The Role of Advanced Typographic Taxonomy Systems Vis-à-Vis Modular, Variable and Parametric Typography

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The European Conference on Arts, Design & Education 2022
Official Conference Proceedings

Abstract
Typographic taxonomy systems categorise and describe the vast *corpus* of typefaces, created over centuries, and are used in teaching, commercial and professional settings. Mainstream taxonomy systems usually focus on separating neatly defined, text-bound typefaces into discrete classes, while grouping a huge diversity of display-bound typefaces and other outliers into loosely defined, generic classes. Modular and geometric typeface specimens are extremely varied and sometimes stylistically hybrid. Similarly, variable and/or parametric OpenType font specimens can cover a stylistic gamut potentially larger than those from simple typeface families or even multi-style, sans-serif+serif superfamilies (such as Rotis, Scala, etc.). The largely dominant mainstream taxonomy systems, with their typically simplistic and single-class categorisation processes, inadequately cover these complex typefaces. Moreover, the latter are used both academically and professionally, for expressive media and, particularly variable and/or parametric typefaces, also for running text (whose readability is, opposingly, paramount). The ever-increasing popularity and variety of these typefaces further exacerbates the inadequacy of mainstream taxonomy systems for academic and professional scenarios. Using advanced taxonomy systems would address these otherwise unavoidable issues and, thus, improve typography teaching, distribution of new typefaces, and typeface selection by professionals from within their already acquired/licenced collections. As a specific solution to these issues and their consequences, we present a theoretical approach, using a non-interventionist methodology of qualitative research, via literature review and observation, analysing potential advanced alternatives to mainstream taxonomy systems and proposing a further extension, in line with Brandão et al.'s 2020 proposal, to Dixon's own purposely extensible, multi-class-tagging, parametric/descriptive system from 2002.

Keywords: Typography, Typeface Classification, Typeface Taxonomy, Modularity, Modular Fonts, Variable Fonts, Parametric Fonts, OpenType Fonts, Font Distribution, Teaching

Introduction

Taxonomy systems, such as the one pioneered by Linnaeus, aim to increase the understanding of complex universes, through the descriptive categorization and grouping of its members and the consistent teaching and usage of the literal and mental vocabulary derived from those processes. Typography, a field with more than five centuries of history, during which thousands upon thousands of typefaces were – and are still being – designed, is one such universe.

The origins of typographic taxonomy can be traced back to Sigismondo Fanti's compilations of different alphabetic styles in his calligraphy and lettering manuals (Fanti, 1514; Fanti et al., 1532), specifically to the naming scheme of the different specimens presented therein. Such styles would not necessarily be named as such by their original creators in their respective settings, instead simply being labelled as monumental, formal or running hands. However, the complexity which arose from their grouping in bespoke educational publications forced Fanti to categorize them according to their disparate historical and/or geographical provenance, as well as their structural characteristics.

The advent of modern typographic taxonomy as we know it is, it should be noted, a more recent phenomenon, and quickly evolved from its inception in the mid 19th century onwards, from the first attempts by De Vinne, Thibaudeau or Warde (Cabral, 2014, p. 68). The latter would, notably, be among the first scholars to recognize the limitations in her peers' work, namely the focus mainly on classic naming conventions instead of on structural details (Warde, 1935, pp. 121–122), and to attribute the creative explosion in the field of typography to advances in the means of production such as those by Benton (Warde, 1935, pp. 122–123; cf. Cost, 1994), anticipating the observations by Hoefler (1997) by more than half a century.

Challenges to Taxonomy Systems: Display Fonts, Font Families, Type Systems and Parametrization, and an Upcoming Paradigm Shift

Categorising modular and geometric typefaces, as defined by Gomes (2019b) and Brandão & Gomes (2020), has long been a fraught affair, on account of their structural deviations from the main Latin script archetypes, which make them display typefaces but not necessarily uncategorisable with those archetypes in hybrid, fringe cases. Likewise, the up-and-coming variable typefaces can span a gamut potentially larger than that heretofore reserved to outright separate typefaces from different epochs and/or styles or, at best, superfamilies including stylistic variants, such as *Scala* (Fig. 1), *Rotis* (Fig. 2), etc.

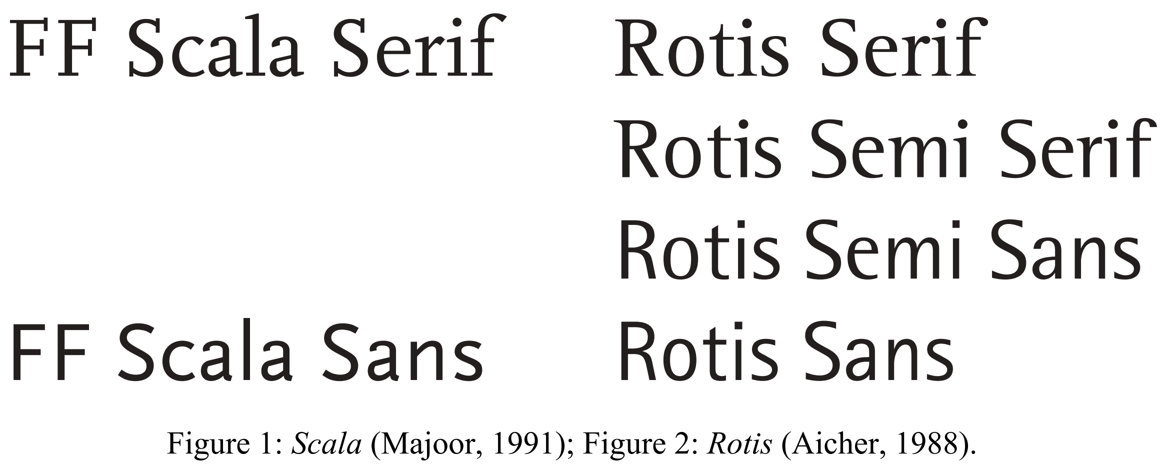


Figure 1: *Scala* (Majoor, 1991); Figure 2: *Rotis* (Aicher, 1988).

