

PALO BÁLIK SK

FILIP BLAŽEK CZ

ROBERT KRAVJANSZKI HU

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ZOFIA OSLISLO PL

THE INSECTS PROJECT

Problems of Diacritic Design for Central European Languages

asplkatowice



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Concept and editorial
development

AGNIESZKA MAŁECKA **PL**

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THE INSECTS PROJECT: Problems of Diacritic Design for Central European Languages, i.e. the book you are holding in your hands, is a proud product of a collaborative international research effort aimed at sharing knowledge about Central European typography and promoting design that is sensitive to the needs of all those who are unlucky enough to be native users of Czech, Hungarian, Polish and Slovak. On one hot July day in Bratislava, Robert Kravjanszki cracked an inside joke at the opening meeting of the project team, saying that diacritics made texts printed in our languages look like they were swarmed by insects. In addition to having us helpless with laughter, this quirkily funny and perfectly fitting metaphor became an instant inspiration for the project's name.

Perhaps few users of "diacriticless" languages (such as e.g. English) realise how lucky they are to be able to choose from literally thousands of typefaces. Central Europeans, on the other hand, are nowhere near as spoiled for choice, because many fonts available on the market still seem to overlook the specific needs of the knotty languages in our part of the continent. Awkward kerning and non-existent or sloppy diacritics are but a few of a long list of eyesores. Our ambition is to make a step towards levelling the playing field for users of all languages, including those spoken (and written) across the Visegrad Group, and filling the gaps in the knowledge about our languages. We also hope to encourage designers to create fonts that are sensitive to local users' needs. And though the problem of designing typefaces for our region was previously tackled by the likes of Filip Blažek (*Diacritics Project*), Adam Twardoch (*Polish Diacritics: How to?*), and Radek Sidun (*Diacritics of World's Languages*), the topic seems far from exhausted and we can certainly expect swarms of further observations, discoveries and developments (to stretch Robert's entomological metaphor a little further).

This book contains four articles by invited experts: Palo Bálik (SK), Filip Blažek (CZ), Robert Kravjanszki (HU) and Poland's duo of Agnieszka Małecka and Zofia Oslislo, who also doubled as the project's co-ordinators. Each article comprises a historical overview and a guide to good diacritic design practices in particular languages including examples of the most common design problems.

In our research, we focused on old prints in order to examine the process of formation of spelling principles in different countries. The majority of solutions presented are examples of text typefaces in different varieties. Due to the limited research time frame and the length of the essays, we had to leave out a number of interesting topics which, although undoubtedly worthy of further study, would require a different research strategy. These include comparative studies of ancient manuscripts and modern handwriting for diacritics, alphabet books and methods of teaching writing in particular countries, as well as job printing and experimental alphabets.

We hope that this book will become an informative source of knowledge on Central European languages and a useful tool for type design professionals, teachers, students and enthusiasts. Enjoy your read!

Agnieszka Małeczka, Zofia Oslislo

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p. 64 Diacritics are marks added to glyphs to change their meaning or pronunciation. They are also commonly called *accents* or *diacritical marks*. These marks can be made above, below, through, or anywhere around the letter. The name comes from the Greek word, διακρίνειν, meaning “that distinguishes”.

(Gaultney, 2002)

p. 65 If all diacritics were simple in shape – such as a perfectly circular dot – and if all base glyphs were lowercase, symmetrical and had unchanging stroke weight, the design and positioning of diacritics would be trivial.

(Gaultney, 2002)

p. 96 (...) debate on designing Central European diacritics is finally moving in the right direction in international typographic circles. Outside the world of professional typography, however, global awareness of diacritics in Central European languages, as well as the sounds they represent, is close to non-existent.

(Bálik, 2016)

12—35

Czech diacritics: from Hus to Unicode

p. 18 With a kind eye, do welcome the elegant Latin script! Nature, magnificently almighty, loves the round form in its fairest of works.

(Tyl, 1833)

p. 29 Since the early days, the caron has had three basic forms in text typefaces: symmetrical, shadow and rounded.

(Blažek, 2016)

p. 27 Some traditional and widely-used typefaces, like Helvetica and Futura, have a stable diacritic form to which designers have become accustomed.

(Blažek, 2016)

p. 16 Accents are minutiae, but important minutiae; the fine, sensitive eye is impeded by any sort of disorder in such minutiae. Their proper and careful design, therefore, underlies good book design.

(Dyrynk, 1924)

1. Hus also marked the dark (velarised) / similar to the Polish / with a dot; these phonemes stopped being distinguished in the C19th; / was not always differentiated in texts.

Accents are minutiae, but important minutiae; the fine, sensitive eye is impeded by any sort of disorder in such minutiae. Their proper and careful design, therefore, underlies good book design. Disorder disturbs the impression of harmony that a beautiful book wishes to convey to the reader.
(Dyrynk, 1924).

The oldest known transcription of the Czech language dates back to the C12th and C13th. Until that time, Czech had appeared in Latin texts only sporadically. The oldest documented Czech sentence, a memorandum in the founding charter of the Litoměřice cathedral chapter from the early C13th, states: “Pauel dal geft ploscouicih zemu Wlah dal geft dolař zemu bogu i ľiatemu řcepanu ře duema duřnicoma bogucea a ředlatu.” (Pavel has given land in Plořkovice, Vlach has given land in Dolany to the Lord and Saint Stephen, with two souls, Boguřej and Sedlata.) A single grapheme represented several different phonemes; c, for example, could have been read as today’s [ts], ř [tř] or k [k].

As Czech writing developed, digraphs, sometimes trigraphs and exceptionally even tetragraphs (combinations of two, three or four Latin letters, respectively) started to come into use during the C13th (Kosek, 2014, pp. 12–24). But writing methods were neither regular nor consistent. The first system of digraphic orthography (known as old digraphic style) was not created until the early C14th. The oldest preserved Bohemian legends in verse, such as *The Legend of the Virgin Mary*, *The Apostles*, *Descent of the Holy Spirit*, *Pontius Pilate and Judas*, and *The Passion of Jesus Christ*, were written in digraphic style, as were the oldest manuscript fragments of the secular epic poem *Alexandreis* (Křístek). Vowel lengths were not marked still, and the way some phonemes were written could vary even within the very same text. The consonant ř, for example, could be written as rf, rs, rz or even just r. The system (called the young digraphic style) soon stabilised in the early C15th and appeared in the first printed books.

Introduction of accents in the C15th

The proposal to conduct a spelling reform is credited to Master Jan Hus and contained in an early C15th treatise written in Latin that was later called *Orthographia Bohemica* (experts dispute its exact date). Hus homogenised the non-uniform way in which some phonemes were written and introduced a simple and, above all, logical system for Czech phonemes. He suggested that palatalised consonants be marked with a dot (punctus rotundus)¹ above the letter and long vowels be represented by a short line (gracilis

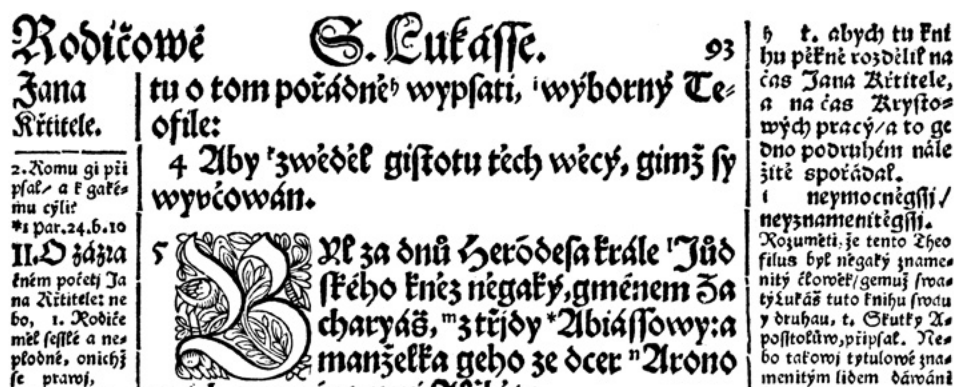


Fig. 1 In the six-volume Kralice Bible, published between 1579 and 1594, Czech diacritics are roughly in their contemporary form. The graphemes *ě* and *č* are the exceptions, bearing a mark that (in some font sizes) is more similar to an apostrophe than a caron, and the *š*, which was written either as *ff* (at the beginning and in the middle of a word) or *ch* (at the end of a word). The shape of the caron, especially in upper-case letters, also often resembles something like an irregular dot.

virgula) over the letter. With minor changes, this system continues to be used to this day; the dot soon turned into the caron or háček used today. It is said that Hus called the accent a “nabodeníčko” (“pin prick mark”), but Jana Pleskalová (2006) explains that this term does not appear to have been introduced until the C19th.

The new orthography was not adopted immediately. Parallel to Hus’ style, the digraphic style continued to be used into the first half of the C16th. It was the members of the Czech Brethren who finally used Hus’ orthography in a consistent manner (Kralice Bible style) **Fig. 1** and raised its popularity thanks to their high literary output. With only minor changes, this style was used until the 1790s.

Transition to Latin

A transition from Blackletter to Latin script **Fig. 2** represented an important milestone in Czech typography. It is primarily credited to František Jan Tomsa, who was a school textbook warehouse administrator for the Bohemian School Commission in the late C18th and early C19th (Kabát, 1935). Since 1794, Tomsa had tried to introduce Czech accents to books printed in Latin script but encountered numerous technical issues and general reluctance in his communications with type foundries. It was not until 1799 that the first Antiqua with Czech accent marks came to Prague, but the alphabet books printed in the 1800s influenced entire generations of future readers. Josef Dobrovský, Pavel Josef Šafařík and others worked to further simplify and systemise Czech spelling throughout the C19th, and, with minor modifications, the form of Czech established in the mid-C19th has survived to date.

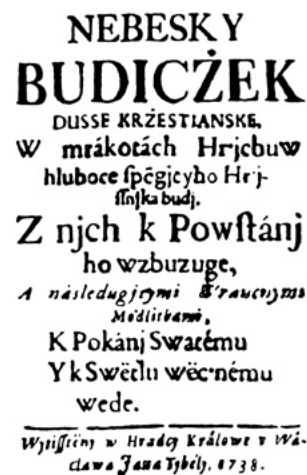


Fig. 2 One of the first known uses of Latin script to typeset a Czech text: *Nebesky Budiczek duffe kržestianske*, a Czech prayer book from 1738. As Latin script was primarily made to set Latin texts, printing houses did not have any Czech characters available. And thus printer Václav Jan Tybely replaced the caron with one or two dots placed above or next to the letter.



Fig. 3 The cover page of the 3rd issue of *Gindy a Nynj* (Then and Now) magazine from 1833 contains an article in which Josef Kajetán Tyl underlines the advantages of Latin script. Nevertheless, the very next issue goes back to Gothic script.

In the mid-C19th, Latin script also finally emerged as the dominant script, partially thanks to the Haas Type Foundry, which published several typeface families featuring Czech letterforms in 1840. The question of the transition to Latin script was debated in professional circles and beyond; even playwright and journalist Josef Kajetán Tyl, who also penned the lyrics to the Czech national anthem, joined the discussion. In his 1833 article titled “To the Maidens of Bohemia” **Fig. 3** printed in *Gindy a Nynj* (Then and Now) magazine, he sounded the battle cry:

With a kind eye, do welcome the elegant Latin script! Nature, magnificently almighty, loves the round form in its fairest of works. Your faces, dear maidens, are round, your hands are round, all that is beautiful is also round. How could I send you anything but beautiful script? Boxy German blackletter seems like oak wheels wedged between you and me, hence keeping me from your grace. Yet still – oh, if only you should send word that by virtue of the round Latin script I have stolen into your heart, and you shall soon prefer to read nothing more than lines written in the elegant Latin script! (Tyl, 1833)

The limited availability of typefaces with Czech accents was a lingering problem even at the end of the C19th, as *Typografia* **Fig. 4** magazine notes in 1890: “There is an enormous need especially for Czech accents in many typefaces, as some German foundries, on which the overwhelming majority of local printers rely, are sometimes reluctant to supply the much needed accented characters, particularly for certain special typefaces, on the pretext that they would simply lose money investing in new dies with accented Czech characters made for some specific typeface merely to satisfy a few negligible orders” (Stivín, 1890, p. 85).

As a result, printers occasionally took matters into their own hands and soldered the accents onto metal type sorts by hand. In spite of this, many foreign type foundries (such as J. G. Schelter & Giesecke in Leipzig, H. Berthold in Berlin and Oscar Laessig in Vienna) advertised typefaces featuring Czech accents in Czech professional journals, though their quality varied greatly.



Fig. 4 The heading for the first issue of *Typografia* (1888) comes across as a type-face specimen corresponding with period fashion. There is tremendous fluctuation in the harmony between the letters and the accents.

TYPOGRAFIA

sloužití bude zájmem knihtiskařství vůbec se zvláštním zřetelem k zájmu pomocnictva.

Typographic renaissance of the early C20th

Debuting in 1911, and remaining in publication all the way up to 1949 (with hiatuses during the two world wars), *Ročenka českých knihtiskařů* (Czech Book Printers Yearbook) was a three-hundred-page annual publication that summarised important developments in the industry from the previous year. In his article “Výrobky písmolijem starší i moderní” (The Older and Modern Products of Type Foundries) featured in its premiere volume, the yearbook’s editor Josef Mrkvička underlined the importance of the establishment of Slévárna Písem, a Czech type foundry that grew out of Dr. Ed. Grégr type foundry, and especially its collaboration with Vojtěch Preissig. While discussing the question of accent marks in a review paragraph on the Augenheil-Antiqua typeface, Mrkvička explained: “As is the case for so many typefaces from practically all type foundries, Czech accents are a stumbling block even for the beautiful Augenheil-Antiqua. They were not at all designed in harmony with the letterforms, as all of the accents give the impression of having been appended to the letters from an entirely different typeface” (Mrkvička, 1911, p. 199). The yearbooks also featured advertisements for foreign type foundries, but the execution of the Czech letters was often very poor.

Typographer, editor and author of several professional typography books Karel Dyrynk boldly entered the debate on accent quality and cohesion between accents and base letterforms. He had already mentioned the importance of the harmony between the accent mark and the outline of the letter in his 1911 book *Typograf o knihách* (A Typographer's View of Books) (Dyrynk, 1993); accents were discussed in far more detail in his slim volume *Krásná kniha a její technická úprava* (Fine Press Publications and Layouts). In the second edition published in 1924, which Dyrynk himself considered to be the “final” edition, he wrote:

All of the typefaces used here [in Czechoslovakia] thus far have been designed abroad; the letters are meant for typesetting languages that either do not at all think in terms of accents (English) or use accents only sparingly (German and French). For this reason, setting these typefaces in the original language, the language for which they were designed, is far more impressive than when they are set in Czech, with accents filling the space above the midline. This is only natural, as the person who drew the letter did not consider Czech accents, which were added only when the typeface was prepared for Czech. They were inserted above the letters not only without regard for the needs of the language or their meaning in Czech, but often even regardless of the typeface style, shapes and strength. Hence it occurs that the very same carons and rings are used for typefaces that are entirely different in character. The caron tends to be a sharp wedge, no matter if the letter is narrow or wide; the acute is vertical, almost stabbed into the letter; the ring over the ů is usually weak, even if it is with a strong letter (Dyrynk, 1924).

Dyrynk believed the solution to the problem with diacritics lay not in adding accents to imported typefaces, but in having Czech artists design typefaces at Czech foundries. He was certain that local typographers “actively yearn” for a Czech typeface, one reason being that “there surely is a certain national ambition to make every effort to have at least one typeface of our own with which we could prove not only our professional, but also our cultural advancement in this field” (Dyrynk, 1925). Hence, Dyrynk enthusiastically welcomed the creation of Vojtěch Preissig's Antikva at the State Printing House (Státní tiskárna) in Prague in 1923–1925, dedicating a separate book, *České původní typografické písmo* (Czech Original Typography) to the occasion. This is probably the author's most extensive contribution to the topic of Czech diacritics, expounding on accent marks in great detail over several pages.



Fig. 5 The master templates for arrangers or sign painters often integrated accents into the letters to create a single whole. Samples from Jaroslav Benda's *Písmo a nápis* (Typefaces and Inscriptions) from the 1930s, published by Heintze & Blanckertz in Berlin, the manufacturer of Redis and Ato metal nibs.

Vojtěch Preissig did in fact devote great care to diacritics in his type design work. When he opened a studio in Prague in the early C20th, he added the accent marks to foreign typefaces himself. In the words of Karel Dyrynk, he tried to make sure his accents were not “merely typeset, but adapted and logically incorporated into the typefaces – so that, rather than causing interference, they decorated and imparted Czech character to the base letterform” (Dyrynk, 1925). It is interesting that, in justified cases, Preissig did not hesitate to change the outline of the letter; his alteration of the letter Ů, allowing him to lower an open ring down into it, was typical. Preissig also “Czechified” several classic typefaces, adapting Garamond Antiqua (including punctuation) for the State Printing House **Fig. 6**. And Dyrynk did enjoy using this version of Garamond in his own books. While he was in the United States, Preissig designed a number of typefaces that were cut into linoleum, where his distinctive way of working with diacritics manifested itself, too. However, he applied it to other European languages as well, thus somewhat defying Dyrynk’s call for a purely Czech typeface.

Dyrynk and Preissig were the first to systematically demand quality accents for typefaces intended to set Czech texts. Whereas Karel Dyrynk’s attempts at creating new text typefaces ended in obscurity, Preissig’s legacy remains vital not only in the work of Czech typographers, but also beyond his native country’s borders. From today’s perspective, it is apparent that both Dyrynk and Preissig demanded accents that were too bold and artistic, calling unwanted attention to themselves and disturbing legibility **Fig. 7**. It is clear, however, that while their interpretation of diacritics influenced several artists and type designers, such as Oldřich Menhart, it has had almost no impact on typefaces regularly used to set books or newspapers, where imported typefaces with

Slyšte i co více dochovalo se z temnoty věků,
co zůstalo z báječných vypravování předešlých
pokolení, jež klaněla se bohům v šeru starých
hájů a jež obětovala studánkám v tichých
ABCDEFGHIJKLMNOPQ - 1234567890

Slyšte i co více dochovalo se z temnoty věků,
co zůstalo z báječných vypravování předešlých
pokolení, jež klaněla se bohům v šeru starých
hájů a jež obětovala studánkám v tichých
ABCDEFGHIJKLM - 1234567890

Slyšte i co více dochovalo se z temnoty věků,
co zůstalo z báječných vypravování předešlých
pokolení, jež klaněla se bohům v šeru starých
hájů a jež obětovala studánkám v tichých
ABCDEFGHIJ - 12345

Slyšte i co více dochovalo se z temnoty věků,
co zůstalo z báječných vypravování předešlých
pokolení, jež klaněla se bohům v šeru starých
hájů a jež obětovala studánkám v tichých
ABCDEG - 12345

Fig. 6 A sample of type set in Garamond with Czech accents drawn by Vojtěch Preissig for the State Printing House (Státní tiskárna) in Prague in the early 1920s.

Fig. 7 When František Štorm set out in 1998 to digitise Preissig's Antikva, a typeface designed in 1925, he created two versions: one maintains the original expressive diacritics, and the second is updated to reflect contemporary thinking about accents.

důležitý KUŇ
důležitý KŮŇ

average-quality diacritics have remained dominant even to this day. Even back then, the influence of globalisation was evident. For the most part, foreign type foundries logically did not want to offer specifically Czech accents, with one é for Czech and another one for French. The question remains, whether type foundries were even cognizant of Czech typographic experiments. Type specimens from the period show that they did not seem to hold much interest in diacritics. Sometimes accent shapes for the same letterform differed from one size to the next, or some sort of universal diacritics were added to the base letterforms [Fig. 8](#).

Fig. 8 When texts were still set by hand, the shapes of accents often changed from size to size, as can be seen in this sample of a narrow sans (Úzké kamené) from the typeface specimen of a standard Czech printing house (1960s).

by; konečně dlužno říci, že každé
ABCDEFGHIJKLMN 1234567890

písmo je do značné míry &
ABCDEFGHIJKLM 12345!

Typography on the wane

Although World War II, followed by the communist coup of 1948, meant that any real progress in Czech typography was put on hold for several long decades, even this dark period brought a small number of valuable typefaces and a few outstanding books in the field. The first and, thus far, the only Czech book exclusively focused on type

design – Oldřich Menhart's *Tvorba typografického písma* (Type Design) – was published in 1957, but even this was an achievement Fig. 9. Until fonts were digitised in the 1990s, there were only a few type designers in the entire country and only a handful of original fonts were ever actually cast.

In Menhart's book, one can see a certain change of opinion regarding diacritics, especially a more global approach to the entire issue. He writes, "If Latin script should be adapted for printing in a multitude of languages, each stroke requires a good deal of forethought and experience so that the demands for the practical and aesthetic nature (of the script) may be balanced in an acceptable manner" (Menhart, 1957).

Throughout the totalitarian period (1948–1989), foreign typefaces prevailed in Czechoslovakia. Books were usually set in Baskerville, Plantin or Times. Diacritical marks were occasionally touched upon in Jan Solpera's typeface reviews in *Typografia* magazine or a few short paragraphs in specialised books about typesetting and printing. The only place where a certain distinctiveness still appeared in the general approach to diacritical marks was in lettering on posters and covers of books and music albums.

In the late 1980s, the state of printing in Czechoslovakia was downright tragic, particularly in regard to illustrated publications that required reproductions of excellent quality. As a result, some books were printed abroad, but international printers were not equipped to respect Czech typographic conventions. Some books featured a publisher's apology that the book did not follow Czech standards. Frequent culprits were one-letter words hanging at the end of a line or diacritics (one typical mistake was printing the palatalised *t* (ť) with a caron (ř). Similar errors also appeared in Czech books that were printed in exile and smuggled into Czechoslovakia before 1989.

Digital revolution

Czechoslovakia's printing industry underwent its much-needed modernisation in the early 1990s. From a typographical perspective, the introduction of computers to the typesetting process (DTP) brought about the greatest change. Because PCs were suddenly able to efficiently perform tasks that used to require specially-trained experts and a lot of time, typesetting was decentralised and democratised. But history repeated itself: just as in the early C20th, Czechoslovakia's cultural and economic isolation behind the Iron

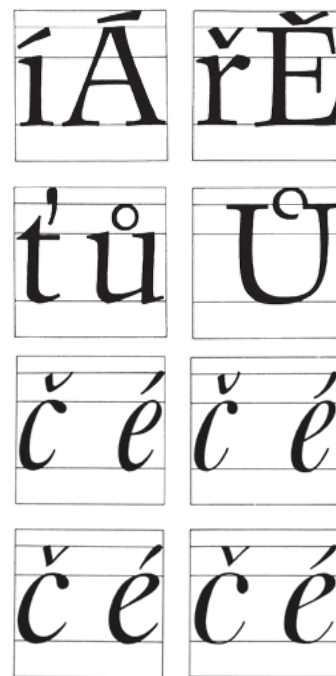


Fig. 9 Menhart's distinctive approach to diacritics is apparent from his illustrations for *Tvorba typografického písma* (Type Design). Flat accents for the upper-case letters are in part determined by the typesetting machines' own technical limitations. From today's perspective, the strict shadowing of the caron – which is additionally rounded for Old Style typefaces – is unusual.

2. Admittedly, however, whereas the Czech and Slovak characters were perfect, Latvian, Lithuanian and Polish characters contained many errors. This was one of the reasons why typefaces localised in the Czech Republic did not catch on in neighbouring countries.

3. Until around 2001, computer typefaces could contain no more than 256 characters. As this number could not accommodate both Western European and Eastern European characters, fonts were divided into separate families, i.e., *Helvetica* and *Helvetica CE* ("Central European"). Font files could not be transferred from one platform to another (e.g. a Windows font could not be used on a Macintosh); character encoding in fonts was incompatible between platforms, making it impossible to transfer text documents without a special converter.

Curtain following World War II meant that Western suppliers of typesetting technology initially ignored Eastern European characters. This left no alternative but to modify the software, but as computer geeks had limited knowledge of typography, the first localised programs and typefaces were full of errors and problems.

The situation surrounding diacritics started to improve with the arrival of QuarkXPress, a typesetting and desktop publishing program (the Czech version was released in 1992), and the expansion of Apple Macintosh computers. Mac OS supported vector fonts which were localised by Macron in collaboration with Adobe. Consequently, carefully localised fonts were reaching Czech and Slovak readers by the early 1990s, with font diacritics often surpassing the originals². Different accents for upper-case and lower-case letters were a typical feature of typefaces localised by Martin Pruška, Martin Klimeš and (until 1996) Otakar Karlas.

Around the same time as the quality fonts mentioned above became available, the Czech market started to be flooded with relatively cheap, terribly localised typefaces that respected absolutely no principles of aesthetics. Particularly noteworthy in this respect were all manner of pirated copies of genuine fonts available on CDs that were still officially distributed. Whereas Adobe's Futura font family featured accents in the spirit of Paul Renner's original designs, various copies and clones had generic diacritics that bore no relationship to the structure of the letters. In some cases, the accents were completely wrong.

Rise of Czech type foundries and support for standards

In 1993, František Štorm entered the Czech market with První střěšovická písmolijna, a type foundry that tried to sell its typefaces. The concept that a local designer community, which had grown accustomed to working with stolen fonts on stolen software, proved a premature one. Initially, however, Štorm's typefaces, which stood out for their distinctive character and carefully executed diacritical marks, were widely pirated and most of the foundry's clients were outside of the country.

An important moment for Czech diacritics came roughly in 2001, when the Unicode standard, defining character encoding across multiple platforms, became widely respected and the OpenType format for multi-platform fonts entered the market³. But the real

change came with the launch of Adobe InDesign. OpenType typefaces were embraced and within about ten years they had entirely replaced original formats despite some early problems (as users transitioned to modern operating systems, their old, incorrectly localised fonts stopped working). This was also the case for the oldest versions of Štorm's typefaces, which had non-standard encoding.

