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## Editorial comments

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### Passings: Janusz Nowacki, Ed Benguiat, Ron Graham

This year has not been kind to font designers.

Janusz Marian Nowacki (9 July 1951–7 June 2020) was an active participant in the e-foundry team that created the Latin Modern family and the  $\TeX$  Gyre fonts, and an honorary member of GUST, the Polish  $\TeX$  group. He was responsible for the revival of several traditional Polish fonts, including Antykwa Toruńska and Antykwa Półtawskiego, which he implemented using MetaType1. His attraction to  $\TeX$  was in service to his principal occupation as a rubber stamp maker and his hobby as a fine art photographer. A more personal remembrance appears on the GUST web site.<sup>1</sup>

The prominent U.S. font designer Ephraim Edward “Ed” Benguiat (27 October 1927–15 October 2020) is possibly best known for the font bearing his name — ITC Benguiat,<sup>2</sup> a decorative serif typeface loosely based on typefaces of the Art Nouveau period. This typeface was released in 1977 by the International Typeface Corporation (ITC), an independent licensing company for type designers which he helped establish, and for which he became vice president. Among his other accomplishments was work on the redesign of the *New York Times* logo; this was more a “cleanup” than a full redesign, and the *Times* obituary quotes Benguiat thus: “My thought was, ‘OK, we’ll change it—but if we change it, nobody will recognize it. So all I did was take it and fix it.’” The obituary contains some good advice for aspiring typographers and is well worth reading.<sup>3</sup>

Not a font designer, but a co-author with Don Knuth and Oren Patashnik of *Concrete Mathematics*, one of the first books to use the AMS Euler font, Ronald Graham (31 October 1935–6 July 2020) was a President of the American Mathematical Society (1993–1994) and creator of the Erdős number, a measure of the distance from Paul Erdős in the collaboration network of mathematical publication.

R.I.P. Messrs. Nowacki, Benguiat, and Graham.

### A new Unicode-specific area in CTAN

The new directory tree `CTAN:/macros/unicodetex` is meant for macro packages that work with either  $X_{\text{F}}\TeX$  and  $\text{Lua}\TeX$ , but *not* with ‘traditional’  $\TeX$  engines like  $\TeX$  and  $\text{pdf}\TeX$ .

<sup>1</sup> [www.gust.org.pl/news/jmn-obit-en](http://www.gust.org.pl/news/jmn-obit-en)

<sup>2</sup> [www.fonts.com/font/itc/itc-benguiat](http://www.fonts.com/font/itc/itc-benguiat)

<sup>3</sup> [www.nytimes.com/2020/10/16/business/media/ed-benguiat-dead.html](http://www.nytimes.com/2020/10/16/business/media/ed-benguiat-dead.html)

Macro packages that require  $\text{Lua}\TeX$  (and work with none of the other engines!) are stored in `CTAN:/macros/luatex`.

Macro packages that require  $X_{\text{F}}\TeX$  (and work with none of the other engines!) are stored in `CTAN:/macros/xetex`.

Macro packages that work with any  $\TeX$  engine, or only with the ‘traditional’ engines, are stored, as before, in `CTAN:/macros` outside the directories mentioned above.

So far, the following packages have been relocated to `CTAN:/macros/unicodetex/latex`: `fontsetup`, `fontspec`, `lilyglyphs`, `polyglossia`, `quran`, `realscripts`, `texnegar`, `unicode-math`, `xltxtra`.

Feedback would be most welcome about more packages that should be moved to another location, according to this classification. Please email [ctan@ctan.org](mailto:ctan@ctan.org) if you are the author, or a knowledgeable user, of a package that you feel should go to the new `CTAN:/macros/unicodetex` area, but is still located elsewhere on the archive.

## Fonts, fonts, fonts

### Font Wars

For about half a millennium before  $\TeX$  was created, type was metal, but in the mid-20th century, metal type began to be replaced by phototype — negative images of letters and other symbols on film, through which a light was flashed to record an image on a photosensitive surface. Don Knuth had access to an early laser printer, and realized that images could be represented by a matrix of zeros and ones — a bitmap — and from this idea, `METAFONT` was born, as a necessary adjunct to  $\TeX$ . But this was still a specialized operation, carried out on a large shared computer. When, in the 1980s, personal computers became available, one of the first killer applications was word processing. Soon after, personal-sized laser printers appeared, and the race was on to provide fonts that would allow any user of a PC to create any kind of document their occupation required.