The heavy investment on both modular and variable typeface creation technology and on the promotion of the resulting specimens, and their ensuing apparent popularity, brought us to a typographic culture of fringe cases not unlike that from the Victorian era, and the inadequacy of the extant systems greatly hinders the tasks of teaching typography and type design theory alike, distributing typefaces and picking already owned ones. On a related note, our own students have indeed already presented us with such specimens in their creative assignments (Figs. 18 and 19), making the teaching of strategies to better contextualize, understand and make use of these typefaces an urgent matter.

We must also provide some historical context on the strictly technical side of the designing and implementation of variable and parametric type specimens, namely on type systems and earlier experimental examples. These specimens, namely those of the modular and geometric kind, extend as far back as the early 20th century, and became a staple of aesthetic vanguards and other speculative exercises (Figs. 3, 4 and 5).

Figure 3: *Kombinationsschrift „3“* (Albers, 1931, 2014).

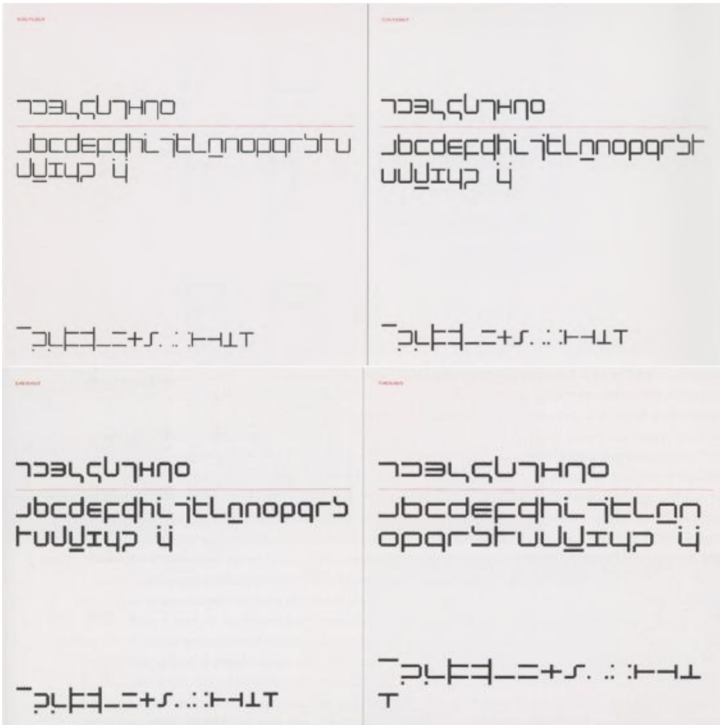


Figure 4: *New Alphabet* (Crouwel, 1967, apud Huygen, 2015, p. 321).

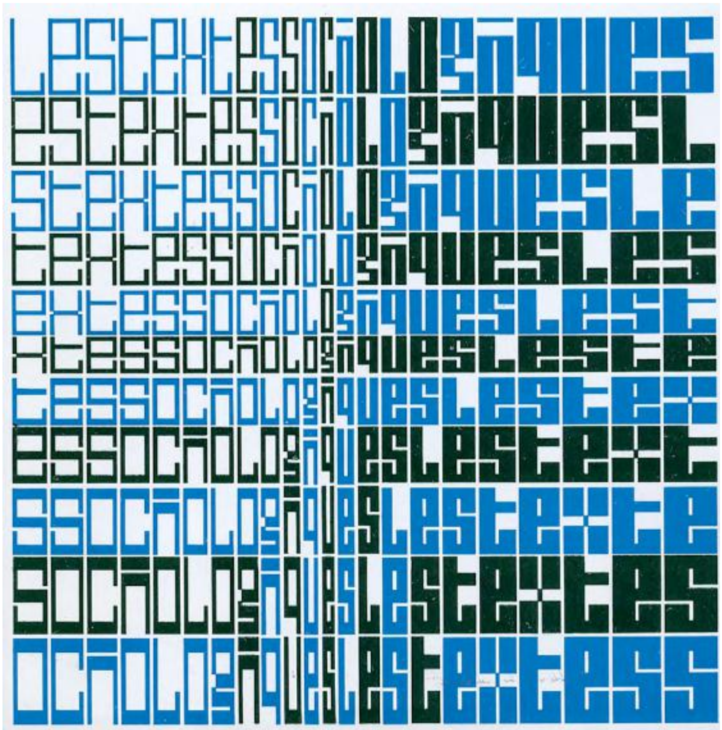
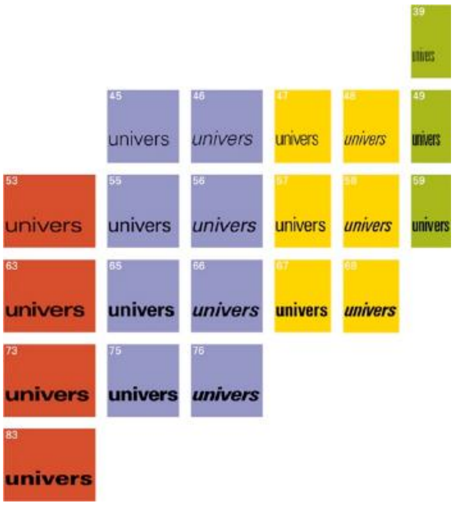


Figure 5: *Textes Sociologiques* (Schrofer, 1968, apud Huygen, 2014, p. 334).