Today

Even today, diacritics remain a very hot topic among type designers and typography experts. 2006 saw the author of these lines launch diacritics.typo.cz, an open online database of information about diacritical marks, meant as a response to the low-quality accents being produced by many foreign type foundries. The site, which followed up on the author's article "Accents" in volume 10 of *Typo*, continues to operate to this day (Blažek, 2004). Accent marks were also addressed in great detail in the typeface reviews that appeared in *Typo*, a bilingual (English and Czech) magazine published in Prague from 2003–2012. Most reviews were written by Czech typographers Martin Pecina and David Březina. The latter made a major contribution to the debate on the form of diacritical marks in his 2009 article "On Diacritics" (Březina, 2009), as did Radek Sidun the following year in his master's thesis on diacritics. This included a "Diacritic Manifesto", reprinted here in full:

DIACRITIC MANIFESTO

Every day I get about a billion emails, newsletters and Web updates about new fonts. The authors brag on about how they spent 60 years making a new font, and how their one in particular is the best thing since sliced bread. But if we try to use their font for anything more than a simple ABCD, we're out of luck.

The football World Cup's on the TV, one of the guys running around on the pitch is Nedved, but that's not really his name. Football players have top notch kits with loads of features, but did anyone care to pay attention to whether or not the player's name is spelled correctly? Apparently not. These so far unsuccessful attempts to abolish diacritics have about as much chance of success as if we tried to get the Brits or Germans to reform their grammar and write everything phonetically.

All of these typeface designers and typographers spent vast amounts of time learning their profession. Now, in their prime, they directly affect fonts as a means of communication, but by the look of things don't seem to be bothered much about responsibility towards the media or a reader who might be trying to get information in adequate quality.

We quickly got used to computer fonts having loads of language variants for operating system fonts, but the obvious purpose seems to escape many. The whole circus around "Web-fonts" and other cool Internet tidbits is really laughable when you realise that in the end, you won't be able to display and view the thing correctly. Let's openly admit that 256 characters of the basic font set won't save the planet. The underlying principle of what they were creating got lost on the geezers who defined it back then, and instead of creating a meaningful language unit, they shoved in loads of nonsensical mathematical characters that no-one knows how to use anyway. The technical options have moved on quite a bit, but half of Europe would probably still rather use the Wingdings picture font.

Doing business in these conditions is a bit like selling a British Rover car in Warsaw. Looking inside, it looks like the steering wheel's missing, and when someone does actually find it, it's on the wrong side. The only difference is that someone in Warsaw can change the fonts; we can hardly do that with the Rover. This situation is miles away from the ideal universe, where someone would sell a font and someone else wouldn't have to do the language customisation for a different language in order to print the poster for the play *Polish Blood*, for example, so that the client would be happy. The people in Warsaw don't give a toss about the fact that I can't even say "hello" in Polish, all they're concerned about is that they can read the play programme in their theatre (Sidun, 2010).

As at 2016, there are several established type foundries operating in the Czech Republic that are very much concerned about the quality of the diacritics in their typefaces. In addition to František Štorm's Storm Type Foundry, Tomáš Brousil's Suitcase Type Foundry and David Březina's Rosetta have earned solid reputations. Prague is also the official headquarters of TypeTogether, a type foundry established by two graduates of the MA Typeface Design course at the University of Reading – Prague's native Veronika Burian, who is currently living near Barcelona, and José Scaglione from Rosario, Argentina.

Several more have opened in recent years: Rostislav Vaněk's Signature Type, Vojtěch Říha's Superior Type, Filip Matějček and Jan Horčík's Heavyweight and others.

The main centre of action now is Prague's Studio of Type Design and Typography at the Academy of Art, Architecture and Design, led by Karel Haloun and his assistants, Tomáš Brousil and Radek Sidun. The studio is primarily focused on type design and its students have repeatedly proven that when it comes to excellence in diacritics, they are worthy followers of their predecessors' traditions.

Dos and don'ts of Czech diacritics

Some of the best learning aids to understand correct Czech diacritics include typefaces designed by leading Czech type designers, as they offer an invaluable insight into how the workshops of František Štorm, Tomáš Brousil, David Březina and Veronika Burian have all approached accent marks [Fig. 10](#). Czech accents should be drawn in harmony with one another, as there are common words that contain all three marks (růžový – pink) and a string of accent marks will often appear next to each other (příští – next). Consequently, the forms of accent marks should not be too wide as this would cause them to blend into each other, especially in extremely light and heavy styles. At the same time, they should always be drawn in harmony with other European accent marks, since the very same diacritics are used in combination with other languages' accents. Unexpected combinations may appear in translated literature, as, for example, both the Swedish and the Czech ring appearing in the same word (Håkanův – Håkan's).

When designing font families, diacritics become darker and wider, as light styles increase in weight, though without much gain in height [Fig. 11](#). This is even true of the ring, which, if needed for heavy styles, can be drawn somewhat flatter [Fig. 12](#). For styles with various weights within the same family, the carons and acutes are usually adjusted to the width of the letterform; in narrower styles, the acute is steeper and the caron narrower, while in broad styles the acute is merely tilted and the caron is broader. The ring, especially if it is a geometric circle, may remain the same.

Some traditional and widely-used typefaces, like Helvetica and Futura, have a stable diacritic form to which designers have become accustomed. Other approaches to accent



Fig. 10 Examples of fonts created by Czech type designers with harmonious and carefully designed diacritics. (Fonts: *Tabac G2* by Tomáš Brousil, *Baskerville 120* by František Štorm, *ITC Týfa* by Josef Týfa, *Clara Serif* by Rostislav Vaněk, *Skolar* by David Březina, *Adelle Sans* by Veronika Burian, *Vegan Sans* by Vojtěch Říha, *Falster* by Jan Novák and *Solpera* by Jan Solpera.)

Fig. 11

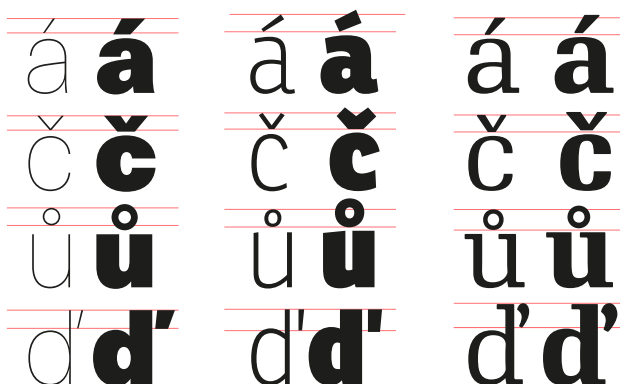


Fig. 11 Whereas very thin typeface styles have stroke widths that are about the same for both diacritic marks and letters, in bold styles the accents must be relatively light. Notice how the diacritics in the first three light weights differ from each other are more distinctively than in the last three bold weights. (Font: *Neue Haas Unica*).

Fig. 12 Within a single family, the height of the acute and caron should be approximately the same while the ring increases in size. The bottom edge of the vertical caron should ideally be somewhat higher than the x-height. The samples show that there are many approaches to diacritics within a family; it always depends on the specific type of font and the designer's style. (Fonts: *Neue Haas Unica*, *Ronnica*, *Republic*).

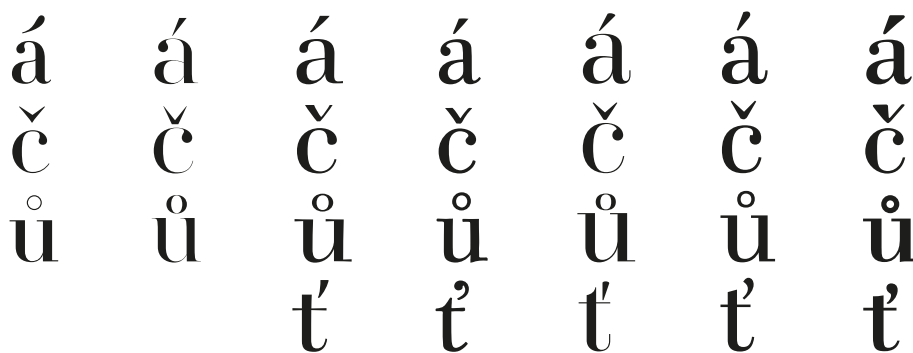
Fig. 13 A comparison of various approaches to Czech accents in Didone. Whereas the rendition of the acute does not change much, efforts at creating an asymmetrical caron and shadowed ring are clear – but not necessarily within a single typeface. The final column shows a sample of *Empiriana*, a variation on Bodoni from 1920 published by *Slévárna Písem* typeface foundry in Prague and featuring a very characteristic caron shape. This version of Bodoni was used in Czechoslovakia all the way up until the letterpress era came to a close at the end of the C20th.

Fig. 12



marks are possible, of course, but may result in a lack of interest among Czech designers to use typefaces featuring a significantly different accent style.

Fig. 13



Readers can understand written Czech without accent marks, although in some cases the meaning may change (jdu na krtiny vs. jdu na křtiny = I'm going to [get rid of] the mole holes vs. I'm going to [attend] a christening). Although it is still common to write text messages without diacritics, accent marks are now normally used in emails and chat messages. Unaccented texts may occasionally appear in various industrial or commercial databases, such as on store receipts or address labels. In regular written communication, however, it would be inconceivable to omit diacritics.

Carons

In Czech, consonants with carons (*ď, ň, ř, š, ť, ž*) are treated as separate, independent letters, placed in alphabetical order immediately following their respective unaccented equivalents. The Czech caron softens (palatalises) the pronunciation of consonants and also appears above the vowel *ě* to palatalise the consonant preceding it. In addition to the basic shape of the caron (reminiscent of a small letter *v*), there is also the vertical form used in Czech for the letters *ď* and *ť* (and in Slovak for *ľ* and *Ľ*), which arose due to technical reasons – the classic caron simply would not fit together with the ascender of the letter, or rather take up too much space. In handwriting, the caron usually has just one shape for all letters – a breve (“swoosh”) or more or less horizontal stroke [Fig. 14](#); the pointy version almost never appears in handwriting.

Basic form

Since the early days, the caron has had three basic forms in text typefaces: symmetrical, shadow and rounded [Fig. 15](#). The symmetrical caron is the most common variety, now regularly used in most types of font, especially serif, sans and slab serif ones. The shadow caron is a typical feature in script and calligraphic fonts, but it does occasionally appear in serif fonts, especially Didones. The rounded caron is specific to handwriting-based typefaces and makes rare appearances in serif italic types. (Vojtěch Preissig was probably the first to create this design when he “Czechified” Garamond in the 1920s; since then it has appeared only sporadically.)

The shapes of the symmetrical and shadow carons are usually identical to the circumflex diacritical mark. As the two accents may (at least in Slovak) appear next to each other in a single word (*môže* – may, can), they should be identical or mutually harmonised to the greatest possible extent.

The bottom part of the caron should be bevelled flat or rounded. It is theoretically possible for the caron to have a sharp vertex, but that would create complications in heavy styles and when combined with other accent marks. In sans serif typefaces, the two strokes of the caron typically terminate in a horizontal line (or almost horizontal, or even orthogonal); a rounded vertex is common in serif fonts. The diagonal strokes of the caron narrow to a greater or lesser extent as they ascend, even in strictly geometric fonts. Even



Fig. 14 Each Studio Lettering font by House Industries includes culture-specific character sets that reflect stylistic preferences of native users. Compare the generic caron (left) with the caron for Czech texts (right) based on local handwriting. (Fonts: *Studio Swing*, *Studio Sable*, *Studio Slant*).

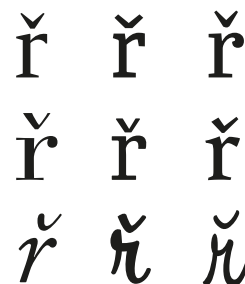


Fig. 15 Symmetrical, shadow and rounded carons. (Fonts: *Tabac G2*, *Adelle*, *Abril Text*, *Walbaum 120*, *Republic*, *Maiola*, *Adobe Caslon CE*, *Bistro Script*, *Studio Lettering*).

diagonal strokes seem unnatural, and Czech type designers find fault in strokes that expand as they ascend.

The horizontal position of the caron above *r* is at the optical centre of the letter. This imaginary line can match the right vertical edge of the stem, but depending on the style of the shoulder it can be shifted more left or right. The caron should never be placed above the stem. Finding the optical centre is discussed in detail in David Březina's (2009) article "On Diacritics".

Vertical caron

The vertical caron presents the greatest problem to type designers, who confuse it with an apostrophe and usually design a mark that is too large and wide. The form of the vertical caron may in fact be based on an apostrophe, comma or other shape that is reminiscent of a notably vertical acute Fig. 16.

Fig. 16 The vertical caron forces the designer to apply kerning. If *d'* is just as wide as *d*, kerning pairs with a positive value must be created (*dk*, for example); but if *d'* is wider than *d*, pairs with a negative value must be added (such as *d'a*, including Czech and Slovak accented graphemes: *dá*). Czech and Slovak type designers today prefer a shape that is not based on an apostrophe or comma, but is less decorative and practically vertical. For comparison, an apostrophe and a caron appear at the end of each line after the letter *t*. Note a unique solution created by Samuel Čarnoký in his *Inka* family: *k* following letter *d'* has a special form without the head serif. (Fonts: *Adobe Garamond Pro*, *Neue Haas Unica*, *Skolar PE*, *Inka B Text*, *Adelle*, *Tabac Sans*).

lod'ka d'as, l' l' — apostrophe
lod'ka d'as, l' l' — l' – l with caron
lod'ka d'as, l' l' — comma
lod'ka d'as, l' l'
lod'ka d'as, l' l'
lod'ka d'as, l' l'
lod'ka d'as, l' l'

The caron in *d'* and *ť* should create as little white space as possible in situations where the letter is followed by another letter with an ascender, such as in the word *lod'ka* (row-boat), or punctuation: *bud'!* (be!). Hence, recent years have seen Czech and Slovak type designers lean more towards creating a practically vertical acute. The mark is placed to the right of the stem [Fig. 17](#). For *d'*, the accent is usually on the same level as the ascender, while for *ť* it could be placed higher than the stem, and, consequently, end up at a different height than for *d'* (especially for very heavy styles). Although in normal handwriting, Czechs usually write a basic caron next to the letter instead of a vertical caron (*ď* or *ť*). Nevertheless, the correct, vertical form is used in calligraphic fonts and type designers view the use of the basic caron as incorrect⁴.

4. The standard Czech keyboard has no letters *ť* or *d'*. Instead, they are typed in the same way as capital accented letters – first the separate non-spacing caron (ˇ), then the letter. To date, this is how uppercase accented letters are typed on all hardware and software keyboards – except for iOS, which ignores this established method.

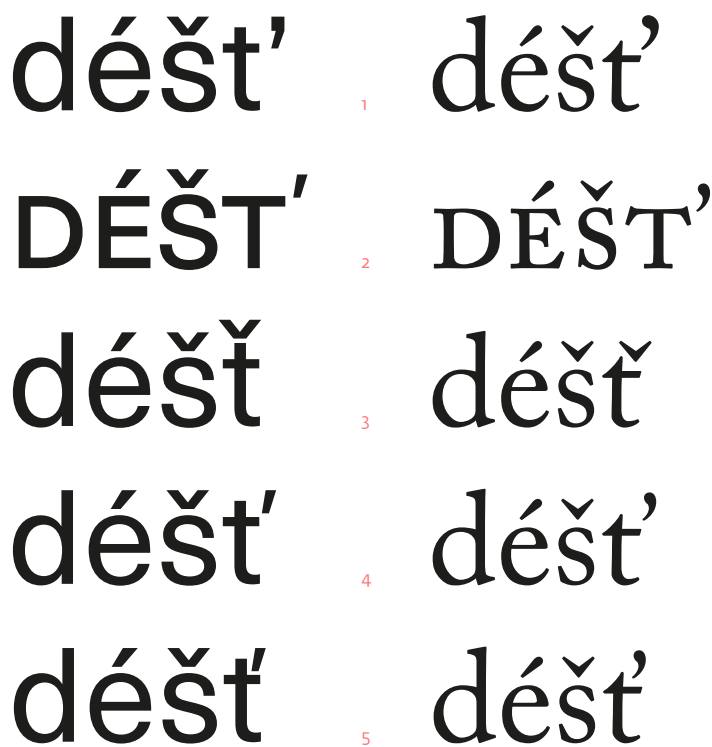


Fig. 17 Among the most frequent errors made in designing characters with a vertical caron are the follows: 1. Use of an apostrophe, which in the context of the other diacritics is set too low or is too large; 2. Application of a vertical caron on small caps or uppercase letters; 3. Use of the basic caron; 4. Accent placement too far from the letter. The fifth line shows original accents for comparison. (Fonts: *Neue Haas Unica*, *Adobe Caslon Pro*).

Acute

The acute mark indicates a lengthened vowel (*á, é, í, ó, ú* and *ý*), although the *í* and *ý* do not differ in pronunciation. In terms of design, the acute is perhaps the least complicated accent mark. It is usually placed slightly to the right of the optical centre of the letter; the

5. Slovak approached this dipthong similarly, replacing the original *uo* with *ô*, which to this day is pronounced as [uo].

extent to which this deviates depends on the type designer's own approach. Usually the mark narrows as it descends, and the extent of this narrowing depends on the typeface style. Nevertheless, even strictly geometric typefaces feature a slight narrowing because, like in carons, even diagonal lines seem unnatural.

The most common type of acute in sans typefaces terminates in strokes that are parallel (or almost parallel) with the baseline. Less frequently the terminals are orthogonal, and some typefaces combine both types of terminal. The level of variability in stroke alignment and terminals is far greater for serif typefaces, which feature rounded or other stylised terminals.



Fig. 18 The angle of the acute should be based on the on the character of the typeface – compare different solutions by Storm Type Foundry. (Fonts: *Jannon Antiqua*, *Sebastian Text*, *John Sans*, *Farao*, *Tusar*, *ITC Týfa*).

Czech type designers have no particular preference regarding the angle of the acute. The acute should neither be completely vertical nor horizontal, but the angle that is chosen should be based on the character of the typeface [Fig. 18](#). For this reason a more vertical slant should be chosen for Old Style typefaces, while a decorative Grotesque may feature an acute that is practically horizontal.

Ring

The letter *ů* first appeared in the Kralice Bible, where it replaced the dipthong *uo*, which at the time was pronounced as [u:] – the same as *ú*, but the inventors of this innovation considered it important to differentiate between the two long *u*'s for grammatical reasons. The ring can thus be interpreted as a vestige of a lower case *o*. The vanished *o* does continue to manifest itself in declensions: the genitive of the word for horse, *kůň*, is *koněs*. Whereas *ů* is always in the middle or at the end of a word, *ú* always appears at the beginning of a word or word root. In terms of pronunciation, there is no difference between *ů* and *ú*, creating a major stumbling block for Czechs.

In early book printing, the ring was in the shape of a circle (sometimes with a shadow), sometimes of a dot. The shape started to stabilise only after Czech switched over to Latin script in the latter half of the 19th. The first issue of *Typografia* in 1888 (which, with brief hiatuses, remained in print until 2014) used a ring, regardless of the many typefaces used in the magazine, and the shape was always a geometric circle that differed only in size and thickness [Fig. 4](#).

The pioneers of quality Czech diacritics, especially Vojtěch Preissig, interpreted the ring as an integral part not only of the letter, but the grapheme itself. In his designs, Preissig always drew the ring expressively, often leaving it open and sometimes changing or shortening the right stem of *U* so that he could lower the ring down into the letter; in serif letters the right serif of the grapheme “encircles” the open ring. Although Preissig’s contemporaries did not accept this bold interpretation, nearly all type designers in the first half of the 20th adapted the ring to the character of the typeface; the ring started to feature a shadow and its shape changed in accordance with the typeface. Oldřich Menhart followed up on Preissig’s work, his rings for some typefaces seemingly emanating from the right stem of the lower – and upper-case *U*. However, these experiments remained outside standard print production. The typefaces available at Czech printing houses, as evidenced by the examples, have the circle separate from the letter; the shape is usually based on a circle or oval, and sometimes features subtle shadowing. This concept of the ring became a certain standard that remains in place to this day.

The size and character of the ring should correspond to other diacritical marks. Geometric typefaces normally feature a ring in the shape of a geometric circle. Theoretically, the ring could take on the curvature of one of the letters – in the Eurostile font family, for example, the shape of the ring may be based on the letter *o*. In Old Style typefaces, the ring usually features a slight shadow, while Didones tend to be circular in the shape



Fig. 19 From a geometric circle to a brush stroke – different approaches to the shape of the ring. (Fonts: *Fishmonger*, *Vegan Sans*, *Walbaum 120*, *Teuton*, *Maiola* and *Bistro Script*).

Other accents

Although, officially, Czech uses no other accents, several thousand Czechs have surnames with umlauted letters (Müller, Jäger, etc.). The German umlaut is commonly understood and people with such surnames have little problem registering their names at government offices. There are also tens of thousands of Slovaks, Poles and Vietnamese living in the Czech Republic and a number of them would like to maintain the original orthography of their names (Luptovský, Książczak, Nguyễn); however, their names are usually either garbled and the diacritics are misinterpreted (Luptovský), completely removed (Ksiazczak) or simplified (Nguyễn). The mainstream media treats foreign first names and words the same way.

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36—61

The case of Hungary

p. 50 The fact that the type casting business did not exist in Hungary made typesetting work even harder when dealing with publications in Hungarian, as local printers were put at the mercy of non-Hungarian type founders. This is one of the reasons why they occasionally used foreign characters to mark certain sounds.

(Kravjanszki, 2016)

p. 53 The history of diacritical marks in printing is barely mentioned in the literature. While there is a wealth of material in numerous volumes accompanied by heated debates about the manuscript-era, the printing period left the scholars seemingly indifferent.

(Kravjanszki, 2016)

p. 53 Zoltán Trócsányi's most important statement is, however, that the use of different diacritics is nothing else than a series of endeavours to mark Hungarian sounds, depending on eras, geography (dialects) or font sets. In his opinion, several diacritics differ in form only and mark the same sounds.

(Kravjanszki, 2016)

p. 56 Only one rule is to be mentioned here, i.e. the rule of the optical centre (the diacritical mark is adjusted to the optical centre of the base letter). However, this rule works just as any other rule – it is possible to deviate from it.

(Kravjanszki, 2016)

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In the Ohio mine your hand slips, the pickaxe

Thuds down and your name loses its diacritical marks.

Funeral Oration

Sándor Márai (1951)

translated by: George Gömöri & Clive Wilmer

In recent years, reliable internet access has become necessary to reach certain sources. An astonishing number of original documents have been digitised in the past twenty years and a good proportion of these are free to access or can even be published under certain conditions. Due to the nature of the process, the rate of processing and its quality is uneven. Undoubtedly, we need to wait a few more decades before the majority of the data available online is of good quality and presented in a well-structured fashion. The situation in Hungary is quite good in this respect. This essay would not have been possible without the *Hungaricana* project¹. Several of the sources were taken from the website, including, in particular, the *RMK* and *Oklevelek*. The *OSZK Magyar Nyelvmélekek*² site served as a source for medieval monuments of literature. The majority of professional journals in Hungary are also available from several sources. As at now, the Arcanum Digitális Tudománytár³ contains 8 million pages (and is continuously growing). It is an invaluable source for professional periodicals, which dates back to the beginning of the C19th. Albeit a pre-paid service, the list price is a reasonable €10 per month, i.e. the price of a single meal, and is worth every penny. The *Országos Széchényi Könyvtár Elektronikus Periodika Archivuma*⁴ és *Sajtómúzeuma*⁵ offers free access to a wide range of digitised periodicals. A rich collection of materials, either digitised or processed textually, can be found in the *OSZK Magyar Elektronikus Könyvtára*⁶ free of charge. The control material for the analysis of the Hungarian manuscripts was provided by a wonderful repository of Western European manuscripts, the Swiss Virtual Manuscript Library⁷, where more than 1500 digitised titles are available (and is continuously growing) in exceptional quality and under liberal licence conditions towards free use.

I would like to thank my colleagues for their valuable comments. Special thanks go out to László Fejes, for the linguistic support, and to Gergő Erdei, for his work on the English version of this text.

On diacritical marks in general

As the study of diacritical marks usually falls within the scope of interest of linguists, palaeographers and librarian-bibliographers, the typographical point of view is often overlooked. The aim of this essay is to explore the subject from this angle. They are called accents in vernacular and diacritical marks in linguist circles. There are no Hungarian translations for those marks. In the rare cases that we do come across a discussion about them, we find inaccurate descriptions. For example, the dotaccents above *i* and *j* are called dots – the same name that is used for the full stop. This can also be found in the terms *kettőspont* (colon) and *pontosvessző* (semicolon). The former, written separately (*kettős pont*), stands for the dieresis. The old form of *e* with hook stands for the *e* ogonek, cover or bent accute for the circumflex and *o* with tail for the *o* dieresis with certain authors. In the absence of a standardised terminology, I will be using standard postscript names for diacritical marks.

The letters of the alphabet are just a portion of the conventional marks (codes). Punctuation marks are used for setting texts. Although these are conventionally called *írásjelek* (writing marks) in Hungarian, the term is confusing. For more information on their history, please see the outstanding work by Borbála Keszler (Keszler 2004). I will not deal with any numbers, names of currencies or certain typographical or mathematical marks. It is important to emphasize the abbreviations and contractions, which were preserved until the turn of the C18th and C19th⁸. After this time, only the apostrophe remained for a time and it is rarely used today. These abbreviations can sometimes be confused with diacritical marks, just like certain embellishments from the days of manuscripts.

