

Uppercase 3.7 %
lowercase 96.3 %
ascenders or descenders 37.0 %
diacritics 0.0 %
(The visual identity of a language)

Marta Guidotti

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GLOSSARY

glossary

A VISION OF WRITING, LANGUAGE AND TYPOGRAPHY

BLACKNESS

black amount in the text frame, measured by the amount of characters.

CULTURE

the trace of a social being built through history, so linked to facts, values and to a place; in brief it is the substance of an identity.

CHARACTER/LETTER

symbol, sign, or mark used in a language writing system. (Carter & co., 2015)

IDENTITY

the particular and unique characteristics that makes something itself.

IDENTITY OF A LANGUAGE

all that makes differentiation between languages and introduce recognisability: e.g. the letter frequency that it is the own way every language has of using the (same) alphabet.

LANGUAGE

cultural artefact that has an oral (speaking) and visual (writing) form.

LETTER FREQUENCY

recurrence of certain letters within the use a language makes of its writing system.

MACRO-TYPOGRAPHY

the macro level is looking at the text as an overall (black and white), with specific graphic qualities as the texture/text colour; it is about the shaping of the space, so typeset and layout design: leading, column width, margins, density of the text etc.

MICRO-TYPOGRAPHY

the micro level refers to the visual comprehension of the letter shape (in a classification of these in relation to the text line: ascender, descender, uppercase etc); it is about looking at the single black element of typography.

glossary

ORTHOGRAPHY

rules for combining letters together and making up words.

TEXTURE

it is also referred to as colour of the text, and it is the visual perception of a text at the reading size, made by the black and white relation produced by the visual properties of the characters; it also depends on the language.

TYPESETTING

the design of the space in relation to the content (text or images). So of the type size, of the spacing between letters, words and text lines; of what is in and around the text frame, as well as columns and margins. Briefly, typesetting is the composition of text by means of arranging physical/digital type. The early printing stored letters and other symbols retrieved and ordered according to a language's orthography for usual display.

TYPOGRAPHY

the visual form of a language, as it is writing. It consists of organising and composing a text in the space that can be printed or digital format. It is also referred to as typesetting.

VISUAL IDENTITY OF A LANGUAGE

the identity associated to the appearance of the subject and it generated by the characterising/identifying features: when the specific visual qualities, as text colour, are based on language specific features, as letter frequency.

WRITING (WRITTEN LANGUAGE)

writing is typography as it is addressed in the sense of printed text (not handwriting).

WRITING SYSTEM

the visual form or representation of a language

TERMINOLOGY INTRODUCED WITHIN THE SYSTEM

We have two ways of classifying letters: one is typographic (ascenders, descenders, Upper-case etc.) and one, which is introduced with this system, is based on glyphs location/occupation of the text line.

Within this system we need to introduce a terminology in order to have a map of the character location and, in this way, to be able to see how much each language fill in the line divided into three areas: Top, Middle, Bottom.

CAP-LINE

the invisible horizontal line that runs along the tops of capital letters and the ascenders of lowercase letters.

MEAN-LINE

the invisible horizontal line that runs along the height of the body of lower-case letters.

BASE-LINE

the invisible horizontal line upon which the characters stand.

BEARD-LINE

the invisible horizontal line that runs along the bottoms of descenders.

TOP

the area of the text line that is between the mean-line and the cap-line. In this area are considered the upper-case, ascender and above diacritic characters.

MIDDLE

the area of the text line that is between the base-line and the mean-line. In this area are considered all the characters and (when are present) the middle diacritic characters.

BOTTOM

the area of the text line that is between the beard-line and the base-line. In this area are considered the descender and below diacritic characters; and the only upper-case characters: J and Q.

UPPERCASE

the large set of letters of the alphabet, usually used in the initial position of the word.

LOWER CASE

the small set of letters of the alphabet, containing ascenders and descenders.

XHEIGHT

the lower-case characters that are in the Middle area within the text line.

ASCENDER

the lower-case characters that are both in the Middle and Top area within the text line.

DESCENDER

the lowercase characters that are both in the Middle and Bottom area within the text line

DIACRITIC

a character with an added mark that change its phonetic value and visual meaning, they are also called accented and are the differentiating individual letters of a specific language.

ABOVE DIACRITIC

the lower-case character whose diacritic sign is on the Top area.

MIDDLE DIACRITIC

the lower-case character whose diacritic sign is in the Middle area.

BELOW DIACRITIC

the lower-case character whose diacritic sign is in the Bottom area.

KEYWORDS

CULTURAL DIVERSITY, LATIN SCRIPT, LANGUAGES, VISUAL IDENTITY, MULTILINGUAL TYPOGRAPHY, LETTER FREQUENCIES, EQUALITY

ABSTRACT

This design research is about language diversity and identity, studied and absorbed through vision and typography. The aim is to understand how cultural diversity can be present in typography and how it can guide designers in understanding an equal treatment of multi-lingual printed and digitally set material in text formats; to see if a language has a visual identity and how languages are different in visual terms.

The call for equality - as we are different but we should be treated the same - is tackled from a typographic design approach, focussing on the language diversity by means of character use and linguistic specificities to be represented. The intention is to treat every language with its according identity in the most respectful way.

The visual identity of a language is defined by the letter frequency, which is the characterising feature of every language within a text. This is translated into an abstract pattern, built on these specific linguistic parameters and expressing a black and white relationship which gives a variable blackness perception according to the language. The visualisation is looked from typography, that is the visual form of a language in the sense of placing the linguistic elements in a page and handling the white space according to the black textual elements e.g., the leading. The abstraction of the text into an image, as it is a common visual language, makes possible the visual comprehension of the language and introduces the necessary familiarity in order to make a typography in respect of the language nature and diversity.

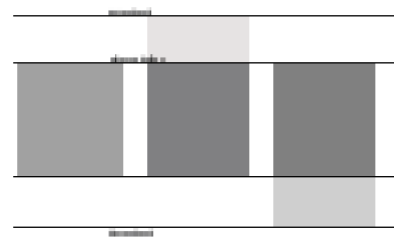
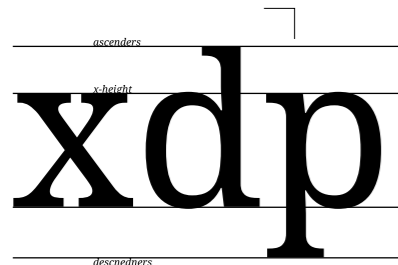
personal statement

PERSONAL STATEMENT

I've always had a strong interest in the concept of identity and how it can be explored in the field of typography and type design. More specific, the pluralistic attitude herein that consist of the discovery and the affirmation of diversities. Diversity is seen as source of enrichment as it holds the possibility to extend knowledge about yourself and 'the other' within and about the typographic work I create.

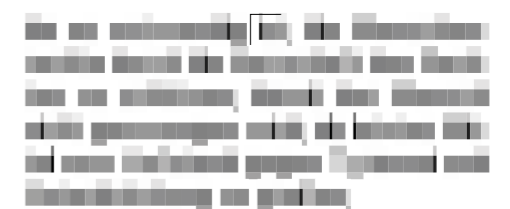
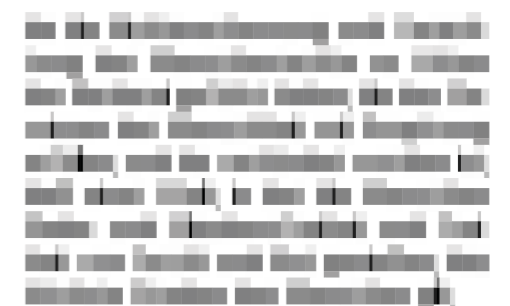
Firstly, I've been intrigued by (type)designers who looked at typography from a humanistic point of view; considering it as the sign of a culture and of people. One of these is Ladislav Mandel (1986) who stated that the sign of identity and the symbol of liberty for people is on the use of the spoken and the written language. Mandel talks about writing and typography as the mirror of man and society. In that sense, typography holds the possibility to bring a trace of an identity. In relation to this, and driven by curiosity, I started looking at my 'typographic' culture that is related to the Latin script and the European context, made of a plurality of languages and identities.

In my last thesis project *Satzbild* (2021), written and designed in conclusion of my Master in *Visual Arts: Graphics* at the Accademia di Belle Arti in Florence, I focussed on the act of observation of a text in its printed format (so of written language), by tracing it back to its original nature, which is drawing, and by finding its visualisation consisting of return text to an image still evocative of the written text. The goal was not to demonstrate linguistic diversity as much as to initiate a reflection and introduce a purely visual method of investigating writing and language.



personal statement

The visualisation of a text set in two different languages (italian and german) showed a light perceivable difference in terms of colour in relation to the language. From this observation it has been possible to introduce the definition of "visual identity of a language" with the hypothesis of going deeper into it, researching if a language has an identity and what expresses it, and how it is visible. Secondly, this visual diversity opened to the following question on the relationship between language and typography.



∨ fig.3
∨ The design fit the Latin Palatino nove family through the partner design which translate the Latin concept of Palatino into the correspondent one reflecting the Arabic script shape (Linotype, 2007) in: Chahine, Nadine. Zapf, Hermann. Palatino Arabic 2007.

