

# Articulation of Language through Transformation via Design. Historical, Technological and User Contexts

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## 1. INTRODUCTION

In this text we examine the transformation that language undergoes in its translation from the sounds of the spoken word to the image that the sounds represent. For this reason, we can not afford to overlook the context of language and its constituent parts. As users/readers we perceive the transformation of speech into writing as organic and natural.<sup>1</sup> This begs the question: can we define this “naturalness” from different perspectives—for example through the “habit” of reading, through the use of different technologies, and through a historical perspective? Our second interest is in how the different functions of the message and the different ways of and motivations for reading inform the process of transformation.

1 The broader context of the research that Barbara Predan and I embarked on in the summer of 2020 is the “language of design” and, accordingly, what is natural in design and, by contrast, what is not, but might appear so at first glance due to our perception of the world, our thinking and our humanity.

We will be looking at where and when the decisions regarding the representation of speech were or are being made, who is making them, and how. Assuming that this is a process in which typography and linguistics are closely linked, the logical question to ask is why linguists so rarely delve into typography, and whether text designers pay enough attention to language. The field being as broad as it is, our main effort in this text will be to attempt to establish the contextual framework of the technological/historical component of the transformation and then examine, using a small cross-sectional sample, how the theory manifests in practice.

For easier understanding, let us first clarify that by the word “typography”, we mean not only the typefaces themselves, but everything in connection with the visual organisation of the written signs of language, with no regard to how the text was reproduced; in short, the elements associated with the articulation of the text, which was carried out by someone in order to visualise the thoughts and ideas of the message in an understandable way.<sup>2</sup>

Even though articulation of text is an important concern within the design profession, language is all too often left out of the discussion. Designers talk about typeface design, page layouts and other visual elements; the information technology experts talk—we are speaking of modern technologies—about the code that constitutes the applications in whose context we, in turn, read. Few, however, seek to combine the above into an integrated system incorporating language. It was more than twenty years ago that British linguist David Crystal argued that “the explication of printed language needs the expertise of both typographers and linguists, in order to provide a complete description of its forms and structures and a satisfactory explanation of its functions and effects.” (Crystal, 1998, 7) Why? Because typography is, in a sense, speech frozen in time. If we relate this to Marshall McLuhan’s definition of language as a tool that “made it possible for man to accumulate experience and knowledge in a form that made easy transmission and maximum use possible,” (McLuhan, 1962, 5) we can conclude that typography is one of the fundamental tools of communication.

2 An even broader definition of the typographical profession is offered by Joseph Moxon in his well-known work *Mechanick Exercises on the Whole Art of Printing*: “[But] by a Typographer, I mean such a one, who by his own Judgement, from solid reasoning with himself, can either perform, or direct others to perform from the beginning to the end, all the Handy-works and Physical operations relating to Typographie” (Moxon, 1978, 11–12).

## 2. VERBAL GRAPHIC LANGUAGE

This brings us to an interesting fact: we have said that typography is very closely linked to language, in the sense that it is a static representation of spoken, or heard, language, with language in general generally divided into written and spoken language by linguists. As early as in the 1980s, Michael Twyman, a British professor of typography, sought to develop models to take into account the different aspects of language in connection with graphical communication. (Twyman, 1982, 7) He used the term verbal graphic language to mean everything covered by the German word *Schrift*, whose Slovenian equivalent is *pisava*. Compared to the English *type*, these terms have a broader meaning, as the former predominantly refers to print, whereas *Schrift/pisava* can mean anything from handwritten lettering, through typewriter output, to text on a television screen, as well as anything in between. *Verbal* refers to words and *graphic* to the mode of execution (which includes both manual and mechanical production), while *language* points to the fact that it is, in a sense, a *language* of its own—with its own conventions, organisation, usage and history.

Twyman starts out by defining the way in which communication is received (channel): *visual* on one hand and *aural* (words and sounds) on the other. Since spoken language is the domain of linguists, we will be focusing exclusively on the visual category. *Visual language* can be further subdivided into *graphical* (encompassing all language writing systems) and *non-graphical* visual language (gestures, body language). *Graphical language* can then be subdivided according to the mode of visualisation into *verbal* (anything involving letters), *pictorial* (pictures) and *schematic* language (anything not covered by the other two categories).

When things get interesting is when Twyman subdivides the verbal (letter-based) language according to the technology employed into one *written by hand* and one *written using mechanical means*. This is where the concept could use some adaptation to bring it up-to-date, since the mechanical means, otherwise encompassing print, as well as all other mechanical methods of text reproduction (typewriters, conventional television), need to be extended to include the *digital methods*. I therefore propose a division into *manual* and *machine-assisted* methods.

The smallest unit of the verbal language as illustrated in the diagram is the script (the entire set of characters), or alphabet (a set of characters in an established order in a particular script in general).