Based on the preserved and available authentic sources, we can estimate the following eras in the use of diacritical marks:

- 1) Early manuscripts. Beginning with the C11th, diacritical marks can only be stumbled upon by a stroke of luck. A loosely related but noteworthy fact is that in those times there were almost as many producers of texts as there were consumers.
- 2) A revolution takes place at the turn of the C14th–C15th. This is the era of Bible translations to national languages, when, probably following Jan Hus, attempts are made to represent the rich set of Hungarian sounds in translations more accurately, based on the "one sound, one sign" principle. This is achieved by the diacriticisation of certain vowels and consonants. Some later monuments also follow this principle, while

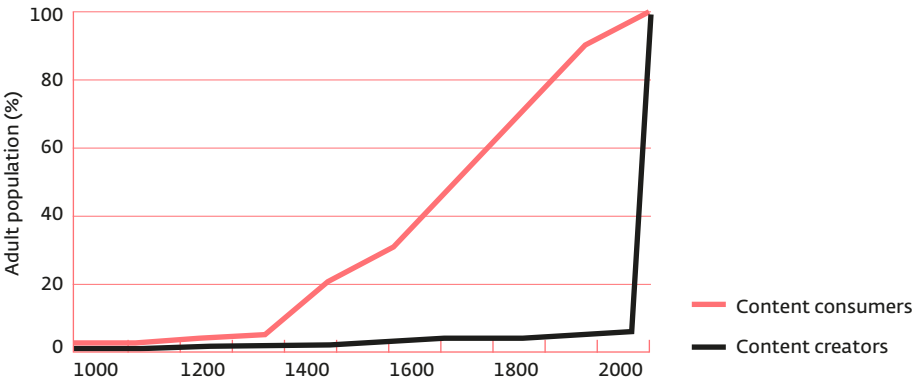
8. For their description and interpretation for latin languages, see: Maunde Thompson: *An Introduction to Greek and Latin Palaeography*. Oxford 1912, pp. 84–90. In Hungarian, schematically: Salamon Lővy & László Novák: *Betűművészet*. Vol. 2, Budapest 1926, pp. 17–18.

9. Due to the small number of sources, the history of early literacy is rather obscure. Some indirect statistics about literacy are only available from the second half of the C15th (see e.g. ourworldindata.org).

others retain the chancery spelling convention, i.e. have no diacritics. With the slow propagation of education, there is a rising number of consumers of content but the rate of literacy is still very low⁹.

- 3) From the C16th onward, namely from the time when Hungarian books begin to come out in print, almost every publication contains diacritical marks. In the beginning, there is a considerable disarray caused by the lack of standardised spelling as well as the great diversity in the font sets used for printing. A number of typographer scholars (those who use and form the language consciously, based on the legacy of Aldus Manutius and his followers) also explain their usage of spelling in writing, especially János Sylvester, Gáspár Heltai, Miklós Misztótfalusi Kis (hereafter Kis) and János Tsétsi. The era closes with the publication of the first edition of Academic Orthography (*Magyar helyesírás' és szóragasztás' főbb szabályai*, 1832). This is when the since-unaltered system of diacritical mark usage appears.
- 4) The situation today. The vast majority of textual content is consumed on digital platforms. Text production and consumption is on a similar scale, which makes it analogous to the early times in this respect. There is a huge difference, however. As opposed to the early days, when content consumers represented only a trace of the adult population, virtually all of it is involved now, as Fig. 1 shows. The chart also reveals that the knowledge of the use of diacritical marks has never been as important a skill and affected as many people as today.

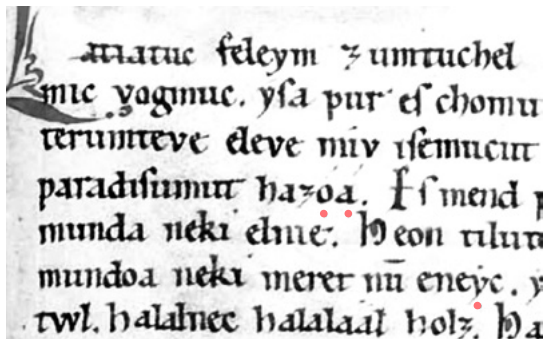
Fig. 1 Producers and consumers of written content. Own calculations, approximate estimation based on contemporary data.



Early manuscript era

Crinkled, torn, stained, defective, faded remnants of the past, these monuments contain texts that are difficult to make out at times and often features marks that are

indistinguishable from each other (dotaccent from acute, macron from tilde, etc.). The language of the decisive majority of these works is Latin. The first preserved text in Hungarian, the *Halotti Beszéd* (Funeral Oration), which dates back to the turn of the C12th and C13th, does not contain diacritical marks. To be more accurate, there are a few acute accents and dotaccents added post-factum in an disorganised manner. The *y* dotaccent, on the other hand, might be original [Fig. 2](#).



10. In fact, we see a connected *i* and *j* (a ligature), so the dieresis and the doubleacute denominations are misleading, although it definitely looks like those. The earliest form (*y* dotaccent) is probably the ligature of the dotless *i* and *j* where the dotaccent might have been placed at the optical middle for aesthetic reasons.

Fig. 2 Excerpt from the *Halotti Beszéd* (Funeral Oration), nyelvemlekek.oszk.hu. National Széchényi Library.

The techniques which were later adopted in print evolved in the era of manuscripts. There were no diacritical marks in the beginning. Even the *i* did not have a dotaccent, which was possibly added later to the glyph for easier recognition (to avoid confusion between the characters *i*, *m*, *n*, *u*). In the first literary monuments from Hungary, it was followed by *y*, but based on its origin, it is more of an *ij* ligature. These are contained in Latin documents coming predominantly from the Chancellery, *loca credibilia*, in 3 forms: *y* dotaccent, *y* doubleacute (often in bent or broken form) and less frequently, *y* dieresis¹⁰ [Fig. 3](#).



Fig. 3 The different forms of *ij* ligatures. 1165: *Diplomatikai Levéltár* (DL), DL-DF 76136. Standard *y* dotaccent. 1198: DL-DF 40001. *i* acute *j* acute ligature in dotaccent value. 1201: DL-DF 61124. Similarly. 1255: DL-DF 97856. 1256: DL-DF 39394. The latter two show freely placed diacritics, which is incorrect according to some authors. My opinion is that it is at the transcripator's discretion to do so. 1261: DL-DF 106108. This is the best example for the origin; the *i* dotaccent and the *j* acute (with a dotaccent value).

At this point, I would like to put forth a hypothesis that there is probably no difference between the sound value of the acute-shaped and the dot-shaped accents. It was presumably more elegant or easier to place a dash above the character than a dot. Another reason against treating it as a difference is that it is a commonly perceived problem in transcriptions, too. This method is also characteristic of other eras, e.g. the C18th Fig. 4. As for the Western European practice Fig. 5, which shows an excerpt of a C9th codex. There is no dotaccent on *i* but we can find the *y* dotaccent.

Fig. 4



Fig. 4 O dieresis with long diacritic (Hajdúböszörmény).
Az első katonai felmérés
(The First Military Survey). 1782–1785.
DVD. Arcanum, 2004.

Fig. 5

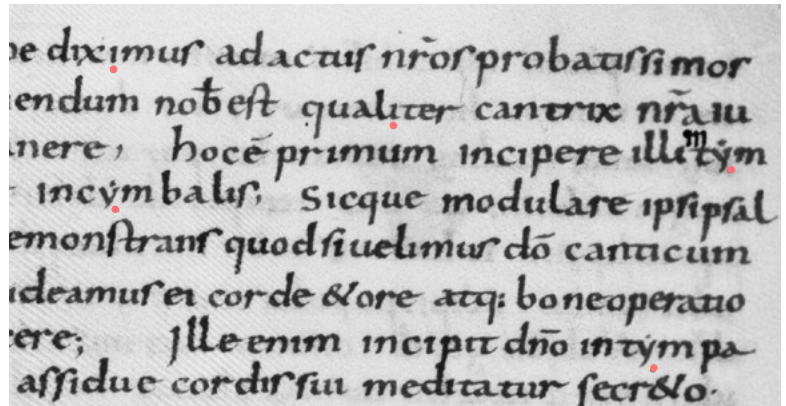


Fig. 5 Codex excerpt from the C9th
e-codices. Ms. lat. 22. 30v. C9th.

Although we do not know the identity of the authors of these charters and other documents, we do know that they were ecclesiastics, as only parochial education was available at the time. They knew how to read and they spoke Latin. It is also impossible to know, where they had come from as migration among educated people was common in those days, either through following their lords or receiving an invitation they could not reject. The territories under the reign of particular lords were constantly changing due to diplomatic or war efforts, causing certain areas to populate or depopulate. Anyone with that sort of attitude would keep moving. Any free and adventurous person could study at numerous locations in Europe and could reach a professional status in different writing systems and styles, for which there was high demand. This might explain why original documents show such a great diversity of character styles and spelling rules.

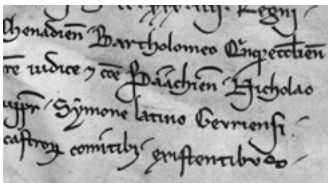


Fig. 6 Possibly one of the first
diacritical marks, 1234. DL-DF 194.

While discussing vowels in his 1928 essay on the early stages of Hungarian literacy, István Kniezsa refers to a document from 1234 (Kniezsa, 1928, p. 192), where he finds the following expression: Bááchien[sj] Fig. 6. He claims that the double vowels are not long sounds but separate syllables which are supported by the hyphens. He may be right, though I find it

difficult to make an informed judgement on this as I am not that well versed in the area of historical phonetics. It is also possible, however, that we see one of the first instances of the use of diacritical marks (*á*). If this is the case, it would read *bácsi* or *bácskai*. We can find vowel duplication in the name András/Endre, [Andréé], from 1240 Fig. 7. It is very possible that this also marks a sound variant, a fragment of a text in French shows that the practice of using diacritical marks existed in the European manuscripts as well Fig. 8.

Fig. 7

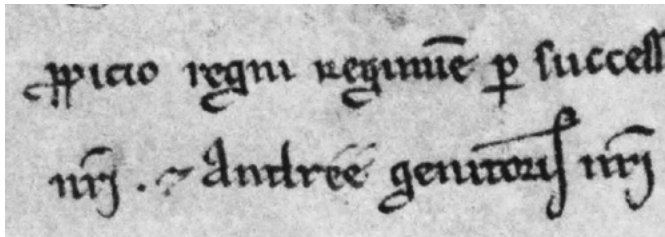
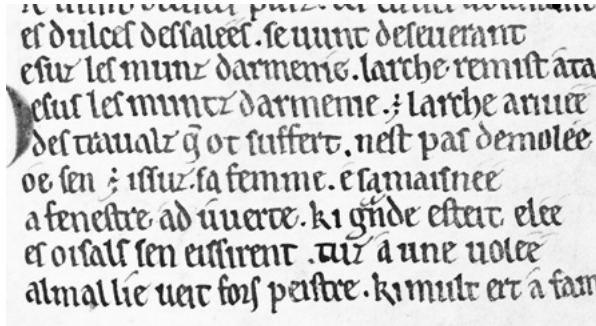


Fig. 8



In criticism of the above, it may be stated that Hungarian names of people and settlements could be found in Latin texts, too, and to determine whether the use of diacritics was to mark sounds, stresses or something else is a task for linguists. The possibility that these marks are embellishments or were put above the characters post-factum or by accident cannot be ruled out either.

Fig. 7 Probably an *e* acute, 1240
DL-DF 12796.

Fig. 8 A fragment of a French text from
the 12th. e-codices. Comites Latentes
183, 4v. 12th.

The era of codices

As László Deme states "...the younger the orthography of a European language in Latin letters, the more consistently perseveres the phonetic marking of its sounds. Czech, Romanian, Slovak and Hungarian in particular are good examples of that. [...] It unites the older and more Western solutions of combining characters, with the younger and more Eastern single-character diacritical solutions" (Deme, 1979).

At the turn of the 14th–15th, the circumstances became conducive to the translation of the Bible. A growing number of people became educated and this strengthened independent thinking and initiated the strive for breaking out of the slavish ties of feudal subordination. As a result, the strengthening and propagation of the vernacular language and its endowment with individual features became stronger. The number of producers

11. E.g. one page each in the following publications: Ernő Vende: *A magyar irodalomtörténet képekben*. Vol. 1, Budapest 1905, p. 18. József Molnár & Györgyi Simon: *Magyar Nyelvemlékek*. Budapest 1976, p. 74.

12. Bayerische Staatsbibliothek (München), BSB-Hss Cod.hung. 1. Hungarian edition with some restored pages: Antal Nyíri (ed): *A Müncheni kódex 1466-ból*. Budapest 1971.

and consumers also rose, along with the demand to acquire information in the mother tongue. The ones who may be associated with the first Bible translation might as well have studied at the university of Prague, where they came across the ideas of the new heresy and became familiar with Jan Hus's principles of spelling. According to contemporary knowledge, two scholars named Tamás and Bálint were the ones who undertook the translation work and introduced the diacritical system of writing sounds.

The three codices that contain the copies of these translations are collectively called the *Hussite Bible* (*Huszita Biblia*). The Vienna Codex (around 1450), held by the National Széchényi Library, contains the translation of the Old Testament books. A few facsimile excerpts of it have been published in different places¹¹. The Munich Codex¹² (according to the colophon, the copying procedure was finished in 1466 by a György Némethi) contains the four Gospels. It is kept in the Bavarian State Library (Bayerische Staatsbibliothek). The digitised version is of exceptional quality and it is free to use. The Apoc Codex (late 15th) is a translation of the Psalms. Its original can be found in the Székely National Museum and its facsimile was published in 1942 (Szabó, 1942).

From the mid-18th until now, the transcriptions of these manuscripts were done in roughly four waves. All of them emphasise adherence to the originals, the newer ones even palaeographically. Upon visual comparison to the originals, however, one cannot help but notice that typographic authenticity was not among the main priorities and thus each transcription variation can be misleading in one way or another. Consequently, examining the originals is necessary (or their replicas, to be exact).

As I became aware of the digitisation of the Munich Codex quite late, I examined the Apoc Codex more thoroughly. It might as well be for the better as I would probably have got lost among the arguments about the *e* grave. The community is divided about the designation of some *e* characters Fig. 9.

An ambiguity is already present in the first line of the sample and only becomes stronger in line 7. We see either occurrences of *ê*, two-stroke *e* or even *é* (diacritical marks can put on with fewer strokes). Two centuries later, Geleji laments in his grammar book (Geleji Katona, 1657) that they would need an *e* grave, but the glyph is not in the printers' set, although it is evident from Fig. 10 that it is there indeed. This is a somewhat curious thing.

Fig. 9

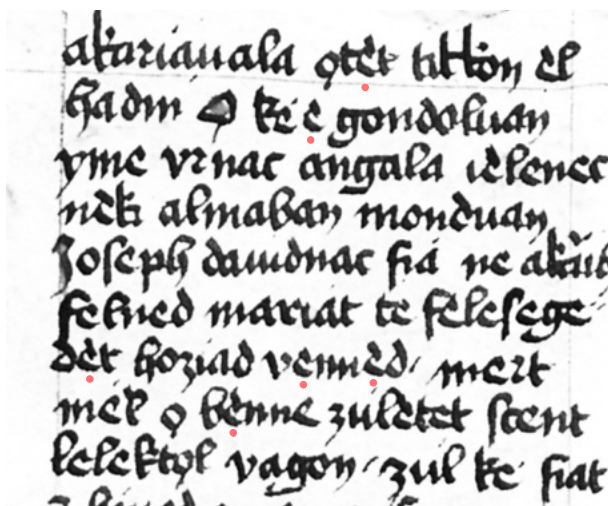


Fig. 10

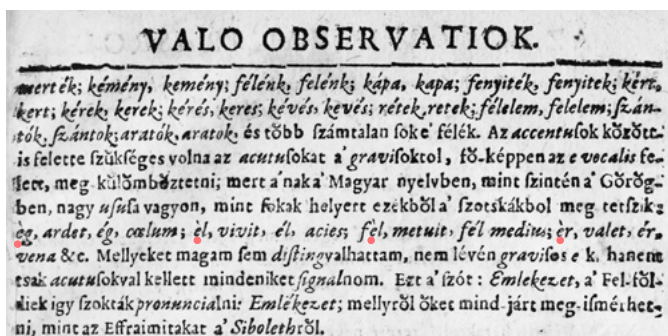


Fig. 9 The assumed *e* grave of the Munich Codex. Bayerische Staatsbibliothek, BSB-Hss Cod.hung. 1, 8v.

Fig. 10 An excerpt from Geleji's grammar. RMK I. 773. National Széchényi Library.

The three copies of the *Hussite Bible* took almost a hundred years to complete. The first translation might have been done in the first decades of the 15th and the phrasing of the Psalms dates back to the end of the century, which is almost a hundred years' difference. May I mention, from my field of expertise, the magnificent *Mira Calligraphiae Monumenta* by György Bocskay and Joris Hufnagel, where the phrasing and the illumination were not created simultaneously, but rather with a 30 years' difference. Time constraints were probably not an issue in those days and patience was in abundance. The majestic flow of the years or decades in which a codex was being completed would not be rushed.

It is also undecided whether other copies were created in the meantime. It would be a noble palaeographic endeavour to find out if the known volumes were copied from an original manuscript or from presently unknown copies. Whether the three copies are based on one translation is also a question. Apparently, the spelling among the copies is inconsistent. It even changes under the same hand in the *Apor Codex*. I was able to distinguish at least 4 hands in this codex and the notes at the bottom of the page (and sometimes at the top) tell of a fifth. The first 175 pages were created using a richly diacritical writing. Apart from the formerly known *i* and *ij* variations, the new characters appear including *a* acute, *v* acute, *o* with acute below and even *oacute* with acute below: *bŭnŏŏk*; *lcaron* as well as the palatalisation marks: *gcaron*, *ncaron* and *tcaron*: *valamell'eket*, *felegge*, *men'neknek*, *a'natol*, *igazolatt'a*, *ho'g* (hogy) Fig. 11. An intriguing posterior attachment can be found below Psalm 57. It is unclear whether the writing is contemporary or not. The writer of the note might not have understood

the concept of the “one sound, one sign” principle as palatalisation at *y*’ is duplicated: *keñyerenek, hoğy* Fig. 12. A new hand appears on page 176 where the Hussite spelling is abandoned and only one diacritical character (i.e. *y* dieresis) remains. Page 189 marks the beginning of a third hand, which is more archaic, uses more abbreviations and contains numerous untranslated latin expressions. The fourth hand comes on page 199, with a similar spelling to the second hand. Other available documents from the second half of the C15th and C16th are diverse and often inconsistent in their use of diacritics. In other cases, they are not used.

Fig. 11 A fragment from the Apor Codex. Dénes Szabó (1942) i.m., p. 46.

Fig. 12 Note at the bottom of the page from the Apor Codex. Dénes Szabó (1942) i.m. p. 44.

Fig. 11

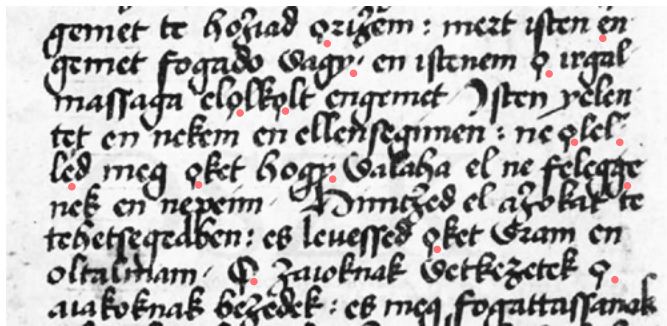
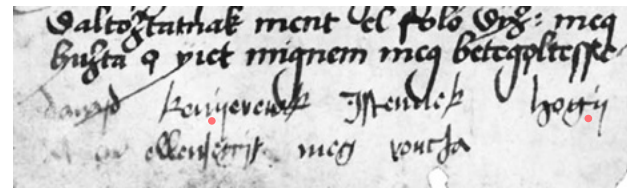


Fig. 12



The first 450 years of Hungarian press

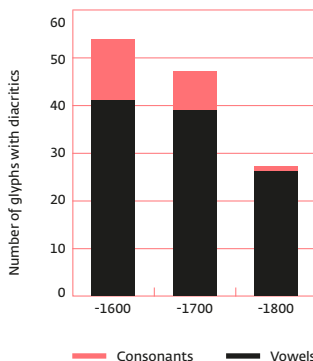


Fig. 13 The use of diacritics in Hungarian typography, 1530–1800.

Judit V. Ecsedy 1986, op cit., based on data found on pages 250–251. Author’s own calculation.

I will discuss this long and diverse era in one section, although the changes are numerous. The use of diacritical marks arches gradually from fragmented and incidental to unified. The use of diacritics becomes simplified as they disappear from consonants. The long vowels (*á, é, í, ó, ú*) gain a foothold by the end of the C18th and the same happens to *ő* and *ű*, the long form of *ö* and *ü* by the early C19th (first as the provisional dieresisacute and then in the final hungarumlaut form). From that point on, there is no substantive change in the use of diacritical marks.

In her 1986 essay (Ecsedy, 1986), Judit V. Ecsedy lists 178 variants in addition to the characters of the standard alphabet. However, most of these are ligatures and typographical variants (e.g. swash). Only 70 characters contain diacritical marks. Unfortunately, their digitisation is of such low quality that the aforementioned numbers can only be an estimate and may be inaccurate. What the data shows is that diacritics on consonants basically disappear by the second half of the C18th, and the consonants with diacritics, which are not in use anymore, go extinct by the end of the 1700s. This is illustrated in Fig. 13.

I had the opportunity to examine Judit V. Ecsedy's (and later: et al.) grand work¹³ concerning diacritical marks. The four imposing volumes are an inexhaustible treasure vault for those interested in Hungarian typography, recording types of printing houses until the 1800s. The end results of this effort (along with some of my observations) are summarised below. I did not differentiate between Antiqua and Fraktur types or normal and cursive forms Fig. 14.

| | |
|-----------------------------|---------------------------|
| a = á â ã ä å ă | q = q̇ q̈ |
| c = č ċ | t = ṫ ẗ |
| e = é ě ê ë è ę | u = ú û ü ù ű ŭ ú ŭ ú ŭ ŭ |
| g = ġ g̈ g̉ | v = v̇ v̈ v̉ |
| i = í î ï ï | w = ẇ |
| ij (y-shaped) = ý ÿ ŷ ŷ [ý] | A = Á Â Ã |
| ij (eng-shaped) = ĳ ĳ [ĳ] | E = É Ê Ë |
| l = l̇ | G = Ğ |
| n = ñ ñ | O = Ó Ô Ò Ö Ő |
| o = ó ő ô ö ò ő ó ȡ Ȣ ȣ Ȥ ȥ | U = Ú Û Ü Ũ |
| p = ṗ | V = V̇ V̈ |

There are about 90 forms with diacritics (excluding tildes and macrons, which are usually abbreviation marks). It is impossible to create an exact list. The condition of the books is uneven, sometimes they are greasy, blurred, stained or contain broken fonts. A part of the type chipped off in the printing process, maybe a diacritic itself.

Typesetting is not always used systematically. This is not to mean print errors, but cases where the font set was not complete or not every letter was available, as some had already been used. Furthermore, the typesetter might not have spoken Hungarian or was unable to read altogether and recognised the characters from their shapes.

Nothing points to the assumption that any commercial type foundry had existed in Hungary before the 1900s. Punches were obviously cut (and counterpunches, too), (Smeijers, 1996) as it is not a profession with particularly demanding tool requirements, but requiring a high level of expertise and practice. These tools were mainly used to repair items already in stock¹⁴. They naturally had matrices, firstly, because types were quite heavy, and secondly, because the nearest type founder's workshop was in Vienna. They

13. Judit V. Ecsedy: *A régi magyarországi nyomdák betűi és díszei, 1473–1600*. Budapest 2004, Balassi Kiadó, Országos Széchényi Könyvtár (Hungaria Typographica I). Judit V. Ecsedy: *A régi magyarországi nyomdák betűi és díszei, XVII. század*. Vol 1. Nyugat és észak-magyarországi nyomdák. Budapest 2010, Balassi Kiadó, Országos Széchényi Könyvtár (Hungaria Typographica II).

14. There is no evidence to prove that Rudolf Hoffhalter, a renowned punch-cutter in Vienna (see for example: Georg Fritz: *Gesichte der Wiener Schriftgiessereien*. Wien 1924, p. 23.) and later a travelling typographer, would have a separate typeset during his stay in Hungary. According to György Haimann, Kis cut punches in Kolozsvár in sizes 9, 10, 11 and 13 but no display types (see György Haiman: *Tótfalusi Kis Mikós a betűművész és a tipográfus*. Budapest 1972, p. 42).

Fig. 14 Inventory of glyphs with diacritical marks, C16–C19th. Judit V. Ecsedy, 2004, 2010, 2014.

15. Bikfalvi Falka Sámuel, <http://font.hu/digitart/0108.html>.

also used German, French, Italian and Dutch types, but their transport was quite problematic in turbulent times. For this reason, better print shops had small casting shops (where separate types were cast by manual casting) saving them the transport costs and risks. As type casting was a delicate process, from organising the work process and alloying a good casting metal to heating up the furnace. The alleged involvement of the famous Hungarian printer, Sámuel Falka¹⁵ in punchcutting seems unlikely. The University Press bought its sets from Vienna and Falka could have made minor modifications to them at best. The fact that the type casting business did not exist in Hungary made typesetting work even harder when dealing with publications in Hungarian, as local printers were put at the mercy of non-Hungarian type founders. This is one of the reasons why they occasionally used foreign characters to mark certain sounds.

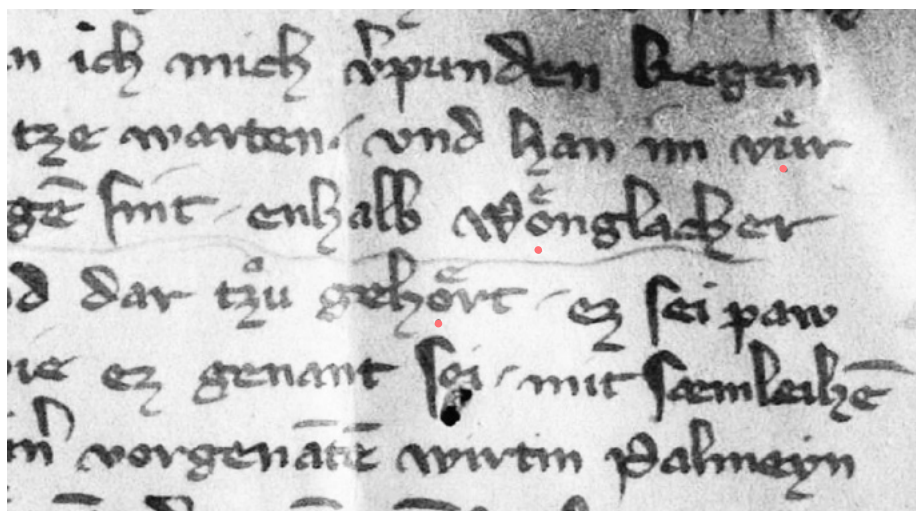
If, for instance, one would like to examine the evolution of certain characters with diacritics, here is an apparent example Fig. 15.