∨ fig.4
∨ The concept was to connect people with their city through type and at the same time designing a font representative of the city of plovdiv. It was made by collecting and looking at the handwritings of the inhabitants of that city (Plovdiv, 2019) in PUNKT and Typedepot. Plovdiv typeface. 2019.

∨ fig. 5
∨ The designer takes the (Guarani) language, with its specific problems like diacritic marks, as a design criteria (Giovagnoli, 2011) in Giovagnoli, Carolina. Andada Typeface. 2011.

the status questions: on the Latin script and language identity

THE STATUS QUESTIONS: ON THE LATIN SCRIPT AND LANGUAGE IDENTITY

The core of the research is to see if a language has an identity, how it is visible by means of typography and how typography, on a micro and macro level, can consider language specificities in typographic design choices. In the typographic field the interest towards personal and collective identity and cultural diversity, that characterise the actual society, is translated into the emergence of non-Latin writing systems, which call for certain parameters to keep unaltered their nature, despite the Latin settings. Every script has its own way to be drawn, and this is not explicative just of a technique but in the gesture and in every visual aspect of the form there is a piece of tradition and culture.

This pluralistic attitude in front of the different writing systems here is questioned within the Latin script, in its peculiarity of being used by a heterogeneous mass of cultures and languages. Hence the attention however is different as it takes care about mainly the characteristics: the way each language has a different use of the same script in terms of letter frequency, and how this creates a different perception of the text.

In the current (Western) multilingual editorial practice we can't really talk about a language-based typography as the design choices looks at a standard use of typeset elements. Only in the early age of printing movable type, each language was clearly visible as it was composed and designed by local foundries, following the requests of the local language (Twardoch, 2002). Soon this was missed, and in front of this plurality of voices, the typographic world started to feel the need for a standard and a simplification to search for uniformity and a unifying typographic system.

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the status questions: on the Latin script and language identity

The standard rules set the structure of the page, the column width in proportion to the type-size, the right average of 7/10 words per line (Brockmann, 1981); the leading in relation to the type-size etc. By looking at language diversity and the actual sensibility for the affirmation of cultural diversity and ethnic identities, are these standard deviations appropriate to reflect each language identity?

Jost Hocuili (2005), in giving rules is aware of the fact that German could require longer lines than English because of its longer words, so the column width will result different. He recognised that each language will varies within standard rule.

From the diversity of language, enlightened by the designed visualisation system, we can begin to ask ourselves whether the standard deviations we are using to set the text blocks are in line with and expressive of the visual nature of each language. Who has ever looked at the possibility that a language can change or define the type and editorial design practice?

Until now the Latin script is used by 131 languages (Wikipedia, 2021). From its basic 26 character set, each language has added or even removed several letters to respond to its linguistic needs (Bringhurst, 2002). Because it is used by a multitude of different languages, it makes easier to point that the identity of a language is not in the script itself but in the frequency of letters, how these are combined and used: i.e., orthography that is the language-set of rules to compose letters and words. It can be interesting to research how a language is represented by this alphabet in its singularity and if visually we can notice a differentiation between them as well.

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شجخخذ

Plovdiv 

Añđãôâ

v fig. 6
v The identity of a language is not in the script itself but in the frequency of letters, how these are combined and used, distinctive characters, diacritics etc. The same text - the Universal Declaration of Human rights - is set in English, Czech, Polish and German.

the status questions: on the Latin script and language identity

The intent is to look at this light shade, parallel to the more usual research of legibility; to see if the language can be considered into the typographic design and to introduce an aesthetic that is language related; a typography based on language with an understanding of it in visual terms and of type and typography as a cultural artefact.

LANGUAGE, CULTURE, TYPOGRAPHY, TYPESET

Looking at the diversity and the multitude of languages within the Latin script, we are in front of the fact of how a language, in its visual form, is not just a mean of communication but the cradle of a cultural heritage. The language is a great tool for approaching questions of collective and personal identity (Kellman, 2000), because it is the trace of a social being built through history, so linked to facts, values and to a place because it is the product of men (Unger, 2018); it is the substance of an identity and it has its own identity in its diversifying linguistic features.

The intrinsic relationship between culture and language derives from how this has followed, from its origins, the history of the people who use it both orally and visually (Sartore, 2017). In particular from the visual point of view, the visual identity of a language can be found in typography, which is the visual form of a language because of its variability in the shape of the letters and in the visual qualities of a text printed in a page.

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Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world, whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people, whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression,

U vědomí toho, že uznání přirozené důstojnosti a rovných a nezczitelných práv členů lidské rodiny je základem svobody, spravedlnosti a míru ve světě, že zneuznání lidských práv a pohrdání jimi vedlo k barbarským činům, urážejícím svědomí lidstva, a že vybudování světa, ve kterém lidé, zbavení strachu a nouze, se budou těšiti svobodě projevu a přesvědčení, bylo prohlášeno za nejvyšší cíl lidu, že je nutné, aby lidská práva byla chráněna zákonem, nemá-li být člověk donucen uchýlovat se, když vše ostatní selhalo, k odboji proti tyranii a útlaku, že je nutné podporovat

language, culture, typography, typeset

According to Gelb (1962) the printed matter, so typography, is included in the concept of writing and from this we can stand with a definition of typography as “writing, with prefabricated characters” (Noordzij, 2000).

Hence, this connection between language and typography (as its visualisation) is mainly related to the nature of typography as typeset: setting text in the space (word and interlinear spacing, layout and hierarchical organisation, the use of the space), and the fact that a language has its own way of using its writing system, so of defining the text in terms of letter use, frequency and composition. This various and repeated combinations of letters, distinctive characters, letter frequencies and orthography, create a different perception of the text: a distinctiveness of the texture, which is the visual perception of a text at the reading size, made by the black and white relation produced by the visual properties of the characters; in particular it also depends on the language (Bringhurst, 1996; Badius, 2013; Lo Celso, 2005; Unger, 2018).

With language diversity, in typeset is introduced another level of communication that is expressive; not related to the content or to external concepts but to the nature and identity of that language, and it goes beyond considering typography just as a tool.

So, what defines the language identity/diversity?
And how can it be visualised?

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Zważywszy, że uznanie przyrodzonej godności oraz równych i niezbywalnych praw wszystkich członków wspólnoty ludzkiej jest podstawą wolności, sprawiedliwości i pokoju świata, zważywszy, że nieposzanowanie i nieprzestrzeganie praw człowieka doprowadziło do aktów barbarzyństwa, które wstrząsnęły sumieniem ludzkości, i że ogłoszono uroczyste jako najwznieślijszy cel ludzkości dążenie do zbudowania takiego świata, w którym ludzie korzystając będą z wolności słowa i przekonań oraz z wolności od strachu i nędzy, zważywszy, że konieczne

Da die Anerkennung der angeborenen Würde und der gleichen und unveräußerlichen Rechte aller Mitglieder der Gemeinschaft der Menschen die Grundlage von Freiheit, Gerechtigkeit und Frieden in der Welt bildet, da die Nichtanerkennung und Verachtung der Menschenrechte zu Akten der Barbarei geführt haben, die das Gewissen der Menschheit mit Empörung erfüllen, und da verkündet worden ist, daß einer Welt, in der die Menschen Rede- und Glaubensfreiheit und Freiheit von Furcht und Not genießen, das höchste Streben des Menschen gilt,

IDENTITY, LETTER FREQUENCY, TEXT COLOUR, BLACKNESS

The aim is to approach language as a cultural artefact, that has been looked at as an “object” with its characterising visual features. Consequently, the visual identity of a language is not on what the language represents or the content it has to communicate, but it consists of those unique features that belong only to the single language and make it different from the others. These features are the way of composing a text with the letter use/frequency, recognised to be basically distinctive by Gerard Unger (2018) and Alejandro Lo Celso (2005). The concept of identity refers to what makes something itself and visually recognisable: it can be seen, so translated into a visual quality.

Tibor Szanto (1972: 18-19) talks in his article “Language and Readability” about the fact that each language has its own characteristics expressed - at the level of its written form - in the letter frequency. In relation to this, each national language reveals its own aesthetic or graphic form which, in its being different, expresses the diversity and the cultural background that a language holds. This aesthetic, in printed material is perceived at the level of the texture or colour of the text, and it's given by how the text is composed (Balius, 2013). In that sense the identity of a language is linked to the letter frequency and how visually these letters are located in the line system, through a classification of the letters according to their visual structure. So, the way the language occupies the lines/space defines the black amount in the text.

To capture the visual identity of a language we have to move from the language feature (the letter frequency) to the distinctive visual quality it introduces (the texture/text colour); in the association of typography to writing,

Gerrit Noordzij (2000) has introduced this graphic point of view consisting of looking at a printed text in the graphic qualities of form, rhythm, colour, shade and composition. These qualities are shaped by the orthography of a language, thereby a text-page as well as each character, becomes a black and white structure defined by the language (as it decides for the black amount variable) and typography (which decides for the space in and around the black elements); and in these same terms a language's visual identity is shaped.