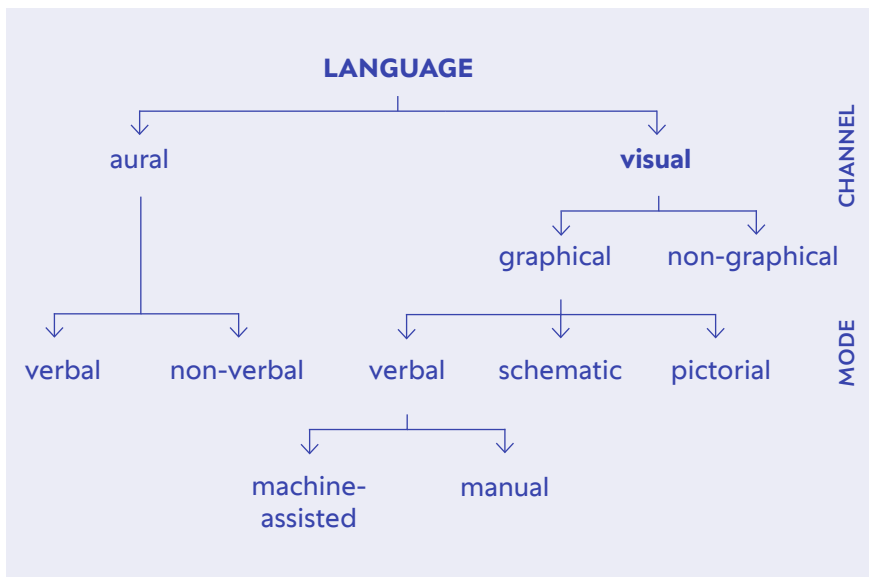


FIGURE 1: The adapted scheme of verbal graphical language per Twyman (Twyman, 1982, 7).

It is phonetic<sup>3</sup> in nature, enabling the use of a relatively small set of characters to write down any sound of nearly any language. The sounds are therefore represented by characters; naturally, this does not yet make it a language—having just the building blocks, the bricks, is not enough. Indeed, of all the aspects of the transformation, establishing a system of visual characters to represent the sounds we hear is perhaps the most trivial.

Why? We know of such translations of sounds into characters that have been left so far behind in the past by the subsequent developments that they can not be used for modern communication. We could offer as an example continuous script (*Scriptio continua*), a style of writing that does not use spaces or, indeed, any other marks to separate the words and sentences. Such documents also lack punctuation, diacritics and capital letters. A similar example is the Greek *boustrophedon*, in which lines are read alternately left to right and then right to left, and which might even involve mirroring of the characters. In both of these instances we are dealing with conventions that held in the past but seem alien to the modern reader. These examples show nicely how solutions for language visualisation have evolved or been refined through time, this process of transformation eventually leading to the present state.

Some Roman inscriptions already exhibit the first modifications to the practice of using just the basic building blocks of language (the

3 There exist, of course, other writing systems, equally suited to modern languages; in this particular discourse, however, we will be limiting ourselves to the Latin script.

letter characters). A great example is the *interpunctus*, which came to be used in classical Latin to separate words. In addition to the circular shape that was predominantly used in manuscripts, we can also encounter—in stone-carved inscriptions—a small equilateral triangle pointing upwards or downwards. This pattern of use nicely demonstrates the impact of the technology employed (the stone chisel versus the paintbrush) on the articulation of the visual language. Roman inscriptions therefore already exhibit a degree of spatial organisation that is one of the variables in articulation.

### 3. ARTICULATION AND CONFIGURATION OF LANGUAGE

Were we to attempt to explore the entire set of variables that can be used in the configuration of language, the easiest way to illustrate it would be by using a matrix showing the method of *symbolisation* on one axis and the *method of configuration*<sup>4</sup> on the other.

This is because every time we use words, we have to decide how to employ the signs, how to place them, as well as the method we will use to define relationships. This holds true whether we do it intuitively, as laypeople, or as professional designers. We could find examples of each of these 28 methods<sup>5</sup>, either in everyday life or in the history of visual language. The matrix shows the theoretical possibilities for articulating of the message, which influence the decisions regarding how to organise the graphical language. Talking about the space where the text will be is not enough, however. The method of symbolisation covers many features that have a key influence on articulation.

If we temporarily set aside the pictorial and schematic elements and instead focus solely on the verbal messages, we can, according to Twyman, divide the features of the graphical language into extrinsic and intrinsic features. (Twyman, 1982, 11) Intrinsic features represent everything that is part of the characters themselves, or of the system that produces these characters; this includes the character set, the slant of the script (cursive or non-cursive), the weight (bold, regular, light), alternative characters (small capitals), letterform styles, sizes. Extrinsic features, on the other hand, include the configuration, microtypography (typeface selection, styles, use of typographic symbols, kerning,

4 Twyman, Michael, 1979. "A schema for the study of graphic language", in: Kolers, P. A., Wrolstad, M. E., & Bouma, H. (eds.), *Processing of Visible Language*, vol. 1. New York & London: Plenum Press, 117–50.

5 It should be noted that new exceptions could probably be found that would not fit into any of the categories.

→ METHOD OF CONFIGURATION  
 ↓ METHOD OF SYMBOLIZATION

	Pure linear	Linear interrupted	List	Linear branching	Matrix	Non-linear directed viewing	Non-linear most options open
Verbal/numerical	1	2	3	4	5	6	7
Pictorial & verbal/numerical	8	9	10	11	12	13	14
Pictorial	15	16	17	18	19	20	21
Schematic	22	23	24	25	26	27	28

FIGURE 2: Matrix of graphical language features per Twyman (Twyman, 1982, 8).

sage using digital tools. This is in contrast to the pre-digital era, when this was predominantly the domain of the professionals in either printing or design.

So how do we make decisions about the articulation of language? It is difficult to pinpoint exactly where, or when, the decisions are made in the design process. We usually make decisions based on our previous experience. As Twyman says, “we frequently do things the way they have been done before simply because we do not stop to think.” (Twyman, 1982, 11) We simply fail to look at the options we have available. Certainly we are influenced—at least in the articulation of hand-produced text—by what we have learned in school, but also by our writing skills, our experience of the tool we use to write and the content of the document we are writing. It also seems that we tend to be more deliberate in terms of articulation when we produce text using a machine than when we do so by hand. It must be added that this only applies to machine-assisted production in the pre-digital era, when the process was protracted and the costs were more of a factor. As a result, authors were much more careful with their manuscripts than nowadays, when the possibilities for correction are virtually endless in most cases. This also influences, on a conscious or subconscious level, our decision-making.