Another important milestone towards true variability was the discrete and static parametrization of typefaces into type systems, or super-families, as defined by Frutiger (1989, p. 181) (Fig. 6), Aicher (2015, pp. 75, 175–178) (Figs. 2 and 11), Majoor (2004, 2010) (Figs. 1 and 10) or Bil'ak (2012) (Fig. 7). By virtue of being made up of separate fonts, first in physical form and later as digital files, their categorization was still an uncontroversial and simple affair.



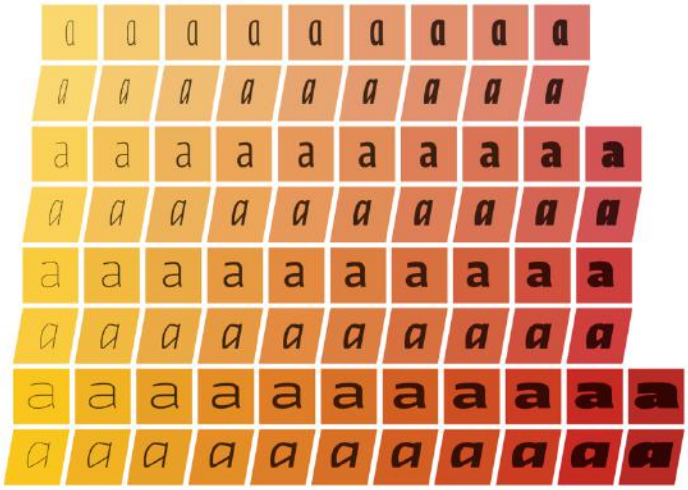


Figure 6: *Univers* (Frutiger, 1955, apud Donley, 2015); Figure 7: *Greta Sans* (Bil'ak, 2012).

Conversely, modular, variable and parametric typefaces are much more complex than type systems, as they fit all potential variants into a single font file or an extremely reduced number thereof.

By their very nature, complex creative activities such as typography will end up birthing novel ideas and approaches, to which scholars will often end up playing catch-up. One of the broad fields whose proper and well-deserved categorization coverage is long overdue is modular, variable and parametric type design. The niche status of both these sub-universes, modular/geometric, and variable/parametric type design, motivates said lack of coverage.

However, their diversity and popularity in both commercial and educational settings justifies a change to the status quo and motivated us to initiate that very process. Furthermore, with the momentous decision by the Association Typographique Internationale of recalling the endorsement of their own very popular and longstanding typeface classification system Vox–ATypI, based on the earlier work of Maximilien Vox (Association Typographique Internationale (ATypI), 2021), opened a privileged window of opportunity for other systems to gain momentum, and it is our hope that our proposals may be among them.

Our main goal is, thus, to be able to properly integrate these fringe typefaces into appropriate typographic taxonomy systems, in order to better teach their design and ensure their commercial distribution.

Two Different Approaches to Taxonomy Systems: Container-like and Database-like

Even in a field as complex as this, we can already make some sense of it, in a meta-taxonomy of sorts, and separate taxonomy systems into two large families. Both families obviously have their own strengths and weakness, but we shall put in evidence which one is more suitable to solving the issue at hand.

The most common, well-known and used systems, including the aforementioned Vox–ATypI (Fig. 8) or British Standard 2961:1967 (Fig. 9), are those which we call **Container-like**. They follow a traditional model, not unlike that seen in biological taxonomy, in a "'top down' approach" (Dixon, 2002) which neatly packs typefaces into separate boxes. These containers can vary in specificity and granularity but cannot even fit and describe the complexity of display typefaces from the Victorian, Modern, or Postmodern design eras, let alone the ongoing creative explosion in contemporary type design without becoming infinitely complex and unsustainable themselves.

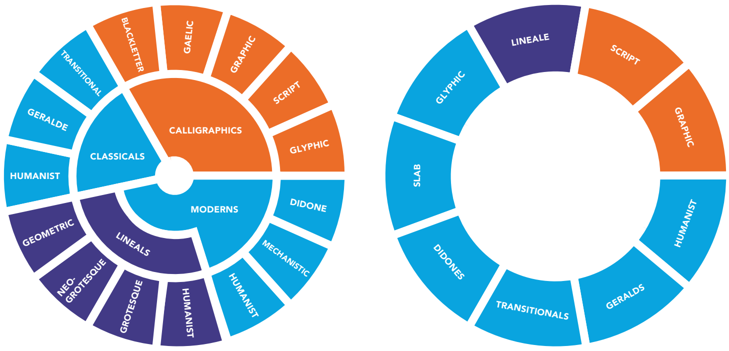


Figure 8: Vox–ATypI (1962); Figure 9: BS 2961:1967 (1967) (Childers et al., 2013, pp. 4, 6).

The other family of systems is that of the **Database-like**. These take a different approach, based on tagging, and the kind of frameworks they are made up of are much more flexible and future-proof by design, if apparently more complex at first sight. We should mention, however, that some conventional systems started out as hybrid or at least offer some added degree of complexity that transcends their containers. For instance, Dixon (2002) points out that Vox's initial system would actually be more akin to a database-like system, as it would allow for any font to belong in more than one category. This would still not be enough to tackle the current and future typographic corpus, however.

In a similar vein, Updike's system (Fig. 10), while fairly conventional and apparently Container-based, separates eras and geographic origins (Childers et al., 2013, p. 3), as if organizing its sub-variants on an "axis" of their own. This time and space principle makes it a **Hybrid** of sorts, and might indeed provide a workable blueprint for modular, variable and parametric typography as other separate "axes"[1]. But, besides the heavy criticism it drew from (1997, pp. 61–62), it would still not be enough to accurately describe those specimens in detail.