In the typographic field the texture - or pattern depending on the type-size and on the reading distance (Unger, 2018) - is also referred to as the colour of the text, meaning the blackness given by the relationship between the black and white amount, so the graphic elements (e.g. the text) and the space all around (e.g. the page).

The texture is made up of those signs that, by repeating themselves, create a rhythmic structure and, as a distinctive feature, makes the text page distinguishable. In particular, it is defined by: the shape of individual characters; the space between words and between text lines; the type of glyphs or combination of these etc. Thus, there are elements linked to the graphic field (type design and layout, so the design of the spacing) and others that derive from the language itself (the letter frequency, so the number of certain glyphs and their combination). As a result, we see that language plays a role in the visual form of the text; as it introduces a definite amount of black and requires different relationships between the letters and the text lines, modelled by typography.

Hence, with the same typography, each language appears differently by means of the frequency and order of the characters used to compose the text (Balius, 2013); and it is visualised as a black and white amount.

It is about to see how all the elements that can identify single languages can be classified and how these get in relation with typography, thus revising the type and editorial design with the language conditions.

The hypothesis that a language has a visual identity and it is visible – comprehensive of an intrinsic relation with typography – derives from the definition of texture that, as text colour, introduces an approach to text/language as an image perceived in black and white, indeed Bringhurst's (2002) definition refers to "blackness" and density, and is given by the repetition of a sign, as are the letters. As the abstract and visual terminology is already used to describe the typographic qualities of a text, in terms of blackness (the grey value connected to leading, text density, spacing relations in the page) we are going to research the visual form of a language, still based on its linguistic visual parameters.

The blackness is the visual term to obtain a translation between language and typography, where the language is the variable that decides for the amount of characters (classified in definite typologies) in a space, so it's the "black shape", while typography designs the space within in relation to the black shape: the linguistic-visual elements.

The language became form; and from this visual approach we, as designer, can get to know the nature of a language, thus overcoming our lack of confidence with foreign

languages in editorial design, bringing to a respect of its properties, without running into "standard" or rush solutions. From the moment that being a designer is knowing how to approach different cultures, to know the different in order to make appropriate design choices in the typographic field. Indeed, instead of a language we will look at the image of a language based on its particularities (ascenders, descenders, diacritics, uppercase letter frequencies) and from this we will set text-layouts.

OBJECTIVES

The current research starts from the hypothesis that, in a text frame, every language has its own appearance, expressed in black and white, because of the letter frequency: how every language composes the text page with the amount and recurrence of certain letters. Relatively to this, is it possible to say that a language has a visual identity?
 Can it be studied by means of typographic parameters?
 How can these typographic parameters be defined in visual terms to describe the visual identity of a language?
 How can it guide designers in understanding an equal treatment in multi-lingual editorial design?
 How to introduce a comprehension of the unknown through an abstract visual system and to promote a typography (on a micro and macro level) respectful of language diversity?

Whether typography is a black and white relationship and is usually set on classical standard deviations, in particular the leading set in proportion to the typeface and to the reading context. The aim of this research is to base typography on the language specificities (visual identity). Within the general conception of typography and type design as black and white relationship: the micro level refers to the visual comprehension of the letter shape (in a classification of these in relation to the text line: ascender, descender, uppercase etc); it is about looking at the single black element of typography. While the macro level is looking at the text as an overall (black and white), with specific graphic qualities as the texture/text colour; it is about the shaping of the space, so typeset and layout design.

The interest that lies within this design research is to consider language diversity in the representation of a cultural diversity, between the Latin script users. Despite a deep curiosity to look at the different and foreign writing systems – which are facing the digital world mainly centred on the Latin script, calling for a more appropriate typeset and design based on the particularities and structure of their writing culture, respectful of the nature of their script – I started wandering about our used Latin script in a multilingual context, where the risk is to take alphabetic equality for granted at the expenses of linguistic difference in typographic design.

The innovative aspect of this research is on a typography based on language and on the understanding of a language through typography which is its visual form. Fundamental reading is inherently connected. Typography is not only visually shaped by the context and the convention in which it is used, but also the language defines the typographic shape and gives recognisability on a visual text level (Bringhurst, 1996; Lo Celso, 2005; Mandel, 1986; Ruder, 1967; Unger, 2018). In relation to this I started from verifying what they said by looking at the same text (a multilingual document as the *Universal Declaration of Human Rights*, which has been chosen because in line with the topic and for its being one of the most translated texts) set with the same typography by only changing the language. Looking for if and how language can become visible looking at design properties that can be connected to our perception of the text page.

methodology: the analysis of micro and macro aspects in typography to capture the identity of a language

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METHODOLOGY

THE ANALYSIS OF MICRO AND MACRO ASPECTS IN TYPOGRAPHY TO CAPTURE THE IDENTITY OF A LANGUAGE

In the purpose of dealing with the appearance, visual identity, of a language and introducing a typography based on this; – as a language affects our perception in a text block by displaying different letter frequency – the first step is the creation of a system to classify and analyse the parameters (the letters) that identify each language by looking at the formal attributes of the letters in relation to their placement in the word/text line.

To look at letters in their formal definition, firstly we need to look at the text line in its typographic structure by deconstructing it into three position areas:

- Top (from the mean-line line to the ascenders),
- Middle (from the baseline to the mean-line),
- Bottom (from the beard-line to the baseline).

Each letter, as for its shape occupies differently the line system. So, in the Top there are the uppercase, ascenders and above diacritics; in the Middle all the characters and the middle diacritics; in the Bottom the descenders and below diacritics.

This system introduces a map of the characters location and, by considering the number of characters in each area, it communicates how much each language in the use and frequency of particular letters, fill in the text block and the text line in terms of black/character amount by looking at those alphabetical elements that are frequent and that creates differentiation among languages.

