



Figure 7: A LACE session

ments, and there is large body of documents which have been authored using it.

L^AT_EX's disadvantages should be obvious:

1. its syntax is too complex
2. the document structures it defines are restricted (a simple hierarchy of chapter, section, subsection. . .)
3. it is a batch-oriented text-processing system which differentiates between the text and its physical representation
4. the T_EX system itself is much too large, slow and over-sophisticated for most of the work we will put it to.

It is clear that T_EX in a hyperactive world can only survive in a generic markup form such as L^AT_EX. Much of its power (such as pagination) is irrelevant in this context, and its implementation language will continue to put off many potential designers. But T_EX retains a raw beauty of its own, and if we decide that the hyper systems we build must have a formatting engine behind them, we are confident that T_EX will continue to be the first choice for many years to come.

Bibliography

- Bryan, M. 1988 *SGML: an author's guide*. Addison Wesley.
- Nelson, Theodor H. 1987. *Literary Machines*. T.H. Nelson, Swathmore, PA, 87.1 edition.
- Niblett, Tim and Arthur van Hoff. 1989. "Programmed Hypertext and SGML." unpublished MSS available from authors at Turing Institute, University of Strathclyde.
- Rahtz, Sebastian and Tim Allen. 1990. "Dynamic excavation reports, for good or evil," in *Pre-circulated papers for Information Technology themes at World Archaeological Congress 2, Venezuela, September 1990*. World Archaeology Congress.
- Rahtz, Sebastian, Les Carr and Wendy Hall. 1989. "Creating Multimedia Documents: hypertext-processing," in *Hypertext state of the art*, ed. Ray McAleese and Catherine Green, Intellect, Oxford, UK, pp. 183 - 192. York.
- Wilkins, Rob. 1990. "A L^AT_EX viewer for Hypercard." 3rd year computer science project, Department of Electronics and Computer Science, University of Southampton.
- Yankelovich, N., B. Haan, N. Meyrowitz and S. Drucker. 1988. "Intermedia: The Concept and

the Construction of a Seamless Information Environment," *IEEE Computer*, pp. 81 - 96.

The Dutch National L^AT_EX Effort

Johannes Braams
PTT Research Neher Laboratories
P.O. Box 421
2260 AK Leidschendam
email: JL_Braams@pttrnl.nl

Victor Eijkhout
Department of Mathematics
University of Nijmegen
Toernooiveld 5
6525 ED Nijmegen
email: U641001@hnykun11.bitnet

Nico Poppelier
Elsevier Science Publishers
Sara Burgerhartstraat 25
1055 KV Amsterdam
email: n.poppelier@elsevier.nl

Abstract

In this article, an overview is given of the activities of Working Group 13 WG13 of the “Nederlandstalige T_EX Gebruikersgroep” (Dutch T_EX Users Group). This working group is also called “Neerlandica,” and is interested in anything that has something to do with using L^AT_EX (and T_EX) in a non-American environment. The topics tackled so far range from the design of a page layout suitable for A4 paper by adapting the American layout of `article.sty` to Dutch typographical tastes, to the implementation of a new letter style called “brief.”

Introduction

At its founding meeting, the NTG decided to establish a number of “working groups,” which would tackle some of the problems encountered by members of the NTG. Some of the subjects are “education,” “drivers,” “T_EX for personal computers.” At the second NTG meeting, another working group was started. The task of this group was to investigate the T_EXnical problems Dutch-speaking L^AT_EX users encountered and to suggest solutions to these problems.

The first activity of this group was to decide on which problems would be tackled and in what order. We had a number of subjects:

1. The original L^AT_EX document styles are designed for American-sized paper. The dimensions of this paper differ from A4 paper, which is used most commonly in Europe. The avail-

able style option files at the time were not very satisfactory.

2. In Dutch texts, commands that produce text, like `\chapter` or `\abstract`, should produce *Dutch* texts instead of *English*. A way to solve this problem had already been pointed out by Hubert Partl *et al.*
3. The design of the standard document styles provided by Leslie Lamport is very “American” and, at least to our Dutch eyes, a bit “loud.” We decided to develop replacement styles that would be more adapted to Dutch typographical standards.

After identifying these tasks, we set ourselves a short-term and a long-term goal. The short-term goal was to provide the members of the NTG with an acceptable page-layout, adapted to A4 paper and to provide a document-style option that redefines commands like `\chapter` to use macros

like `\chaptername`. This seemed a reasonably simple task that would be welcomed by a lot of Dutch L^AT_EX users. The long-term goal was to develop new document styles, plug-compatible with the styles provided by Leslie Lamport. To this, we added the need for the implementation of a document style for letters that follows Dutch guidelines for the design of letters.

In the following sections we will discuss these topics in more detail. Some of this work has led to articles published or to be published in *TUGboat*.