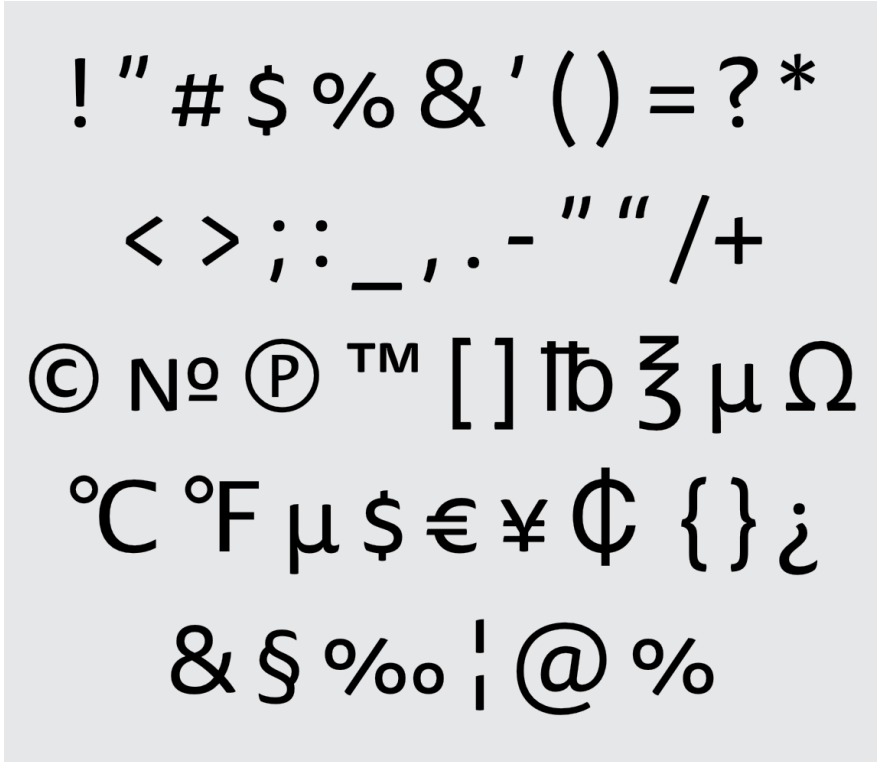


FIGURE 3: The set of characters used for communication is considerably larger than the set of characters in the alphabet. Author's archive.

#### 4. FACTORS OF INFLUENCE IN THE TRANSFORMATION OF LANGUAGE THROUGH DESIGN

We will now discuss some of the most common factors of influence evident within the transition from spoken word (or thought) to its visual representation: technology and means of production; conventions, regulations and rules, as well as the intent and context of the message.

##### **Technology and means of production**

One of the main differences between the spoken and visual categories of verbal language lies in the development of the means of production. The biological organ we use to produce sounds has not changed much in the course of human history. Voice is still produced by the vocal chords, still shaped by the nasopharynx. Ways of producing text have, by contrast, varied greatly through history—text could be handwritten, impressed in clay, carved in stone, typed on a typewriter or mechanically typeset using monotype or linotype machines, which was followed by phototypesetting, and at the very end, we entered the digital

age, which brought desktop publishing and everyday communication through digital devices.

Technology is therefore one of the foremost factors influencing the transformation of spoken language into a graphical one. It is, in fact, technology that dictates which visualisation materials can be used and how much flexibility we are given regarding articulation. (Walker, 2001, 13) Let's look at some examples: A handwritten document exhibits the greatest flexibility of articulation. We can freely choose the size and form of the letters, the place where they are positioned and the leading, as well as deciding the orthography, the colour—we can basically influence all the elements of the message.

On the other extreme is the typewriter.<sup>6</sup> The contrast to handwriting is immediately apparent, with the typewriter limiting us to the use of a single typeface, and while it does permit switching between upper- and lower-case letters, it offers no choice regarding sizing. We are likewise limited to the set of characters offered by the keyboard. The words can be strung together into lines of varying length, but the leading is fixed. If our particular machine features a colour ribbon, we have the luxury of choosing between two colours: black and red. Handwriting and a typewriter represent the extremes: the other technologies all lie somewhere in between the two in terms of flexibility of articulation. (Walker, 2001, 13)

Looking back into history, we can say that the historical process of articulation took place, in a way, “naturally”. With the emergence of printing, typefaces came into use that were, so to speak, “frozen” in time. Producing new typefaces in metal was an expensive and, compared to the natural urge that drove the scribes to adjust their handwriting, far more complicated process. In the beginning, as a result, typeface designs were used for a very long time that in all respects resembled the handwriting in manuscripts, of which the incunables were basically an imitation. It was only very slowly that typography became a medium of expression in its own right, casting off the influences of manuscripts and handwriting. Even so, we can also see technology-related interventions in communication. I present as an example two historical texts by the Benedictine monk Bernard of Clairvaux *De consideratione ad Eugenium papam* (approximately dated to the 1400–1410 period).<sup>7</sup>

6 The typewriter (in commercial use since 1874) is the first expression of the desire to mechanise the writing process and one of the most basic mechanical means of reproducing text.