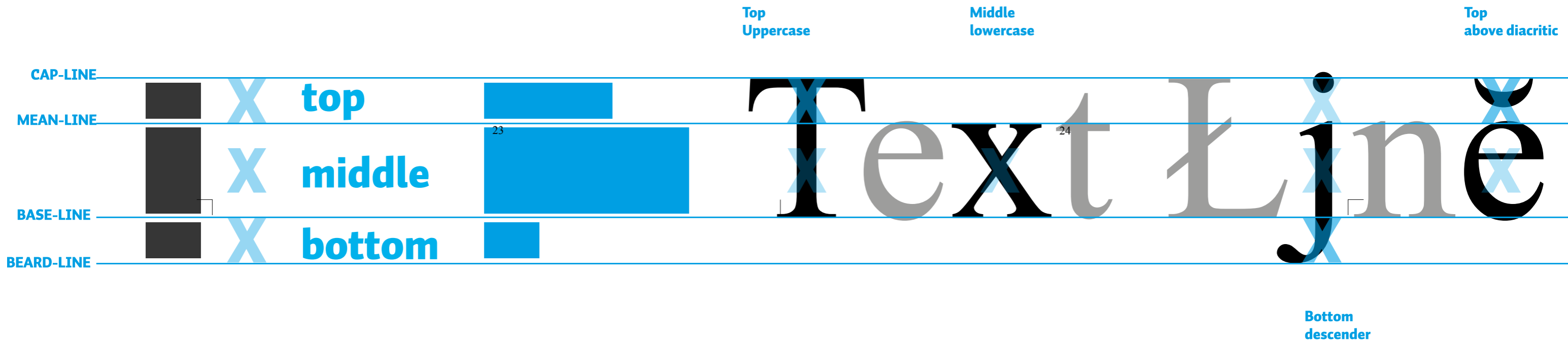


fig.8 Letter frequency counted with the LetterMeter, within the Universal Declaration of Human rights set in different languages
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LATVIAN LA character count 1554 LA word count 233 LA avg. word length 6.7	ENGLISH EN character count 1647 EN word count 320 EN avg. word length 5.1	ITALIAN IT character count 1802 IT word count 340 IT avg. word length 5.3	TURKISH TU character count 1707 TU word count 247 TU avg. word length 6.9	CZECH CZ character count 1325 CZ word count 245 CZ avg. word length 5.4	FINNISH FI character count 1325 FI word count 245 FI avg. word length 5.4
LA x-height 118476.2 % LA asc or desc 357 23.0 % LA ascenders 277 17.8 % LA descenders 805.1 %	EN x-height 1101 66.8 % EN asc or desc 520 31.6 % EN ascenders 436 26.5 % EN descenders 84 5.1 %	IT x-height 1301 72.2 % IT asc or desc 466 25.9 % IT ascenders 386 21.4 % IT descenders 80 4.4 %	TU x-height 1230 72.1 % TU asc or desc 461 27.0 % TU ascenders 387 22.7 % TU descenders 74 4.3 %	CZ x-height 946 71.4 % CZ asc or desc 374 28.2 % CZ ascenders 263 19.8 % CZ descenders 111 8.4 %	FI x-height 946 71.4 % FI asc or desc 374 28.2 % FI ascenders 263 19.8 % FI descenders 111 8.4 %
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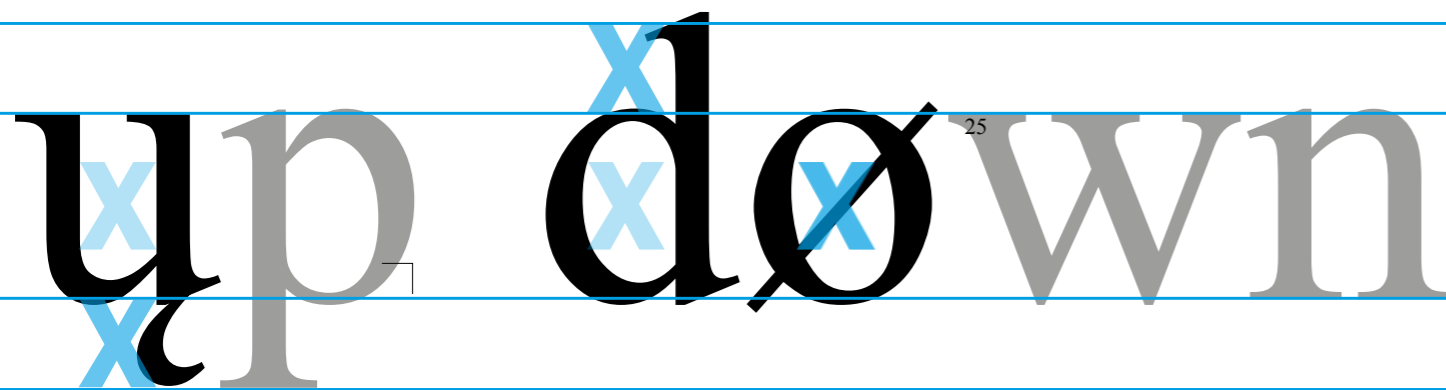
methodology: the analysis of micro and macro aspects in typography to capture the identity of a language

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The starting point is the consideration of the different letter frequencies of each language through the analysis and the subsequent construction of the visual identity, according to the language-specific visual parameters: ascenders - descenders - uppercase - diacritics. These are firstly understood through maths by counting them in terms of percentage amount within a common multilingual document – *the Universal Declaration of the Human Rights* – that is shared for the content, so it is presumed to appear differently because of the change of language. The deconstruction of the text in the parameters considered within the system and this first step of reducing them (so the language) into numerical terms, has been made with the *LetterMeter* (Ferreira, 2003), an already existing programme which counts the letter frequency in a text. In order to fit the needs of the project, as counting the diacritical marks in relation of its location: above, middle, below, I have been in touch with the developer of the *LetterMeter* (Gustavo Ferreira) and a programmer who helped me understand how to redefine the code of it. This has been implemented by adding the letter classification introduced with the designed system that considers the form and the placement of the letter in the text line. The further question has been how to go from this abstract, mathematical (%) representation of the text set in a specific language, to an as well abstract visualisation of it. This in order to develop a comprehension through maths and vision of the identity of a language.

The aim, before gaining a better knowledge on how to research a typography based on language and respectful of its identity, is to learn how to know and relate with this language diversity, how to meet each other, how to get familiarity and overcoming our lack of confidence with what is foreign and unknown without falling in any kind of standardised treatment – meaning the use of default typesetting, introduced through the time by typographers, following the need of creating a uniformity in the typography around the World; for example, if we take a software like *InDesign* we can see that the leading is automatically set in relation to the type size, and it multiplies the font size for 1.2 or 120% (Ben-Dor, 2019). Usually, all these standard deviations derived from a question of readability of the text, while here it is about redefining these in relation to the nature and the needs of a language.

Top ascender Middle middle diacritic



Bottom below diacritic

RU diacritics 156 8.7 % RU above.diacritics 87 4.8 % RU below.diacritics 69 3.8 % RU mid.diacritics 0 0.0 %	SK diacritics 189 13.8 % SK above.diacritics 189 13.8 % SK mid.diacritics 0 0.0 % SK below.diacritics 0 0.0 %	HU diacritics 206 11.1 % HU above.diacritics 206 11.1 % HU mid.diacritics 0 0.0 % HU below.diacritics 0 0.0 %	PR diacritics 54 3.1 % PR above.diacritics 36 2.1 % PR below.diacritics 18 1.0 % PR mid.diacritics 0 0.0 %	AL diacritics 170 10.2 % AL above.diacritics 166 10.0 % AL below.diacritics 4 0.2 % AL mid.diacritics 0 0.0 %	SL diacritics 170 10.2 % SL above.diacritics 166 10.0 % SL mid.diacritics 4 0.2 % SL below.diacritics 0 0.0 %
RU lowercase 1783 99.1 % RU Uppercase 16 0.9 %	SK lowercase 1365 99.3 % SK Uppercase 9 0.7 %	HU lowercase 1839 99.4 % HU Uppercase 10 0.5 %	PR lowercase 1695 98.6 % PR Uppercase 23 1.3 %	AL lowercase 1651 99.0 % AL Uppercase 17 1.0 %	SL lowercase 1651 99.0 % SL Uppercase 17 1.0 %
RU TOP 638 35.4 % RU BOTTOM 137 7.6 % RU MID 0 0.0 %	SK TOP 552 40.2 % SK BOTTOM 109 7.9 % SK MID 0 0.0 %	HU TOP 795 43.0 % HU BOTTOM 165 8.9 % HU MID 0 0.0 %	PR TOP 455 26.5 % PR BOTTOM 86 5.0 % PR MID 0 0.0 %	AL TOP 799 47.9 % AL BOTTOM 154 9.2 % AL MID 0 0.0 %	SL TOP 799 47.9 % SL BOTTOM 154 9.2 % SL MID 0 0.0 %

methodology: the visualisation of the identity of a language as black and white shape to get in relationship with typography

methodology: the visualisation of the identity of a language as black and white shape to get in relationship with typography

THE VISUALISATION OF THE IDENTITY OF A LANGUAGE AS BLACK AND WHITE SHAPE TO GET IN RELATIONSHIP WITH TYPOGRAPHY

To introduce a *typography based on language*, we need to look at the visual identity of a language as an abstract pattern, built on specific linguistic parameters relatively to the same textual context. It is about constructing a symbol correspondent to all the text, up to and meaningful of those linguistic parameters we are considering the basic of the visual identity of a language. Through this shared and common “language”, what is unknown became familiar to our eyes so comprehensible and this familiarity is what make the meeting possible.

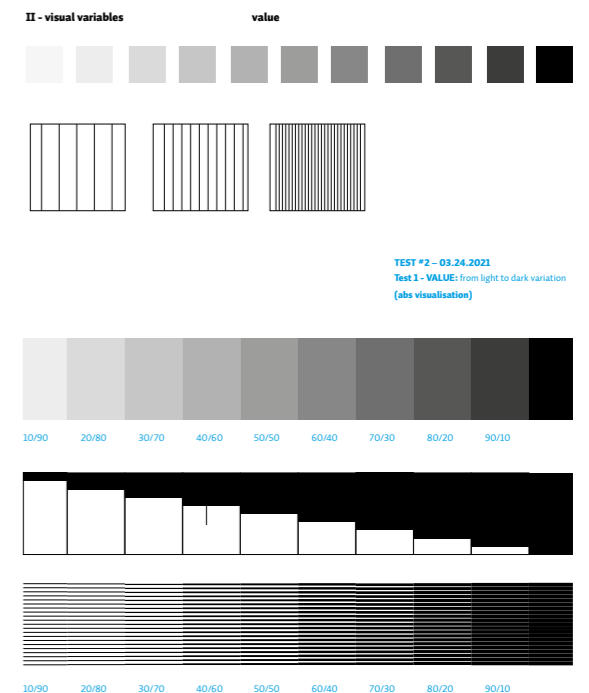
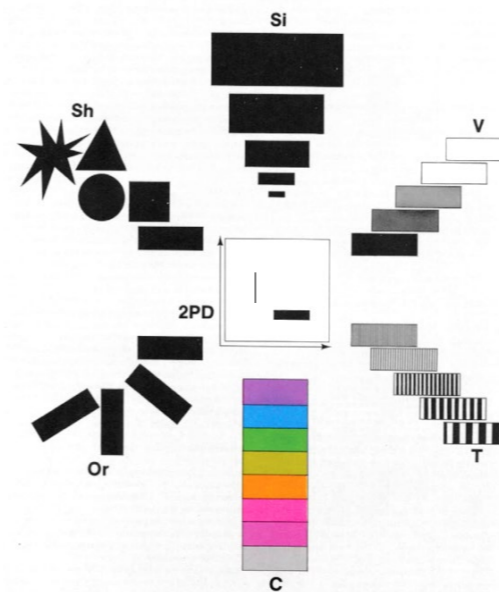
Adrian Frutiger (1980) already found the potential of a symbol (an abstract shape) in being the holder of a universal language system instead of the alphabet, because, as he believed, it is potentially understandable by everyone without a pre-given knowledge but just emphatically. So, you can be in front of a new language, a new world, a new culture but in some way understand it because of familiar items.