Page Layout for A4 Paper

As described before, one of the first problems tackled was that of adapting the standard document styles to A4 paper. The solution we sought was to provide a document style option file, and not to modify document styles for this. This was done mainly to avoid having to maintain extra document styles that differ only marginally from the originals.

Obviously, we were not the first L^AT_EX users to identify the problem, and we knew that document-style options were available in the international T_EX community. However, as we were not satisfied with the results these options gave us, we decided to adapt them. This has led to the file `A4.sty` described by Poppelier and Braams. This file started as a combination of two options that were already available. The combination of these two files didn't satisfy our demands, which were:

1. The width of the text should be chosen in such a way that no more than sixty to seventy characters appear on a line of text.
2. When a document is printed two-sided, the texts printed on both sides of one sheet of paper should overlap.
3. The "inner" margin of the document should be wide enough to allow for the binding of the document.
4. The "outer" margin should be wide enough for marginal notes.

After the publication of our article on `A4.sty`, we received a comment that it doesn't handle texts with more than one column correctly. We still have to look into this, but it is a nice example of Gödel's principle¹.

The "Loud" American Design of `article.sty`

As discussed before, the modification of the design of the standard document styles was a long-term

¹ See the chapter about the *Contractostipunctus*.

project. As a first attempt, a document-style option "sober.sty" was developed. This file modifies the amount of white space around section heads and lists. It also modifies the fonts used for the various levels of section heads.

Braams, Eijkhout and Poppelier began a more fundamental approach with the development of new document styles, derived from `article.sty` and `report.sty`. The design of these "new" styles was based on discussions with a Dutch typographical designer and books by Treebus and Miles on typographical design. One of the ideas behind the redesign of `article.sty` was to minimize the number of "implied left margins." By an implied left margin we mean a non-zero distance from the actual left margin that is used in more than one element of the document. Examples of implied left margins are:

1. the paragraph indentation,
2. the left margins of items in an "itemize" or "enumerate" list construct,
3. the left (or right) sides of the numbers and labels in such list constructs and
4. the left side of the text of a section heading.

In the standard styles of L^AT_EX all of these four distances are independent and are different from one another. In the style we have developed, it was decided to strengthen the visual coherence of the layout by taking the same value for each of them whenever possible.

Another idea that was implemented with `artikel1.sty` is that the white space separating a section heading and the text following it should bear some simple relation to the baseline skip, and should not have any stretch.

A third major modification in the design of the article style is a new layout of the table of contents. Both Treebus and Miles are very explicit in their opinion about the layout of a table of contents. They find a layout like the one implemented in `article.sty` "old fashioned" and even confusing. So, a completely different layout was implemented.

As the new layout of the table of contents met with some reservations from users, the old layout is still available through an option.

Besides `artikel1.sty`, we also implemented two other article styles that have a layout that differs from the layout of `artikel1.sty`. `artikel2.sty` is a layout designed to show what can be accomplished by modifying a few parameters in a document style. The third article style is like `artikel1.sty`, but with one major design decision changed. In `artikel3.sty` paragraphs are not indented, but they are separated by vertical space.

The design of the document styles `artikel1` and `artikel3` can also be implemented for reports, as `report1.sty` and `report3.sty` respectively, and there is a `boek` style based on the design of `artikel1`.

Modifying the Standard Styles Without Modifying Them

As discussed in the Introduction, one of the topics WG13 should be working on was a solution to the problem of English terms appearing in Dutch texts. The basic idea behind our first solution was already implemented by Partl in `german.sty`. We adopted the idea and created `dutch.sty`. In some ways this file is much simpler than `german.sty`; in another way it is more complex. A major difference between the two files is that `german.sty` just provides parameters and parameter values for the various terms and states in the comment that the user should provide modified document style files that make use of these parameters. The file `dutch.sty` also contains the necessary redefinitions for the various L^AT_EX macros. This implies that `dutch.sty` can be used with the standard *unmodified* document style files as they are included in every L^AT_EX distribution.

While implementing `dutch.sty`, it occurred to us that it had some code in common with `german.sty`. This, combined with some discussions at the 1989 EuroT_EX meeting in Karlsruhe, led to the idea of building a more universal system of style option files, called the `babel` system.

Braam's `babel` system consists of one file, with macro definitions common for all languages and a language-specific file for every language that is to be part of the system. It offers the possibility to switch between languages while processing a multilingual document. Because we wanted this system of style option files to be compatible with the original `german.sty`, the files are implemented so that they can also be used with plain T_EX. This is useful because the language-specific files can (and do) contain more than just parameters for L^AT_EX terms. For instance, for the German language as well as for the Dutch language we have an extra active character. This active character is, among other things, used for controlling the hyphenation of words containing accented letters or explicit hyphens by inserting `\discretionary` commands.

All the user needs to specify is the (main) language used in his document as an option to the `\documentstyle` command. This will instruct T_EX to read the appropriate language-specific file. This

file checks whether the core of the `babel` system, `babel.sty`, has been read before. If this turns out not to have happened it inputs `babel.sty`.

