Editorial comments

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John Warnock (1940–2023)

Although John Warnock was not a member of the TEX community, his work was central to the environment that allowed it to flourish. Born October 6, 1940, in Holladay, Utah, he pursued an academic program in mathematics, but after a few years in a doctoral program at the University of Utah switched to electrical engineering, which at the time encompassed computer science. There, he developed a computer graphics algorithm to render a three-dimensional image in two dimensions.

After receiving his doctorate, he moved to the San Francisco Bay area, and in time went to work for Xerox PARC (the Palo Alto Research Center). It was there that he met Chuck Geschke. A product of their work was InterPress, a tool for getting printers to render an image from a computer screen. But Xerox wasn't interested, and Warnock's disappointment led to his leaving Xerox to pursue his vision.

In 1982, he and Geschke founded Adobe Systems. Among Adobe's many groundbreaking products directed at document production using personal computers and laser printers are PostScript, PDF, InDesign, Illustrator, Photoshop and Acrobat.

In July of this year, Don Knuth, in a message to Chuck Bigelow, mentioned "I don't know the name of the genius who invented the hints that were used in Adobe's Type 1 fonts."[1] Bigelow responded

> John Warnock has publicly claimed credit for Doug Brotz, Bill Paxton, and himself for the idea and implementation of distorting character outlines to fit outline characters to raster grids before rasterization.

In an effort to find the authoritative answer, I reached out to Frank Romano, president of the Museum of Printing and long-time observer of and commentator on all things about printing, and he, in turn, asked Warnock directly. In a message dated July 4, Warnock responded with a copy of the slides for the lecture he had given when presented in 2004 with the Lovelace Medal by the British Computer Society. In it, he doesn't say unambiguously that he was the inventor of hints, but presents the method used by PostScript: "The Good Idea!" This comprises two parts: "Don't try to figure out what bits to turn on or off." and "Instead, change the letter forms so the result is good." The illustrations demonstrate the effectiveness of the method.

Dr. Warnock died on August 19. Romano mused that the last email he'd received was Warnock's communication regarding hinting.

Taco Hoekwater and METAPOST

METAPOST, a graphics program created by John Hobby, inspired by Knuth's METAFONT, has continued to be developed by a team centered in the Netherlands and populated largely by members of the ConTEXt community.[2] A key member of this group is Taco Hoekwater.

Taco has written a series of articles on various facets of METAPOST that have appeared online in the pages of the *context group Proceedings*. These articles address the following topics. The last two are from presentations at the 2023 ConTEXt meeting, and will not be posted until March 2024.

- "Sparks, tags, suffixes and subscripts",[3]
  context group Proceedings 2019, pp. 10-21.
- "METAPOST definitions",[4]
  context group Proceedings 2020, pp. 53–72.
- "METAPOST paths and pairs",[5]
  context group Proceedings 2021, pp. 48–92.
- "METAPOST control structures".[6]
  context group Proceedings 2023, pp. 70–78.
- "METAPOST pictures",[7]
  context group Proceedings 2023, pp. 79-93.

Frans Goddijn has now pulled together all five articles to form an issue of the NTG *MAPS*, Nummer 53, Voorjaar 2023,[8] under these slightly changed titles: "Variables", "Definitions", "Paths, pairs, pens and transforms", "Conditions and loops", and "Colors and pictures". This issue, like current issues of some other TEX user group journals, is available only for members of the group for some period. For NTG, the period is two years.

In the introduction to the collection, Taco writes

> There is a lot of information in this set of articles, but this is not a manual. [...] The point of this set of articles is not to replace [the] manual, but to elaborate and clarify some parts of it.

Thanks to Henning Hraban Ramm for providing authoritative editing assistance.

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[1] Quoted in a personal message from Chuck Bigelow dated 2 July 2023.

[2] Editor's note: The variations on the presentation of "ConTeXt" here follow the usage within the ConTEXt group.