In that sense a visual system is designed that consists of a group of signs remarkable for each parameter (uppercase, ascender, descender, above diacritics, middle diacritics, below diacritics) which then are combined in one resultant visual which is the overall image of the text in a specific language. It gives a perceptual and visual comprehension of the language, particularly in terms of black/characters amount. This information, that suggests how much black a language is, introduces a design approach, in a multilingual text layout, that considers how much full/black will be the text set in one language compared to another. From the comparison of the visual identities of different languages – referring to a scaling system to gain the same blackness perception

– and the research of harmonisation of these in editorial design; the typographic elements which handle the space of the page (e.g., the leading) can be set in proportion to the blackness of each language, through a scale and proportional system. So, e.g., we will have different leadings, in a multilingual document, according to the language diversity, but the same “black perception”: it’s about setting the white/space to gain the same colour between two texts in different languages.

The associative criteria between the sign and the parameter are not based on the pursuit of any kind of mimetic or evocative expression or representation of the textual content as of the letters (within the parameter) form/behaviour in the text.

The attention is all on the generation of a distinct and memorable group of signs, capable of generating a clear visual differentiation and prompt recognition of the parameters when are taken in singularly, but the meaningfulness is mostly in the combination of them into one composition which is the visual translation of a quantity. This understanding of graphic design as data and quantity, as well as all the building of this visual system, the visual variables to play with and the concept in the creation of a sign which strength is not in the unreachable universal signification but in its recognisability; this has been guided by the vision of Jaques Bertin explained in his book *La semiologie graphique* (1967) where he gives indications, even if for the cartographic field, to organise and visualise data and big quantitative information, looking for simplicity and familiarity, to avoid ambiguity and confusion.





method: the visualisation of the identity of a language as black and white shape to get in relationship with typography

method: the visualisation of the identity of a language as black and white shape to get in relationship with typography

Every parameter is represented by a stroke differently oriented in relation to each of them:

- uppercase: | (90°)
- ascender: / (60°)
- above diacritics: / (30°)
- middle diacritics: — (0°)
- descender: \ (-60°)
- below diacritics: \ (-30°)

If on one side the task was giving a visual shape of each parameter, on the other side the point was to give a perception of blackness within each of them and how to combine these into one resultant symbol: the image of the language.

In order to be representative of the character's amount of the analysed text (e.g., uppercase: 1.8%, ascenders: 25%), the complete visualisation of it with its relative language is given by the repetition of each single sign in the same space. The variation of the number of the strokes and of the white spaces in-between, together with the inclination and the amount of each sign, it is what defines the identity of a language in terms of texture-structure (designed by the composition of the different masses of signs) and blackness (related to the black amount and white modulation in the given space) relatively to the context of the language. The point is to see that different languages generates different visuals which are the visual identity of a language.

The visualisation of the identity of a language consists of a square (1000x1000 pt) divided into three parts keeping the heights proportional system used in type design (division of a square to set the x-height, ascenders and descenders line in the standard units of 200 - 500 - 300 from the baseline). These three areas correspond to the three parameters areas, so it sets the location for each sign:

- Top: uppercase, ascenders, above diacritics
- Middle: middle diacritics
- Bottom: descenders, below diacritics

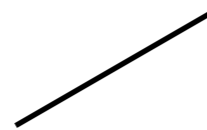
The blackness variation is visualised by translating the percentage data in the variation of the number of strokes for parameter within each area. While the language diversity is visualised by the structure of the relative texture made by the different components amount and behaviour within the same space.



uppercase



ascenders



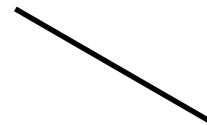
above diacritics



middle diacritics



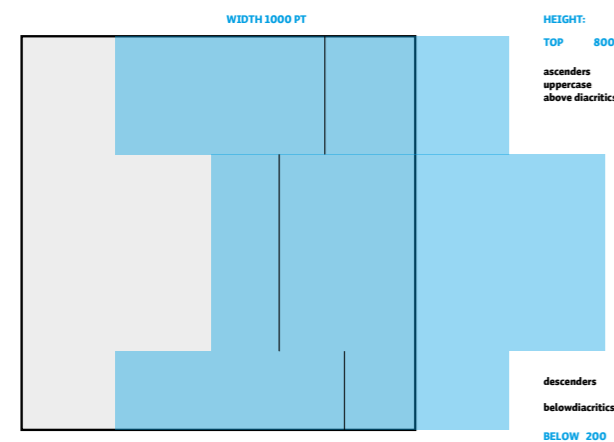
descenders



below diacritics

for the construction of the visual/texture I've designed an area corresponding to the 100% based on type design's proportional system: the division of a square in the standard units of 200 - 500 - 300 (identifying the areas between the construction lines: descender - baseline - x height - ascenders)

1000x1000 pt square



The square is filled up with 1pt lines
* for each area:
100% = 1000 lines of 1pt
0,1% = 1 line of 1pt

100% = 1000 lines.(1pt)
0,1% = 1 line.(1pt)

300 pt
this proportional vertical division can be repeated in any space that visualisation will happen.

500 pt

200 pt

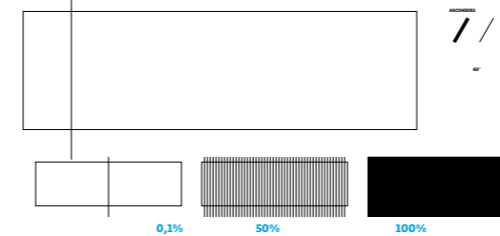
The square is filled up with 1pt lines
100% = 1000 lines of 1pt
0,1% = 1 line of 1pt