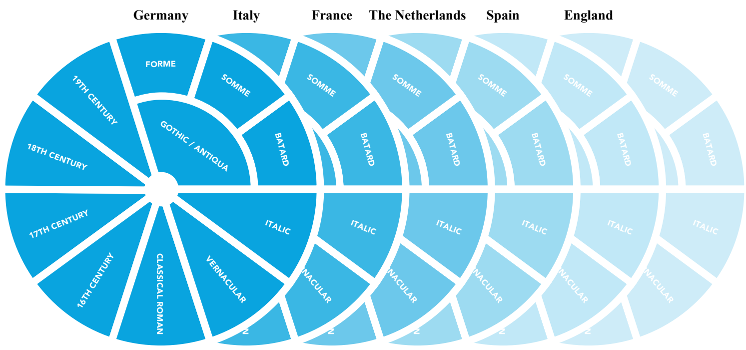


Figure 10: Daniel Berkley Updike's system (1922) (Childers et al., 2013, p. 3).

Kupferschmid's system, on the other hand, is completely **Database-like** and **Tag-based**, in a spirit of micro-classification which can even be user-generated, and follows a form model derived from Noordzij's letterform theories (Kupferschmid, 2012). These include Noordzij's

[1] In the context of this paragraph, the term "axis" and "axes" refer to Updike's system itself as a concept and visual object, as a diagram (Fig. 10), and should not be confused with the modern concept of axes introduced with Variable typefaces (see note 2).

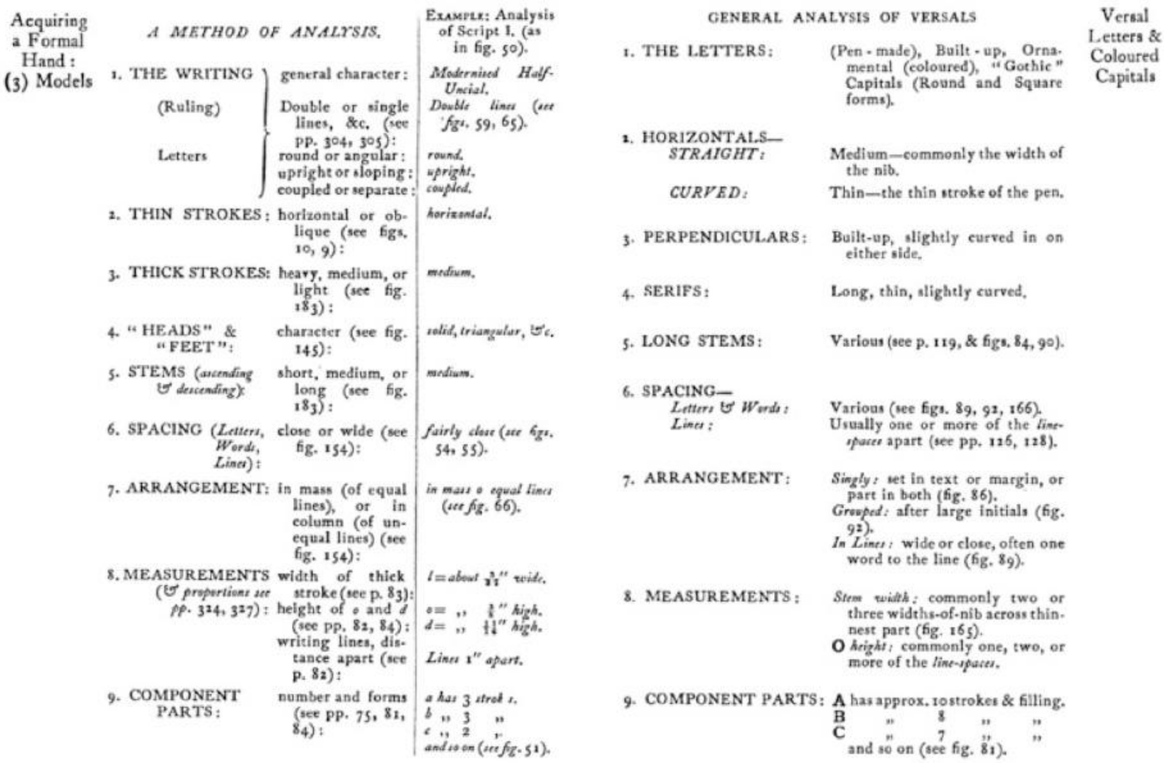
3-axis parametric cube (Noordzij, 2005, pp. 75–59) (Fig. 17), a trend-setter for the definition of "axes" in variable and parametric typography[2]. Accordingly, Kupferschmid separates tags into the bones level – that is, the skeletal shapes of the characters –, the flesh level – which include the presence or absence of contrast and finishings –, and the skin level – which pertains to the specific looks of said finishings (Fig. 11). For added context, skeletal shapes are the centrelines of strokes – a concept already put forth by Johnston and further solidified by Frutiger (1989, pp. 200–203) (Fig. 12), Majoor (2004, 2010) (Fig. 13) and Kunz (Fig. 14) –, contrast is the variation between thick and thin strokes, and finishings can be certain details such as serifs in general, hooks, or teardrop terminals in characters such as f, r, etc.

Figure 11: Bones, flesh and skin model (Kupferschmid, 2012).


Figure 12 (Frutiger, 1989, p. 202); Figure 13 (Majoor, 2010); Figure 14 (Kunz, 2003, p. 20).

Impressively, Johnston (1906, pp. 70–72, 114–115, 237) devised such a system at the beginning of the 20th century for his models of lettering, describing them in a hierarchic, numbered list with all their structural and decorative details (Fig. 15). In her much later and rather similar system, Dixon (2002) would also take the Database route, proposing a hierarchical model of analysis (Fig. 16). This new description framework is comprised of sources, that is, the historical influences behind a letterform, formal attributes, which are literally a very detailed of all the relevant shapes in a typeface, and patterns, which are common and recurring combinations, or archetypes, of the former two parameters in separate typefaces across history or even in the same time period. This system also stands out for its inherent expansibility, by design, in a very conscious and targeted effort by the author.