[3] `articles.contextgarden.net/journal/2019/10-21.pdf`

[4] `articles.contextgarden.net/journal/2020/53-72.pdf`

[5] `articles.contextgarden.net/journal/2021/48-92.pdf`

[6] `articles.contextgarden.net/journal/2023/70-78.pdf`

[7] `articles.contextgarden.net/journal/2023/79-93.pdf`

[8] `www.ntg.nl/maps/53` (when available)

TUG annual meetings: 2023 and 2024

The videos of the talks at TUG 2023 have been post-processed and uploaded to YouTube. They can be accessed at `youtube.com/@TeXUsersGroup`. Only a single playlist is provided for 2023 since, unlike the previous two years, no interviews took place, so everything is collected under "Lectures". Thanks to everyone who worked hard to make this happen.

As for 2024, an invitation was extended to, and accepted by, the Board to hold the meeting in Prague. Dates have not been set yet, but it will most likely take place in July or early August. When more information is known, the dates will be added to the calendar, and details posted at `tug.org/tug2024`. Stay tuned.

TEX Collection DVD discontinued for 2024

As time goes on, an increasing portion of the TEX community has taken to updating their personal TEX installation directly from a Web source like CTAN, or has started to use a third-party service like Overleaf. More and more members have notified the TUG office that they don't need the DVD.

It takes considerable time and money to produce and mail the DVD. Thus, the TUG Board has decided to no longer provide, as of 2024, the DVD as a standard benefit of membership (for non-electronic members).

Nonetheless, there are valid reasons to need an offline mechanism to install or update a TEX system. As practiced by Don Knuth, a user's hardware may not be connected to the net; that might be for either personal or corporate reasons, but the disconnect can be absolute. In such a case, a DVD provides the most convenient installation method. The TUG office received about 20 requests for DVDs last year, mostly from nonmembers; it's not possible to know how many of the DVDs distributed to members were actually used to install the system.

Preparation of TEX Live for 2024 will continue to build images suitable for burning to DVD, and the other components of the TEX Collection are also expected to be available, if desired; only the manufacturing step will be omitted. Instead, several volunteers have already agreed to burn DVDs from the official release on request; the actual procedure hasn't yet been established.

If you are willing to participate in this effort, or know already that you will need the 2024 software releases in physical form, the best way to keep track of what is happening is to follow `tug.org/texcollection`, where the current status will be communicated. Another possibility is to subscribe to the public mailing list `lists.tug.org/texdvd`

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which is intended for discussion among those interested. Or do both.

***Shift Happens*: How keyboards got lowercase**

Remember teletypes? Keypunches? All 26 letters of the English alphabet were there on the keyboard, but only in uppercase. What would be printed out now looks, to contemporary eyes, like SCREAMING. First-generation typewriters also had only one case — upper — and if these machines were to become effective for use in business, something had to be done.

The story of how the case shift was added to the typewriter has now been told, in great graphic detail, in *Shift Happens*, by Marcin Wichary. The book hasn't yet been delivered, but is expected before the end of the year. (If you are interested, go to `www.kickstarter.com/projects/mwichary/shift-happens` for more information.)

In anticipation of publication, a discussion took place at the Museum of Printing (MoP) on July 8. Entitled "Shift happens meets etaoin shrdlu", the panelists were: Frank Romano (moderator, president of MoP), Marcin Wichary (the author), Glenn Fleischman (editor of *Shift Happens*, author and long-time technical journalist), Jeff Jarvis (journalist and observer of the transition from hot type to cold in newspapers), and Doug Wilson (creator of *Linotype: The Film*[9]).

The discussion, more than an hour long, was recorded, and is posted on MoP's YouTube channel in three parts.[10] Sadly, I wasn't present at the event to kibitz, but would have had some comments on a few topics mentioned by the panelists:

- Does anyone still recognize the name Ottmar Mergenthaler, or remember what he was known for?[11]

- Nobody mentioned that an early method for producing copy for material to be printed was to type it into machines that could punch paper tape (which could be edited), then read that tape back in, with the possibility of the typed output being automatically justified. The Friden Justowriter was such a machine.[12]

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[9] `linotypefilm.com`

[10] `www.youtube.com/watch?v=HrlcFB_Q_UE`
`www.youtube.com/watch?v=-8a4XwOtd9k`
`www.youtube.com/watch?v=SWfDrcdXfaM`

[11] Mergenthaler developed the Linotype in Baltimore, and a public high school, Mergenthaler Vocational-Technical High School — MerVo-Tech — is named in his honor.