TOP

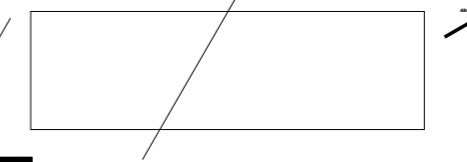
MIDDLE

BOTTOM

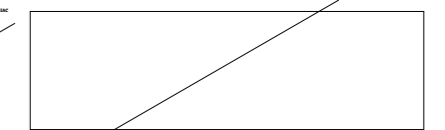
uppercase



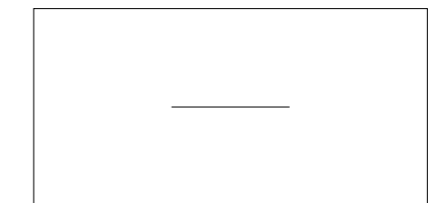
ascenders



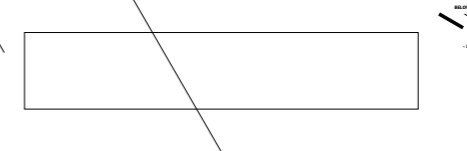
above diacritics



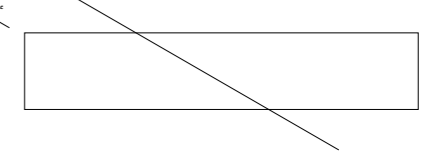
middle diacritics

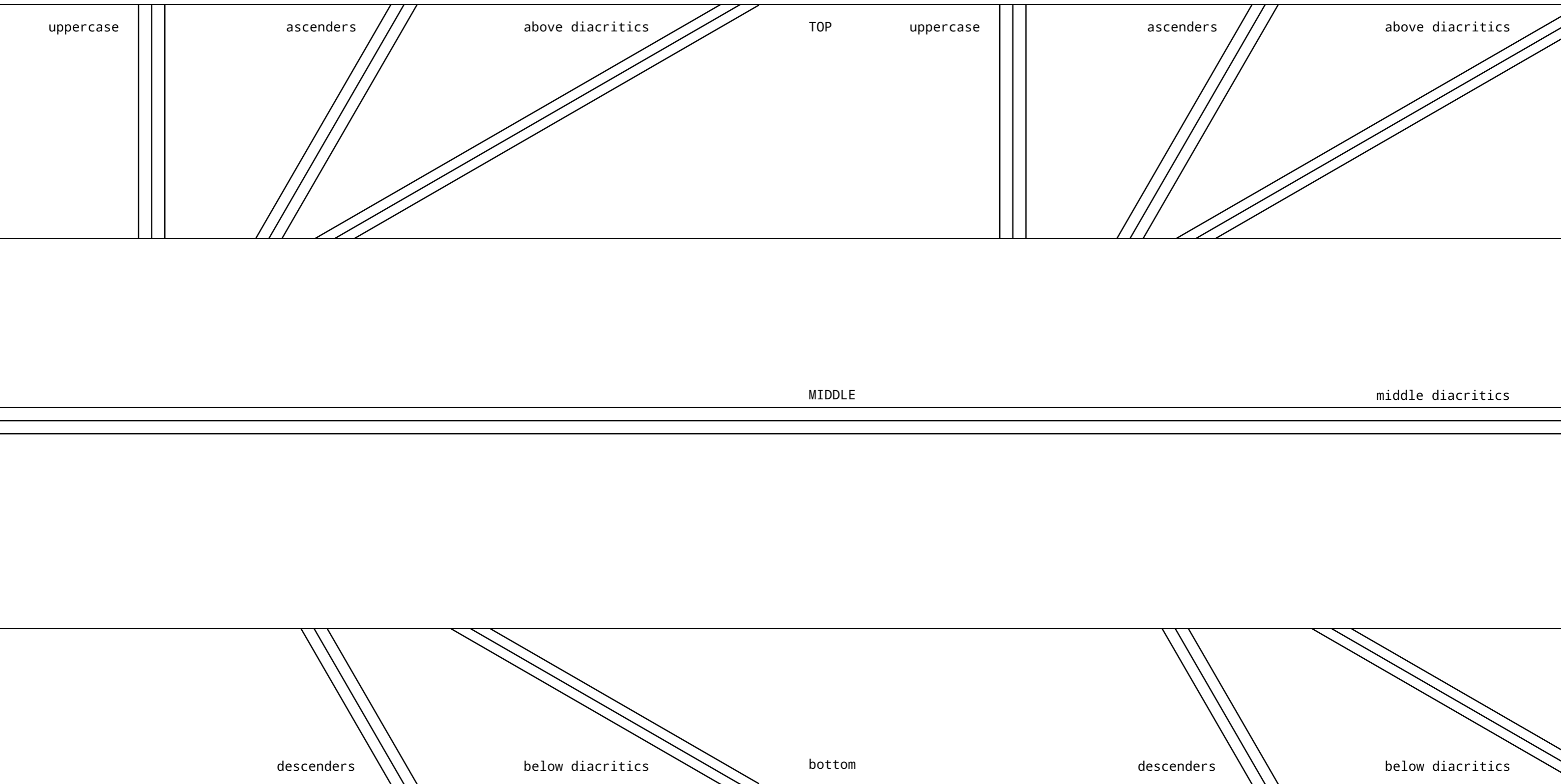


descenders



below diacritics





THE ARTISTIC OUTPUT:

UPPERCASE: 3.7 % / LOWERCASE: 96.3 % / ASCENDERS OR DESCENDERS: 37.0 % / DIACRITICS: 0.0% (THE VISUAL IDENTITY OF A LANGUAGE)

The process books – containing the visual identity of 4 different languages (Czech, English, German, Polish) – show how each image is built by each parameter firstly in their singularity and then in the resultant composition that is the image of the relative language. Every step and the image itself are shown at three scaling levels, for each level we have a different level information: when the scale it's reduced under the 100%, we have mostly the black/grey level perception of the texture; when it is enlarged over the 100% the capability of understanding what parameter and how is making a language image different from the other, increase. By looking the resultant textures and by comparing them it would be possible to say that: different languages create different textures, which – because of the different frequency of the linguistic parameters – gives a grey/black perception in association to the language. In conclusion, the analysis of language-specific visual parameters generates an abstract-image that gives a perceptible understanding of the language. This visual is the identity of a language, and it is the term of comparison through which looking for the design choices that fits each language needs, introducing an equal (multilingual) design treatment and start questioning the standard deviations we are using to set text blocks.

To go back to typography from abstract shapes – or in this case colour –, as Blanchard (1979), in *Pour une sémiologie de la typographie*, linked the Bertin's visual variables to typographic ones, is helping us to understand how typography define a visual perception and which are its expressive visual elements. The visual variables: size, value, texture, colour, orientation, shape; now can be associated to the elements of typesetting:

type- case, style, slant, weight, width, colour; letters, letter spacing, word, word spacing, lines, line spacing, leading, column width, margins etc.

In this design research the attention is also focussed on the leading (the distance between the text lines), as this is usually set on a default relation to the type-size and in (multilingual) editorial design tends to be the same for all the languages according to a typographic attitude of typesetting harmonisation through uniformity. The objective here is to obtain a visual balance between languages by maintaining the differences; so, an interlinear value which is representative and respectful of linguistic singularity and identity (cultural diversity) understood in terms of character amount through an abstract visualisation.

A tool book with the application of this system and analysis, shows how to compare visual identities and how to set a multilingual document in relation to these; in particular the leading variation depending on the language. The comparison system consists of grey scale gradients charts, generated by the variation on the size of the image representative of the language. The idea is to use these charts to compare textures and find when they have the same balance of black and white. From this the leading has been redesigned through a proportional variation with the enlarged or reduced scale of the texture, where the percentage becomes the typographic point measuring unit. As a result, we have a multilingual document where the texts present different interlinear values relatively to the language, anyway the harmony and uniformity within the page is kept and reached not by the sameness but by diversity.

fig.14
Pics of the four different process books with the visual identity of four different languages (Czech, English, German, Polish) and a tool book with the application of this system concerning the leading set in a multilingual document.

the artistic output: the visual identity of a language

What I give is just one of the possible answers to the analysis I made. The task is to make a first hypothesis of application of this research in the multilingual editorial design and mostly to stimulate a dialogue and a practice on a design based on the visual identity of a language.

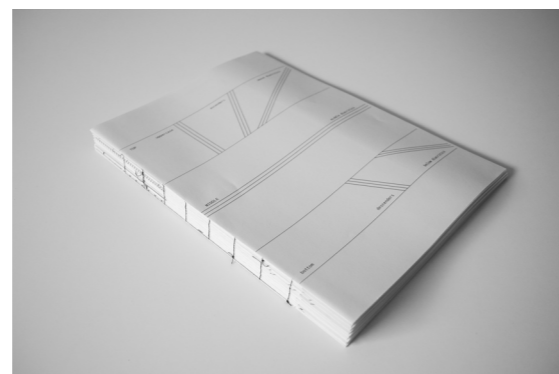


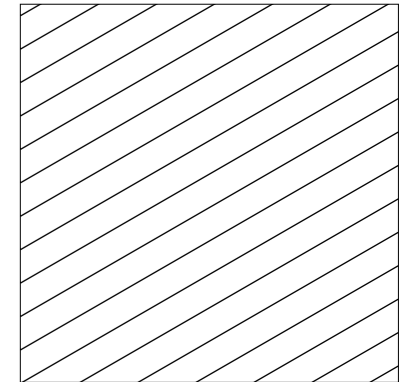
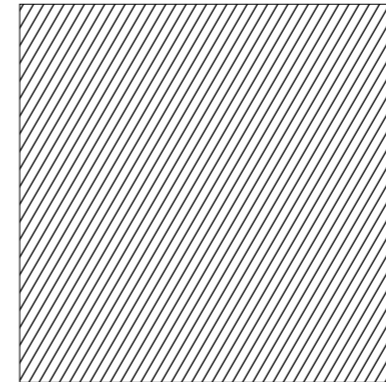
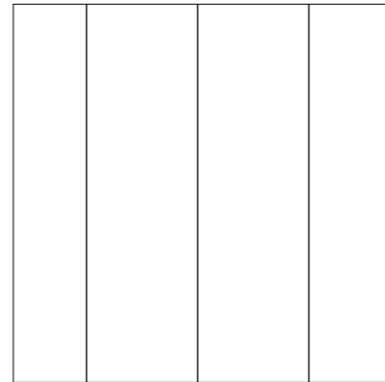
fig.15
Pages from the process book: scheme with the visual identity of the language (Polish) resumed with all the parameters.

TOP 30.2 %

uppercase 1.5 %

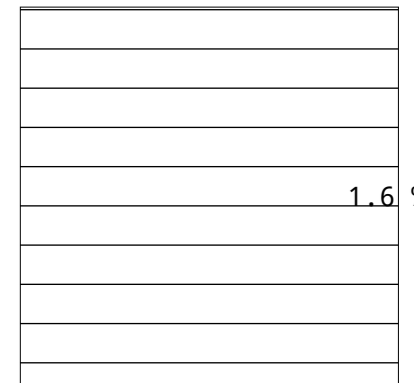
ascenders 15.3 %

3.4 %



MIDDLE 1.6 %

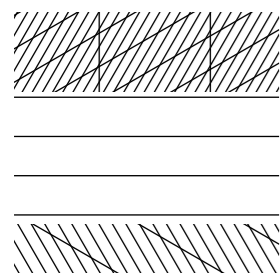
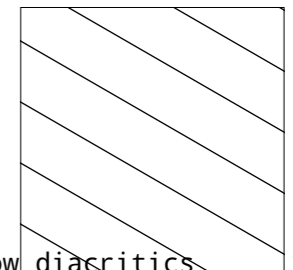
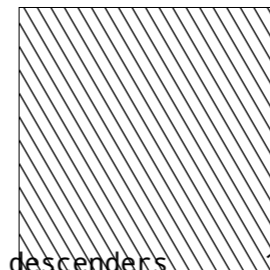
1.6 %