Fig. 15 The development of *e* dieresis.

e
Ö ► ö ► ő ► ö

It would be intriguing to follow the progress through where the upper *e*, which was originally almost the same size as the *e*, became smaller, rotated 90 degrees and turned into a dieresis, losing its original attribute. It is not impossible that it happened like this, after all, the bigger upper *e* already appeared in the period of charters Fig. 16. However, the dieresis variant appears a few decades before the rotated small *e*, so as agreeable as this theory may seem, facts prove otherwise.

Fig. 16 The marking of the upper *e* from the 1300's. DL-DF 86476. Korneuburg, 1354.



Let us follow up with the details of three publications to illustrate the contemporary use of diacritics.

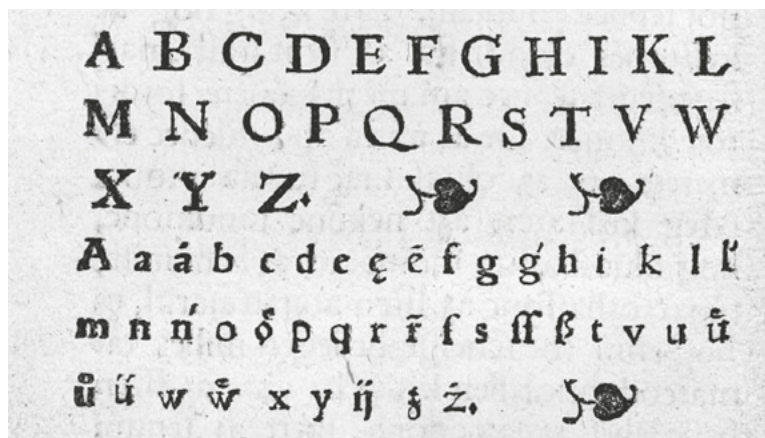
János Sylvester's translation of the New Testament is one of the earliest publications in Hungarian (Sárvár-Újsziget, 1541). Fig. 17 shows a part of the cover page of this volume. It has only six lines, yet there is so much to examine! We can see the remnants of Hussite spelling in the palatalisation of consonants: *mağar, ñelven, kereřten, mell'et*. Only the *ö* and the *ű* have diacritics among the vowels: *gõrõg hűtben*. Not one, but two forms of *ij* can be found: *Uỹ, řordñjtank*. The word *Testamentum* did not fit, hence the abbreviation mark above the *u*.



Fig. 17 Sylvester: New Testament, part of cover page. RMK I. 15a. National Széchényi Library.

Mátyás Dévai Bíró, author of one of the first Hungarian spelling guides (Dévai Bíró, 1549), describes each vowel and consonant with diacritics in detail. See Fig. 18 for a model of his alphabet. The book describes the writing techniques as well as sound values in a language that is still comprehensible today. The fragment of the book shown in Fig. 19 contains two pages I put together leaving the sheet sign and custos for authenticity.

Fig. 18



This, apparently, stands for the sound values of *é* and *á* and is still marked differently. We might guess that the presence of *e* ogonek (which is a character of the Polish alphabet) is no coincidence. After all, the book was printed in Wietor's print shop in Kraków. However, according to Ecsedy's 1986 report, this character was in general use from 1559 until 1679 and was present in virtually every print shop's set. I also

Fig. 19

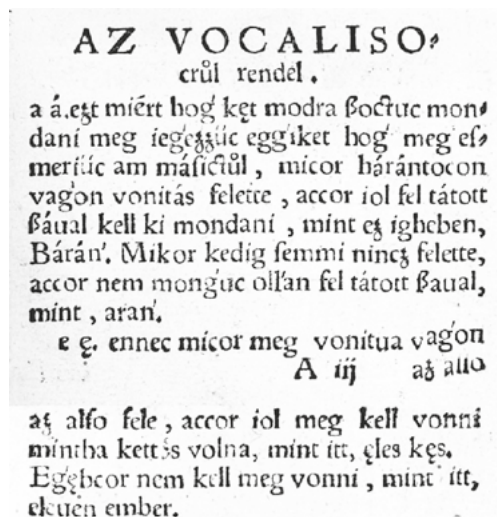
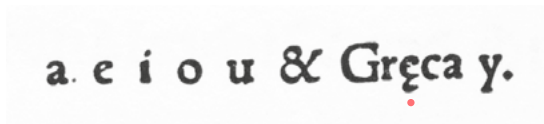


Fig. 18 Dévai's alphabet. RMK I. 20. National Széchényi Library.

Fig. 19 Interpretation of certain vowels by Dévai. RMK I. 20. National Széchényi Library.

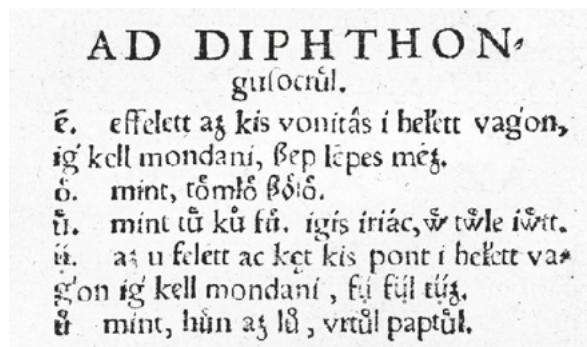
Fig. 20 E ogonek in a reader from Leipzig. Reiner, *Typo-Graphic II*. St. Gallen 1950, p. 9. [1544, V. Bapst, Leipzig].



found it in a 1544 reader from Leipzig, so the *e* ogonek could be found in the German speech area, too Fig. 20.

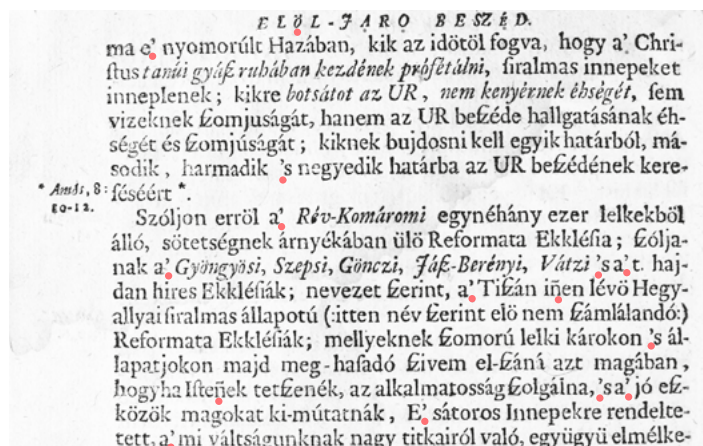
We can also see the *é*, which was a diphthong (ei) at that time according to the description. So, there would be an *i* above the *e* instead of an acute. This is hardly surprising, as the Unicode Consortium accounts for the small *i* among the diacritical marks which has its own code. Another possibility, though, is that the adverb of place (felett = above) did not only mean a vertical relation at that time, but also the one after. The other glyph worth noting is the *ű*. One might think that this is the first appearance of the uhungarumlaut. Dévai breaks the illusion, however, when he states that those are two dots above the *u*. Consequently, it is not a hungarumlaut but a dieresis Fig. 21.

Fig. 21 Uhungarumlaut? No, udieresis! RMK I. 20. National Széchényi Library.



Our third sample Fig. 22 shows a part of Kis's publication from 1700 (*Innepi ajandekul...*). Just one look at the cover page makes it clear that, in terms of diacritics, he uses caps entirely at his discretion.

Fig. 22 A part of the text from a Kis publication. RMK I. 1556. National Széchényi Library.



If there is a type with a diacritic then he uses it, if he does not find it, the basic character remains. This is visible in the running head, too. Certain missing types are substituted with smaller ones with diacritics while others are not replaced. This is not an uncommon phenomenon, as caps were often cast for a body with no room for diacritical marks. This was not considered an error (e.g. in French, apart from a few exceptions, it is still not required to put diacritics above caps). Abbreviations are still present at the end of the C17th *Iſteñek* as well as a good number of apostrophes. Also, no differentiation is made between the short and long forms of *ö* and *ü*.

* * *

The history of diacritical marks in printing is barely mentioned in the literature. While there is a wealth of material in numerous volumes accompanied by heated debates about the manuscript era, the printing period left the scholars seemingly indifferent. Scrappy notes and sporadic references are all we have. In a report from 1955 (Trócsányi, 1955), Zoltán Trócsányi prepared a record of the ageing of publications. He counted 114 marks for Hungarian sounds. This number cannot be set against our previous data as he listed unmarked letters as well (e.g. *a, b, c, d, ... x, y, z*, or *Eszett*). The scope of his work does not include caps and there are a few marked consonants which our list does not contain. This also shows that further research is needed.

His most important statement is, however, that the use of different diacritics is nothing else than a series of endeavours to mark Hungarian sounds, depending on eras, geography (dialects) or font sets. In his opinion, several diacritics differ in form only and mark the same sounds.

A short diversion towards the hungarumlaut

It does not initially have a separate mark and appears in dieresisacute form in the C18th. It is clearly visible in maps with handwritten notes Fig. 23 shows a selection of its different forms, the three different interpretations of the same mark (dieresisacute) is really funny (military survey maps were not written by a single hand and the writers could have been of different ethnicities, too).

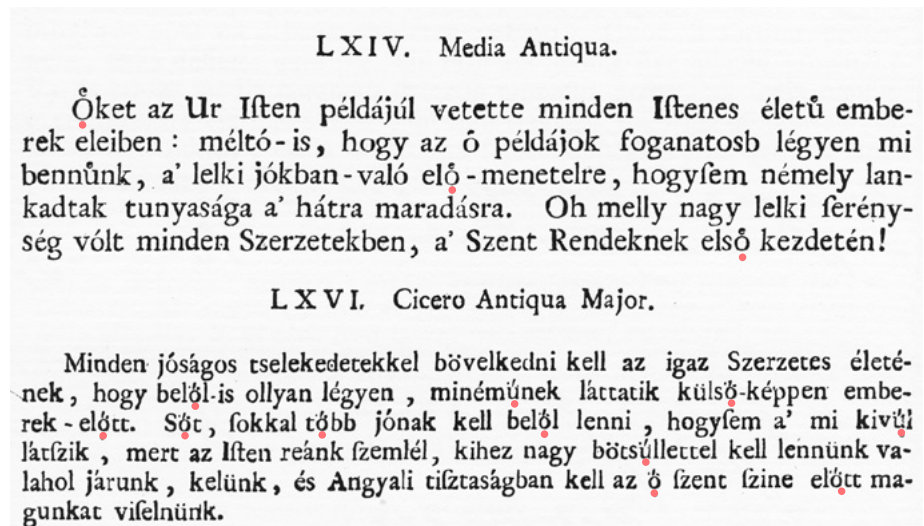


Fig. 23 Depiction of the *o* hungarumlaut in late-C18th maps. *Az első katonai felmérés* (The first military survey). 1782–1785. DVD. Arcanum, 2004.

16. The digital version can be found in the Bayerische Staatsbibliothek.

Fig. 24 Tyrnavia 1773 Haiman (ed) (1997) op cit.

The Nagyszombat University's book of sample letters (1773) (Haiman, 1997) still contains the e above form, but the dieresisacute variant appears in smaller sizes. Fig. 24. This form does not stay for long, either, and the hungarumlaut [ő, ű] appears at the turn of the C18th–C19th.



It permanently supersedes the dieresisacute form by the first decades of the C18th. *Tudományos Gyűjtemény*⁶, a popular periodical of the day, first uses dieresisacute, then dieresis for a while, dieresisacute again from 1833 and finally hungarumlaut in the word *Gyűjtemény* while the body text is set with the hungarumlaut form (ő, ű) since the beginning. The vertical hungarumlaut appears in the middle of the C19th Century Fig. 25 but does not stay long, either.

Fig. 25 The vertical hungarumlaut. Pesti Hírlap, 1844, author's own copy.

ében, a' loyaltásnak, a' böl-
onnél hasztalan keresnők.
iek nagylelkű megszüntetése,
hetlen tényezőül mutatná-
n a' törvényes garantiák óva-

Digital age, digital letters

Vernaculars which use diacritical marks in a sovereign way can be expected to stay behind after each technological advancement. This is what happened in the early days of printing and also after the digital conversion. Make-shift practices had to be invented, to substitute certain characters of the standard code page. Hacked fonts, which did not conform to any standards, were passed from hand to hand. The lack of expertise among hackers resulted in numerous problems. For example, most of the metric information was ignored, although, at least the hungarumlaut characters, if there were any, looked as if they had been real. These were created by duplicating the acute. Compared to the neighbouring countries, the situation in Hungary was relatively good, since only four hungarumlaut characters (ŐőŰű) had to be substituted. Initially, localisation being the magic word, Ventura (GEM) and Monotype (fonts for Windows, then for Word, with a character set becoming gradually richer) pioneered the way, but then, apart from sporadic attempts, there were no significant advancements until the beginning of the 2000s. By introducing its EuroWorks CDs in 1993, URW made an exception when, in addition to the standard codepage fonts, they presented almost 1000 fonts in accordance with the standard Central European codepages. It was too late, however, not only because the legitimate culture of font licensing was almost unheard of, but also because time could not hold still, and the printing industry did not receive any support from the big manufacturers at the start. It would have been impossible to work under these circumstances. The clarification of standards, the birth of OpenType, the emergence of new generations of operating systems and the launch of sophisticated layout software have all improved the situation to a great extent and the activity of the Unicode Consortium has become more meaningful as well. However, the 20-year-old technology is still used by many. Unfortunately, there are prints still using tilde or circumflex in the place of hungarumlauts even to this day. This is an obvious sign of a lack of expertise, but perhaps some printers still think this is the right method.

The introduction of the OpenType standard made it considerably easier to add richer content to fonts. Since the early 1990s, TrueType has been technologically capable of this, however, the user got confused by the conflict of the top dogs. Many times a series of tricks was needed to conjure up the already existing Central European characters. This is a necessary attribute of heroic times. Adobe only supported postscript fonts for a long time. TrueType did not get the appreciation it deserved: it was impossible to use it to

write a postscript file necessary for raster image processing, it would not embed into pdf, etc. These problems have only been solved by the turn of the millennium. Considering that, compared to the time font production takes, preparing the Central European glyphs takes only a negligible fraction of the time, it is difficult to understand why we still do not have enough fonts containing the glyphs of our region.

The widespread use of the internet in Hungary started in the late 1990s. Consuming online content does not shatter offline media right away, but the situation has changed by now. A considerable part of the content is consumed online on screens of different sizes and resolutions, in fonts that are supposed to be optimised for this very purpose. Although printed media today cannot be superseded in terms of legibility and easy accessibility, low prices lure the consumer towards the screen. Initially, the different browsers and email programs, and especially communication issues between them, produced illegible results. It was better to forget about diacritical marks. Consequently, they were only used by the most determined ones. Although serious coder teams decoded texts at first, later the fight of the most determined resulted in a regulated situation by the second half of the 2000s. This was especially thanks to UTF-8 encoding, which also ensured backward compatibility. Inaccurate uses of diacritical marks still occur on Hungarian websites and the situation is not much different in the printed media.

The design of Hungarian diacritical marks

Nowadays, the Hungarian alphabet only uses three diacritical marks on vowels. The marks are the acute, the dieresis, the hungarumlaut and the vowels are the following: *Áá, Êê, Íí, Óó, Öö, Őő, Úú, Üü, Űű*. It can be observed that the form of the acute and the dieresis does not differ from international practice, only the position of the hungarumlaut is different. Only one rule is to be mentioned here, i.e. the rule of the optical centre (the diacritical mark is adjusted to the optical centre of the base letter). However, this rule works just as any other rule – it is possible to deviate from it. After all, it breaks the monotony of digital fonts if there is something else to engage the eye. Of course, I do not wish to say that diacritical marks should be put anywhere one pleases.

Let me illustrate the unresolved situation of the accurate form and display of diacritical marks by a personal example. While the t caron in one of my fonts was acclaimed by one excellent Czech typographer, it was criticised by another excellent Czech typographer.

Obviously, they might represent two different schools, but this does not help find the right solution. There might be several right solutions. This could be true about the hun-garumlaut as well.

In Hungary, there are no rules or literature for designing and displaying diacritical marks. There are legends, principles attributed to great masters, and quasi-rules. However, these are not based on professional literature, either, and they are only used and acknowledged by a relatively small circle of enthusiasts.

For this reason, it was an important day when I discovered Adam Twardoch's site on Polish diacritical marks around the turn of the millennium (Twardoch, 2009). It provides a consistent set of the rules for designing Polish diacritical marks with geometric elaboration and detailed illustrations. One can criticise or contradict these, saying, for example, that the e ogonek is an e with a diacritical mark (ogonek) indeed, but still, this was the first detailed online description. The "kreska" [stroke] has been used as a diacritical mark by some typographers since then and taken into account when dealing with OpenType features.

Filip Blažek published his site about diacritical marks (Diacritics Project, 2004) after 2004 and it has been used a reference source ever since. Currently, it contains the descriptions of diacritical marks for 49 languages and a vast collection of links leading to further sources.

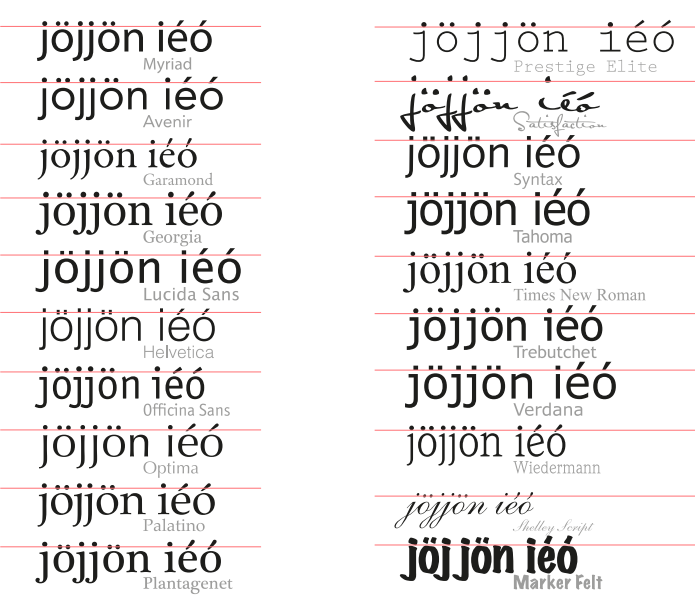
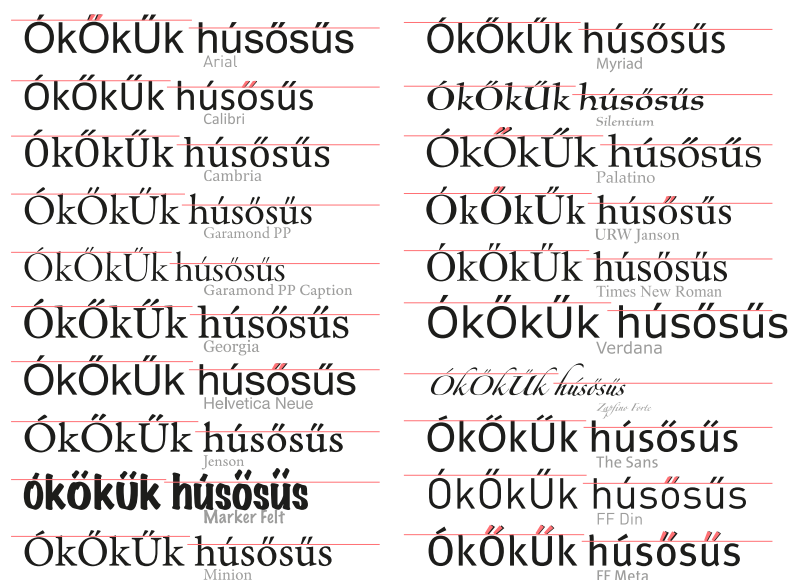


Fig. 26 Displaying diacritical marks in Hungarian texts.

What exactly are these national quasi-rules? For example, at least the size and vertical offset of the dotaccent and the diaeresis should be consistent. Fig. 26 illustrates the situation with fonts picked from my system at random. It is clear that none of the fonts comply with the “rule” entirely, the dieresis is usually smaller and not aligned with the dotaccent. If the rule is narrowed down, stating that the two diacritical marks should be in the same line, almost half of the examples do not comply.

There are traditions in connection with the hungarumlaut (see Fig. 27), faulty horizontal offsets are marked with colour). Its vertical offset should not diverge too much from e.g. the acute or be much higher, but of course can have a different angle and, if necessary, be thinner as well. FontShop, Lucas de Groot and others create hungarumlauts which are not parallel and this suits them very well. Often their height is also different. This is a friendly gesture, a sign of being aware of the hungarumlaut, which I am quite pleased with, to be honest. For fixed, formalist eyes these variations are difficult to handle. The followers of this ideology prefer the diacritical marks keeping to the line without any diversions. This point of view can also be accepted, especially in the case of technical, mechanical glyphs. However, it is not a mistake – quite to the contrary – it is often the case that the hungarumlaut is created by duplicating the acute accent (its alternative postscript name *doubleacute* suggests the same), provided that it can fit (consider the rather slanted acute in e.g. AvantGarde, Benguiat Gothic or the black variations, where the duplicated acute could not fit at all).

Fig. 27 The different forms and display of the hungarumlaut.



All the fonts attributed to Robert Slimbach (Jenson, Garamond PP, Minion, Myriad) use the diacritical marks perfectly, even the optical centre is where it should be. Although this is not easy, an experienced eye should be able to find the optical centre. It is not strictly fixed and there is a certain freedom to it, still, the practice in which the hungarumlaut is about to drop off the base letter on its right side is incorrect (there is an example of this in the sample). Robert Slimbach's work [Fig. 28](#) illustrates the most important guidelines.



Garamond PP

Garamond PP display

Fig. 28 Robert Slimbach's interpretation of hungarumlauts.

The lowercase and uppercase letters are marked with diacritics that fitting their respective shapes (the minuscule has a steeper angle and can even be longer than its uppercase equivalent). The difference between the text and display fonts is clearly visible, as the latter have less protruding diacritical marks. It is difficult to tell if the hungarumlaut of the roman display Ű is eccentric or a mistake. In any case, I find them to be within acceptable limits.

Big manufacturers usually assign placing the diacritical marks to operators who complete the task to varying degrees of success. Being amorphous shapes, the base letters and diacritical marks are difficult to calibrate but there seems to be no other way.

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62—91

AGNIESZKA MAŁECKA PL

ZOFIA OSŁISŁO PL

Polish diacritics: the history and principles of design

p. 67 Had the Polish ruler Mieszko I chosen to be baptised in the Eastern (Byzantine) Rite in 966 A.D., we would most likely be using Cyrillic in Poland today.

(Małecka, Oslislo, 2016)

p. 68 The 16th, also known as the Golden Age of Printing, was a period of rapid development for the Polish language and the spelling rules then established have seen little change to date.

(Małecka, Oslislo, 2016)

p. 67 It should be noted that there are no universal solutions, and any tips regarding accent shape, positioning and size may only be viewed as suggestions rather than directives.

(Małecka, Oslislo, 2016)

p. 78 Poland's accession to the European Union in 2004 meant a substantial change of approach towards these issues, marked by the re-focussing of type design from national to international perspective.

(Małecka, Oslislo, 2016)

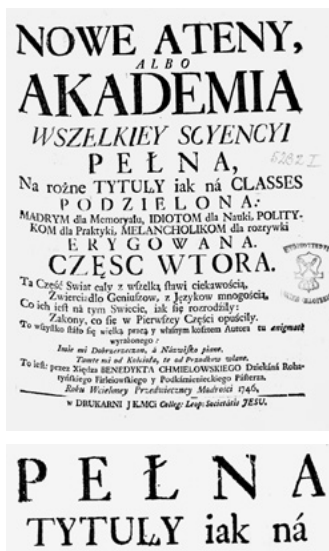


Fig. 1 Two different proposals for accenting the character Ł within the same publication, <https://polona.pl/item/n1447688/6>.



Fig. 2 Accenting the sound Ł with the ogonek (customarily added to the characters a and e to change their pronunciation), <https://polona.pl/item/n1659188/4>.

Introduction

In his *Problems of Diacritic Design for Latin Script Text Faces*, one of the first comprehensive essays on special characters, English researcher J. Victor Gaultney draws attention to a small number of reliable sources on accent design. Since the release of his essay in 2002, a number of similar research projects have appeared in different countries, attesting to the importance of diacritical marks as a pertinent area of study for many researchers and typographers. This issue is becoming all the more important when we consider the globalised typography market striving to serve multilingual users from different continents. As new technologies emerge, such as especially the Open Type format, it is now possible to create universal typefaces which are increasingly more responsive to local users' needs.

However, and not dissimilarly to this essay, most modern papers on diacritic design are based primarily on the direct analysis of prints and typefaces. Studying old prints and the history of language, we become aware that a number of specific design solutions may have come about as a result of some commonplace reasons, such as technological constraints, lack of appropriate accented fonts, wear and tear of typesetting materials, ambiguous spelling codifications, as well as the fact that a single text was set by several people who may have trained in different centres and therefore adhered to various spelling traditions [Fig. 1, 2, 3](#).