[12] For many years the membership list of the American Mathematical Society was produced from edge-punched cards, one per name and address, which were stored alphabetically in card trays, updated as changes were received, and once a year run back through the Justowriter to produce the camera copy for publication.

- The "correcting" IBM Selectric had two ribbons, one black carbon that produced crisp images, and another that appeared white, but was actually covered with adhesive that, when a letter was retyped in place, could lift the carbon image off the paper and leave a clean surface to type a correction.

Do watch the video — it touches on many facets of composition and printing, not just typewriters. And while you're at it, consider subscribing to the MoP YouTube channel; other videos posted there cover a variety of print-related topics.

Nelson Beebe's bibliographic archive

For many years, Nelson Beebe has been compiling an archive of carefully curated BibTeX files recording published material in subject areas of interest to scientists of all stripes, in particular those who are users of TeX. An introduction to the archive is at:

`www.math.utah.edu/pub/tex/bib`.

The page carries the title "The TUG bibliography archive".

The collection is segmented into many subareas; these are listed:

- Journals on the history, philosophy, and popularization of mathematics and science
- Computer science journals and topics
- ACM Transactions
- Markup, programming, scripting, and symbolic algebra languages and systems
- Cryptography
- Fonts and typography
- IEEE journals
- Computational/quantum chemistry/physics journals
- Numerical analysis journals
- Probability and statistics journals
- SIAM journals
- Mathematics journals
- Mathematical and computational biology
- General topics
- Internet
- Markup, programming, scripting, and symbolic algebra languages and systems
- Operating and database systems
- Fisheries research
- Publication metrics
- Standards

Coverage for all issues is complete, if data can be found. The number of entries is now over a million.

Included in the detailed entries are many elements not defined in the original BibTeX spec, including URLs and ORCID information. If relevant information for an entry is available in online metadata, it will be present in the entry in this collection; where essential elements are missing from an online source, Nelson researches it thoroughly and includes what he finds. But the presence of a particular journal in the BibTeX archive does not guarantee that the original is available online.

A related archive has been compiled by the Bib-Net Project: `www.math.utah.edu/pub/bibnet`.

Question regarding hyphenation: chemistry

I would like to find an answer to this question:

> Can chemistry be considered a "language" for purposes of hyphenation?

The names of chemical compounds tend to be quite long, and are themselves compounded of shorter segments in a way that often does not lend itself to being hyphenated acceptably by the default US hyphenation patterns. Two more characteristics are relevant here: Many, if not most, such names seem to be used in the same form regardless of which western European language they appear in, and the longer names are very infrequent in documents outside of the disciplines in which they are common, e.g. chemistry, medicine/pharmacology, and the like. Therefore, adding a large number of exception entries for such terms to `hyphenex` doesn't help a large proportion of (LA)TeX users. (Nevertheless, a few of the terms are included in `hyphenex` now, in a separate section.)

This has been mentioned before in the introductory prose accompanying the periodic updates to the exception list.[13] I have tried to solicit opinions from some users who have mentioned in various Q&A forums that they have made such specialized `\hyphenation` lists for themselves, but have received no answer. Therefore I'm now asking here for help.

If a substantial list of chemical terms could be built, with proper hyphenation markings included, it might be possible to derive a specialized set of patterns for use in documents where there is heavy use of this vocabulary.

Send your thoughts and suggestions to me in care of `TUGboat@tug.org`. Thanks.

⋄ Barbara Beeton
　https://tug.org/TUGboat

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[13] See *TUGboat* 42:1, p. 11, `tug.org/TUGboat/tb42-1/tb130hyf.pdf` and earlier installments.