Competition among the manufacturers of PCs and associated software was fierce, and the part of it that dealt with the printing of documents became characterized as the “Font Wars”. This period has been described in a number of places, one of which we celebrate here. Chuck Bigelow, as part of a 2017 symposium on the History of Desktop Publishing sponsored jointly by the IEEE Computer Society and the Computer History Museum in Mountain View, California, tells the story of this period in a two-part article: “The Font Wars”, *IEEE Annals of the History of Computing*, **42:1**. January–March

2020, 7–40. Additional notes are provided as a web supplement: [history.computer.org/annals/dtp/fw/](http://history.computer.org/annals/dtp/fw/). TUG plans to publish the entire enterprise in book form next year, with additional material. Since Chuck was a key participant in this saga, this is a true first person account, well researched and lucidly presented. Interspersed with the text are numerous illustrations depicting various methods, old and new, used for defining the shapes of letters.

This same subject has been covered from a different point of view (that of someone active in the printing industry) by Frank Romano in his book *History of Desktop Publishing*, which was reviewed in an earlier issue of *TUGboat* ([tug.org/TUGboat/tb41-1/tb127reviews-romano.pdf](http://tug.org/TUGboat/tb41-1/tb127reviews-romano.pdf)). This book characterizes the different personalities and points of view of the principals involved in the hardware end of the font wars, and is notable for the presence of some photographs that illuminate the intensity of competition that marked the period.

#### *Computer Modern / Latin Modern*

Changing gears, visible differences between Computer Modern and Latin Modern were addressed by a question on the `tex.stackexchange` Q&A site ([tex.stackexchange.com/q/48369](http://tex.stackexchange.com/q/48369)). CM has been criticized for appearing too thin, especially on screen, but a comparison of copies of Knuth’s *The Art of Computer Programming* (TAOCP) show it to appear more substantial than other documents produced with  $\LaTeX$ . An answer to this question notes that a great deal of  $\LaTeX$  material is now by default set with Latin Modern, not the original CM. It attributes the difference in weight to the model used for LM (and also for the Type 1 implementations of CM), which has a lesser value for the METAFONT variable `black`, leading to noticeably thinner stems.

#### *Other fonts, and some related software*

A productive field for font development is directed toward assisting readers with visual disabilities. Several new fonts and supporting software in this area have been announced on the web.

- Luciole (French for “firefly”)<sup>4</sup> is a sans serif font intended to “advance research”, supporting almost all European languages and including many Greek and math symbols for scientific notation.
- Lexend<sup>5</sup> is a “variable” font (or series of variations on an underlying basic sans serif font style) that is intended to change depending on feedback from the reader’s ability to comprehend a

text (measured in “words correct per minute”). Its goal is to improve reading proficiency.

- The Accessible RMarkdown Writer<sup>6</sup> is not a font, but “a tool that creates documents in various formats based on RMarkdown text”. Designed to help create “scientifically rigorous” complex documents, it is based on the existing tool Markdown, with the ability to add inline R-code, and uses pull-down menus to access symbols.  $\LaTeX$  is supported for inclusion of references.

#### **Erratum:**

#### **“The Road to Noto”, Steven Matteson (*TUGboat* 41:2, 145–154)**

A question was raised regarding the relative antiquity of Anatolian hieroglyphics compared to Egyptian, as stated on page 152: “Anatolian hieroglyphs are at least 4,000 years old, thus predating Egyptian hieroglyphs.”

When Matteson was asked about this, he responded, “Whoops — yes I see looking at the timeline I quickly sketched out for the talk I transposed the words ‘Akkadian’ and ‘Anatolian’. Big mistake on my part and I’m very happy it was pointed out.”

But there’s more to this story.

To begin, “Akkadian” applies to cuneiform, not hieroglyphs. Cuneiform has traditionally been considered slightly older than hieroglyphs, but archaeologists are still digging. And the text here mentions only hieroglyphs, not cuneiform. So, where did “Anatolian” come from?

One of the goals of Noto is to support all language scripts in Unicode; the relevant block (U+1440–U+1467F) is named “Anatolian hieroglyphs”. The initial request for adding this script to Unicode (found in the Unicode archives) was submitted by the UC Berkeley Script Encoding Initiative. This document indicates that the script was used by multiple languages, so a regional rather than a linguistic name was applied. Sadly, no temporal information is included.

Elsewhere, in a Wikipedia reference for Egyptian hieroglyphics ([https://en.wikipedia.org/wiki/Egyptian\\_hieroglyphs](https://en.wikipedia.org/wiki/Egyptian_hieroglyphs)), it is stated that

Since the 1990s, [...] discoveries of glyphs at Abydos [Egypt], dated to between 3400 and 3200 BCE, have shed doubt on the classical notion that the Mesopotamian symbol system predates the Egyptian one. However, Egyptian writing appeared suddenly at that time, while Mesopotamia had a long evolutionary

<sup>4</sup> [luciole-vision.com/luciole-en.html](http://luciole-vision.com/luciole-en.html)

<sup>5</sup> [lexend.com](http://lexend.com)

<sup>6</sup> [www.arowtool.com](http://www.arowtool.com)

history of sign usage in tokens dating back to circa 8000 BCE.