7 The documents being compared are: the manuscript *Liber ad Eugenium papam de consideratione* from the Carthusian monastery Nieuwlicht of Bloemendaal (approx. 1400 to 1410), now found at the Utrecht University Library (Universiteitsbibliotheek Utrecht Hs. 162. Hs 4 H 14 dl 2 (fol. 60-97r). Available at: <https://objects.library.uu.nl/reader/index.php?obj=1874-334039&lan=en#page//82/67/43/82674307418102037578660428365828346718>.



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FIGURE 4: Handwritten documents exhibit the greatest flexibility of articulation. Author's archive.

The manuscript was in two columns, which the printed version merged into a single one. While in the manuscript the *Explicit* heading is a rubric in red ink, the heading is black in the printed version (due to the printing being monochromatic). At the same time, it gained an extra blank line above and below to maintain the emphasis. These examples attest to how the decisions on the adaptations of language due to technology (previously handwriting, printed incunabula afterwards) have been taking place throughout history.

Through the development of various typesetting technologies, the roles of intrinsic and extrinsic features—as well as what can be used in communication—shifted. A designer thus could not use bold lettering if the metal type in the bold weight was not available. For the most part, the intrinsic elements were shaped by the typesetting technology, while the extrinsic elements were determined by the technology of reproduction itself, i.e. printing. Accordingly, the possibilities kept changing, and not always for the better. The keyboard of a Monotype typesetting machine featured 250–272 characters. New technology—for instance videotext in the 20th century—brought more stringent limits, the latter supporting no more than 96 characters. (Vernimb, 1980) The beginning of the digital revolution—much like all the preceding changes in technology—was likewise a step back. As we all know, it took computers thirty years and much difficulty to reach the level of quality that had been taken for granted with previous technologies. In terms of typography, each new technology initially offered only a pale imitation of what the previous technologies were capable of. This continues to be a problem for many languages of small nations, as they do not have the same range of options that larger nations do.

We could follow this process of adaptation throughout history, but what makes the transformation more complex still is the fact that technology is not the only element that is changing. Transformation is also crucially influenced by the production relations. All elements are of equal importance: who transmits the message, who decides about design and who decides about the mode and medium of reproduction. The famous Venetian humanist scholar Aldus Manutius (1449/1452–1515) was still a pedagogue, translator, businessman, printer, designer and editor, all rolled into one, in his printing shop Aldine Press. Eventually, however, virtually all of these elements of the process would become professions in their own right. For five hundred years, the articulation of

**Typographic specification**

Job *J. Information Systems* Designer *PS*  
 Output as *right reading of paper positive* Date *6/2/91*

Units and conversions used in this specification

ExB = Extra Bold  
 B = Bold  
 I = Italic  
 BI = Bold italic

points Anglo-US  
 points didot  
 mm  
 'body size'  
 H-height

baseline to baseline  points Anglo-US  
 points didot  
 mm

picas & points  
 ciceros & didots  
 mm

	text	paragraphs	extracts	notes	captions	headings A	headings B	chapter head	headings C	tables	abstract
<b>1 Typeface</b>	P	/	P	P	P	FB	PB	see separate note	PI	F	P
P = Plantin F = Frutiger											
<b>2 Type size</b>	10	/	9	8	8	10	10		10	8	10
all type sizes in points											
<b>3 Interline space</b>	12	/	11	9	9	12	12		12	as marked on copy	12
within											
before	/	/	18	/	/	36	24		18		
after	/	/	18	/	/	24	18		12		
<b>4 Measure</b>	18	/	18	18	as marked on copy	18	18	37	18		18

FIGURE 5: Specification for the typographic process by Paul Stiff, 1991. Author's archive.

the mechanically reproduced word was the domain of experts—typesetters, proofreaders, editors, printers—who were the ones responsible for the results. But the processes—especially once the Industrial Revolution was underway—had become increasingly complex, requiring increasing specialisation, and the number of participants in the process grew accordingly.

When modern design developed in the 20th century, even the simplest of printed materials began requiring the designer to specify countless variables in advance, preparing a detailed specification for the reproduction that was then carried out by others. Control of articulation had always depended on experience and knowledge, but this change in production relations also brought a dependence on teamwork, relations within the work collective and leadership skills.

It is only in the digital era, in close association with postmodernism, that a “miracle” finally occurs: suddenly, the designer, the author of the message, or indeed any layperson with the ability to use a computer, can communicate without the backing of a vast system of industrial production.

And so, by the end of 20th century, the circle is complete, so to speak: we are back where monks had been in their medieval monasteries, controlling all aspects of the product. An illustrative example of how the digital age reflected in visual communications is the legendary poster by the New York/Los Angeles-based designer April Greiman,

which she created in 1986 for the *Design Quarterly* magazine. The process of creating the pioneering product—scanning, design, print preparation and multiplication—was performed entirely on a personal computer, and while the process was enormously time-consuming due to the immaturity of the digital technology, it also ushered in a new paradigm in design: no longer is the designer responsible solely for the visuals—she suddenly finds herself as both the author of the content itself and the producer, too.

There was, however, another link to the past that had to be severed in parallel with these developments.

### Conventions, regulations and rules

Noam Chomsky argues that the foundations of language consist of “principles that determine an infinite array of possible expressions, structured expressions which have definite meanings.” (Chomsky, 2014) The statement holds true for graphical language, as well. The fact is that there is a huge variety of rules and conventions facilitating—or, indeed, hindering—articulation. The rules for writing used to be part of general education; as the profession of a scribe evolved, the rules evolved in parallel, becoming increasingly specific and important, depending on the role of writing in society and the purpose of the documents (matters of state, religion, trade ...). Likewise, with the emergence of print the professionals would meticulously construct rules not just on the material aspects of prints but also regarding all the other elements of the process of text reproduction—editing, proofreading—since these tracked the development of languages and therefore the grammatical conventions.