Our research focuses primarily on diacritical marks in typefaces intended for continuous text setting, but due to the limited availability of other, more experimental examples in previous studies, we have decided to also present job and italic types, as well as some extreme (very light or very heavy) varieties. This study is aimed at all type design students and professionals, whether Polish or international, and seeks to discuss the spelling rules and specific nature of the language in order to facilitate the design of correct accents with respect for local traditions and reader preferences.

What are diacritics and how to design them

“Diacritics are marks added to glyphs to change their meaning or pronunciation. They are also commonly called *accents* or *diacritical marks*. These marks can be made above, below, through, or anywhere around the letter. The name comes from the Greek word διακρίνειν meaning ‘that distinguishes’” (Gaultney, 2002, p. 2).

Although the majority of diacritics do not connect to the base letter (floating accents), there are those that form its integral part (connected accents). The question therefore arises, whether such characters are true diacritics, or whether such combinations should be viewed as separate glyphs – additional letters of the extended Latin alphabet – and how this impacts on the design practices Fig. 4, 5, 6.

An important problem in accent design is how to embrace local typographic traditions. The same diacritical mark (e.g. acute) is used in many languages, but may be designed a bit differently due to varying local preferences of language users. Is this really good practice? How should diacritical marks be designed, then? This essay seeks to answer the above questions, present the various standpoints and opinions on the matter, whether contradictory or complementary, as well as provide an accurate historical review of particular diacritics occurring in Polish.

If all diacritics were simple in shape – such as a perfectly circular dot – and if all base glyphs were lowercase, symmetrical and had unchanging stroke weight, the design and positioning of diacritics would be trivial (Gaultney, 2002, p. 4).

Unfortunately, as each font has its own characteristics, e.g. contrast, centre, x-height-to-ascender ratio and caps height, the task is rather more difficult, requiring both knowledge and a keen eye. It should also be noted that there are no universal solutions, and any tips regarding accent shape, positioning and size may only be viewed as suggestions rather than directives.

Part 1

In search of the Polish alphabet

Had the Polish ruler Mieszko I chosen to be baptised in the Eastern (Byzantine) Rite in 966 A.D., we would most likely be using Cyrillic in Poland today. Despite the power of the then Byzantine Empire, however, Constantinople seemed a very long way from the state of the Polans, so, driven by political reasons (alliances) and logistical considerations (proximity of the developed urban centres), Mieszko decided on baptism in the Western (Latin) Rite. This decision was critical for further development of our language, because it put Poland in the cultural sphere of Western Christianity. The history of Polish is thus



Fig. 3 Different ways to accent the character ę (ogonek, strikethrough) within the same publication, *Elementa architectury*, <https://polona.pl/item/7852961/8>.



Fig. 4 Shape, size and proportion of the ogonek in relation to the base character, *Dąsy*, <https://polona.pl/item/667490/4>.



Fig. 5 Shape, size and proportion of the ogonek in relation to the base character, *Skąpcy*, <https://polona.pl/item/1244109/0>.

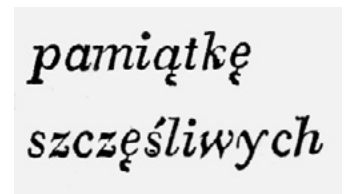


Fig. 6 Shape, size and proportion of the ogonek in relation to the base character, *Wspomnienia Sycylii*, <https://polona.pl/item/1312382/2>.

marked by an unending series of borrowings: first from Greek and Latin, then from German and French, and finally from English.

To the best of contemporary knowledge, our ancestors did not seem to have any writing system prior to the adoption of Christianity. Neither has the alleged existence of the ancient Slavic runic script been confirmed by any reliable academic research. Poland's baptism, therefore, meant a symbolic transition from an oral culture to a hand-written or manuscript one that was based on the phonetic Latin script (Malinowski, 2011, pp. 13–14). The modest inventory of 23 Latin letters, however, was nowhere near sufficient to represent the phonetic richness of Polish spoken at that time, which needed as many as 45 letters (12 vowel and 33 consonant characters). Paradoxically enough, an alphabet that was much better suited to this task was that of Old Church Slavonic – the so-called Glagolitic alphabet (*Glagolitsa*), created by Byzantine Greek brothers and Christian missionaries Saints Cyril and Methodius for the purpose of missionary work among the Slavs. At the turn of the C9th and C10th, the Glagolitic alphabet evolved into Cyrillic to become the basis for the alphabets used in Russian, Ukrainian, Belarusian, Bulgarian, Serbian and Macedonian as well as partially Armenian and Georgian. Poles and Czechs, on the other hand, were consistent in their adherence to the Latin alphabet and set out to adapt it to the needs of their languages in a process that took considerable effort and a few centuries to complete (Malinowski 2011, p. 15).

The task of devising a transcription system for medieval Polish was first taken on by foreign church chroniclers, scribes and copyists, who followed the spelling rules used in e.g. German and Czech to write Polish local names. In the absence of any codified rules of Polish spelling, their notes were written very erratically, sometimes using solutions only they could understand. The method of recording would often change, even within a single document, which caused problems for the readers and writers alike. This situation was only resolved with the invention of print and a huge role in this process was played by printers and typesetters. Before the spelling of the Polish language became fully established, it went through three distinct stages of development: Stage 1: Polyphonemic Orthography (C12th to first half of C14th), Stage 2: Compound Orthography (late C14th and C15th), and, finally, Stage 3: Diacritical Orthography. The C16th, also known as the Golden Age of Printing, was a period of rapid development for the Polish language and the spelling rules then established have seen little change to date.

Puzzling Polyphonemic Orthography (C12th to first half of C14th)

In Polyphonemic Orthography, one Latin letter was used to represent several similar sounds (based on acoustic or sound similarity), creating huge discrepancies between the pronunciation and spelling. For example, the letter *s* could mean as many as six different sounds: *s*, *ś*, *š*, *sz*, *z*, *ż* and *ź*; the letter *d* represented *d*, *ǵ*, *ǝ* (*d*, *dź*, *dż*); the letter *z* was used to transcribe *z*, *ś*, *ž*, *ż*; while *c* was used for writing the sounds *k*, *c*, *č* (Jodłowski, 1979, p. 19).

The nasal vowels *ę* and *ɛ̃*, in turn, were transcribed as a combination of two sounds, e.g. *an*, *am*, *en*, *am*, *em*, *um* (Malinowski, 2011, p. 17). This type of spelling is found in the following three monuments of the Polish-language literature: *The Bull of Gniezno* (1136), *The Book of Henryków* (1270) Fig. 7 and *The Holy Cross Sermons* (late C13th to early C14th) Fig. 8 (Malinowski, 2011, p. 18).

Although published in Latin by Pope Innocent II, *The Bull of Gniezno* contains original Polish-language spellings of local and personal names, providing an invaluable insight into the then state of the Polish language and proof that the letter *s*, in addition to its base function was also used to record the phoneme *sz* (voiceless retroflex fricative, similar to English *sh*): *Calis* = *Kalisz*, *z*: *Posdech* = *Pozdziech* and *ż*: *usrewsy* = *uźrzewszy* (Malinowski, 2011, p. 18).

An extremely important work from the period of Polyphonemic Orthography is the afore-mentioned *Book of Henryków*, dating back to the mid-to-late C13th. This Cistercian chronicle, written in Latin by a German abbot, contains the very first Polish sentence recorded in writing. In the nearby village of Brukalice, a Czech settler named Boguchwał (aka Brukała) reportedly uttered the following words to his Silesian wife: “Day, ut ia po-brusa, a ti poziwai”, which roughly translates as “Let me grind [with quern stones] and you take a rest” Fig. 9 (Lehr-Splawiński, 1978, p. 99). The chronicler probably decided to describe this story because grinding grain with quern stones was a woman’s job at the time, so for a husband to relieve his wife of the chore must have been regarded as unusual. As jokingly put by acclaimed Polish linguist Jan Miodek, peasant Brukała was Poland’s “first linguistically validated gentleman”.

An important innovation to Polyphonemic Orthography found in *The Holy Cross Sermons* from the turn of the C13th and C14th was an attempt to write the nasal vowels *ę* and *ɛ̃*. Used for this purpose was the Greek character *φ* (Phi), as e.g. in the word *p̄pte* = *pięte*

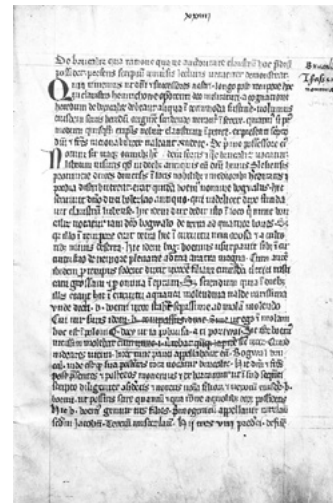


Fig. 7 Księga Henrykowska [The Book of Henryków], <http://digital.fides.org.pl/dlibra/doccontent?id=744>.



Fig. 8 Kazania Świętokrzyskie [The Holy Cross Sermons], <https://polona.pl/item/304920/7>.

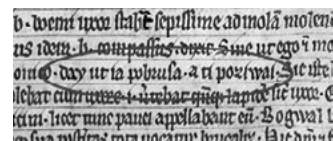


Fig. 9 The initial sentence, *The Book of Henryków*, <http://digital.fides.org.pl/dlibra/doccontent?id=744>.

[fifth], and later the non-Latin character ~~o~~ (strikethrough o), originating from the Norse alphabet (still present Danish and Norwegian spelling), e.g. *prawd~~o~~* = *prawdę* [accusative of truth], *s~~o~~* = *są* [(they) are] (Malinowski, 2011, p. 21).

Improved (though still imperfect) Compound Orthography (C14th – C15th)

Obviously, the highly inconsistent and ambiguous Polyphonemic Orthography caused considerable confusion and inspired multiple interpretations even among monks and translators, i.e. manuscript writers themselves. This often led to perplexing situations where there were almost as many ways to understand a given word as there were readers and writers. It is hardly surprising, therefore, that the steadily growing number of people using written Polish sparked numerous efforts to improve the functionality of its spelling.

Compound Orthography came as the second stage in the development of written Polish. This system was based on the use of combinations of two or three characters to create new and permanent digraphs and trigraphs with distinctive phonetic values (e.g. *ss*, *sy*, *sz*, *zs*, *zy*, *cz*, *dz*, *r*, *rs*, *ssz*, *sch*), such as *scham* = *sam* [alone], *schobye* = *sobie* [self], *schuka* = *szuka* [he/she looks for], *czas* = *czas* [time], *owocz* = *owoc* [fruit] (Malinowski, 2011, p. 22). The work which best documents Polish spelling at the time is the *Bible of Queen Sophia* (1455), the oldest surviving attempt to translate the Old Testament into Polish, commissioned by Sophia of Halshany, the wife of King Władysław II Jagiełło.

A unique role was also played by the *Psalter of Puławy*, which, according to prominent Polish linguist Stanisław Urbańczyk, is the greatest achievement of pre-diacritical Polish orthography. It was based on combining different consonant characters with the letter *y* (replaced over time by *l*) to denote soft consonants occurring before vowels, e.g. *zyemya*, *kamyen*, *swyat*, *myedzy*, *kwathky*, *neysye*, *lyosem*, *lyud* (Malinowski, 2011, p. 22).

It should be noted at this point that when Polish writing was still governed by Compound Orthography, Czech spelling had already begun to shift towards diacritics. In his 1411 treatise *De orthographia bohémica* [On Bohemian Orthography], Jan Hus (Czech clergyman, reformer and ardent advocate of his native Czech language, in which he gave sermons) contained the famed *Abeceda*, i.e. a sentence consisting of all the letters of the alphabet

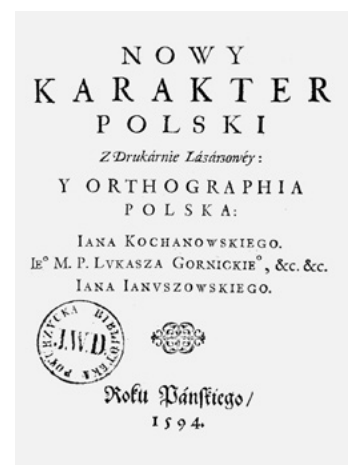
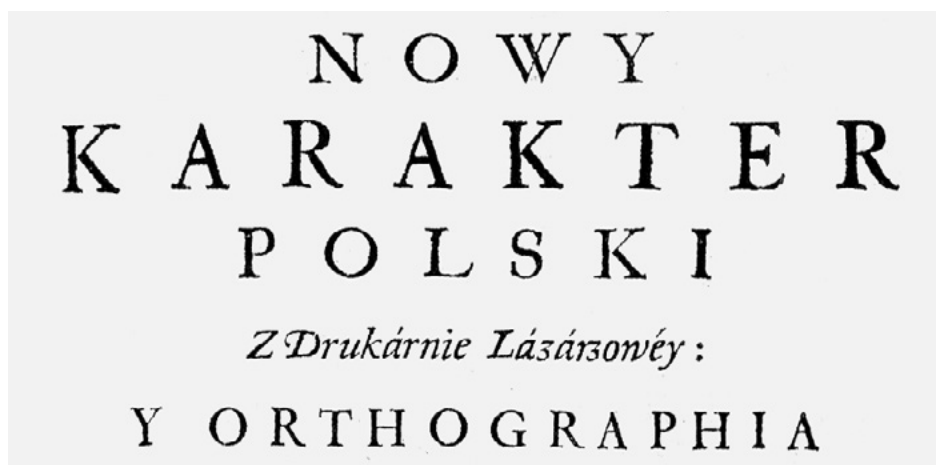
from a to z: “A Budé cele czeledi given diedicztwie...” (A Budé celé čeledi Dano diedict-
vě...). Hus proposed that the former letter combinations, such as digraphs and trigraphs
(with the exception of the digraph *ch*, which remained to denote the sound), be replaced
by diacritical marks placed over the letters (Malinowski, 2011, p. 24). Not only was Hus’s work
a great contribution to the development of modern Czech spelling, but it also provided
a key inspiration on how to write the sounds of the Polish language. Unfortunately, al-
most a century had passed before his ideas were finally adopted on Polish soil. A certain
apprehension towards diacritical spelling and the resulting delay were caused by the fact
that the creator of Czech diacritical orthography was condemned by the Catholic Church
and burned at the stake for heresy, which naturally stirred controversy in Catholic Poland.

Towards Diacritical Orthography

A decisive, though largely unsuccessful, attempt to prevent Polish spelling from lagging
behind other European languages was made by Jakub Parkoszowic, professor and rector
of Kraków’s university. Regrettably, the impractical spelling solutions he proposed in his
1440 *Obiecado* failed to make a lasting impact on Polish orthography (Malinowski, 2011, p. 28).

The next century, however, brought a larger number of Polish spelling reformers, or
sometimes merely codifiers. These included, among others, Stanisław Zaborowski, au-
thor of *Orthographia seu modus scribendi et legendi polonicum idioma quam utilissimus* (1513),
Stanisław Murzynowski, author of *Orthografia polska* [Polish Orthography] (1525), and last
but certainly not least, Jan Januszowski, the famed co-author and editor of *Nowy Karakter
Polski* [New Polish Typeface] (1594), a collection of 3 treatises on Polish orthography Fig. 10.

Fig. 10 *Nowy Karakter Polski* [New
Polish Typeface],
<https://polona.pl/item/22764216/4>.



The last-mentioned work undoubtedly takes precedence over the others in terms of lasting impact. Created by humanist, printer and publisher Januszowski, it contained three proposed, Hus-inspired alphabets by poet Jan Kochanowski (Fig. 11), courtier Jan Górnicki (Fig. 12) and Jan Januszowski himself (Fig. 13) (Malinowski, 2011, p. 11). In hindsight, the last alphabet

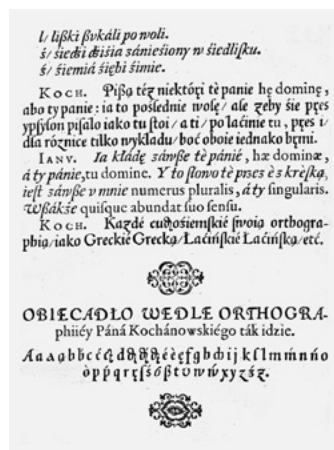


Fig. 11 The new alphabet, Kochanowski's proposal, <https://polona.pl/item/22764216/56>.



proved to be the most functional one, as evidenced by the fact that it is closest to modern Polish spelling. *Nowy charakter Polski* contains various proposals for writing individual sounds. As for the book's layout, the author used a specially designed typeface in

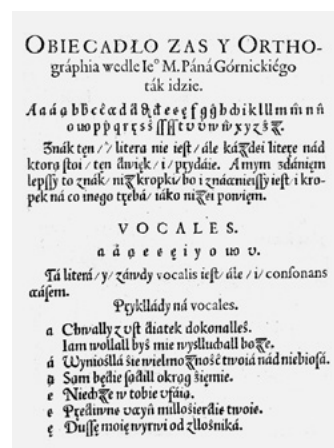


Fig. 12 The new alphabet Górnicki's proposal, <https://polona.pl/item/22764216/57>.



two styles: *karakter prosty* (upright) and *karakter ukośny* (italic) (Czernecki, 1902). Visually, it drew on Roman type styles and marked a shift away from the then prevalent blackletter. Januszowski was a trailblazing reformer of printed and hand-written Polish in both theoretical and practical terms. He established spelling rules and introduced new simplified characters corresponding to the sounds of the Polish language. In 1600, his typeface was used in the *Statuty, Prawo i Konstytucja* [Statutes, Law and Constitution] of the Polish Kingdom.

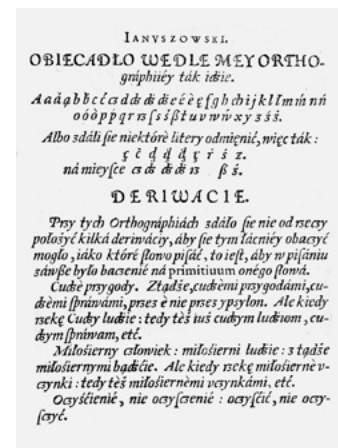
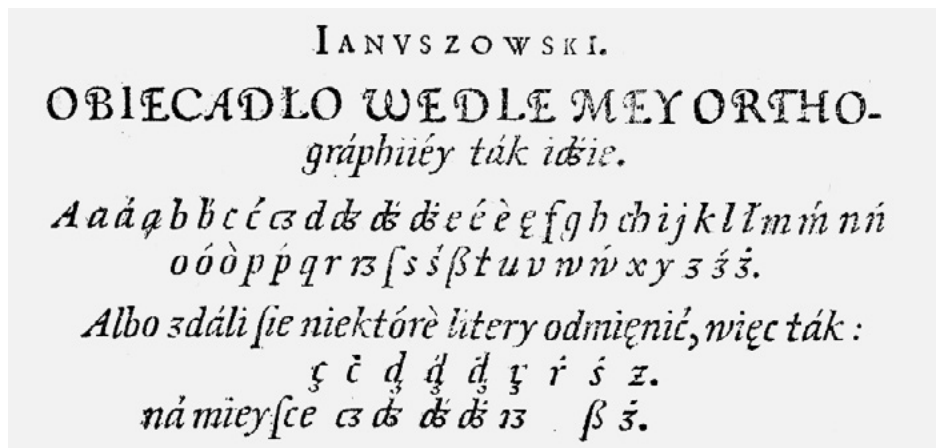


Fig. 13 The new alphabet, Januszowski's proposal, <https://polona.pl/item/22764216/65>.

We owe a great deal to the printers and the bourgeoisie

A key factor contributing to the development of the Polish language, and especially to the standardisation of its written form, was the invention of print. In one of his interviews, Professor Jan Miodek recounts a heated (and still unresolved) dispute among linguists about whether the standard Polish language formed with the establishment of state power in Greater Poland, or thanks to the work of Kraków printers.

In those days, printers, proof-readers and typesetters were educated people, often holding degrees from the Kraków Academy. Being well versed in linguistic matters, they were able to play a prominent role in rooting out foreign dialects, archaisms and regionalisms that were still present in the manuscripts. "It was the codifiers associated with the printer communities that systematised Polish spelling in the C16th" (Polański, 2004, p. 32). Notable names among them included Florian Ungler, Hieronim Wietor and Maciej Wierzbipięta.

Since printers were intent on achieving uniform spelling and, consequently, economical typesetting (i.e. fitting as many words as possible on one printing sheet), they were keen to eliminate any unnecessary digraphs and trigraphs. As Zygmunt Klemensiewicz notes, various competing print shops contributed to the development of spelling, grammatical and stylistic standards, thus overcoming the casual freedom and diversity of mediaeval orthography (Klemensiewicz, 1980, p. 251).

An important fact for the development of Polish in general and its consistent written form in the C15th and C16th was the intellectual growth and gradual polonisation of the

bourgeoisie. Towns and cities brought together educated people to become administrative, commercial and cultural centres with a range of relevant facilities. The social structure of the C16th town consisted of several social strata. The highest of these was the patrician class, i.e. the richest merchants, usually of Italian or German descent. Although the C16th saw gradual polonisation of patricians, they would still often use German or Latin in order to maintain power and differentiate themselves from the commoners. The middle class was composed of artisans and small traders of Polish origin, who were the biggest proponents of the Polish language and national identity, as this gave them a chance to aspire for positions in local administration and municipal institutions. Artisan guilds led their meetings and correspondence in Polish, which was also the language of choice when drafting legal documents. The lowest class were the plebeians (the urban poor) who also used Polish, but at a lower level than the middle class. The main recipients of books published in the Polish language, therefore, included the middle class, less educated gentry (due to inadequate education in Latin), and a modest number of peasantry with elementary education (Klemensiewicz, 1980, p. 257).

Decline of the middle class spells trouble for the Polish language

The C17th saw the bourgeoisie being gradually pushed into poverty as a result of political and economic oppression by the gentry and nobility. Due to a lack of generous patrons, towns and cities began to decline and church censorship ensued with a detrimental impact on independent book and secular printing. This inevitably led to a gradual loss of quality and collapse of the printing trade. Books were printed using worn-out sorts with little attention to proper grammar and spelling. This situation lingered on until the times of Stanisław II August (C18th), when the growth in expenditure on culture had a positive effect on the quality of printing and the Polish language in general (Klemensiewicz, 1980, p. 256).

C17th Polish still adhered to the spelling principles developed in the previous century. Polish books were printed using mainly blackletter (Schwabacher), while Roman typefaces were only just gaining ground, initially being used almost exclusively for the composition of Latin texts [Fig. 14](#). Unfortunately, the transfer of the royal residence by Sigismund III Vasa from Kraków to Warsaw in 1609 meant that the standard-setting Kraków printers began to lose their leadership position. The situation was further aggravated by on-going wars, resulting in the deterioration of the economic situation of the entire country and, consequently, the overall level of Polish.

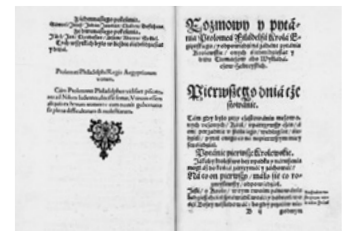
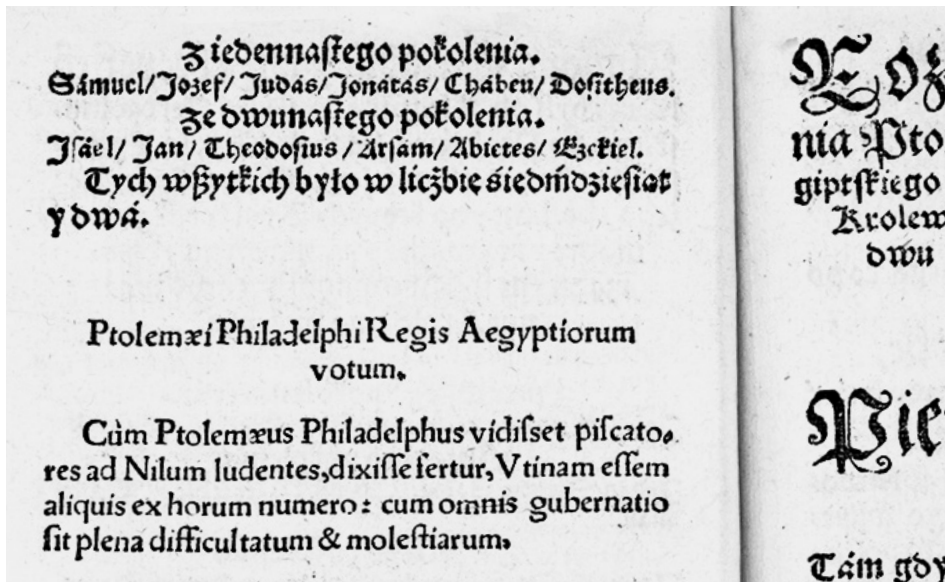


Fig. 14 Kronika starodawna y ktemu pobożna o poważnych rozmowach Ptolomea Filadelfa (...) [The Ancient and Pious Chronicle of Serious Deliberations by Ptolemy Philadelphus (...)], 1578, <https://polona.pl/item/628418/5>.

Following the latest Western trends, the local gentry took a fancy to sprucing up their Polish with Latin words, phrases and even whole clauses, often in blatant disrespect for linguistic correctness. The royalty and nobility, on the other hand, developed a keen taste for French. In his 1741 treatise *De emendandis eloquentiae vitiis* [On correcting eloquence errors], the Enlightenment educational reformer Stanisław Konarski criticised the pompous style and corrupt language of contemporary elites, calling for the use of simple and communicative language in speech and writing, recommending the Polish language writers of the 16th (mainly Jan Kochanowski), as worthy model to follow (Malinowski, 2011, 47).

A nation that survived through its language

The reign of King Stanisław II August (1764–1795) marked a notable revival of intellectual life and the rise of state educational institutions. The then established Commission of National Education managed to reform the Academies of Kraków and Vilnius. Working under the auspices of the Commission, the Society for Elementary Books modernised primary education and introduced innovative textbooks. Unfortunately, these favourable changes were interrupted by Poland's deteriorating political situation leading to the three partitions (1772, 1793 and 1795.) and the division of its territory among the neighbouring powers of Russia, Prussia and Austria. The attitude of the respective oppressors' governments towards Polish education varied considerably. Prussia and Austria germanised the acquired school systems, incorporating them fully into their own organisational

structures. On the other hand, educational facilities annexed by Russia had enjoyed a much greater freedom until the fall of the November Uprising (1830–1831), when their autonomous status was revoked and stricter russification policies were adopted (PWN Encyclopaedia).