[2] Noordzij's novel definition of "axes" pertains exclusively to the letterforms themselves (Fig. 17), and not necessarily to the visual representation of the categories in the systems based on it, or to other factors such as geographic or historical provenance of typographic specimens.


Acquiring a Formal Hand: (3) Models

A METHOD OF ANALYSIS.

		EXAMPLE: Analysis of Script I. (as in fig. 50).
1. THE WRITING	general character:	*Modernised Half-Uncial.*
(Ruling)	Double or single lines, &c. (see pp. 304, 305):	*Double lines (see figs. 59, 65).*
Letters	round or angular:	*round.*
	upright or sloping:	*upright.*
	coupled or separate:	*coupled.*
2. THIN STROKES:	horizontal or oblique (see figs. 10, 9):	*horizontal.*
3. THICK STROKES:	heavy, medium, or light (see fig. 183):	*medium.*
4. "HEADS" & "FEET":	character (see fig. 145):	*solid, triangular, &c.*
5. STEMS (*ascending & descending*):	short, medium, or long (see fig. 183):	*medium.*
6. SPACING (*Letters, Words, Lines*):	close or wide (see fig. 154):	*fairly close (see figs. 54, 55).*
7. ARRANGEMENT:	in mass (of equal lines), or in column (of unequal lines) (see fig. 154):	*in mass & equal lines (see fig. 66).*
8. MEASUREMENTS (*& proportions see pp. 324, 327*):	width of thick stroke (see p. 83): height of *o* and *d* (see pp. 82, 84): writing lines, distance apart (see p. 82):	*l = about 1/12" wide. o = ,, 1/8" high. d = ,, 1/4" high. Lines 1" apart.*
9. COMPONENT PARTS:	number and forms (see pp. 75, 81, 84):	*a has 3 strokes. b ,, 3 ,, c ,, 2 ,, and so on (see fig. 51).*

GENERAL ANALYSIS OF VERSALS — Versal Letters & Coloured Capitals

1. THE LETTERS:	(Pen-made), Built-up, Ornamental (coloured), "Gothic" Capitals (Round and Square forms).
2. HORIZONTALS—*STRAIGHT*:	Medium—commonly the width of the nib.
CURVED:	Thin—the thin stroke of the pen.
3. PERPENDICULARS:	Built-up, slightly curved in on either side.
4. SERIFS:	Long, thin, slightly curved.
5. LONG STEMS:	Various (see p. 119, & figs. 84, 90).
6. SPACING—*Letters & Words*:	Various (see figs. 89, 92, 166).
Lines:	Usually one or more of the *line-spaces* apart (see pp. 126, 128).
7. ARRANGEMENT:	*Singly*: set in text or margin, or part in both (fig. 86). *Grouped*: after large initials (fig. 92). *In Lines*: wide or close, often one word to the line (fig. 89).
8. MEASUREMENTS:	*Stem width*: commonly two or three widths-of-nib across thinnest part (fig. 165). O *height*: commonly one, two, or more of the *line-spaces*.
9. COMPONENT PARTS:	A has approx. 10 strokes & filling. B ,, 8 ,, ,, C ,, 7 ,, ,, and so on (see fig. 81).

Figure 15: Analysis sheets from early Database-like system (Johnston, 1906, pp. 72, 115).

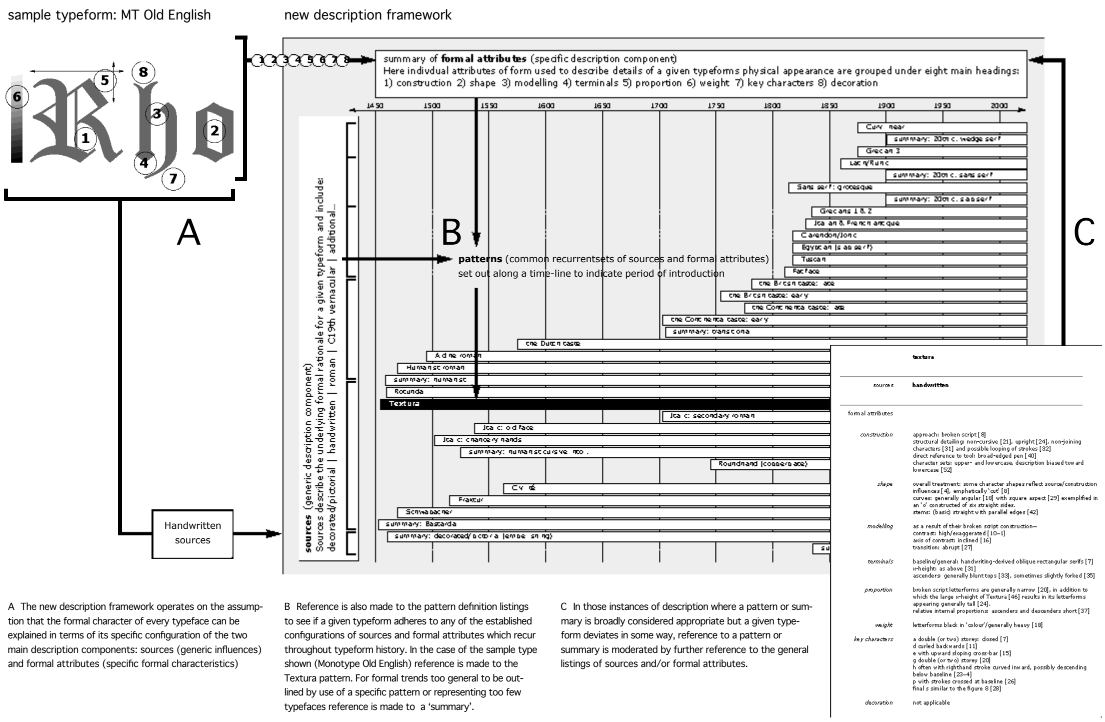


Figure 16: Database-like system and analysis sheet (Dixon, 2008).