These rules were something everyone was involved with: artists, printers, writers.<sup>8</sup> It is thanks to these rules that the anomalies that historical development resulted in do not strike us as odd. What other explanation is there for how a simple word, such as *gajba* (meaning crate), can be written down with characters of different shapes yet remain readable, and understood the same way by all of us?

The purpose of the rules was to ensure order and understandability; they represented a standard of quality. And yet we find cases throughout history of people questioning the value of these rules. The most conspicuous examples came with the avantgarde movement in the beginning of the 20th century. Despite the technological limitations of metal type, composing sticks and wooden frames, which, due to the

8 One of the best-known examples is the rulebook *Hart's Rules for Compositors and Readers* at the University Press, Oxford, which is a reference manual and guide to topics such as style, grammar, typographical rules and punctuation. It was first published in Great Britain by Oxford University Press in 1893. It has since been reprinted and reissued countless times.



FIGURE 6: A simple word *gajba*, meaning “crate”, written in different ways using the Tisa Sans Pro typeface. Author’s archive.

laws of gravity, required the blocks of text to be stable and aligned in the X and Y directions, authors like Filippo Tommaso Emilio Marinetti began—in complete defiance of the rules—to change the visualisation in order to influence the articulation of printed word.

These developments took place not just on the level of macrotypography but microtypography as well. We can cite as an example the issue of upper- and lower-case letters. Walter Porstmann, a mathematician and engineer working in the field of standardisation,<sup>9</sup> along with several other thinkers from early 20th century Germany, were debating the reason for the existence of two characters representing a single sound.<sup>10</sup> The same idea also stoked the imagination of the typographer and designer Herbert Bayer, professor of typography at Bauhaus, who, in defiance of both grammatical rules and typographic conventions, ended up designing a small-caps only typeface: Universal typeface.

In practice, of course, the argument for having each sound represented by a single character falls apart immediately. German designer Otl Aicher was in the habit of citing the following example: “*Ich habe in Moskau liebe Genossen*” [I have dear colleagues in Moscow] and “*Ich habe in Moskau Liebe genossen*” [In Moscow, I tasted love],<sup>11</sup> where both sentences consist of the same sounds, but are represented by different characters and have different meanings.

9 Among other things, the author of the paper size standardisation system (DIN 476, 1922) at the Deutsches Institut für Normung.

10 In his book *Sprache und Schrift* (1920).

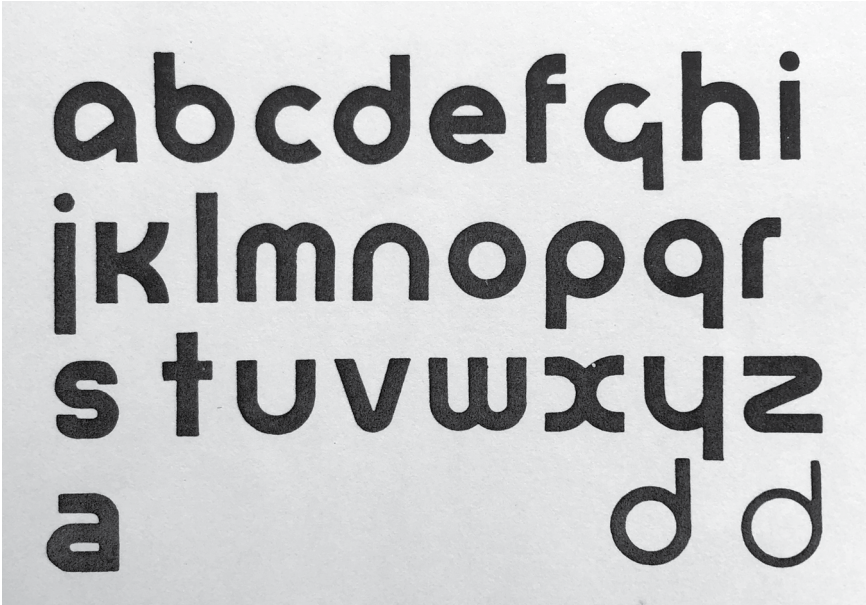


FIGURE 7: One of the best known examples of lowercase alphabet typography, Herbert Bayer, Universal type, 1926. Source: Herbert Spencer, *The visible word*, Lund Humphries, Royal College of Art, London, 1968, pg. 59.

There are other contextual factors influencing the development of rules and conventions in communication, such as when we read and for how long (we might be tired; a different kind of attention is required to read traffic announcements when driving; certain information, such as regarding medications, permits no mistakes; it matters who sends or delivers the message, what the tone of the message is, who the intended recipient is—they might have special needs; we might be reading something in a foreign language; we might find the text uninteresting, etc.). Reading is not often on our mind in everyday life, being able to read has become something we take for granted, and from childhood onwards, reading becomes just one more mode of communication we use to communicate with others. And yet “the way we read”, including the contextual factors, ought to be a key piece of information for designers creating the message.

As readers, what we typically see as “natural” is what we are used to<sup>12</sup> and there is a scientific explanation for that. Our brains are

11 I am grateful to Robin Kinross for the Aicher quote. Atyp1 mailing list correspondence, Robin Kinross, 11 October 2001, 00:14:56.