When the user wants to add the definitions for another language to the environment in which his document is processed he can use the command `\addlanguage`² with the name of another language-specific file as an argument. So the preamble of his document might look like:

```
\documentstyle[11pt,dutch]{artikel1}
```

```
\newlanguage{germanB}
```

```
\begin{document}
```

So, this example document contains Dutch and German texts. Because the function of the extra active character ("") is different for `dutch.sty` and `german.sty`, the user wants to switch this definition when he starts a German part of the document. This can be achieved by adding,

```
\selectlanguage{german}
```

in front of the German text. When he wants the Dutch settings to be restored, he simply uses the same command with the parameter `dutch`.

As the `babel` system has been developed in a pre-T_EX 3.0 environment, it doesn't use any of the features of T_EX 3.0. Perhaps the switching of hyphenation tables and other T_EX 3.0 features might be added to the definition of `\selectlanguage`.

The Design of a New Letter Style

In one of its meetings, the "Neerlandica" group decided to try to implement a document style for letters that should conform to Dutch standards for the layout of letters. We have consulted four such standards, from the Dutch standardization institute, the Nederlands Normalisatie Instituut (NNI). They are:

1. NEN-1026 for letters,
2. NEN-1025 for envelopes,
3. NEN-3162 for the structure of documents and
4. NEN-3516 for the design of forms.

The result is a design that cannot be judged by taste: it just implements the standards. This seems quite rigid, but some freedom is left to the user to adapt certain parts of the layout to his own wishes.

This new style is *not* "plug compatible" with the L^AT_EX `letter` style, although equivalents of some of the macros from `letter.sty` have been provided. The main reason for its "incompatibility"

² — "`\newlanguage`" would be more appropriate, but this has become a T_EX primitive, so the macro was renamed.

with `letter.sty` is that we have quite a lot of new user commands to either modify some parts of the layout or to fill in some of the fields in the “reference lines.” The reference lines contain fields such as “Your letter of” and “Date.”

Some of the features of this document style are:

1. If the user doesn't have printed letter paper, he can provide his own letterhead by writing his own macro `\briefhoofd` or he can use the macro `\maakbriefhoofd` to adapt the default letterhead provided with the document style.
2. An option is provided to print short horizontal rules on the sides of the paper as an indication where to fold the letter.;
3. The address is positioned such that it can be used with “window envelopes.” The window can be either on the left side (default) or on the right side of the envelope.
4. A user-command `\voetitem` is provided for information about the sender at the bottom of the letter.

An example of this document style can be found at the end of this article.

Conclusion

Working Group 13 of the NTG has had a busy year. We have

1. produced a number of replacement document styles for the standard L^AT_EX document styles,
2. developed a new document style for letters that implements Dutch standards for the layout of letters,
3. presented a new and improved document style option file for use with A4-size paper and
4. produced a document style option file system that supports multiple languages in one document and provides additional features for specific languages.

In short: the category code of this working group has been `\active`.

Bibliography

- Braams, Johannes, Victor Eijkhout and Nico Poppelier. “The development of national L^AT_EX styles,” *TUGboat* 10 (1989) #3, p. 401–406.
- Braams, Johannes. “Babel, a multilingual style-option system for use with L^AT_EX's standard document styles,” *To be published in TUGboat*.
- Hofstadter, Douglas R. “Gödel, Escher, Bach: een eeuwige gouden band,” Uitgeverij Contact, Amsterdam 1985, Dutch translation of *Gödel, Es-*

cher, Bach: an eternal golden braid, Basic Books, New York 1979.

- Knuth, Donald E. *The T_EXbook*, Addison-Wesley, 1986.
- Lamport, Leslie. *L^AT_EX, A document preparation System*, Addison-Wesley, 1986.
- Lamport, Leslie. in: *T_EXhax Digest*, Volume 89, #13, 17 February 1989.
- Miles, John. *Ontwerpen voor Desktop Publishing, Alles over layout en typografie op de personal computer*, Uitgeverij Mingus, Baarn 1988, Dutch translation of *Design for Desktop Publishing: a guide to layout and typography on the personal computer*, Fraser, London 1987.
- Partl, Hubert. “German T_EX,” *TUGboat* 9 (1988) #1, p. 70–72.
- Poppelier, Nico, and Johannes Braams, “A style option to adapt the standard L^AT_EX document styles to A4 paper,” *TUGboat* 11 (1990) #1, p. 98–103.
- Schrod, Joachim. “International L^AT_EX Is Ready To Use,” *TUGboat* 11 (1990) #1, p. 87–90.
- Treebus, K. F. *Tekstwijzer, een gids voor het grafisch verwerken van tekst*, SDU Uitgeverij ('s-Gravenhage, 1988). A Dutch book on layout design and typography.