Analysing Container-like and Database-like systems

We are currently confronted with technical deficiencies in the most popular typeface taxonomy systems used in commercial and educational settings, which devolve into matters of fairness and inclusiveness or, better yet, their lack thereof. Those systems are not inclusive of these fonts and cannot properly describe or represent them. The main trend is a complete lack of dedicated Variable and Parametric categories, or tags, and, per Brandão et al. (2021), also of Modular and Geometric tags, which would then force us to put all of these typefaces in generic and, thus, unsuitable categories, even if nominally correct.

Regarding **Container-like** systems, these can already accommodate different members of a single, conventional type family in corresponding categories, by virtue of those typefaces' static quality. However, this separation is not ideal, and these seems have obvious limitations even when it comes to certain specimens with hybrid finishing configurations, such as Aicher's *Rotis Semi Sans* (Fig. 2). Variable and Parametric-related terms are, on the other hand, completely absent, which means that there is no ambiguity present, but also means that they are even less visible than Modular and Geometric typefaces if they are not strictly display, or decorative typefaces on their own. As for **Database-like** systems, especially the most recent ones, this omission feels more like an oversight. However, they also contain, by design, the mechanisms to accommodate these typefaces, on account of the lofty goal of accommodating any present and future innovations.

Considering the former, we are, thus, at a crossroads: we can either use **Container-like** systems or simpler **Tag-based** systems, and add to them the necessary categories for Modular, Variable and Parametric typography, while allowing for the original tags or categories geared for conventional type design, in a strategy comparable to Updike's, or go for a **Database-like** system and add to it all the necessary Variable and Parametric Type categories.

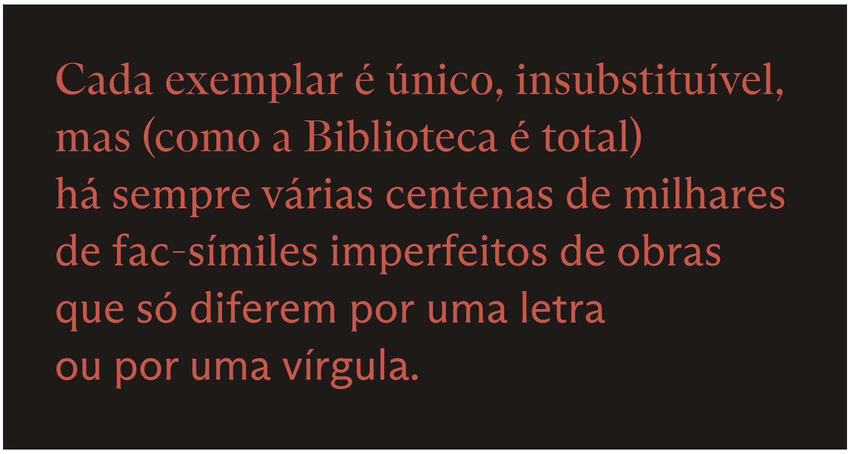
This will allow for an extremely fine degree of detail and, and while probably better suited for expert users' daily usage, it could still be simple enough for novice designers to understand as a primer, especially considering how interactive and immediate the experience of playing with Variable and Parametric typefaces in design applications, such as Adobe Illustrator™, or on on-line digital typeface stores and other distribution platforms can be.

We have decisively moved towards the second family, that of **Database-like** systems. And judging them on their technical merits, Dixon's seems to be more encompassing than Kupferschmid's, as it can indeed, if desired, include Noordzij's theories as well, but is not dependent on them by design. As we saw, Noordzij's system (Fig. 17) only encompasses three calligraphic axes, which is clearly not enough to describe the ever-expanding complexity of variable typefaces and their sometimes not so conventional axes.

Figure 17: 3-Axis parametric cube model (Noordzij, 2005, p. 79).

This system was and is used for interpolation purposes during the type design process, such as the one described earlier for typeface systems (Figs. 6 and 7), with which type designers generated static, finished instances, or separate font files, from discrete points on those axes. The ongoing variable typeface revolution comes down to these type designers handing over some degree of control to end-users, thus allowing them to pick any intermediate value in those axes' continuums and create, on the fly, extremely fine-tuned, bespoke combinations which would otherwise be unfeasible or uneconomical to set in stone beforehand.

Regarding this combination of flexibility and complexity and for reference, we present examples of exercises by students of ours, respectively making use of *Arizona* (Hanzer, 2021) (Fig. 18), a typeface which can smoothly transition from Sans-Serif to Serif – making the process of categorizing Rotis appear outright simple by comparison –, and making use of *Fit* (Ross, 2017) (Fig. 19), a variable geometric typeface, which bears no relation whatsoever to calligraphy. We also call into attention *Cheee* (Edmonson, 2020) (Fig. 20), a typeface whose axes its author mused on naming after marijuana-related themes.



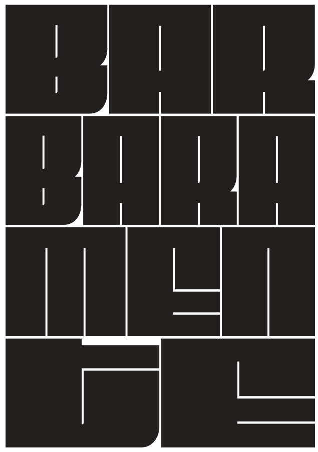


Figure 18: *Arizona* (poster by A. Carmo, 2021); Figure 19: *Fit* (poster by M. Matias, 2021).

Figure 20: *Cheee* (Edmonson, 2020).