It is tempting to infer that the underlying idea was “in the air”, resulting in relatively contemporaneous development.

### Learning L<sup>A</sup>T<sub>E</sub>X

An introductory manual, *Learning L<sup>A</sup>T<sub>E</sub>X*, by David Griffiths and Desmond Higham, first published in 1997 with a second edition in 2016, has been highlighted by a commentary in *SIAM News*.<sup>7</sup> In it, the authors predict “future LaTeX breakthroughs, leading up to the release of LaTeX3 in 2051.” I think that some of these have already come true.

Returning to the present, the new L<sup>A</sup>T<sub>E</sub>X “instructional” site, [learnlatex.org](http://learnlatex.org), has in just a few months progressed from an idea to a full-scale operational reality. Introduced by Joseph Wright in a talk at TUG 2020,<sup>8</sup> the collection of elementary lessons has already been translated into French, Portuguese, Vietnamese and Spanish, and more translations are underway. Each lesson contains one or more typical examples, which can be run directly from the connected page or modified for a different view; experimentation is encouraged. Access to, and presumably use of, the site has grown to several hundred connections per day.

One of the principal goals of *learnL<sup>A</sup>T<sub>E</sub>X* is to keep it current, unlike many existing web sites that have been constructed but left to lie fallow (sometimes for years), or books that represent a particular point in time.

### Graphical history in action

Not fonts, not T<sub>E</sub>X, but an art form that *does* utilize fonts as an integral part of its message and considerable charm, posters for the national parks of the U.S. have been compelling advertisements for the locations they picture. Among the most attractive of the lot are the posters created as part of the Works Progress Administration (WPA), an organization created during the Great Depression as a means of supporting artists, whose talents did not otherwise yield a stable existence.

An article<sup>9</sup> in the *New York Times* tells the story of a retired dentist, Doug Leen, who has tracked down original posters and reproduced them, and also designed new posters in the distinctive style.

<sup>7</sup> [sinews.siam.org/Details-Page/writing-learning-latex](http://sinews.siam.org/Details-Page/writing-learning-latex)

<sup>8</sup> [tug.org/TUGboat/41-2/tb128carlisle-learnlatex.pdf](https://tug.org/TUGboat/41-2/tb128carlisle-learnlatex.pdf); video: [youtu.be/0qTbtKr-5c0](https://youtu.be/0qTbtKr-5c0)

<sup>9</sup> [www.nytimes.com/2020/08/25/style/ranger-doug-leen-wpa-national-park-posters.html](http://www.nytimes.com/2020/08/25/style/ranger-doug-leen-wpa-national-park-posters.html)

Illustrations accompanying the article show both original and newly created items; it’s very hard to distinguish which is which. (Will there be anyone, or any reason, to memorialize this year’s disaster? The need is certainly there among artists.)

### Followup to “old news”

With the cooperation of the Computer History Museum, ACM has carried out interviews with many recipients of the Turing Award. This includes both Don Knuth and Leslie Lamport. The interviews (and transcripts) are online. Start with the main announcement page for Knuth, at [amturing.acm.org/award\\_winners/knuth\\_1013846.cfm](http://amturing.acm.org/award_winners/knuth_1013846.cfm). On that page are links for all forms of the interview, and an alphabetical listing of award recipients. (Leslie is listed next after Don.) The interviews are long—more than seven hours with Don, and about five and a half with Leslie. (I learned from Don’s interview that his long-time secretary, Phyllis Winkler, was able to read his handwriting, was a top-notch technical typist, and thus a superlative candidate for the first non-DEK T<sub>E</sub>X tester.) Put this site on your list of things to turn to when you have a few hours of quiet time available.

TUG maintains an extensive list of Knuth videos at [tug.org/interviews/#knuthav](http://tug.org/interviews/#knuthav) as well as links for other people in the T<sub>E</sub>X world elsewhere on [tug.org/interviews](http://tug.org/interviews). If you know of anything we’ve missed, please let us know.

### Making TUGboat more accessible

No, this isn’t a claim that *TUGboat* will be easier for someone with a visual disability to read, but starting with the next issue, each article will carry a DOI—a Digital Object Identifier. This unique identifier will broaden digital access to *TUGboat* content, allowing it to be included in major collections of bibliographic data, starting with that of Crossref, the DOI registrar for material like that published by TUG.

The assigned DOI prefix for TUG is 10.47397. To this will be added the journal, volume, issue, and article identification. For new issues, the DOI will appear below the bottom of the first column on the first page of each item to which a DOI is assigned. Assignment of DOIs to earlier issues will proceed as time permits.

The DOIs will be added to Nelson Beebe’s BIB-T<sub>E</sub>X database of *TUGboat* contents.

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