Quite paradoxically, the greater the occupants' efforts to exterminate the Polish national identity, the more respect was gained by the language and its literature. Polish culture was treated almost reverently, its cultivation regarded as an act of patriotism. Throughout the entire partitions period, Polish-language newspapers and literary works were published, and (often secret) lectures, readings and meetings were organised. Not surprisingly, perhaps, when Poland regained independence after World War I, its national culture began to grow almost explosively.

Renaissance and demise in the C20th

The young Polish State, re-born to include its historical territory after 123 years of foreign rule, had the ambition to reactivate a coherent and distinctive national culture. This trend was also observed among typographers, who had a driving ambition to modernise printing after long years of backwardness and create a national typeface that would best suit the needs of Polish language typesetting. Despite the many attempts, most of the new typefaces, which typically drew on folk culture, were excessively ornamental and hardly lent themselves to book typesetting.

A completely different design philosophy was adopted by Polish graphic artist and typographer Adam Półtawski, who approached the problem from the vantage point of language and typography, starting from the study of legibility and differences in the composition of texts using the same font in different languages. This way he was able to codify specific Polish kerning pairs and the most common signs, including diacritics. His investigations led him to a conclusion that, in comparison with other languages, Polish features a large proportion of letters with slants, such as *w*, *k*, *y*, *z*. Having established that, Półtawski set out to improve general legibility and enhance optical text regularity (typographic colour) by designing these characters in an alternative way to weaken the slants. His work on the national typeface was completed in 1928, and 1931 saw Jan Idźkowski's foundry cast a full set of sorts for manual typesetting [Fig. 15](#) (Frankowski, 2005, pp. 30–34).

World War II and its aftermath slowed down the enthusiasm for advancements in many areas of life including printing and typography. After 1945, difficult times ensued for Poland, marked by political isolation and technological backwardness. Despite this unfavourable environment, the Polish People's Republic managed to produce some interesting typefaces, though few of them ever saw the light of day. One glorious exception in this respect is Antykwa Toruńska [Toruń Antiqua], designed by Zygfryd Gardzielewski in 1952–1958 and cast by the Warsaw Font Foundry (pre-war foundry Idźkowski i Ska, nationalised after WW2). The typeface is historicist and ornamental in style drawing on Toruń Gothic architecture. Trying to adapt his design to the quirks of the Polish language, Gardzielewski studied Półtawski's research done while working on the first Polish Antiqua decades before. Despite a few practical applications, Antykwa Toruńska gained nowhere near as much popularity as its predecessor – perhaps due to its very decorative style and limited versatility Fig. 16 (Misiak, Szydłowska, 2015, pp. 88–91).

The problems of the printing industry and the need to create a centre for the design of new typefaces for the Polish market became pressing issues, which were raised to public attention in specialist magazines, such as "Poligrafika" and "Litera", by the likes of Roman Tomaszewski – the most prominent typoactivist of the time. His efforts led to the creation of the Centre for Print Types [Ośrodek Pism Drukarskich] in 1968, which brought together a number of talented type designers, including Helena Nowak-Mroczek (Helikon, Hel), Andrzej Heidrich (Bona), Jerzy Desselberger (Alauda, Acanthis). Another centre for typeface design active at the time was Katowice's Linotype Matrices Plant led by typographer Henryk Sakwerda Fig. 17. Unfortunately, many of these award-winning typefaces failed to achieve wider recognition because of the iron curtain separating Poland from the West. After the Centre for Print Types was closed down in 1978, stagnation was inevitable in domestic type design (Misiak, Szydłowska, 2015, pp. 92–114).

The technological revolution

After the fall of Poland's communist regime in 1989 came a technological revolution which flooded the market with an abundance of solutions imported from the West. The optimism of those early days prevented any criticism of the new technologies and hundreds of computer fonts which either lacked, or contained very poorly designed Polish diacritics. A reflection did not come until the turn of the millennia when the debate on contemporary Polish typeface and the need for properly designed Polish diacritics gained

krzywy
krzywy

Fig. 15 Adam Półtawski, *Antykwa Półtawskiego*, 1928.

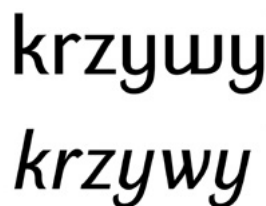
krzywy
krzywy

Fig. 16 Zygfryd Gardzielewski, *Antykwa Toruńska*, 1952–58.

ABCDE 1234567890
FGHIJKLMNOPQRST
UVWXYZ pqtuvwxyz
abcdefghijklmnlrs

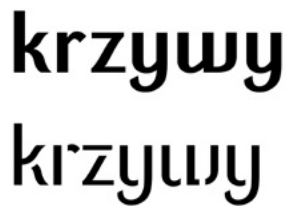
Fig. 17 Henryk Sakwerda, *Akant*, 1975–1980.

momentum once again. The design effort was taken on by a few typographers and most successful ideas then produced drew directly on Półtawski's Antiqua. These included Grotesk Polski [Polish Grotesque] Fig. 18 designed by Artur Frankowski and Danova Fig. 19 by Jacek Mrowczyk with an interesting proposal to create ligatures for Polish digraphs.

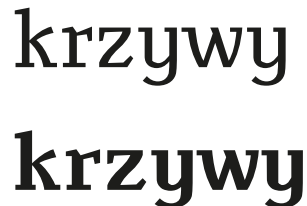


krzywy
krzywy

Fig. 18 Artur Frankowski, *Grotesk Polski*, 1998–2006.



krzywy
krzywy



krzywy
krzywy

Fig. 19 Jacek Mrowczyk, *Danova*, 2010.



aśbłcdeg
aśbłcdeg

Fig. 20 Łukasz Dziedzic, *Lato*, 2010–2014.

Poland's accession to the European Union in 2004, meant a substantial change of approach towards these issues marked by the re-focussing of type design from national to international perspective. An excellent example of a universal typeface, created by a Polish designer but free from specific national features and suitable for multi-language use both in print and on the screen, is undoubtedly Lato by Łukasz Dziedzic Fig. 20.

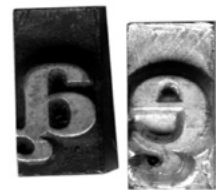
In modern-day Poland, type design as separate branch of graphic design is still a niche discipline, although its enthusiasts are growing in numbers thanks to, *inter alia*, the Letter Design Studio at Poznań's University of Arts, which through the efforts of its long-time leader Krzysztof Kochnowicz, has managed to provide a steady supply of professionals to our type design scene for the last 20 years. Several other cities, including Warsaw, Wrocław and Katowice, have also had similar departments established. Most young Polish typographers work in the global environment, trying to market their designs via online services, such as Font Shop, MyFonts and Google Fonts.

Part 2

Polish diacritics

We owe the presence of diacritical marks in the contemporary Polish alphabet to our Southern neighbours, the Czechs. Similarly to Czech, the sounds of the Polish language were simply impossible to put in writing with the basic letters of the Latin alphabet. So, after a series of earlier-described evolutionary changes and numerous attempts to codify its spelling, Polish finally reached its diacritical spelling form. Not all the special characters, however, appeared at the same time while some of the proposed diacritics fell into disuse. The modern Polish alphabet contains four types of diacritical marks that affect the sound of nine phonemes. Two of them, the dotaccent and the acute, are detached from the base glyph. The remaining two, i.e. the slash and the ogonek (the only Polish word in the international typographic terminology), are permanently integrated into the base letter.

In the era of the traditional printing, letters with diacritical marks were cast as one sort [Fig. 21](#), although separate sorts with diacritics to be put together with the base glyph were often used for larger font sizes and sorts made of wood [Fig. 22](#).



This worked well for the majority of above and below special marks, but in the case of Polish, was possible only for two of them: the dotaccent and the acute. The letters *ł*, *ę* and *ą*, on the other hand, required a different approach and had to be designed as separate glyphs. Unfortunately, as font sets often lacked a complete collection of Polish diacritics, printers made spontaneous attempts at improvising the missing glyphs. The practice of separating diacritics from the basic glyphs was adopted in monotype, from which it found its way into phototypesetting and then modern computer font generation software, where all accents are treated as separate components having a unique Unicode number. Although this approach has proven feasible in most cases, it is not without its problems when it comes to designing connected diacritics (Kramek, 2005, pp. 10–13).

Fig. 21 Wood and metal types with diacritical marks (Oficyna Drukarska ASP Katowice).

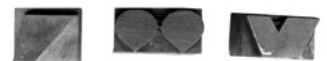


Fig. 22 Wood type diacritical marks (Oficyna Drukarska ASP Katowice).

Tittle

The tittle (Latin: titulus), also known as the i-dot, first appeared in Latin manuscripts in the early C11th and served to individualise the neighbouring letters *i* and *j* (Dictionary.com). It is also found in C13th manuscripts, where it saved space by helping to distinguish individual letters in the dense structure of Gothic writing (Gaultney, 2002, p. 2).

While in the letters *i* and *j*, the tittle forms their integral part and its omission has meaning changing consequences (e.g. In the Turkish alphabet, there is a separate character *ı*/*I* without a tittle parallel to an *i* with a tittle), in some cases it can serve as a diacritical mark (dot accent) changing the form of the base glyph. In Polish, for instance, this situation occurs when the letter *z*/*Z* receives a dot accent to form *ż*/*Ż*. It is also worth noting here that the same sound will be achieved by putting a strikethrough line across *Z*. This form of writing, which dates back to the Renaissance, has survived to date in handwriting and can be used in projects based on handwriting styles (Kramek, 2005, pp. 10–13) Fig. 23.

Fig. 23



Łukasz Dziedzic, *Ringo*, 2014.

Zuzanna Rogatty, *Rudolf*, 2014.

Joanna Angulska, *Jubiler*, 2014/15.

Designing dotaccents is possibly the least problematic task, as the size and shape of the dot serving as a diacritical mark should resemble the i-dot. Exceptions to this general rule include certain calligraphic fonts where the shape of the tittle can differ significantly from the dotaccent, being closer to an acute, a dynamic pen stroke, or even a circle Fig. 24.

Fig. 24



Viktoriya Grabowska, *Rymex*, 2016.

Zuzanna Rogatty, *Rialto*, 2015.

Szymon Sznajder, *Grind*, 2012.

Damian Langosz, *Tilia Black*, 2015.

Horizontal positioning of diacritics for lowercase letters should be the same as that of the i-dot and dieresis, i.e. in the optical centre of the letter, which can be a bit more difficult to achieve in italic varieties [Fig. 25](#). As for vertical positioning, the choice is a matter of the designer's individual judgement and would normally depend on the nature of the font and the length of the ascender.

Fig. 25



Robert Jarzec, *Talia*, 2015.

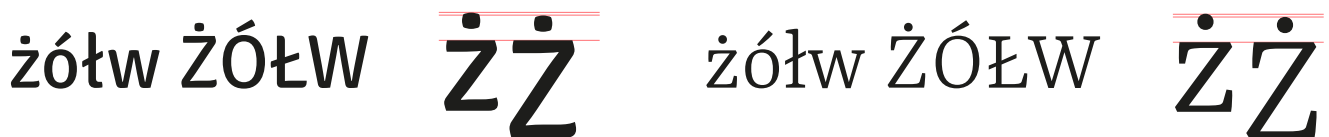
Robert Jarzec, *Metrum*, 2013.



Szymon Sznajder, *Shelf*, 2012.

Also in this case, the position should be fixed for the i-dot, dotaccent and dieresis. For the uppercase letter Ź, the dotaccent is frequently positioned slightly closer to the base character due to the smaller amount of space allocated for diacritics above capitals (Twardoch, 2009) [Fig. 26](#).

Fig. 26



Anna Giedryś, *Signika*, 2010.

Anna Giedryś, *Yrsa Light*, 2016.

Acute

Many European languages have two stroke-type diacritics which are either tilted to the left (grave) or to the right (acute). Both of these appeared in early-16th Polish spelling, but only the latter has survived in the contemporary Polish alphabet. The same diacritical mark may play different roles depending on the language. In Polish, for instance, it

Fig. 27 Androzzi, Fulvio (1523–1575)
Scieszka pobożnego chrześcianina (...)
W Krakowie : w drukarni Jakuba
Sibeneychera, 1600,
<https://polona.pl/item/14978681/o>.

Fig. 28 Barbara Pospischil,
Otil, 2016.

Fig. 29 Rafał Włodarek,
Woodchuck, 2016.

either softens the consonants *ć*, *ń*, *ś* and *ź*, or provides a distinctive quality of the vowel *ó*. In French, on the other hand, a similar glyph is used as an accent, while in Czech it serves to elongate vowels (Kramek, 2005, pp. 10–13).

Initially, the shape of the mark used in Polish was similar to that used in other languages, even though it served a different function. The angle of slope would vary depending on the letter over which it was placed (steeper for *í* than for *á* and *ó*), because the stem of the letter *i* offered less space and extending the accent beyond the character would cause obvious kerning problems Fig. 27.

In handwriting, the angle of slope depends on the gesture, writing speed, and temperament of the writer. In commercially available typefaces, on the other hand, different ideas concerning the angle of the acute in relation to the basic character may result from the designer's creative vision or the nature of the typeface at hand. In all cases, it is important to be mindful of general legibility and accord with the base character and other diacritics. One of the rarer but quite permissible solutions is to put a horizontal stroke through the base character. This method may be of use in handwriting-inspired typefaces intended for job printing Fig. 28.

In view these differences, some typographers have suggested that cultural characteristics should be incorporated into acute design, especially that OpenType font formats lend themselves well to this task. Adam Twardoch, for instance, claims that the Polish "kreska" [stroke], being distinctly different from the acute and requiring an individual design approach, should be more vertical and have a slightly different contrast than the acute

Fig. 29 (Twardoch, 2009).

Alternatively, the "kreska" [stroke] and acute may be designed by selecting an angle of slope that would strike middle ground between the two and thus appeal to users of different languages Fig. 30 (diacritics.com).

éáíóú éáíóú éáíóú éáíóú

Łukasz Dziedzic, *Lato*, 2010–2014.

Szymon Sznajder, *Shelf*, 2012.

áéíóú ćńóśź óćńóśź óćńóśź óćńóśź

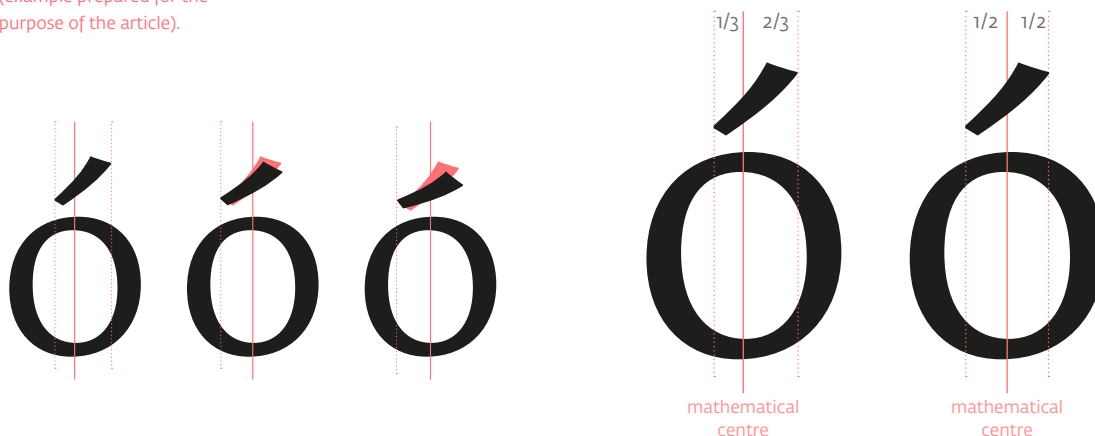
Robert Jarzec, *Metrum*, 2013.

The horizontal alignment of the acute above the letter is much more challenging than in the case of the dot, because it is an asymmetric accent, often having a contrast. This raises a number of positioning controversies among designers, as common ground on this matter is not easy to achieve due to the diacritic's long history of occurrence, aesthetic reasons and the above-mentioned cultural differences. Microsoft's Character Design Standards, for instance, recommend two alternative strategies. Both start with finding the optical centre of the letter to which a diacritic is to be added. For asymmetric letters, it is a kind of imaginary line which requires a trained eye to determine. According to the first strategy, the left, narrower end of the acute should be placed slightly through the optical centre. For italics, this alignment ought be corrected by shifting the acute slightly to the left [Fig. 31](#).

The second strategy, developed by Monotype and Mergenthaler Linotype typographic corporations, the guidelines are more precise, suggesting that the front one-third of the acute should be placed on the left and the other two-thirds on the right of the optical centre. Unfortunately, there is one more parameter that affects the alignment, i.e. the angle of slope. Although the above-mentioned strategies work well for highly vertical slopes, reduced slopes will require further adjustment, involving a shift of the diacritic to the left [Fig. 32](#) (Gaultney, 2002, pp. 7–8).

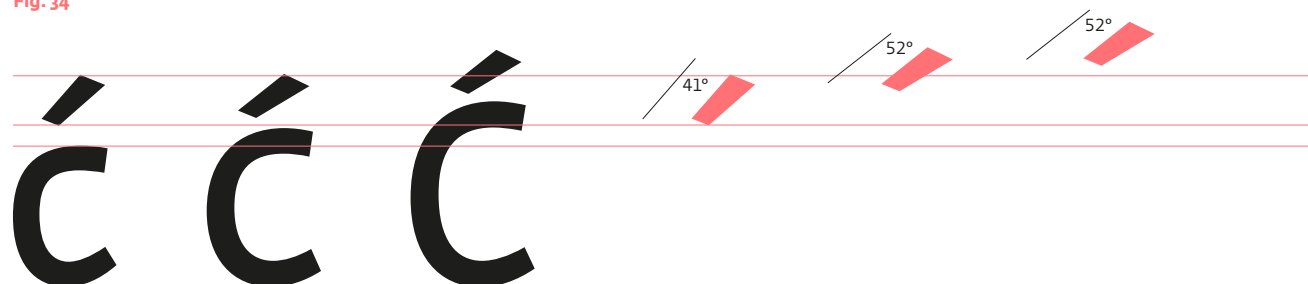
Fig. 32, 33

Maciej Majchrzak, *Słownik*, 2013,
(example prepared for the
purpose of the article).



The angle of slope may also be different for lowercase and uppercase letters. In capitals, accents often use shallower angles, which means that their horizontal position must also be adjusted Fig. 34. The angle of slope has changed historically, early prints using steeper angles in comparison to trends observed in contemporary designs. This is partly due to the fact that designers want to use the same component for uppercase and lowercase letters. Since, in capital letters, the acute has to be more inclined due to space constraints, the same component is used for lowercase letters, not necessarily for the benefit of the overall design.

Fig. 34



Szymon Sznajder, *Shelf*, 2012.

Slash

Although the first attempts to distinguish the spelling of *l* and *ł* date back to the late-C15th treatise by Jakub Parkoszowicz, we owe their modern form to Stanisław Zaborowski (*Orthographia seu modus recte scribendi et legendi Polonicum idioma quam utilissimus*, Kraków,

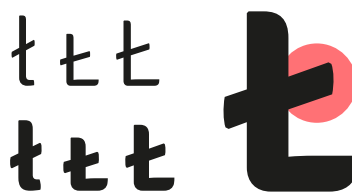
c. 1513) as well as many unnamed 16th printers and typesetters who consistently distinguished between these two characters (Polański, 2004). In contemporary Polish the slash put across the letters *ł*, occurs in both lowercase and uppercase: *ł*, *Ł*. Noteworthy, the methods of recording this sound in print and handwriting are distinctly different.

In fonts used for both lowercase and uppercase text layouts, the slash is added to the base glyphs *l* and *L*. It is usually sheared at both ends, though this depends on the nature of the design and should correspond to the shape of other endings and serifs Fig. 35.

Fig. 35



Agata Pietraszko, *Arin*, 2012.



Anna Giedryś, *Signika Light & Bold*, 2010.

The angle of slope should be steep enough to avoid mistakes in distinguishing between *ł* and *t* in smaller font sizes. Its vertical position is not arbitrary, either. Adam Twardoch describes two alternative ways of dealing with this problem. One solution is to place the mark in the optical centre of the letter, while the other, less orthodox method is a recommendation given by Andrzej Tomaszewski. His approach suggests placing the slash at same height of the crossbar in *t*. The pitfall of the second method is a reduced difference between *ł* and *t*, as well as a some irregularity at the x-height line Fig. 36 (Twardoch, 2009).

In the lowercase *ł*, the slash is usually symmetrically aligned on both sides of the stem, while in the case of the capital *Ł*, most of it remains on the right of the stem and its

Fig. 36



A conventional (preferred) solution, *Signika Bold*.



An unconventional solution (example prepared for the purpose of the article), *Signika Bold*.



Basic Commercial, 1900, digitalised by Linotype, Linotype Originals Library, Polish language version by Kuba Tatarkiewicz.

Fig. 37

łyk

WŁOCHY

Anna Giedryś, *Irsa*, 2016.

łyk

WŁOCHY

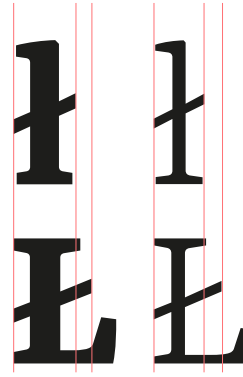


Fig. 38

WŁOCHY

ŁYK

ŁYK

Bartosz Mamak, *Medley*, 2015.

Zuzanna Rogatty, *Rudolf*, 2014.

Fig. 39

łuk Łyk

Adam Półtawski,
Antykwa Półtawskiego, 1928.

łuk Łyk

Zygfryd Gardzielewski,
Antykwa Toruńska, 1958.

weight may also be increased to adjust it to the design requirements Fig. 37. In job printing fonts, on the other hand, the slash may be placed entirely on the right Fig. 38. Certain, more experimental design attempts at slash design are featured in e.g. Półtawski's *Antiqua*, where a wave is used, and *Antykwa Toruńska*, having a curved arc instead of a straight line. Such solutions are acceptable if they are suited to the character of the typeface and meet legibility requirements Fig. 39.

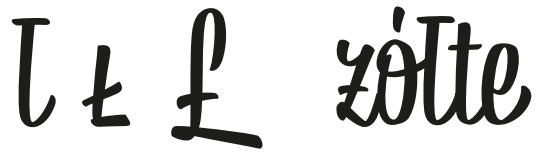
In handwriting, the lowercase *ł* takes the form of the letter *l* with a crossbar or wave attached to the top. This is due to a very high degree of similarity between the handwritten *t* and *ł* and, as such, should be taken into account while designing handwriting-inspired typefaces Fig. 40.

For a double *ł* cluster, in turn, a ligature may be used, the two letters *l* being crossed with a single line or wave Fig. 41. The handwritten capital letter *Ł*, similar in appearance to the pound sign *£* (and causing a design challenge of distinguishing the two), is marked with a straight strikethrough, similarly to its lowercase equivalent Fig. 42.

Fig. 40

A cursive script in black ink showing the words "zółte ty". The letters are fluid and connected, with a prominent loop on the 'y'.

Diana Dobrut, *Liszka*, 2014.

A stylized script in black ink showing the words "Ł Ł Ł zółte". The 'Ł' characters are large and bold, while "zółte" is in a more traditional cursive.

Joanna Angulska, *Jubiler*, 2014–15.

Fig. 41

A cursive script in black ink showing the word "Jagiello". The letters are fluid and connected, with a prominent loop on the 'J'.

Underware, *Liza Script*.

A cursive script in black ink showing the word "Makiewiczówna". The letters are fluid and connected, with a prominent loop on the 'M'.

Joanna Angulska, *Jubiler*, 2014–15.

Ogonek

Even though the ogonek is the only Polish-language term in international typographic nomenclature, the character *ę* was not a Polish invention. Somewhat surprisingly, perhaps, it originates from Latin, where it was used from the C9th to represent the vowel *ae* or *æ*. It came to Poland from the West along with matrix sets as *e caudata* (tailed *e*), but was adapted to record a different sound, i.e. a certain distinctive nasality which dates back as far as pre-Slavic times. However, while other Slavic languages, e.g. Czech, had evolved to simplify the pronunciation of nasal vowels (*zuby* vs. *zęby* [teeth], *dub* vs. *dqb* [oak]), they became well established in Polish (Miodek, 2013). The first half of the C16th already saw a distinction between the front nasal vowel *ę* and rear nasal vowel *q* applied systematically by Kraków's Wietor and Haller print shops. This can be seen in such works as *Rozmowy Salomona z Marchołtem* [Solomon Conversations with Marcholt] (1521) and *Żywot Pana Jezy Krysta* [The Life of Lord Jesus Christ] (1522). Previously, they were recorded as *ø* or *øø* and also (*ę*) (*q*) (Klemensiewicz, 1980, p. 254). In contemporary Polish, nasal vowels have become even more established, replacing such regionalisms as (*chodzo*, *jedzo*)

Fig. 42

A stylized script in black ink showing the word "Łódź". The letters are bold and blocky, with a prominent loop on the 'Ł'.

Underware, *Bello Script*.

A cursive script in black ink showing the word "Łódź". The letters are fluid and connected, with a prominent loop on the 'Ł'.

Joanna Angulska, *Jubiler*, 2014/15.

Fig. 43



Viktoriya Grabowska, *Rymex*, 2016.



Joanna Angulska, *Jubiler*, 2014–15.

still present in the 1950s and 1960s in the dialect spoken in and around Lesser Poland's Miechów (Miodek, 2013).