After careful consideration, **Dixon's system**, which was already the previous target for expansion by at least two of the present authors when it came to adding Modular and Geometric Type-related categories to an existing system (Brandão et al., 2021), is similarly our prime pick for the analogous process pertaining to Variable and Parametric typefaces.

On Expanding an Existing Taxonomy System with Variable and Parametric Type Categories and Axes

We propose, thus, the addition to Dixon's system of the following headings and submenus to the formal attributes framework, including the definition of the absolute limits of its axes and any relevant intermediate points or ranges: **Variable**, as a construction approach; **Shape Axes** pertaining to the general formal and positional aspects of letterform components, such as **Curve**, **Stem**, etc., as well as **Ink Trap Width** and **Depth**, **Formal/Casual** and **Regular/Distorted**; **Modelling Axes** dedicated to **Angle of Contrast**, **Angle of Slant**, and separately to conventionally **Thick** and **Thin Strokes**, which allow a current trend of emulating Victorian-like, reverse-contrast typefaces; **Terminals**, or **Finishings Axes**, such as

Serif Length, **Thickness** and **Shape**, and **Swash Length**; **Proportion Axes**, such as **Character Width** and **Height**, which look to be increasingly popular and setting another aesthetic trend; **Weight Axes**, such as **Weight** and **Optical Size**; and Axes dedicated to **Key Characters** and **Decoration**, such as **Shading**, **Bevel**, etc., if applicable.

We can also identify trends in specialized applications and, accordingly, suggest entirely new headings such as **Animation** (as the existence of a format which allows for several different instances in a single file lends itself to those), or **Legibility**, for readers with special needs, or any other new Headings and Axes which are deemed relevant, which will be actively encouraged as an ongoing debate in academia and in the industry.

Furthermore, all these Headings and Axes are fully compatible with our earlier extension to Dixon's proposal, focused on Modular and Geometric Type design, and even with grid-based fonts, provided that the intermediate values which allow the resulting proportions to fit on grid units and subdivisions are patently stated.

Also of note, from the combination of these formal attributes and recurrent references we can already identify a few already existent Variable- and Parametric-specific/enabled patterns or, more exactly, real-world application patterns, such as the ***'randomly extended characters on the width axis'*** seen on the following examples (Figs. 21, 22 and 23).

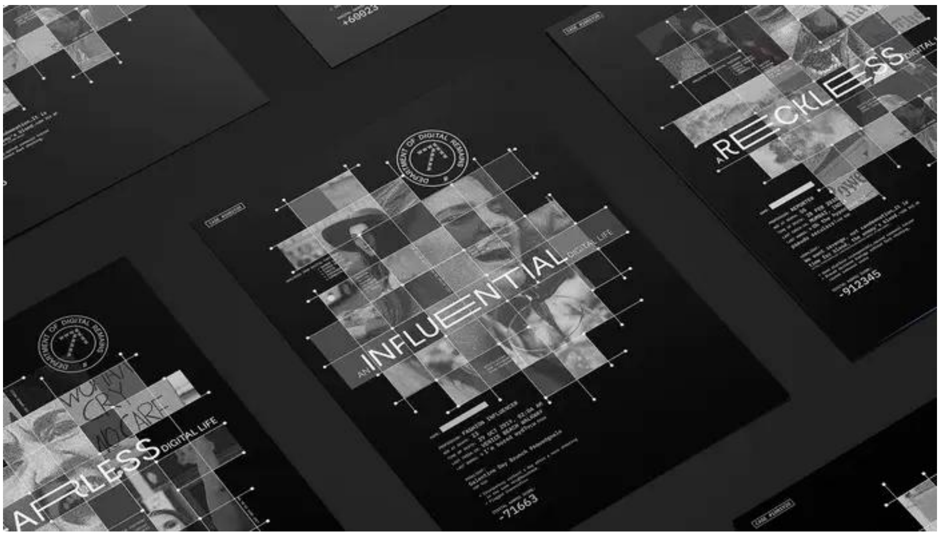


Figure 21: *Bandeins Strange* (Müsgens, 2019; Nair, 2021).

Figure 22: *MEO Text* (Alves, 2015; Altice Portugal, 2020).

Figure 23: *Lusofonia Record Club* (Folchini & Silva, 2021; the Authors, 2022).

Another such variable- and parametric-facilitated pattern is the ***'reverse contrast'*** (Figs. 24, 25 and 26), which can be very broad and unconventional (Fig. 26) and depend on just Axes being pushed to their limits. Furthermore, these formal attributes do not preclude variable fonts from adhering to conventional references and, thus, from belonging to conventional patterns as well, as the Variable and Modern/Uncial hybrid *Escura* (Fig. 27) attests.

Figure 24: *Lubeznik Display* (Miller, 2021).

Figure 25: *Shrill* (Midzic, 2019).

Figure 26: *Cheee* with reverse contrast (Edmonson, 2020).

Figure 27: *DSType Escura* (Leal & Santos, 2022).

Testing the Proposed Extensions

We present the proposed extensions to Dixon's system (Fig. 16), including those earlier set forth by Brandão et al. (2021), in Appendix A, and a preliminary test of them aiming to cover the maximum variety thereof, having chosen, for reasons of economy, *Fit* (Fig. 19), a specimen which would elicit the need for those related both to modular and geometric typefaces, and to variable and parametric ones, also presenting it in Appendix B.

The system in its current did not reveal itself to be much more complicated to use than the earlier extension, having only required, in *Fit*'s case, the installation of the variable font file, generously provided by DJR type foundry, and its testing in Adobe Illustrator™, in order to check the width axis values against the corresponding family member/weight names.

Conclusion

More than just serving as an end into itself, categorizing modular and geometric, variable and hybrid typefaces also serve important practical goals, especially if this process is done in a streamlined, systematic and potentially even standardized fashion – as much as the diversity of the corpus under scrutiny allows.

