanischen Runenhorizonts*. Zürich.
- Grünzweig, Friedrich E., 2004: *Runeninschriften auf Waffen: Inschriften vom 2. Jahrhundert n. Chr. bis ins Hochmittelalter*. Wien.
- Heidermanns, Frank, 1993: *Etymologisches Wörterbuch der germanischen Primäradjektive*. Berlin/New York.
- Henzen, Walter, 1965: *Deutsche Wortbildung*. Tübingen.
- Hermann, Rüdiger, 1989: “ATTOS GABE: Die Inschriften der Runenfibel von Soest und ihre Sprache.” *Jahrbuch des Vereins für niederdeutsche Sprachforschung* 112, 7-19.
- Holthausen, Ferdinand, 1974: *Altenglisches etymologisches Wörterbuch*. Heidelberg.
- Imer, Lisbeth M., 2007. *Runer og runeindskrifter: Kronologie, kontekst og funktion i Skandinaviens jernalder og vikingetid*, vol.: *Tekst*. Ph.d. dissertation, Det Humanistiske Fakultet, Københavns Universitet.
- Karg-Gasterstädt, Elisabeth, et al., 1971: *Althochdeutsches Wörterbuch*, vol. III. Berlin.
- Klingenberg, Heinz, 1976: “Runenfibel von Bülach, Kanton Zürich – Liebesinschrift aus alamanischer Frühzeit.” *Alemannisches Jahrbuch* 75, 308-25.
- Kloos, Rudolf Michael, 1992: *Einführung in die Epigraphik des Mittelalters und der frühen Neuzeit*. Darmstadt.

- Kluge, Friedrich, and Elmar Seebold, 2002: *Etymologisches Wörterbuch der deutschen Sprache*. Berlin.
- KJ = Krause, Wolfgang, and Herbert Jankuhn: *Die Runeninschriften im älteren Futhark: Text, Tafeln*. Abhandlungen der Akademie der Wissenschaften in Göttingen, Philol.hist. Kl., 3rd ser. 65. Göttingen 1966.
- Krahe, Hans, and Wolfgang Meid, 1969: *Germanische Sprachwissenschaft*. Berlin / New York: de Gruyter.
- Looijenga, Tineke, 2003: *Texts and Contexts of the Oldest Runic Inscriptions*. Leiden.
- Martin, Max, 2004: "Kontinentalgermanische Runeninschriften und 'alamannische Runenprovinz'". In *Alemannien und der Norden: Internationales Symposium vom 18.-20. Oktober 2001 in Zürich*, ed. Hans-Peter Naumann, 165-212. Berlin/New York.
- Morris, Richard L., 1988: *Runic and Mediterranean Epigraphy*. Odense.
- Nedoma, Robert, 2004: *Personennamen in südgermanischen Runeninschriften*. Heidelberg.
- , 2006: "Schrift und Sprache in den südgermanischen Runeninschriften." In *Das fuþark und seine einzelsprachlichen Weiterentwicklungen: Akten der Tagung in Eichstätt vom 20. bis 24. Juli 2003*, eds. Alfred Bammesberger and Gaby Waxenberger, 109-56. Berlin/New York.
- Orel, Vladimir E., 2003: *A Handbook of Germanic Etymology*. Leiden.
- Pieper, Peter, 1989: *Die Weser-Runenknochen: Neue Untersuchungen zur Problematik: Original oder Fälschung*. Archäologische Mitteilungen aus Nordwestdeutschland, Beiheft 2. Oldenburg.
- , 1999: "Die Runenschnalle von Pforzen (Allgäu) – Aspekte der Deutung: 2. Technologische Betrachtungen und runographische Überlegungen." In *Pforzen und Bergakker: Neue Untersuchungen zu Runeninschriften*, eds. Alfred Bammesberger and Gaby Waxenberger, 25-35. Göttingen.
- , 2003: "Autopsie und Experimente auf dem Goldreif von Pietroasa." In *Runica – Germanica – Mediaevalia*, eds. Wilhelm Heizmann and Astrid van Nahl, 595-646. Berlin/New York.
- Roth, Helmut, 1994: "Runenkunde und Archäologie: Bemerkungen zu den süddeutschen Runenfunden." In *Runische Schriftkultur in kontinental-skandinavischer und -angelsächsischer Wechselbeziehung: Internationales Symposium in der Werner-Reimers-Stiftung vom 24.-27. Juni 1992 in Bad Homburg*, ed. Klaus Düwel, 309-12. Berlin/New York.
- , 1998: "Nochmals zu den süddeutschen Runenfunden: Methodische Bemerkungen zur Rolle der Archäologie." In *Runeninschriften als Quellen interdisziplinärer Forschung: Abhandlungen des Vierten Internationalen Symposiums über Runen und Runeninschriften in Göttingen vom 4.-9. August 1995*, ed. Klaus Düwel, 180-85. Berlin/New York.
- Scholz, Manfred Günter, 1994: "Die Entstehung volkssprachlicher Schriftkultur in Westeuropa." In *Schrift und Schriftlichkeit: Writing and its Use: Ein interdisziplinäres Handbuch internationaler Forschung*, eds. Jürgen Baurmann et al., 555-72. Berlin/New York.
- Vries, Jan de, 1961: *Altnordisches etymologisches Wörterbuch*. Leiden.
- Waldispühl, Michelle, forthcoming: "Methodische Überlegungen zur Rekonstruktion der Schriftverwendung bei den südgermanischen Runeninschriften." In *LautSchriftSprache: Beiträge zur vergleichenden historischen Graphematik*, eds. Elvira Glaser, Annina Seiler and Michelle Waldispühl. Zürich.
- Wallner, Teut, 1999: "Methoden der Schriftbeschreibung in der Schriftpsychologie: Klassifizierung und Vorschläge zur Registrierung von Handschriftenvariablen." In *Methoden der Schriftbeschreibung*, ed. Peter Rück, 329-46. Stuttgart.
- Werner, Joachim, 1953: *Das alamannische Gräberfeld von Bülach*. Monographien zur Ur- und Frühgeschichte der Schweiz 9. Basel.
- Windler, Renata, 2006: "Rätselhafte Runen eine frühmittelalterliche Fibel mit Inschrift aus Bülach." *Spots in die Vergangenheit* 3, 10-11.
- Zeiss, Hans, and Helmut Arntz, 1936: "Ein bajuwarischer Sax mit Runen von Steindorf, BA. Fürstenfeldbruck." *Germania* 20, 127-32.