12 A typical representative in terms of typefaces is the digitalised version of the Times New Roman typeface, which was included as part of the operating system of the first Windows desktop computers. Despite the plethora of excellent modern typefaces available, Times New Roman continues to be perceived as reliable and readable, conveying a certain authority—in short, something “easy to read”. This is only due to its presence, across all

programmed to respond positively to “familiar” things; changes are perceived as disruption, inducing fear. We could go so far as to say that our brains are lazy, since they constantly avoid work—which is to say, optimise processes. They do this by recognising familiar patterns that, in turn, inform their responses. Cognitive bias emerges, which can be an issue for designers. We think we “know” something and thus fail to explore the uncharted possibilities of articulation.

The factor of “habituation” is very important for readability and legibility, or, in the words of the American typographer Zuzana Licko: “You read best what you read most” (Licko, 1990, 13) Typography does, however, offer certain golden rules regarding what is readable and what isn’t. There have been numerous experts throughout history who researched what comes easier to the eyes and the brain and how readability and legibility can be improved.<sup>13</sup>

In contrast to professional designers, laypeople have a limited set of rules they are familiar with and communicate “naturally”. It comes down to three rules: the important things need to be prominent, written using upper-case letters and possibly underlined or repeated multiple times. What laypeople find particularly useful is the intrinsic quality of upper- or lower-case letters, which they often (ab)use.

### The intent and context of the message

Another question relevant for transformation is to what extent the various features of typography help express the linguistic meaning or, by contrast, hinder its communication. (Crystal, 1998, 9) In order to make my argument more precise, we need to narrow our focus immediately. In the context of this text we are not discussing art posters or visual poetry. What we are talking about is instances of everyday communication with a specific function and an intent to be read, understood and often also to prompt further interaction—in short, such messages often have an explicit or implicit aim. Due to the fewer genres of text in each language, there was much less need for different visualisations before the 19th century.<sup>14</sup> In this time, however, the explosion of print

technologies, regardless of the function, message or user of the text, ever since it was designed for the London newspaper *The Times* in 1931. This ubiquity has meant that we do not notice it in use and are consequently not “bothered” by it.

13 In 1968, in his book *The Visible Word*, Herbert Spencer, a British designer, editor, book author, photographer and professor at the Royal College of Art gave a summary of everything known at the time about legibility and readability. He mentions a number of scientists throughout history who have researched the topic, but there has been considerably more serious study and research since.

14 Dictionaries are excellent specimens for studying the development of typographic elements, as they have different typographical requirements than fiction. For example, as early as the 16th century, the printer and classical scholar Robert Estienne in Paris was the first to



FIGURE 8: A non-professional visualisation of an instruction, or notice, for users. University Medical Centre Ljubljana, 2019. Author's archive.

and the development of linguistics brought a multitude of challenges in various fields—newspapers, train schedules, schoolbooks and various functional texts.<sup>15</sup> In the 20th century, in part due to the modern way of life, this process only accelerated, with the field becoming even more diverse and rich—in a sense even cacophonous—as a result of the emergence of new media that employed new technologies.

No wonder, then, that problems can arise in the process of transformation, particularly in everyday functional texts. In those, the information is key to understanding subsequent interaction; visualisation therefore requires taking into account the content and purpose of the text, as well as the context, or situation, in which the information will be received. The purpose of a given articulation may be providing information (packaging, prices in stores), informing and prompting a certain reaction on the part of the recipient (filling out a form, notices on doors,

begin using cursive letters (a product of calligraphy, i.e. handwriting) for the purely functional purpose of distinguishing between the different units of text in his epochal Latin-French dictionary, *Thesaurus Linguae Latinae* (1531).

15 For more information on the function of language in 19th-century visual communication see: Esbester, Mike, *Designing Time: The Design and Use of Nineteenth-Century Transport Timetables*, *Journal of Design History*, Vol. 22 No. 2, 2009, 91–113.



operating a parking meter, weighing fruit in a store), facilitating searching for information (dictionaries, indexes, phonebooks) or providing directions (wayfinding signage).

The clarity, transparency and usefulness of information (where the message author orders the information and/or defines the information hierarchy, for instance) is therefore key to understanding. Such examples make plain the natural link between the use of language and the visual organisation of words. On the other hand, the producers of these visualisations have a very subjective attitude towards the content, despite the relatively unified, strong and specific intent of a communication.

## 5. WHAT IS NATURAL – AN ATTEMPT TO ANALYSE VERNACULAR MESSAGES

Articulating a text intended to communicate something to a specific target audience is not necessarily a professional activity. It is something practiced not only by professionally trained designers but by everyone who uses words at all. In fact, the share of visual messages produced by professionals is minimal. If we wish to analyse the “natural” visual organisation of visual language, it is therefore a good idea to take a look at informal messages designed by non-professionals. (Walker, 2001, 2) In order to use practical examples to find out if there are any common objective parameters that people use to transform verbal messages into visual representations, and whether it makes sense to talk about a “natural” transformation of verbal messages, we need to reduce the number of variables that could lead to erroneous interpretations.

In order to get rid of the majority of variables that could hinder our ability to compare the analysed materials, we prepared a simplified cross-section of vernacular<sup>16</sup> messages that appear at first glance to be very mundane and inconsequential. We will be analysing missing pet notices through which pets’ owners communicate with the random public. These documents share the same purpose, starting points, target audience and method of distribution. On the basis of these messages we analysed the elements discussed previously: the impact of technology (whether the message is produced by hand or using a computer); the character set, the range of typefaces and styles; whether the document employs a rich set of typographical elements (cursive style, bold letters, lower-case letters, size); the configuration of information; in which ways the microtypography (leading, character spacing,

<sup>16</sup> Everyday, colloquial—not professionally designed.