The benefits of the usage of advanced systems such as these can be twofold: on one hand, being able to properly analyze novel or otherwise unconventional typefaces allows researchers, educators, students and professionals alike to better understand and make use of them. This factor is especially important considering how the freedom and flexibility afforded by variable typefaces has the potential, in the not-too-distant future, to break established conventions on a wider scale. These conventions, along with classic typographic taxonomy systems, however, do not necessarily have to be abandoned; quite the contrary, as they predictably will still inform all researchers, educators and practitioners even in a future where they might be rendered obsolete.

On the other hand, on the commercial side of things, the ability to understand, appreciate and make use of the existing typographic corpus more critically may trigger an increase of both supply and demand of good quality modular, geometric, variable and parametric typefaces, which, in turn, may also justify the need of advanced typographic taxonomy systems as discovery devices on digital typographic foundries and distribution services.

There is, more than ever, an ongoing, lively debate on this topic, including during the presentation of this very research with Amado, who suggested CEDARS+ (Chahine, 2021) as a more appropriate system both for academic and commercial settings, and as a vital component in future editions of SLOType (cf. Amado et al., 2021).

As such, we intend, on future Advanced Typography classes and editions of the Calligraphy and Modular Typography workshops at Universidade de Lisboa, to test both our system and the suggested alternative (and, time allowing, others which may arise as viable), along said classic systems, and present our findings at a subsequent edition of ECADE or at a similar venue, and/or as part of the corresponding author's PhD research project.

As an added vector of testing and dissemination, the corresponding author and dos Reis Duarte, one of the members of the former's PhD supervising team, intend to take their combined typographic corpus (Rangel et al., 2016; J. F. R. Gomes, 2016, 2017a, 2017b, 2018, 2019a, 2021) and invite other up-and-coming type designers in order to create a digital type foundry of their own, in which this system, a variant thereof or some of its elements may be part of the tools provided to prospective customers.

Acknowledgments

The authors would like to acknowledge and thank CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa and its staff for their kind support.

This work is financed by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., under the Strategic Project with the references UIDB/04008/2020 and UIDP/04008/2020.

The corresponding author's current PhD research project, "Tipografia Modular: Aplicações Práticas Enquanto Ferramenta Pedagógica", with the reference SFRH/BD/06696/2020, is financed by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P.

Appendix A: Model of Advanced Taxonomic Analysis Sheet

construction

approach: variable
axis [n]'s limits:
axis [n]'s relevant steps:
structural detailing:
direct reference to tool:
character sets:

grid (if applicable)

kind:
module snapping:
character snapping:

shape

overall treatment:
curves:
stems:
shape axis [n]'s limits:
shape axis [n]'s relevant steps:

modelling

as a result of its […*] construction– contrast:
contrast axis's limits:
slant axis's limits:
thick stroke axis' limits:
thin stroke axis' limits:
transition:

[*fixed, short description/*variable, described by the following axes]

terminals

baseline/general axis [n**]' limits:
x-height axis [n**]' limits:
baseline/general axis [n**]' relevant steps:
x-height axis [n**]' relevant steps:

[**serif length, thickness, shape, etc.]

proportion

character width axis' limits:
character height axis' limits:
ascenders axis' limits:
descenders axis' limits:

weight

weight axis' limits: …
weight axis' relevant steps: …
optical size axis' limits: …
optical size axis' relevant steps: …

key characters

…

decoration

shading axis' limits:
shading axis' relevant steps:
bevel size axis' limits:
bevel size axis' relevant steps:
decoration axis [n]'s limits:
decoration axis [n]'s relevant steps:

animation

loop duration: [n] frames

legibility

reading distance axis' limits: …
symmetry/asymmetry axis' limits:

Appendix B: Advanced Taxonomic Analysis Sheet for *Fit*

construction

approach: variable, modular and geometric

structural detailing: non-cursive, straight, unconnected characters, most horizontal stems are close to baseline in neo-Art Déco style

direct reference to tool: n/a

character sets: monocase, with mixed-case characters

grid

kind: orthogonal, irregular with fixed-width/height gutters equal to horizontal countershapes, linearly variable fields on the x-axis and dependent, non-linearly variable fields on the y axis, without field subdivision in either case

module snapping: module edges line to the grid and skeletal forms line to fields

character snapping: staggered (non-monospaced) and fixed (to the fields) except for M, W, I, and 1 (one)

shape

overall treatment: most characters present a squared, blocky look.

curves: some characters feature perfect-arc rounded corners with constant radius, on the upper-left and lower-right corners of applicable strokes, for disambiguation purposes

stems: (basic) straight with parallel edges

width axis's limits: 1 to 1000 (1:1 ratio to 77,5:1 ratio in relation to gutter width)

width axis's relevant steps: 1 (Skyline), 10 (Compressed), 27 (Extra Condensed), 56 (Condensed), 110 (Regular), 191 (Wide), 335 (Extra Wide), 580 (Extended), 825 (Extra Extended), 1000 (Ultra Extended)

modelling

as a result of its variable, modular and geometric construction, and closed negative space, contrast: variable, affected by width axis, and hard to perceive

width axis's limits: from 1–110 – no contrast; from 111–1000 – negligible to high

transition: abrupt

terminals

baseline/general: horizontal, straight cuts

x-height: same as the baseline

ascenders and descenders: n/a

proportion

character width axis' limits: I at width axis 1 – 1:47 w/h ratio, to M at width axis 1000 – 3,7:1 w/h ratio

weight

weight: variable, from Regular (1 – Skyline) to Ultra-Black (1000 – Ultra Extended)

key characters

T with bar near to x-height; L with spur cut near to x-height; squared A, M, N and W

decoration

n/a.

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