The greatest challenge in designing the ogonek is related to the fact that it is an integrated diacritic, forming an integral part of the letter to which it is attached. Although in conventional hot metal printing, it was designed and cast together with the base glyph, in monotype and then phototypesetting and computer systems it has usually been treated as a detached diacritic, causing a number of objectionable irregularities. Not only are separately designed ogoneks often too small (akin to the *cédilla*), but, above all, tend to be incorrectly connected to the base characters. When designing this diacritic, one should take into account the letter's proportions and character. The ogonek is not formed by a single pen stroke. Instead, it is written smoothly, in the semblance of a wind-filled sail or a curved hook, so it is a mistake to design it as a comma – or apostrophe-inspired shape. Fortunately, calligraphy comes to the rescue in understanding appropriate ogonek design, since a single pen stroke is customarily used in handwriting to write the base letter and the diacritic, rather than two separate strokes Fig. 43.

Fig. 44



Damian Langosz, *Tilia Regular*, *Tilia Italic*, *Tilia Italic Plus*, *Tilia Black*, 2015.



Maciej Majchrzak, *Rainbow Display*, 2015.



Maciej Majchrzak, *Rainbow Regular*, 2015.

The ogonek, as used in *ę* and *ą*, does not necessarily need to have exactly the same shape and should, as a rule, be adjusted at the attachment point to the base glyph. Due to its shape, the letter *e* normally requires the diacritic to be extended Fig. 44.

The problem of attaching the ogonek to capital letters is somewhat different, especially in serif fonts. In his study, Adam Twardoch shows some good practices in this respect, e.g. drawing the ogonek directly from the serif in *A* Fig. 45. This method physically changes the base letter *A* in the *A* (Twardoch, 2009).

It should also be noted that the ogonek should not extend beyond the basic character (*A*, *E*, *a*, *e*). Excessively shifted to the right, it can cause kerning problems in words where *ę* and *q* neighbour with letters containing descenders. Prominent ogoneks are recommended in fonts used for text typesetting, as they ensure enhanced legibility in smaller font sizes. In extreme cases, where descenders are very short, ogoneks may be the same length, or even (being rounded elements) – after applying appropriate optical corrections – extend slightly beyond the descender line Fig. 46.

gęsty sądny

Fig. 46 Veronika Burian, José Scaglione, *Karmina Bold, Regular*.

Kerning

Kerning is the process of adjusting the spacing between pairs of characters (letters, numbers and punctuation marks) for a typographic colour (Mrowczyk, 2008, p. 67). It should be applied whenever the selected standard spacing is inappropriate due to the relative shapes of the neighbouring glyphs. Kern pairs occur with varying frequency in different languages and some are unique to individual languages. Special attention is usually required when it comes to accented letters.

While attending the needs of local users, designers should not limit themselves solely to the design of appropriate diacritical marks, but should consider some popular kerning pairs¹. In Polish, the letter *ł* proves to be the chief troublemaker. In many fonts spacing for *ł* and *l* they is the same in disregard for the fact that *ł* is wider. This often leads to collisions in such pairs as *łł*, *ęł*, *łł*, *łó*, *łw*, *łł* Fig. 47.

Fig. 45

A E A E

Robert Jarzec, *Metrum*, 2013.

A E A E

Robert Jarzec, *Talia Regular, Italic A, Italic B*, 2013.

Jagiello
ello ello

bałwan
łw łw

żółty
łt łt

Fig. 47 An example of capable handling of popular kern pairs in *Karmina Sans*.

¹ For more kern pairs, which should be taken into consideration when designing fonts for use in Polish, please see the following source: Robert Oleś Study, https://d2d.pl/test/kerning_pl.html.

Conclusion

In the 21st, type design has become a globalised industry fuelled in equal parts by technological advancements and new distribution methods through global online platforms. Likewise, catering to the specific needs of small audiences and taking into account local typographic traditions has never been easier. Unfortunately, creating such globally focused and locally sensitive fonts requires a contemporary typographer to have an extensive knowledge coupled with a penchant for aesthetic sensitivity and keen powers of observation. The speed and ease with which fonts are produced these days as well as their global reach and unification often result in the loss of important cultural values. It seems highly recommendable, therefore, that the available technology be used consciously to preserve those locally developed differences and to enhance legibility and promote high-quality typography.

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Designing Slovak diacritics

p. 96 Just taking a look at internet forums makes it immediately clear that two forms of Slovak exist. The first, which is official and employs diacritics, is used for writing articles, whereas the second, “lazy” variant, without diacritics, is used in the comment boxes underneath.

(Bálik, 2016)

p. 96 There are also two coexisting types of Slovak accent design. The first facilitates legibility and the second, often designed away from Central Europe (frequently by renowned type designers), does not do much to help legibility, or even renders it impossible.

(Bálik, 2016)

p. 114 With a growing number of Slovak type designers, a number of new solutions to old diacritical problems will certainly accrue.

(Bálik, 2016)

1. The Diakritika project came about at the Department of Graphic Design in Bratislava as part of the subject History and Type Design during the 2003/2004 summer semester under doctoral student Palo Bálik. Eleven students took part from various year groups at the department. The students were motivated and encouraged to define a problem based on their own experience with issues surrounding diacritical marks. In the opening debate they eventually managed to define five basic definitions of a possible solution to the problem with their pros and cons, which they tried to address in their experiments: 1. Is the current state of our written language with the absence of diacritics in the electronic media sustainable? 2. If we were able to re-codify our written language into an aesthetically non-intrusive form, would foreign technology companies accept it as standard and would they support it sufficiently in their information technologies? 3. Is it possible to re-work and re-organise our written language under the conditions of today's technological standards (e.g. ASCII coding), to maintain proper legibility of written information? 4. Is it necessary to preserve and promote our written language as a symbol of cultural heritage and national identity in order to enrich the World Cultural Diversity Fund at the expense of more complicated technical adaptability and aesthetics of type? 5. Wouldn't it be interesting to re-work our written language into an aesthetically attractive written character system in order to differentiate it from Latin script, and create an original, national script with the ambition to enforce its uniqueness and creative extraordinariness in today's global world? Aesop's fable *Mercury and the Woodman* was chosen as an experimental text, in which practically all the Slovak diacritical marks occur. This text was broken up into a block with left alignment and directly juxtaposed first with its English translation and then with the students' new solutions for Slovak diacritics. By juxtaposing both texts bearing the same name while maintaining the same conditions it was possible to highlight specific diacritic marks more clearly within the whole and point out the aesthetic, qualitative differences in the typography of both blocks. The resulting project became the publication Projekt_Diakritika with a print run of 1000 and an exhibition of

Introduction

There is nothing that really makes Slovak orthography stand out among neighbouring Central European languages in terms of how their spelling systems developed, save for one interesting detail. Approximately 1150 years ago, Slovak orthography was developed by Saints Cyril and Methodius, who made the first attempt at codifying it in the form of a Glagolitic script system. Of course, this was without diacritics. If this script system had taken hold, today we would be discussing issues of adapting and supporting the Slovak “Klingon language” in the era of digital communication. An idea of surfing the web, sending text messages and tweeting in a Glagolitic script system, though in some ways intriguing, would stand no chance of becoming a reality today, even in this sci-fi scenario. Just taking a look at internet forums makes it immediately clear that two forms of Slovak exist. The first, which is official and employs diacritics, is used for writing articles, whereas the second, “lazy” variant, without diacritics, is used in the comment boxes underneath. The world today is moving at an ever-faster pace and diacritics are clearly slowing it down. I first attempted to address this issue in 2003 as a fledgling teacher, working with students on the project *Diakritika* (Diacritics)¹. The result of the experiment was a discovery that this phenomenon does not stem from issues surrounding type design or typography. It rather concerns the pragmatic encounter of a local culture with new communications technologies and as such will not be of interest to us here [Fig. 1](#). However, the picture is more or less similar in the entire world of type design. There are also two co-existing types of Slovak accent design. The first facilitates legibility and the second, often designed away from Central Europe (frequently by renowned type designers), does not do much to help legibility, or even renders it impossible.

This issue is described by J. Victor Gaultney in the introduction to his 2002 paper *Problems of diacritic design for Latin script faces*. Among others, he cites Albert Kapr, who, in his 450-page book *The art of lettering*, dismissed discussion on diacritics: “It would take us too far if we were also to discuss italic letters, umlaut, accents, signs and figures individually”. He also refers to the weak and often misleading knowledge base of manuals on whose basis companies such as Microsoft (Vincent Connare: *Character Design Standards* 1999) and AGFA (Agfa Corporation: *Type Design Standards* 1996) approached and still approach diacritic accent design. This explains why, in early 1990s, there were only a couple of foreign digital typefaces with relatively satisfactory Slovak diacritics. These were the ones you were happy to send to print, being sure that letters with acute accents and carons would not

turn into rectangles or empty spaces. This “horror vacui” has persisted to this day in the form of proofs from printers being signed, which always reminds me of the Dark Ages of “home-produced”, improvised diacritics. This was blatant tampering with copyright, associated with the risk that a typeface would not work properly. For this reason, specialist companies (Macron) began to appear in the Czech Republic which exploited the gap in the market and, for a fee, converted your purchased “Western” typeface into a “Czechoslovak”, or even “Central European” typeface. It was interesting to compare how diacritic design in these naturalised typefaces differed markedly from the original ones. Typesetting in these adapted fonts had the effect of being far more compact and refined because the positioning, shape and size of the acute accents and carons did not attract any unwanted attention. Localisation of foreign typefaces will always have its dimensional limitations, which is why it always involves a certain amount of “tuning”. There are even typefaces that never allowed for additional diacritical marks to be included in their basic design.

By contrast, if a Latin script is designed in the knowledge that it will contain all additional diacritical marks, the result is better adapted to typesetting in languages that use those marks. This approach is reflected in the work of Czech and Slovak type designers who began to establish digital foundries in the second half of the 1990s. The first of these was set up in Prague by František Štorm under the name Střešovická písmolijna (Střešovice Foundry) (later renamed Štorm Type Foundry²), who capitalised on his knowledge of digitising older Czech font types when designing his new proprietary typefaces. His work also became popular in Slovakia thanks to its well-constructed diacritics. At the turn of the millennium, type designers Peter and Johana Biľak set up the global type foundry Typotheque³ in the Netherlands, where they had both previously studied. Its establishment signalled a major turning point for Slovak type design, and not only thanks to producing new typefaces with optimised diacritics for Central European languages. Their considerable use in the Slovak mass media opened up a public debate on the need for good quality type, a need that was practically non-existent until that time. Today, typography in Slovakia is a well-established activity, a fact also reaffirmed by the work produced by type designers from the second Slovak wave such as Michal Tornyai, Ondrej Jób and Ján Filípek, whose notes stemming from their professional practice have also contributed to this paper.

After saturating the domestic type market and raising the interest of the international community in the work and approach to design of Slovak and Czech type designers, the

the results achieved displayed at the Graphic Design Biennale in Brno as part of the Czechoslovak typographic project EAT (Experiment and Typography). During the course of one year the project was covered by almost all the regional printed press publications dedicated to graphic design, such as *Typo*, *Typography* and *Designum*.

2. Štorm Type Foundry,
<https://www.stormtype.com>.

3. Typotheque,
<https://www.typotheque.com>.



Fig. 1 Projekt Diakritika, AFAD Press 2004.



Fig. 2 Jersey of Slovak NHL player Miroslav Šatan.

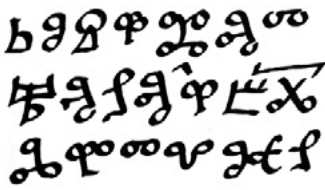


Fig. 3 Glagolitic script, 9th century.

4. Diacritics Project @ Typo.cz, <http://diacritics.typo.cz/>.

5. David Březina: "On Diacritics." *I love Typography*, January 24, 2009, <http://ilovetypography.com/2009/01/24/on-diacritics>.

6. A good example of diacritics being ignored are the surnames of Slovak sportsmen on the strips of international clubs. The ice-hockey player Šatan is simply Satan.

7. The author of the article tries to persuade Dutch officials of the existence of a lowercase *l* with a vertical caron in his name overseas, which could be problematic for the faint-hearted. Peter Biľák: "In the Name of the Father (or the troubles with L-caron)." *Typotheque*, September 25, 2010, <https://www.typotheque.com/articles/lcaron> Fig. 2.

design of Central European diacritics has made it to the forums of professional conferences abroad. A good example of this sort of edifying activity is the popularisation work carried out by Filip Blažek, who, in 2004, published the article "Diacritical marks" in the Czech periodical *Typo Magazine*. This article was later made accessible to international type designers in English in the form of an information portal⁴ where he describes in detail the fundamentals of designing not only Central European but also worldwide diacritics for Latin script. In 2009, David Březina published the article "On Diacritics" on the portal *I love typography*⁵, where, in a condensed form, he summarises and spells out the basic principles of designing diacritical marks which all type designers should learn by heart if they intend to sell their type globally.

I think that the debate on designing Central European diacritics is finally moving in the right direction in international typographic circles. Outside the world of professional typography, however, global awareness of diacritics in Central European languages, as well as the sounds they represent, is close to non-existent⁶. An excellent article on this topic entitled "In the name of the father" was written by Peter Biľák in 2010⁷. If you come from Central Europe and have a couple of accents in your name, it may have happened to you that, while sitting in a café at the airport, you hear some unknown name come over the PA system. It crosses your mind that an entire aeroplane is waiting for somebody who is taking their time. Later on, you realise to your horror that the person is you! That, however, is an entirely different problem Fig. 2.

The Development Of Slovak Orthography

For a better understanding of the function and origin of the design of the contemporary form of Slovak diacritics, it is good to know the background of their historical development within orthographic processes.

Orthography in the C9th–C14th

For some time, Slavs in Greater Moravia used Glagolitic script Fig. 3. We can assume that alongside this they also wrote in the Latin script, although no coherent fragments written in this way were preserved from C9th Pannonia or Greater Moravia. The beginnings of Slavic script in early feudalism are associated with the development of society and its relationship with other tribes and regions, above all with the Mediterranean culture.

Glagolitic script, created by Constantine from Thessalonica, arrived here in around the year 863 and was used up until Methodius' death in 885. We have no other evidence of the existence of Glagolitic script in Slovakia. In around 880, the so-called St. Emmeram Glosses were created. These are five Slavic words inscribed with a chisel directly into the velum of the Latin codex: *Collectio canonum Dionysiana adaucta* Fig. 4. Messengers regularly came to Greater Moravia and Pannonia from Bavaria and Rome. The Pope's letters, sent in the C9th to princes in Greater Moravia, are well known and have also been translated into Slovak. Services in Latin existed alongside those in Old Church Slavonic even before the arrival of Constantine and Methodius. Traces of liturgical texts translated from Latin and Old High German are found in Old Church Slavonic manuscripts, especially in the Euchology of Sinai and the Freising manuscripts Fig. 5.

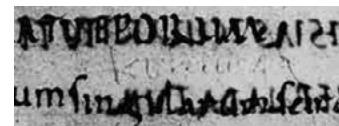


Fig. 4 Slavic word "komusdo" inscribed with a chisel, 860.

In the early C10th, one of Constantine and Methodius' students, known as Chrabr, wrote a defence of Slavic script called *On scripts*. Right at the start of his defence, Friar Chrabr states: "Previously, the Slavs had no scripts, but used lines and scores to read and surmise, still being pagans. After being baptised, they attempted to write in the Slavic tongue using Roman and Greek scripts, but without a system. But how can one write well in Greek script *bogŭ* (god), or *životŭ* (life), or *crŭkŭnŭ* (church), or *človekŭ* (person), or *širota* (breadth) or *štedroty* (generosity), or *junostŭ* (youth), or *językŭ* (language) and other (words) similar to those? And this is how it was for many years." Friar Chrabr realised the basic differences between the Greek and Slavic Glagolitic systems. He noticed that the Slavic "yers" and consonants š, ž, č, ě, ñ and l' could not be properly denoted using Greek and Latin scripts. For centuries, type designers had been trying to overcome this problem in different ways, until it was resolved once and for all in the late C18th with the rise of the progressive bourgeoisie.

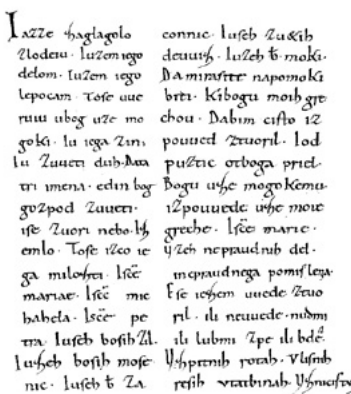


Fig. 5 Freising manuscript, around 972.

In the C9th, Slavic consonants were simply recorded as one phoneme represented by one grapheme, or as a phoneme represented by two or three graphemes. Slavic names from Pannonia, for example, were written as follows: *Skrŭbenŭ* as *Zcurben*, *Žilŭ* as *Siliz*, *Trěbicŭ* as *Trebiz* and *Čbstilo* as *Zistilo*. The consonants was most often written as *s*. However, it could also be written using such graphemes as *ss*, *se*, and, less frequently, as *z* and *sz*. The consonant *ž* was most often denoted using the graphemes *s* and *z*, and in isolated cases as *g*, which has its origins in Italian graphics where *dž* is written as *gi*. The consonant *š* was most often represented by the grapheme *s*, and less frequently by *ss* and *se*. The consonant *č* was most commonly indicated using the graphemes *c*,

ch or, sometimes *s*. The palatal *ň* was denoted as *nn* or less frequently *ni*. The soft *l'* was written as *l* or *li*. The groups *jb* and *ji* were written as *i*. The soft *d'* was written as *da* or, in isolated cases, as *t*, *g* and *z*. The soft *ť* was denoted as *t*, *th*, *ti* and *z*. The consonant *k* was recorded as *k*, most commonly *c*, and rarely *qu*. There were many deviations in writing voiced consonants. German scribes were unable to pronounce these in their language, and therefore they often wrongly recorded a voiced consonant in place of an unvoiced one and vice versa. For example, Priuuinna instead of Pribina. This points to the fact that Slavic names were written according to the practices of scribes recording Latin, German and Italian texts. The German way, in particular, involved mixing voiced and unvoiced consonants. The Italian way involved recording the soft consonant *d'* as *g* or *z*, and also *ť* as *z*, and finally *ž* as *g*. Generally, by the C11th, one consonant was denoted using one character. There were also important legal institutions, known as “places of authentication” (*locus credibilis*), where the spelling of Slovak names developed in Hungarian written manuscripts. In Slovakia, from the C13th, such places were found in chapters in Bratislava and the Spiš region as well as in monasteries in Hronský Beňadik, Zobor, Turec, Leles and elsewhere.

In the C11th, written communication went into decline. Over the following centuries, script and the writing of documents was mainly in the hands of those from ecclesiastical circles. Few manuscripts have been preserved and their orthography was not uniform. Following the Mongol invasion, the function of “places of authentication” was consolidated and they became public authorities with notaries. Written records were required as various kinds of testimonies (for property, citizenship, etc.), thanks to which orthography in the C13th stabilised. Overall, the consonants *s*-*z* were denoted as *z*-*z*, apart from the grouping *st*, which was in the main written as *st*. The consonants *š*-*ž* were written with the grapheme *s*, the consonants *c*-*č* with the grapheme *c*, and *ť*, *d'*, *ň*, *l'* as *t*, *d* or *g* (*=d'*), *n* and *l*, respectively. The consonant *k* was recorded as *k*, and *v* as *uu*, *u* and *w*. For example, *knāz* (priest) was written *knaz*, and the names *Soběslav* as *Zobuzlou*, *Židemer* as *Sidemer*, *Žemlár(i)* as *Semlar* and *Dimišā* as *Dímisa*. Alongside these characters, there were also graphemes which were only known later, for example *č*, *c* written as *ch*: *kouachi* = *Kováči*, *knesech* = *Kňážic(i)*. The consonant *k* was recorded as *k*, *c*, *ch*, *qu* and *q*. The consonant *v* was usually written as *w*, in the middle of a word also as *u*, and less often as *v* and *vv*. The letter *s* was mainly used to record *s* and *z*, but also *š* and *ž*; *cz* and sometimes *ch* were usually used for recording *c*; and *ch* was usual for *č*. Denoting the consonant *č* using the letters *cz* has its origins in the Czech and German

chamber of King Sigismund. The spelling of Slavic names in Hungarian Latin documents was gradually simplified and from the end of the first quarter of the C15th spelling stabilised overall.

Orthography in the C14th–C15th

In the C14th, Czech manuscripts written in Czech started to arrive in Slovakia. Czech orthography had more particularities. The first continuous text from Slovakia, *Mariánska pieseň* (song of Mary) from Bratislava in 1380, for example, has a mixed system for writing *s* and *š*. Ján Hus (in his work "Orthographia Bohemica", 1412) established a set of characters with diacritical marks. In his teachings, *š* was written as *ś*, *ž* as *ž*, *č* as *č*, *ř* as *ř*, *ť*, *d'* and *ň* as *ť*, *ď* and *ň*, soft *l* as *l*, and hard *l* as *l*. He said that long consonants should be indicated using a line. This system was not immediately successful, but it did not fall by the way-side. In the C15th and C16th it even crossed into Hungary. In Bohemia, points were commonly used in the letter *č*, also written as *cž*, then *v ř*, written *rž*, and in *ň* = *ń*. Above the letter *l*, the point changed in that a small half-circle was placed on the upper right side of the character, leading in turn to the "closed" *l*, which in its form is close to the Slovak *l'*, but the caron completely extends to the base character. Bernolák also used this "closed" *l* to denote the soft *l'*. Carons above letters developed from points in print when indistinctive points were stretched a little. Diacritical orthography spread mainly from the C19th. Deviations from today's writing system included *š* being denoted as *ss*, as *š* with two points at the end of a word, *ž* being written as *Zi* at the start of a word and *č* in the same position as *Cž*. The consonant *j* was written as *a g* and the consonant *v* as *w*. The character *ě* was already in use. At the start of a word, *v* was denoted as *u*. This was, in brief, the orthography of the *Kralice Bible* dated 1579–1593 Fig. 6.



Fig. 6 Kralice Bible, 1579–1593.

Until the end of the C18th, a digraphic spelling system was in use. This system was roughly as follows: *s* ~ *ś* *s* (less frequently *ss*) ~ *ss*; *z* ~ *ž*: *z*; *c* ~ *č*: *cz* ~ *cž*, *čž*, *č*; *ť*, *d'*, *ň*: *t*, *d*, *n*, *ti*, *di*, *ni*, *ny*; *ř*: *rz*; *j*: *g*, *y*, (*-ey*); *ä*: *a*, *e*, *ie*; *ie*: *ye*; *ia*: *ia*, *ya*; *u*: *u* (at the start and sometimes even in the middle of a word), *v*. Diacritical marks were placed only in quite isolated cases above *ž* and *cž* (= *ž* and *č*). The consonant *dz* was written using *cz*: *meczy* (= *medzi*) (between); *š* was sometimes written as *s*: *osklywosty* (ugliness), *bywsy* (You have been). Recording *č* using *ch* and *š* using the letter *s* represents the form of writing used in the Hungarian Chamber. The genitive singular feminine adjective ending *-ej* was written *-eg* rather than *-ey*: "z gedneg strany" (from one side). The vowel *ä* was commonly written

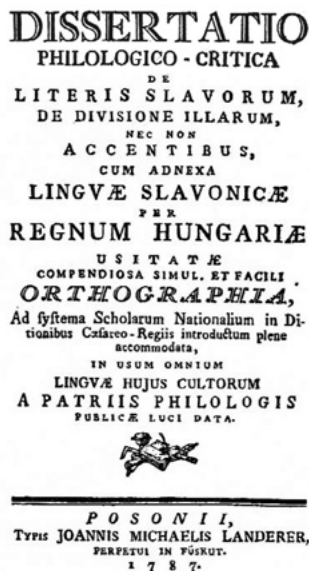


Fig. 7 *Dissertatio philologico-critica de literis Slavorum*, 1787.

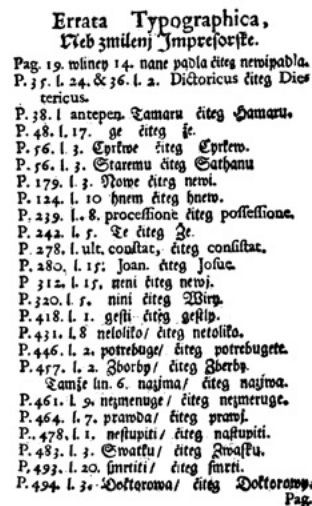


Fig. 8 *Prawa katolicka ručny knyžka*, 1691.

as *e* and sometimes as *a*: pany (páni) (gentlemen) *Swetogensszy* = Svätójänščí, *wod Swateho Ondrege* – vod Svätého Ondrejä. A Polish influence may be seen in writing *š* and *ž* as *ssz*, a German one in writing *s* as *sz*, *ssz* and perhaps even in writing *z* as *s*; and lastly a Hungarian influence could be glimpsed in the writing of *š* and *ž* using the character *s*.

Modern orthography

The birth of the Slovak written language was the result of a rather long development. The modern spelling system of the Slovak language came about after the careful appraisal of older orthographic traditions. The first attempt at its codification was made by Anton Bernolák in his work *Dissertatio philologico-critica de literis Slavorum* (Bratislava, 1787) Fig. 7, because he saw many shortcomings in Slovak orthography. At that time, Literature from Trnava over a century-long orthographic tradition, but it lacked fixed rules. Some of its elements made it stand out from the system commonly used in Czech. Even before Bernolák, Slovak literature had removed some Czech marks, for example *ě*, *au* (written *ú*) and *ř*, and, the denotation of the palatal *ň* before *e* and *i* was introduced occasionally: *naplňený* (filled). In some contemporary writings, softenings in the groups *tě*, *dě* and *ně* were indicated by a mark above the *ě*: *buděš*, imper. *pitě*, etc. In 1691, Mikuláš Thamassy in the book *Prawa katolicka ručny knyžka* (The True Catholic Handbook) wrote, e.g. *powstať* Fig. 8. Writing an initial *u* as *v* ceased in *Catalogus onomasticus* in 1707. *Prívod ku dobropisemnosti* (An introduction to good spelling) from 1780 requested that *Jozeff* and similar words be written with a *J* and not a *G*. However, *y* and *i* caused confusion. The diphthongs *ie* and *uo* were already written in this way in *Ostrihomský ritual* (the Esztergom Ritual) Fig. 9. This work already contains the contemporary way of recording the palatal *t*, *d*, *n* + *e*, *i* and *ie*; although sometimes an *è* appeared: *tèla*, *wedèt*.