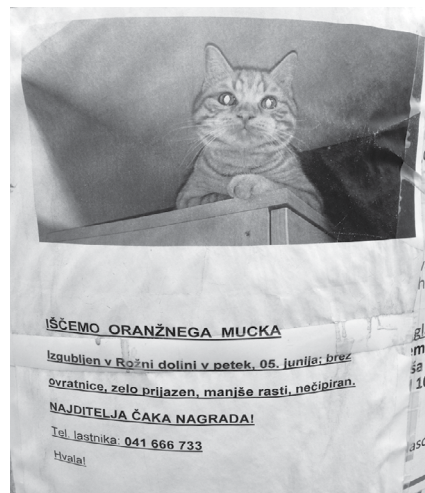


FIGURE 9: A selection of (the most diverse) examples of vernacular communication about missing pets.



V pesih, v zgodnjih jutranjih urah, se je v okolici hale Tivolj izgubila psička Brina, stara leto in pol; nosi modro ovratnico.

Vsi, ki ste jo videli, pokličite na telefon 051 712 074.



## POGREŠAN

od nedelje 6.9.2020

BELO RIJAV MUC S SIVO OV RATNICO

040 508 927 Nagrada: 200 eur



srček na hrbtu



POGREŠAN.

040 303 643



## IZGUBILA SE JE MAČKA TAČKA



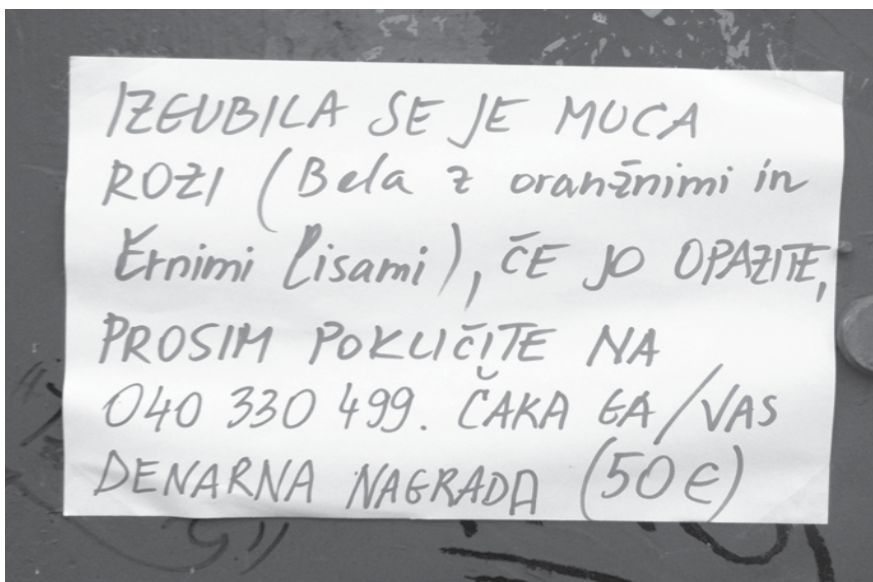
Mucka se je izgubila v soboto, 20.2.2021.

Stara je 10 mesecev, črna, z dvema belima lisama. Eno liso ima na vratu, drugo med spodnjimi tačkami.

Je sterilizirana in čipirana.

Če jo opazite, prosimo pokličite na 051 33 55 55.

**Hvala za pomoč.**



IZGUBILA SE JE MUCA  
ROZI (Bela z oranžnimi in  
črnimi lisami), ČE JO OPAZITE,  
PROSIM POKLIČITE NA  
040 330 499. ČAKA GA/VAS  
DENARNA NAGRADA (50€)

word spacing) and macrotypography (page units, space, margins, layout) are evident; as well as the use of colour and the degree of adherence to typographic rules.

We also analysed three additional related fields: the use of language (innovative use of language tone, the formality of language and the adherence or non-adherence to grammar rules); the use of image material, the quality of content and technical quality, as well as any interactive or functional elements of the notice itself that are contingent on the target audience (adaptation to users, interactivity, context of use).

Our assumption in the choice of the field was that the documents would offer an insight into natural communication and that the results would yield information on how language is transformed into a visual representation if no professional designers are involved. We analysed 60 examples—47 “missing cat” and 13 “missing dog” notices.<sup>17</sup>

As we analyse the documents, we quickly find that the large majority of them were produced using a personal computer (78.3%), with only 6.7% of the notices (that is, four of them) handwritten and a further 15% combining the use of a computer with subsequent analogue processing (e.g. printing, followed by the addition of data or illustrations, or a printed document glued to a larger, firmer, coloured backing).

The character set is conventional, for the most part (76.7%); only 23.3% of the documents featured elements not in the basic Latin alphabet (e.g. twin exclamation marks, emojis, the @ and & character, hearts, asterisks indicating footnotes, the currency sign, parentheses enclosing the animal’s name). The choice of typeface is mostly confined to the range of classic typefaces provided by Microsoft Word (63.3%), with only 36.7% of the documents using unorthodox typefaces (as opposed to the majority using basic sans-serif typefaces). There is considerable variation in the use of intrinsic features of graphic language—cursive styles, bold weights, large character sizes and varying sizes. Of those, varying character sizes are employed most often (46.7%), followed by varying weights (35%), with 13.3% of the examples using no differentiation at all and 5% of the documents exploiting a combination of upper- and lower-case letters.<sup>18</sup>

The extrinsic features of the graphic language—such as the configuration—are mostly varied (63.3%), with line height/leading being the most prominently used element of microtypography (49.2%). The

17 The photographs were taken between 5 July 2010 and 22 February 2021. The condition for inclusion was that the documents were technically intact to the degree that the information could be read normally (not torn, dirty or washed out by rain); in terms of content the condition was for all the notices to have a common focus (searching for a lost pet).