BOTTOM 12.4 %

descenders 10.9 %

below diacritics 1.6 %



POLSKI

POLSKI

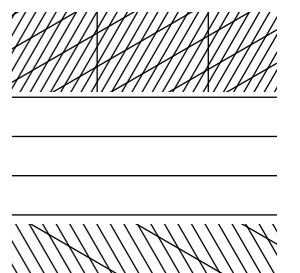
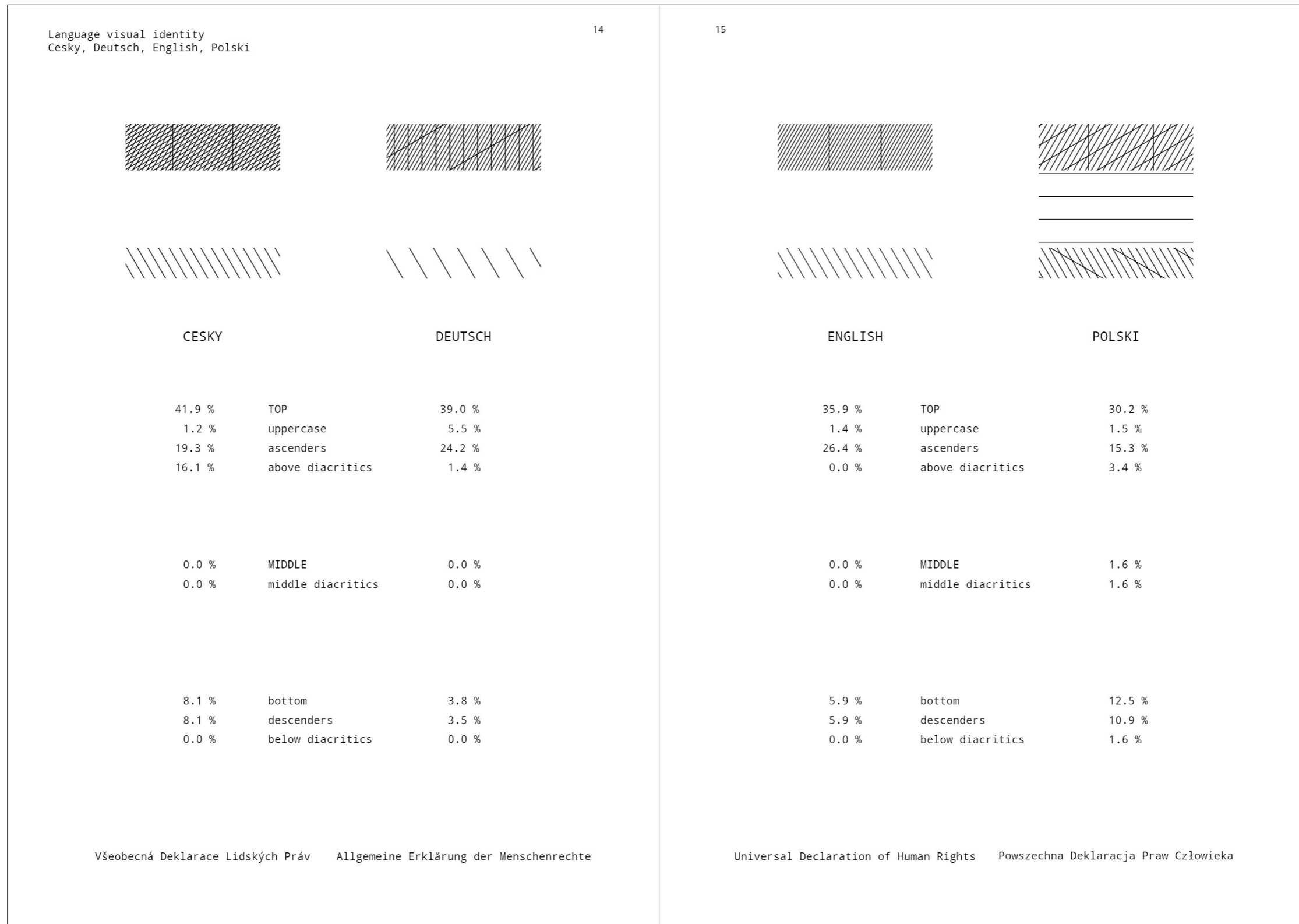
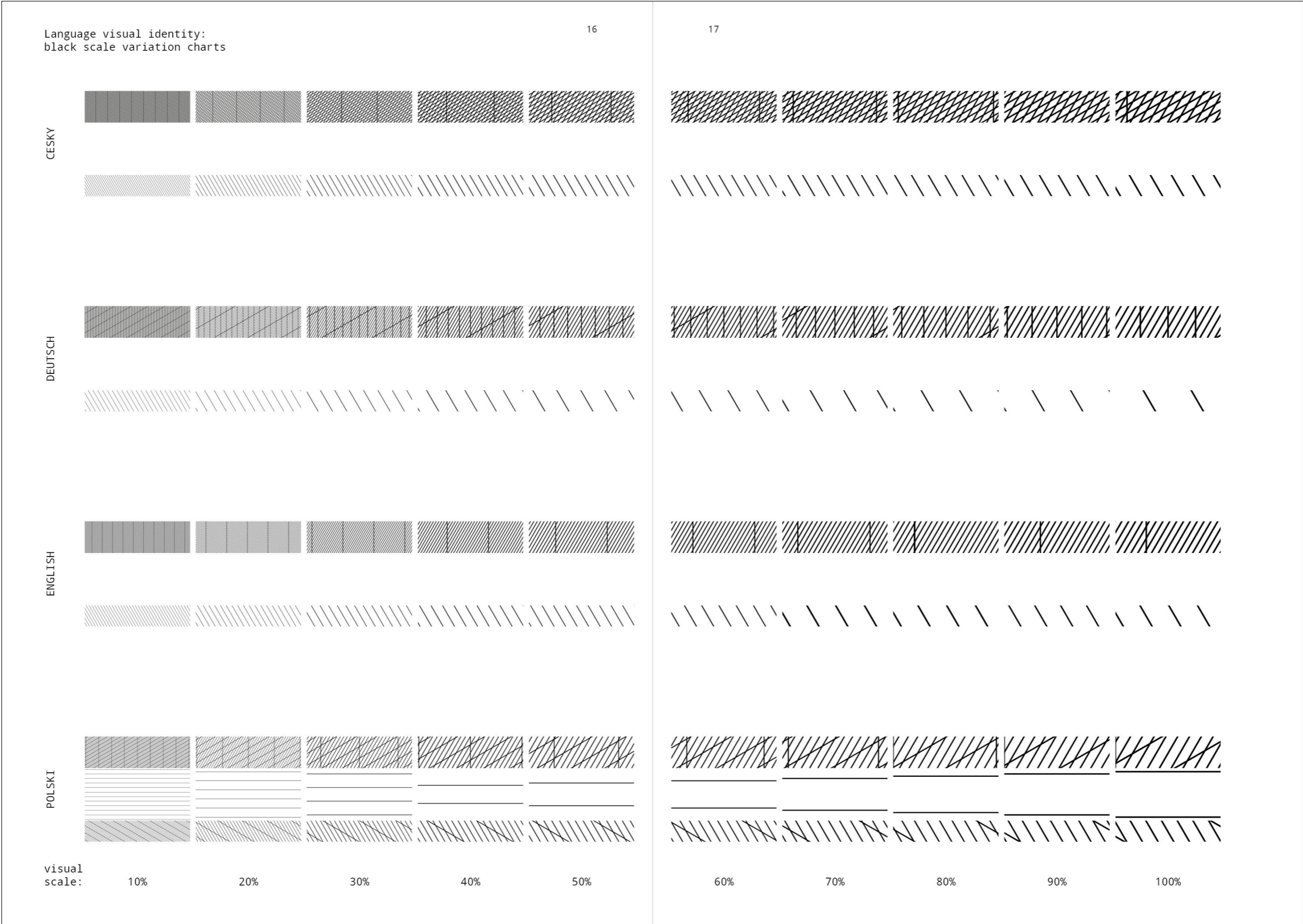
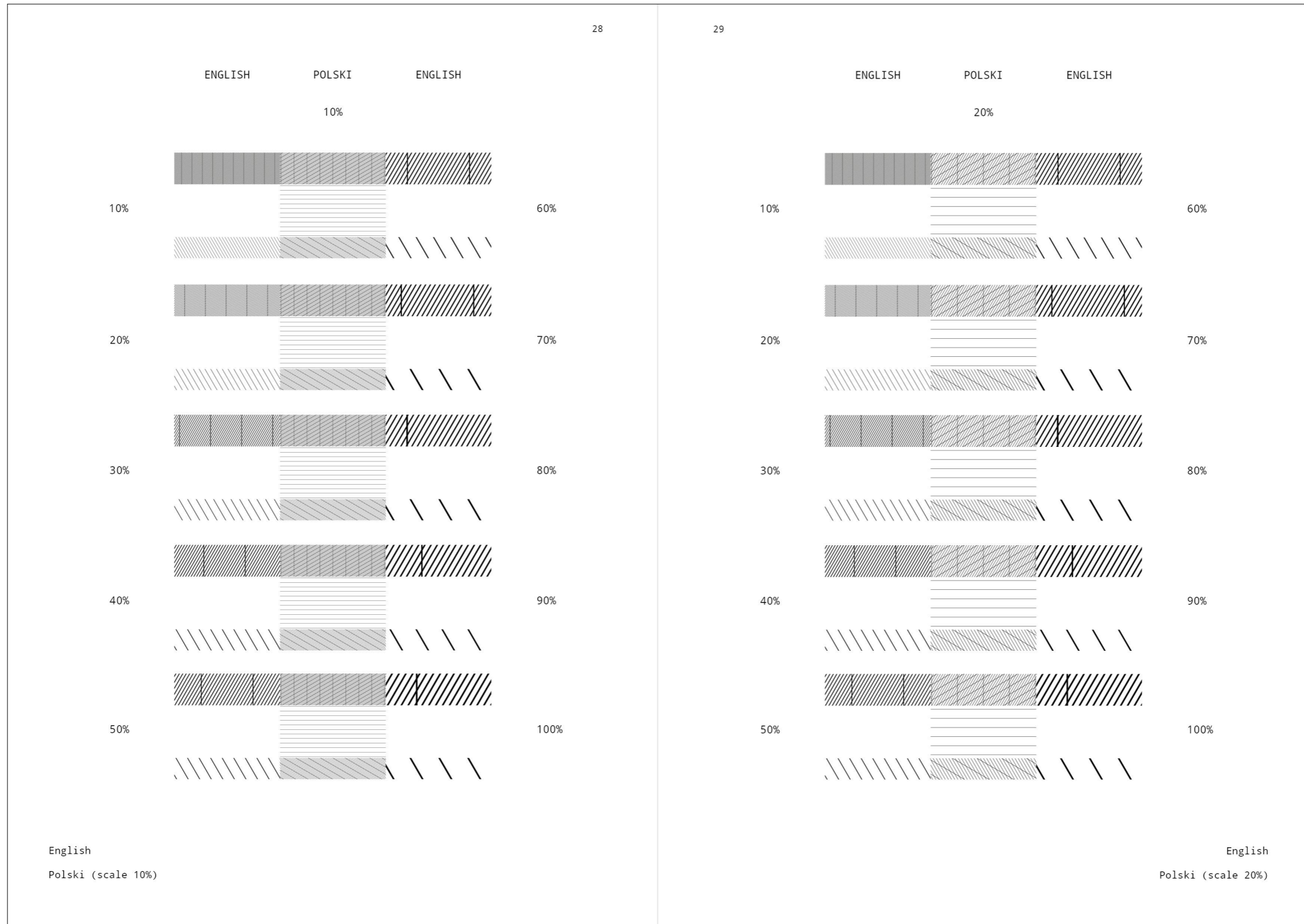