There is a special group of Slovak printed manuscripts including five Slovak books, printed between 1750–1758 in Debrecin in the Zemplín dialect of East Slovakia. These are the first books printed entirely in Slovak, intended for the religious needs of Calvinists. These books employed the Hungarian spelling system, whose influence also appears in other manuscripts. Some smaller writings addressed orthographic issues even before Anton Bernolák. T. Masník (Masnycius), for instance, wrote *Zpráva pjsma slowenského, gak se má dobre psati, čjsti, y tisknauti* (Rules of Slovak writing, how best to write, read and print) (Levoča, 1696) Fig. 10. Then there was *Zač latinského a slowenského gazyka* (Why the Latin and Slovak) (Košice, 1763) and *Začátkowé latinskýho a slowenskýho gazyku* (The Origins of Latin and

Slovak) (Trnava, 1777), and others. Although Czech is often the basis in these documents, Slovakisation is already perceptible. Jozef Ignác Bajza (1754–1836), Anton Bernolák's predecessor in the efforts to codify written Slovak, wrote č, š, ž, í, s (always as s), and ě, ň even in cases such as *bráňiti* (defend) and *dopustiti* (allow). Bernolák stopped writing *q* and *x* and then introduced *i* instead of today's *j*. He also put *u* instead of the formerly used *v* at the start of a word and following a vowel, and removed *y* and *ý*, saying that just *i* and *í* should be used. He still kept *g* to function as *j* and wrote *g* (pronounced) as *g*. Moreover, he marked every palatal *t*, *d*, *ň* and *l* with a caron, even before *e* and *i* and began to simplify the complex way of writing [s] and [š] and wrote *s* and *š*⁸. He also wrote the diphthong *ie* as *ge* and replaced the Czech *ů* with the Slovak *ó* and was against using the diphthong *uo*, which he found vulgar. Bernolák's written language persisted for around sixty years.

His writing system was taken over entirely by Ľudovít Štúr, who did not differentiate between *y* and *i*, and marked every *t*, *d* and *ň*, but not *l*, which he recorded as *l*. He denoted the diphthongs *ja* and *je* in the first digraph using the character for *j*, just as Bernolák had for *ge*. However, Štúr no longer wrote *j* using the grapheme *g*, so even in diphthongs he introduced a *j*. He wrote the diphthong *uo* as *uo*, which is the way it was written in many old texts and the Esztergom ritual from 1625. Štúr stopped writing *w* and replaced it with the grapheme *v*. He denoted the bilabial *u* with the grapheme *u*: *prauda* (truth). Both Bernolák and Štúr required long vowels to be meticulously indicated. The only difference was that Bernolák recorded them in the Western Slovak way, whereas Štúr assumed the Central Slovak system with its rhythmic rule, according to which two long syllables cannot immediately follow each other. Printing in accordance with Štúr's spelling system began in 1844 with the Nitra collection. In 1846, his grammar book *Theory of the Slovak Language* was published.

Our Slovak language has its own sounds which other languages lack. It has its own syllables, lengthenings and shortenings, its own set of sounds, declensions of various nouns and verbs distinct from other languages, thousands upon thousands of its own words...

Ľudovít Štúr

Michal Miloslav Hodža contested Štúr's writing system in his works *Epigenes Slovenicus* (1847) and *Větin o slovenčine* (Theorems on the Slovak language) (1848), with a confusing effect on issues surrounding the Slovak writing system. Ondrej Radlinský's *Prawopis slowenský s krátkou mluwnicí* (*The Slovak spelling system with a short grammar*) (Vienna, 1850)

8. Apart from the above mentioned amendments, Bernolák also contributed to the simplification of the Slovak writing system with some smaller amendments. For example, for denoting the sound [š] he accepted the letter š (s with a caron; it was actually a long Gothic s with an added caron), unlike Bajza who, following older spelling practices, wrote in the first of his books ss for š. It is true that following the publication of his *Dissertatie*, Bajza also accepted one letter for the sound [š] (compare his *Epigrammata*, published in 1794).



Fig. 9 Ostrihomský rituál, 1625.



Fig. 10 Zpráva pjsma slowenského, jak se má dobře psati, čísti, y tisknauti, 1696.



Fig. 11 Krátka mluvnica slovenská, 1852.

signalled a step backwards, as it re-introduced elements of the Czech language, which had acquired the name of “old Slovak” in Slovakia. This confusion was cleared up by Martin Hattala in his commemorative book *Krátka mluvnica slovenská* (*A Short Slovak Grammar*) (1852) Fig. 11, finally bringing the much needed stabilisation of the writing system. According to Hattala, *ť, d', ň* and *l'* were to stop being marked before *e, i, ia, ie* and *iu*, and elsewhere be denoted with a caron. He also recommended, that the diphthong *uo* be written as *ô*. This grapheme is used in the French writing system, however not to denote a diphthong. This was a new symbol that had no previous tradition, but took hold. He wrote the diphthongs *ia, ie*, and *iu* with an *i*, thereby returning to the old custom from many non-literary manuscripts and the *Esztergom ritual* (1625). He wrote the consonant *v* as *v*, even in cases where it is pronounced bilabially (*pravda* (truth), *stav* (status), etc.). Hattala introduced *ä* (*mäso* (meat) etc.) and the diphthong *iu* (*svedomiu* (conscience)). He also introduced a differentiation between *y* and *i* Fig. 12.

Despite various minor modifications that have been introduced in the course of time, his orthographic system based on a combination of Bernolák’s and Štúr’s ideas, Martin Hattala’s writing system has endured to this day.

Fig. 12 Historical orthographic development of Slovak diacritics.

| | 9th–14th centuries | 14th–15th centuries | Modern |
|----|--------------------|---------------------|---------------|
| á | a | a | á |
| é | e | e, ee | é |
| í | i | ij | j, í |
| ó | o | uo | ó |
| ú | u | uu, au | û, ú |
| í | ul | el | í |
| í | ur | er | í |
| ý | y | y | ý |
| č | c, ch | cz, ċ, čz, tsch | c', č |
| š | s, ss, sc, z | ss, ssz, sch, š | š, š |
| ž | z,s | z, ssz, ss, ž, z' | z', ž |
| d' | t, g, z | di, dy, ě | dě, dè, d', ě |

| | | | |
|----|-----------|-------------|----------------|
| ť | t, th, ti | ti, dy, ě | tě, tè, t', ě |
| ň | n, nn, ni | ni, ny, ñ | ně, ñe, nè, n' |
| l' | l, li | l, ly | ľ, l', ĩ |
| ä | a | a, e, ie, â | ä |
| ô | o, uo | vo, vuô | ó, ú, ô |

Contemporary Slovak

Today, the Slovak language⁹ has a combined digraphic and diacritical spelling system, which, alongside the basic characters of the Latin alphabet, also employs digraphs (*dz, dž* and *ch; q* and *x* in loan words) as well as characters with diacritical marks (*á, ä, ě, d', dž, ô, ř,* etc.), which occur relatively often in flowing text.

In Slovak, the order of characters according to the frequency of occurrence in continuous text is as follows: *n* (5.7%); *s* (5.0%); *t* (4.9%); *r* (4.7%); *v* (4.7%); *k* (4.0%); *l* (3.9%); *m* (3.6%); *d* (3.4%); *p* (3.0%); *j* (2.2%); *z* (1.9%); *b* (1.8%); *h* (1.4%). In this regard, it is clear to see that approximately one in twenty characters in Slovak is either *n, s* or *t*. A little less frequent are the characters *r* and *v*. This also shows that every twenty-fifth character in Slovak is *k* or *l* or *m*. In practical terms, this probably means that in a single line of written Slovak text there are three occurrences of *n, s, t, r* and *v*, each, and at the same time around two of *k, l* and *m*, each.

The frequency of occurrence for diphthongs in Slovak is as follows: *ie* (0.88%); *ia* (0.48%); *ô* (0.22%); *ou* (0.20%); *iu* (0.16%). Slovak is composed of 41.69% vowels (including short and long vowels and diphthongs) and 58.31% consonants. Characters that came to us in loan words have the lowest frequency of occurrence: *f* (0.165%); *g* (0.175%); *x* (0.028%); *w* (0.001%).

9. Slovak has consonants and vowels – as do all other languages. However, it does not have nasal vowels, which occur frequently in e.g. Polish and French. It does use diphthongs. Some languages only have short vowels. Slovak has both long and short vowels. There are certain sounds that are identical in all languages, but some are only characteristic for a specific language. In theory, it is important to strictly differentiate sounds from characters. For example, the character *v* may have many forms in a language. Its pronunciation is different in the word *vták* (bird), different again in the word *vláda* (government), it is pronounced differently in the word *krov* (roof) and differently again in the word *polievka* (soup), etc. There are many examples like that. Furthermore, the same letters do not necessarily sound the same everywhere. *R* is pronounced differently in Slovak and German; it sounds different in French and different again in English. It is a similar story with other letters. All languages mainly have in common the characters *n, s, t, v, k, l, m, d, b, z,* and *h*. Those letters that sound soft are different (*š, č, ď, ť, r,* etc.). The former are the most frequently occurring in all languages.

10. Diacritics, once seen as “type-founders’ step-children, can then become fully-fledged members of the Latin typographic family.” J. Victor Gaultney: *Problems of diacritic design for Latin text faces*. Dissertation submitted in partial fulfilment of the requirements for the Master of Arts in Typeface Design, University of Reading, 2002. Available online: http://typefacedesign.net/wp-content/uploads/2013/08/MATDo1_VG_ProbDiacLo.pdf.

Strategies for designing slovak diacritics

In the chapter on diacritic design of his 2012 book *Knihy a typografie (Books and typography)*, Martin Pecina points out that even non-typographers should become familiar with the parameters of quality diacritics in order to have a better grasp of the type market. Working in an environment requiring a quality representation of a language’s diacritics, all good graphic designers or typographers tend to choose types with suitably designed accents. This is not only a professional aspect, but mainly a commercial aspect, which no decent foundry or typographer should ever ignore. Basically, good accents sell in Central Europe. Even large multinational players are slowly beginning to realise this fact (Adobe, Apple, Microsoft, etc.). These companies not only produce types, but their main role is to co-create technological platforms for types or international standards for codifying them.

According to J. Victor Gaultney’s¹⁰ classification Fig. 13, it should be possible to divide Slovak accents according to their horizontal features and vertical positioning as follows:

Fig. 13 Classification of Slovak diacritics by horizontal features and vertical positioning according to J. V. Gaultney.

| Horizontal features | | | |
|---|---|--|--|
| Symmetric (accents are symmetrical on both sides of the central axis) | Asymmetric (accents drawn in a different style on right and left sides with a focus outside the central axis) | | |
| Centred (optical centre of the accent is aligned with that of the base glyph) | Offset (optical centres of accent and base are not aligned) | Variable (alignment changes according to base) | Right (accent is aligned to the right of the base glyph) |
| Ä ä Č č Š š Ž ž Ň ň Ď ě Ō ō | Á á É é Í í Ó ó Ú ú Ý ý Ĺ ĺ Ř ř | | d' t' L' l' |
| Vertical positioning | | | |
| Above (accent rests over base glyph) | Ä ä Č č Š š Ž ž Ň ň Ď ě Ō ō Á á É é Í í Ó ó Ú ú Ý ý Ĺ ĺ Ř ř | | |
| Top Right (accent is aligned to upper right corner of base) | d' t' L' l' | | |
| Through (accent is vertically centred through the middle axis) | | | |
| Below (accent is positioned below base) | | | |

As we can see, many foreign typographers still base their accent designs on old foundry logic, where punctuation was widely used to represent diacritics. Of course, that is a relic today, the result of which is that accents are often disproportionately shaped, too light, dark or badly positioned. Some Slovak typographers blame font creation software programs which use system font characters with added diacritics often designed using the above-described logic as their basic templates. So, how to design fonts with multi-language support so that they are clearly legible to native readers? Martin Pecina summed up a rule for designing quality diacritics in one sentence: “all marks must create a perfect creative and functional unit with the base letters and be in harmony through their size and contrast”. The following advice and strategies serve as initial reference points when trying to determine appropriate weight, size, positioning, style and kerning for Slovak diacritics.

Weight and size

Diacritical marks or accents form part of the character and should therefore be easily distinguishable from punctuation. In order to preserve their function, they should neither attract too much attention, nor be too inconspicuous, so that they are not overlooked when being read. Their size must be proportionate to the optical size of the type Fig. 14.



The rule is: the smaller the type, the more distinct the accents. Their size is often pre-determined by the height of the uppercase letters or length of the ascenders. This, however, is not the case for types with a reduced x-height. Some Slovak typographers slightly shorten the descenders due to accents on uppercase letters in order to prevent collisions when typesetting with more compact line spacing Fig. 15.

Fig. 14 Strong contrast of the accent weight with light and bold type styles.

Fig. 15 Shorter descenders allow narrower line spacing. *Fedra Serif A Book* (Peter Biľak) *Fedra Serif B Book* (Peter Biľak) *Empirk Normal* (Michal Tornyai) *Fedra Sans Book* (Peter Biľak).

gúl' výr / gúl' výr
Čík tík Čík tĺk

Peter Biľak, *Fedra Serif A Book*

Peter Biľak, *Fedra Serif B Book*

Positioning

11. "(...) it is evident by now that diacritics are not merely an add-on to the basic letters. They make letters." David Břežina: "On Diacritics." *I love Typography*, January 24, 2009, <http://ilovetypography.com/2009/01/24/on-diacritics>.

Most symmetrical accents in Slovak (caron, umlaut and circumflex) are positioned above the optical centre of the character, with a slight shift to the right or left as required.

The asymmetrical acute accent is positioned more or less the same as symmetrical accents. The difference is a slightly shifted optical centre, which needs to be compensated with a shift to the right of the central axis of the letter. The vertical accents of the palatal characters *d'*, *t'*, *l'* and *ľ'* are an exception to this rule. Completely different rules apply here, as horizontal positioning of accents is no simple task and may vary considerably in different combinations. That is why there is no universally recognised solution derived from mathematical and geometric ratios. Instead, individual designers set accents according to their own aesthetic preferences. However, the general rule is that when positioning the accents, one should be careful not to shift them too far to the left or right. Their vertical distance from the base characters is also important¹¹. It should neither be too small, making the accents run into the characters, nor too big, as that would make them appear detached from the base letters Fig. 16.

Fig. 16 Positioning of symmetrical and asymmetrical accents. *Fedra Serif A Book* (Peter Biľak), *Preto Sans Regular* (Ján Filípek) *Dora Regular* (Slávka Pauliková) *Jigsaw Regular* (Johana Biľak).

čôäd'

Peter Biľak, *Fedra Sans Book*

čôäd'

Ján Filípek, *Preto Sans Regular*

čôäd'

Johana Biľak, *Jigsaw Regular*

čôäd'

Michal Tornyai, *Empirk Normal*

čôäd'

Peter Biľak, *Fedra Serif A Book*

čôäd'

Slávka Pauliková, *Dora Regular*

Style

The aim of all type designers is to achieve a certain optical balance between the design of the characters and the accents. This can sometimes lead to problems because accents are not characters. If we were to approach them in the same way, we would probably end up with vignettes containing subtle details likely to vanish in smaller sizes and consequently weaken their articulation. This problem often arises in efforts to preserve the character elements of a type's calligraphic design, such as contrast, stress axis and ductal logic. The result is usually an asymmetrical accent style, specifically of the caron and circumflex, with an alternating thick and hairline diagonal stroke. In this case, thin strokes should be slightly thickened. A big challenge surrounding asymmetrical accent style is their very positioning on the central axis of individual letters. That is why most type designers today prefer a symmetrical accent style, where the caron and circumflex are symmetrical on both sides of the central axis. This significantly facilitates their positioning. To improve legibility, type designers can moderate the contrast between thinner and thicker accent strokes, thereby preventing the thinner parts from dwindling away. A very non-standard solution is the "mono-line" accent style. This is where a letter preserves its character aspect, which is in stark contrast to the hairline strokes of one diacritic weight

Fig. 17.

záťaž

Michal Tornyai, *Empirk Normal*

záťaž

Peter Biľak, *Greta Light*

záťaž

Ondrej Jób, *Odesta Regular*

When designing accents, typographers also need to bear in mind the style in which strokes are executed. This should copy the logic of the stems, diagonals, brackets and terminals of the type itself, thereby achieving a more harmonious result within the entire set of marks Fig. 18.

dážď

Michal Tornyai, *Empirk Regular*

dážď

Peter Biľak, *Fedra Sans Book*

dážď

Ondrej Jób, *Sonda Medium*

Fig. 17 Asymmetrical style, symmetrical style and monolinear accent style. *Fedra Sans Book* (Peter Biľak) *Sonda Medium* (Ondrej Jób).

Fig. 18 Various styles of shaped endings in accent strokes.

Fig. 19 Various sets of drawing variants of accents for uppercase, lowercase and small capitals.



Ján Filípek, *Deva Ideal Book*



Peter Biľak, *Lava Regular*



Peter Biľak, *Greta Light*



Peter Biľak, *Fedra Sans Book*

Kerning

Characters with diacritical marks should definitely avoid collisions with the preceding or following letters. In Slovak, this is a particularly salient issue with the vertical carons of the characters *d*, *t* and *l*, which are often followed by characters drawn on the x-height (often also with accents) or the ascender line. There are two ways to approach this problem: 1) maintaining the same width as the base characters *d*, *t* and *l* and add positive kerning against the characters drawn on the ascender line; or 2) making the accented characters a little wider and add negative kerning against the characters drawn on the x-height. This solution may be more appropriate for typesetting in programs that do not support kerning. For a capital *L*, one should be mindful of the very probable collision when followed by the uppercase characters *V* and *T*. For thicker styles, positive kerning of characters with vertical accents should be increased [Fig. 20](#).

The problem of a less-than-elegant gap when setting a lowercase *l* and *d* followed by a character with a left ascender can be resolved with an alternative design of the letters in question. For sans-serif types, it is advisable to consider shifting the lower terminal of the characters *d* and *l* to the right, thus creating a vertical space for a vertical accent. For serif types, an interesting solution is to create contextual alternatives where the following letter with a left ascender has a truncated upper serif [Fig. 21](#).

VEL'TRH

Ondrej Jób, *Doko Bold*

BUL'VA

Peter Biľak, *Fedra Sans Bold*

Fig. 20 Kerning of an accented uppercase L followed by uppercase characters T and V.

Veľká

Ondrej Jób, *Doko Regular*

Veľká

Ján Filípek, *Deva Ideal Book*

Veľká

Andrej Dienneš, *Fazeta Regular*

Designing slovak diacritics

The above-described strategies are valid for designing any diacritical marks more or less universally. When addressing the forms of individual diacritical marks, however, certain additional issues may arise. After consulting active Slovak type designers, solutions to the most frequent dilemmas when designing specific Slovak accents may be summarised in the following practical principles: *Dĺžeň*/acute (*á, Ā, é, Ě, í, Ī, Ĺ, ó, Ŕ, ř, Ů, ý, Ÿ*). The Slovak *dĺžeň* (acute accent) is used to denote the length of a sound: used specifically above vowels (*a, e, i/y, o, u*) and the consonants *r* and *l*. If it is placed above the letter *í*, it replaces the dot. The slope of the accent should run off the demarcated area above the character *í* and the following letter with an ascender on the left, with which the accent should definitely not collide **Fig. 22**.

Fig. 21 Problem of a large gap between a vertical accent and character with an ascender. The slope of the accent should run off the demarcated area above the character *í* and the following letter with an ascender on the left, with which the accent should definitely not collide.

Víla

16°

Dinamit Regular, Marek Chmiel

Víla

34°

Lava Regular, Peter Biľak

Víla

43°

Fazeta Regular, Andrej Dienneš

Víla

56°

Akceler Regular, Andrej Dienneš

Fig. 22 Various tilt angles of the acute accent.

For a lowercase *í*, it is worth considering whether to use the same accent as for the other lowercase characters, or to apply its uppercase form **Fig. 23**.

KÍLB TÍk / KÍLB TÍk

Ján Filípek, *Preto Serif Regular*

Marek Chmiel, *Dinamit Regular*

Fig. 23 The difference between the uppercase and lowercase form of the acute above the lowercase *l*.

“Mäkčeň”/caron (č, Č, ě, Ě, š, Š, ž, Ž – d', Ď + ě, Ť + ě, Ľ)

In Slovak, the “mäkčeň”, or caron, serves to mark the softness of a sound and is used specifically above the consonants *c, s, z, d, t, n* and *l*. Positioning a horizontal caron above an uppercase *D* is problematic because this is not a symmetrical character. An ideal solution is to find the focal axis of the letter itself and set the accent according to this. If we position the caron using an asymmetrical style, their mutual optical centres must be harmonised, and a purely aesthetic solution should possibly be pursued, based on a subjective feeling about their best configuration [Fig. 24](#).

Ďob

Michal Tornyai, *Empirk Regular*

Ďob

Peter Biľak, *Fedra Serif A Book*

Ďob

Peter Biľak, *Lava Regular*

Ďob

Andrej Dienneš, *Akceler Regular*

Fig. 24 Positioning of an asymmetrical and symmetrical caron style above an uppercase *D*.

A vertical caron should be clearly distinguishable from any punctuation, especially apostrophes, commas and upper quotation marks. In terms of shape, it should be closer to an acute mark or other diacritical marks. For a lowercase *ť*, a vertical caron is positioned in the right-hand space, created by the crossing of the horizontal and vertical strokes. Usually its distance from the letter is approximately the same as with other lowercase accents [Fig. 25](#).

Fig. 25 Positioning of an asymmetrical and symmetrical vertical caron above a lowercase *t*.

,ť‘

Michal Tornyai,
Empirk Regular

,ť‘

Ján Filípek,
Preto Serif Regular

,ť‘

Peter Biľak,
Greta Regular

,ť‘

Peter Biľak,
Fedra Sans Regular

The horizontal placement of a vertical caron on an uppercase *Ľ* is similar to its lowercase variant, the difference being that more distance is necessary between the accent and the stem. For vertical placements there is no hard and fast rule. Some type designers position the vertical caron slightly above the ascender line, while others try to keep it just on the ascender line, arguing that there is less of a chance of a collision with the descenders of the letters of the previous line Fig. 26.

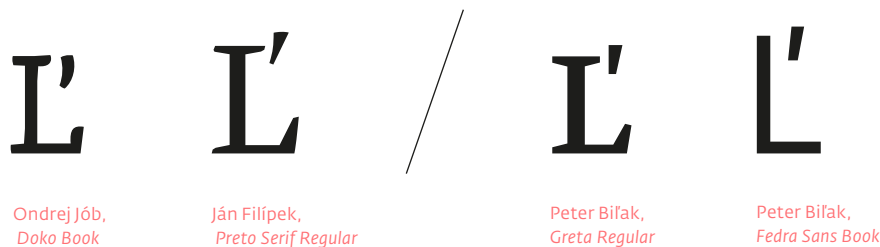


Fig. 26 Positioning of an asymmetrical and symmetrical vertical caron style next to an uppercase *L*.

“Vokáň”/circumflex (ô, ō)

In Slovak, the “vokáň”, or circumflex, is used to denote a diphthong, although it is composed of just one character: more specifically, it is positioned above the vowel *o*. In the simplest terms, this character is created by turning a horizontal caron 180 degrees, and thus the ductal logic also remains preserved in the accent. If the form of the circumflex is modified, it should arguably have the same weight as the caron, because it is highly probable that both marks will appear next to each other in the same word Fig. 27.

Fig. 27 Relationship of a circumflex and caron. *Fedra Sans Book* (Peter Biľak) *Preto Serif Regular* (Ján Filípek) *Dora Regular* (Slávka Pauliková).



“Dve bodky”/umlaut (ä, Ä)

“Dve bodky”, or umlaut, is also (though more rarely) referred to in Slovak as tréma (trema), dieréza (diaeresis) or rozluka (separation). Two dots are employed in Slovak to mark a short vowel and are used specifically above the vowel *a*. The size of both dots should be the same as above the letter *i* and a little smaller than a full stop. Their vertical positioning should also follow the position of the dot above the letters *i* and *j* Fig. 28.

Fig. 28 The contrast in size between the two dots of the umlaut and punctuation.

Najmä.

Ján Filípek, *Preto Serif Regular*

Najmä.

Peter Biľak, *Fedra Sans Book*

Najmä.

Slávka Pauliková, *Dora Regular*

Conclusion

How will the design of Slovak accents develop in the future? With a growing number of Slovak type designers, a number of new solutions to old diacritical problems will certainly accrue. The issue of searching for the most harmonious solution will definitely not become a closed subject. Today, accent design is more or less formally codified. Nowhere is it expressly stated, however, how diacritical marks should look in specific combinations within a specific typeface. This opens up space for alternative accent styles within existing or new type families, from which designers can choose the most suitable solution for their own purposes, whether this concerns the form and/or position of diacritics, or any other original or radical solution. Since modern technology lends itself to the task, why not make creative use of available resources?

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THE INSECTS PROJECT: Problems of Diacritic Design for Central European Languages is a proud product of a collaborative international research effort aimed at sharing knowledge about Central European typography and promoting design that is sensitive to the needs of all those who are unlucky enough to be native users of Czech, Hungarian, Polish and Slovak.

Perhaps few users of “diacriticless” languages (such as e.g. English) realise how lucky they are to be able to choose from literally thousands of typefaces. Central Europeans, on the other hand, are nowhere near as spoiled for choice, because many fonts available on the market still seem to overlook the specific needs of the knotty languages in our part of the continent. We hope to encourage designers to create fonts that are sensitive to local users’ needs.

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