18 Excluding the documents using upper-case letters exclusively.

standout aspect of the documents is the deliberate layout of the elements on the page (the placing of visual material, the position of the headings and the placing of the block of text relative to the image) which can be observed in 46.7% of the documents, while 28.3% of them show no evidence of any specific considerations regarding space or side margins.

Colour is used frequently—only 23.3% of the documents are in black and white. 50% are in colour and 26.7% exhibit strongly functional use of colour (to emphasise headings, call attention to a particular set of information or to ensure the visibility of the document in natural environments through the use of coloured backing).

Nearly half of the documents (49.2%) use an innovative or distinctive tone of language to address the reader (using humour, addressing the reader or passer-by directly, with explicit contact information—“24/7”, an emotionally charged message—“we love him”—or a message written from the perspective/on behalf of the animal). They generally use formal language (80.7%), with most of the documents adhering to grammatical rules and conventions (93.1%). All the messages include contact information and 94.9% use image material. 83.3% of such material features content of sufficient quality to permit positive identification of the animal, but the technical quality is often very poor (52.6% of the photos are of poor quality, out of focus, overexposed or have other technical problems).

The majority of message authors (73.3%) think logically, adapting the communication to the user: the notices are posted where they are well-visible and ergonomically adapted to their location in space in a public place (on a tree, on a pillar, on a fence in the street). They often mention rewards as an incentive. Some of the authors make the documents interactive by printing multiple instances of the contact information in the bottom margin, separating them with vertical cuts that permit passers-by to tear off individual instances (15%). The influence of the natural environment and weather factors were taken into account in 56.7% of the documents (placing the information in a plastic transparent folder to protect it from precipitation; covering the sheet in wide adhesive tape; attaching the sheet to the tree with thumb tacks; laminating the sheet, etc.). The majority of the authors use the A4 format (93.3%), with only a small number (6.7%) expanding that by attaching the document to a larger, more visible backing or employing some other technology (e.g. larger print formats, collages).

The above analysis of a cross-section of specific messages plainly shows that laypeople only make use of a very small part of the possibilities that language visualisation offers. Despite the strong personal

motivation involved in the production of the analysed messages, the solutions, for the most part, are not well thought out and show poor use of the possibilities offered by the technological tools. The message authors communicate “naturally”, relying on instinct. They use the technology they find most convenient, using only the most basic of the features offered by graphic language (bold weights, upper-case letters, variable sizes). They are aware of the importance of choosing the right location to place image material (although one of poor quality); they show more creativity in the use of language tone, even if they follow grammatical rules in this area too.

## 6. CONCLUSION

Every day, nearly everyone is exposed to a situation where they have to articulate language, including using professional tools. This is inevitable; the democratisation of typography, lamented by some in professional circles in the 1990s, has long been a fact of life. For this reason, the level of education in the area of visual language ought to be significantly improved.

It has been twenty years already since Gillian Rose wrote: “We’re often told that we now live in a world where knowledge as well as many forms of entertainment are visually constructed, and where what we see is as important, if not more so, than what we hear or read. So-called “visual illiteracy” is berated, and there are calls to restructure school and college curricula so that visual grammar can be learnt alongside understandings of texts, numbers and molecules.” (Rose, 2001, 1) In view of our analysis, however, we can say with certainty that the practical education of laypeople in the area of visual literacy has not improved, despite the increasingly heavy use of technology exposing us to a deluge of visual content.

If Debbie Millman is correct to say that “Today, the visualization of our personal stories is an integral and essential part of nearly every moment of life, and we use text in all of its forms to define reality, emotions and even time itself. We are now living in a world wherein the condition of our visual communication reflects the condition of our culture,” (Millman, 2020) we can conclude that there’s still a lot of work before us. In the future, designing tools<sup>19</sup> for laypeople—so that they become more user-friendly and facilitate better quality visual

19 In the field of specialised digital tools for typeface design and associated technologies (Open Type, Variable fonts, Unicode, Font Lab, RoboFab/Python etc.), this has been going on since 1990.

communication—will, at least to some extent, become the domain of designers. Moreover, educating laypeople on how to successfully use visual communication should be brought to the fore.<sup>20</sup>

Education on the basic principles of graphic messaging should begin in the kindergarten, where it would benefit children's literacy (motor skills, aesthetics, communication literacy), and continue at later stages in the form of parallel learning about language and communication for the adult population.<sup>21</sup> The topics addressed in this text are not nothing new to professional designers, who deal with them in practice on a daily basis. What's missing is more theoretical insights at the intersection of linguistics and typography, as well as other professions involved in the process of transforming language into a visual form.

20 This is already happening, to an extent. Worth mentioning in this context are the training seminars at the Public Sector Directorate (Ministry of Public Administration), where ALUO conducted *Basics of Visualisation* workshops for civil servants in 2018 as part of the *Inovativni.si* project.

21 Taking as an example the music education system in Slovenia, which we know includes many children who will never become professional musicians but who will, in the long term and by virtue of this education, at least become a trained musical audience, the basics of visual communication merit inclusion in the regular curriculum all the more, since every member of our society will, at some stage, be involved in communication.

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