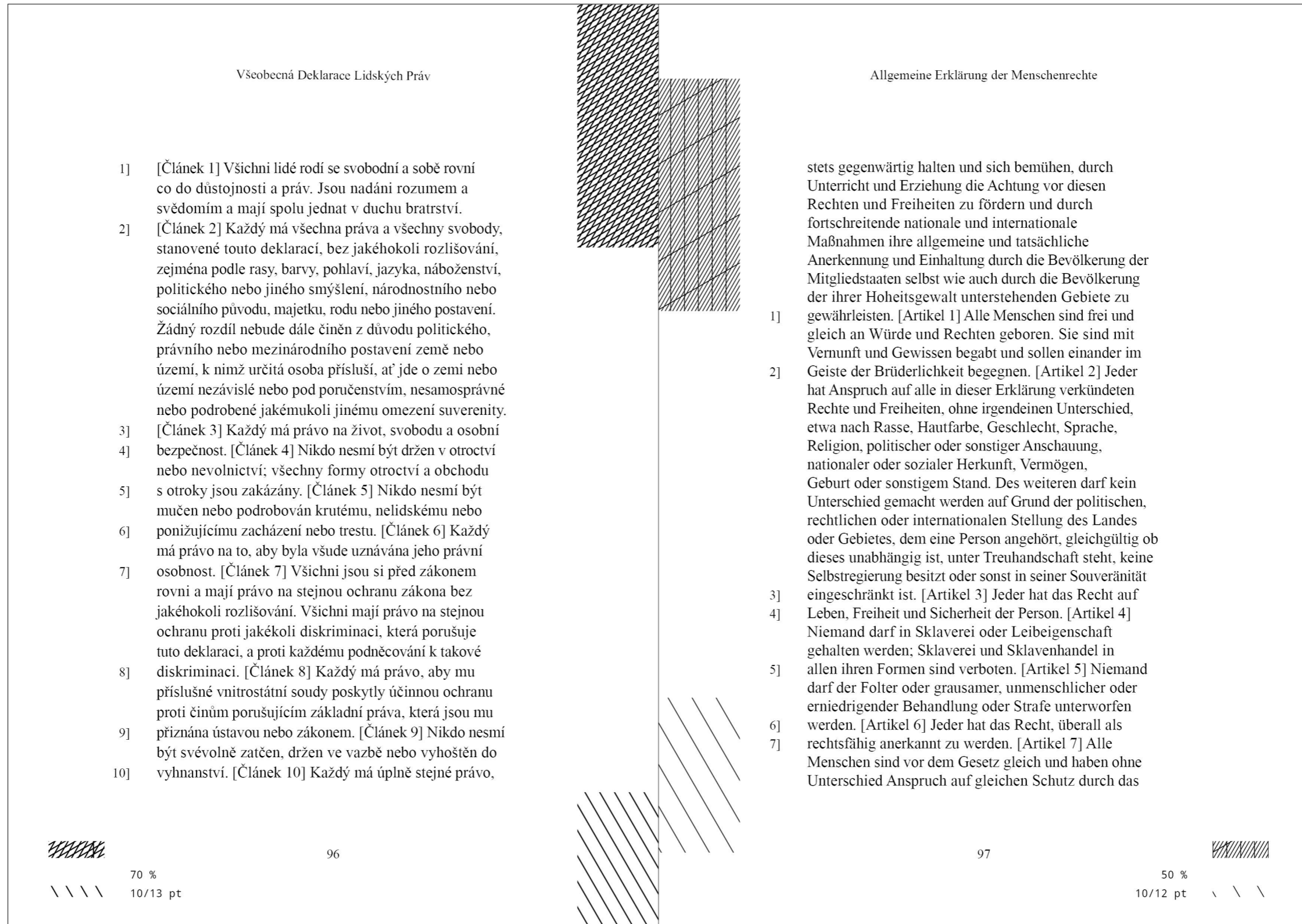
fig.17 Process books: the resultant visual identity of English, German, Czech, Polish.











CONCLUSION

This design research has shown that each language has a visual identity which is expressed in letter frequency. As a consequence of the letter use of each language, we perceive a text differently in terms of colour (texture: black and white relationship). A text is black and white, and this perception in terms of black amount and how this is organised, changes in relation to the language. The language diversity is comprehensible by approaching a text from a (typo)graphic point of view that consists of classifying the letters by looking at the location of these in the text line, and secondly of reflecting on that identity through typesetting. To get a visual comprehension of any language without knowing it, the first understanding is through maths. This is helpful to gain awareness on the different way each language fills in the space in the text line e.g., if a language has a lot of ascenders and uppercase so a high occupation of the top part of the line. Furthermore, this analysis offers an in depth understanding of the language-specific visual parameters, increasing an awareness on the impact they can have on the visual aspect and perception of a language, with the comprehension of the relationship between them. However, a real knowledge of the visual identity of a language, since it is visual (written), can only happen through perception. The resultant image, an abstract black and white visualisation based on the translation of the linguistic parameters into signs (differently oriented black strokes), expresses the differentiation between the elements and represents the quantity of each parameter, hence the overall black amount in the text. The blackness information provided by the texture suggests and shows that, in a multilingual document, each language will appear more or less black than the other. In design choices, which pursue a visual balance, this can be translated e.g., into setting the

leading not in relation to the font and the type-size (as used) but in proportion to the blackness of the language. Briefly, to achieve the same black/white balance in a multilingual text, each language will have different line spacing according to whether it is more or less black. As every language calls for specific design choices, the next step is about discovering what it means to deal with language diversity in a multilingual editorial product. To see how to achieve a harmonious typography in a multilingual publication, by keeping the typeset variations based on the nature of each language. This language-based approach should be expanded to all typographic variables in a layout system, by questioning their standard design. The prospective is of a typography that cares of these diversities, and introduces different design concepts in relation to the typographic parameters which can be set differently in relation to the language. In a progressive understanding of the meaning of coexistence and equal treatment linked to the visual heterogeneity expression of the language's identity. The exploration and encounter of language diversity in the field of typography is an enrichment as looking at this design research opens a new angle on approaching typography as a heterogeneous system, such as keeping different line spacing values within a multilingual document; it also creates an understanding of why different languages need to be treated differently according to their characteristics and also leads us to look at the importance of each typographic design parameter. The increased awareness concerns typography as a relationship and the use of typographic elements, when the leading is not just interlinear spacing but the creation of a white space in relation to printed black characters, an expression of language identity and cultural diversity.

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**Uppercase: 3.7% /
lowercase: 96.3% /
ascenders or descenders:
37.0% / diacritics: 0.0%**
**(The Visual Identity
of a Language).**

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2020 - 2021
International Master
Reading Type & Typography

Supervisors:
Ann Bessemans
María Perez Mena
Carl Haase

Typefaces:
Noto Mono
(Google, 2017)
Times New Roman
(Stanley Morison, 1932)



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