X Ling Paper’s use of TeX Technologies

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About the Presenters

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Our Goals

1. Say ‘thank you’ to the developers of the TeX packages we use.
2. Inform the TeX community of our project and the use of TeX technology.
3. Receive and consider any suggestions from the TeX community on the infrastructure design of XLingPaper.
XLingPaper - A Plugin to XMLMind
XMLMind Interface

- Written in JAVA
- Cross Platform (Windows, MacOS, Linux)
- Specifically designed document types
- XML Editor designed for technical document production
On rights management in anthropological and linguistic sound collections
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25 February 2021
v5 with en-dash corrections

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Publisher Stylesheet: ARSC-Journal
On rights management in anthropological and linguistic sound collections

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This article seeks to expand the creator and curator’s awareness of the scope and range of legal documentation needed for sound collections, so that archives can carry out their fiduciary responsibilities to preserve and grant access to the preserved content – especially within academic institutions. Given this context, I give preference to referencing academic publications rather than legal publications. However, this does not diminish the importance of legal publications such as laws, statutes, rulings, and opinions as primary sources.

Recent estimates indicate that there are about 7,000 spoken languages in the world without counting dialects. While the twenty most widely spoken languages all have over 80 million speakers, the average language community in Africa only has 30,000 speakers, and the average language community in the Americas has about 1,000 speakers. It is not uncommon for ethno-linguistic communities with small populations to view their heritage language and artifacts demonstrating the language in different ways than ethno-linguistic communities with large populations. In the contexts of academic collaborations to document small, often endangered languages, audio may be unpublished in the traditional sense of published audio such as music, radio productions, and more recently podcasts. However, this is not always the case as many formally published audio works have been released on the basis of anthropological field recordings (for example: Sahag 1969, Zemp 1971). Regardless of the formalities of the publication versus, the rules and laws of copyright equally apply. From a United States copyright law perspective (summarized in U.S. Copyright Office, Circular 1 2019), the application of copyright remains the same as in any other industry. Newman

Endnote: p59

(2007, 2013), writing from the perspective of U.S. law, lays out some considerations that linguists should take as they approach their work. Less well discussed are the kinds of resources archivists should request from linguists as they seek to document collections in archives or the kinds of documents which would be helpful to archivists if they were included in accessions in order to support the goals of Open Access collections. I wish to give an overview on the relevance of legal pluralism, or how working across jurisdictions can impact the perceived rights of possible claimants on the artifacts in a collection. Whereas publishing, in the formal sense, often carries with it an institutional process which addresses copyright, the more frequent case for the last decade has been to
X LingPaper Design Goals

- As free as possible.
- Content separated from styles with publishers having unique publishing style sheets expressed in XML.
- Low bandwidth target user group
  - No TeXLive
  - Pre-selected packages
PDF Creation
TeXML

- TeXML requires Python and the design requirements did not want to dictate that XLingPaper users to need to install a version of Python for TeXML when that version may conflict with other versions of Python they might already have installed. Furthermore, without adding Python the installation package would remain much smaller.
- XLingPaper also needed some extensions for formatting white space (more finely as far as the developers could determine).
Ling-TeX

- Contains packages that provide solutions for interlinear texts, but do not allow for the larger number of capabilities XLingPaper already dealt with. So the developer rolled his own.

(Remember XLingPaper started with RenderX for PDF processing.)
TeX Packages Used

- attachfile2
- booktabs
- calc
- color
- colortbl
- etoolbox
- fancyhdr
- fontspec
- footmisc
- hyperref
- lineno
- longtable
- lscape
- mdframed
- multirow
- normalem
- polyglossia
- setspace
- tabularx
- xltlxtra
# Custom TeX Commands

<table>
<thead>
<tr>
<th>Command for</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of contents</td>
<td>Store and retrieve page numbers; format the contents.</td>
</tr>
<tr>
<td>Lists</td>
<td>Numbered and bulleted lists with control over indents, etc.</td>
</tr>
<tr>
<td>Examples</td>
<td>Example number and example content, where the content can be a line, a list of lines, a set of words, a list of a set of words, interlinear, a list of interlinearss, etc.</td>
</tr>
<tr>
<td>Indexes</td>
<td>Handle keeping track of XLingPaper’s indexing capability, including page numbers.</td>
</tr>
<tr>
<td>Interlinearss</td>
<td>Handle lines in an interlinear text or example, including dealing with an ISO 639-3 code in an interlinear example.</td>
</tr>
<tr>
<td>Block quotes</td>
<td>Handle special cases needed for block quotes.</td>
</tr>
<tr>
<td>Table headers</td>
<td>Attempt to calculate a column’s width via its contents.</td>
</tr>
</tbody>
</table>
Typesetting Tasks XLingPaper Users Often Encounter

● Common linguistic numbered example layouts:
  ○ List of words and their glosses
  ○ Interlinear clauses
  ○ Headings for an example
● Automatically wrapping interlinear texts
● Abbreviations used in glosses and interlinear texts
● Hyperlinks between:
  ○ Example number references and examples
  ○ Abbreviations and a list of abbreviation definitions
Interlinear examples (1/4)

In the XMLMind Editor (part 1/2):

2.1.1 sCuant La frase cuantificadora

Una frase cuantificadora puede acompañar al sustantivo (véanse Los Cuantificadores y Los Números Cardinales). Cuando se presenta esta frase, siempre va delante del núcleo de la frase nominal, como en los ejemplos en (\textbf{xQN}).

\[
(xQN) \quad (xSmajin6) \quad (T-\text{ID0EFGAC-6})
\]

\[
(xFC5p1) \quad (T-\text{ID0EMKAE-5.1})
\]

El cuantificador puede presentarse en construcciones donde no hay sustantivo expreso, como se explica en Los Cuantificadores. Un ejemplo se incluye aquí.
Interlinear examples (2/4)

In the XMLMind Editor (part 2/2):

(2-ID0EFGAC-6)
Náa majñuu nákhu iduu iya'
náa māhjù̀ nákù ìɗù ìjá?
LOC entre TOT.cuatro ojo. 3SG agua
'De entre los cuatro manantiales
endnote: nManantial

(2-ID0EMKAE-5.1)
Gì'doo witsu rakhóó mikhúdú
EST.tener.3SG cinco nariz.3SG (EST).picud@
'Tiene cinco esquinas picudas'
Interlinear examples (3/4)

In the XeLaTeX PDF output:

2.1 Los elementos que van antes del sustantivo

Hay una posición para un elemento antes del núcleo de la frase nominal, y puede ser ocupada por una frase cuantificadora, un artículo indefinido o un pronombre para un uso muy especializado.

2.1.1 La frase cuantificadora

Una frase cuantificadora puede acompañar al sustantivo (véanse Los Cuantificadores y Los Números Cardinales). Cuando se presenta esta frase, siempre va delante del núcleo de la frase nominal, como en los ejemplos en (2).

(2) a. [tef-Zila] Náa majñu:majñu nákhú nákhú iduu iduu iya' náá máhjú:máhjú nákù nákù ídúú ídúú íjá?
   LOC entre LOC entre TOT.cuatro TOT.cuatro ojo.3SG agua agua 'De entre los cuatro manantiales'

b. [tC1].Gf'doo witsu rakhó'o mikhúdú
   EST.tener.3SG EST.tener.3SG prec.3SG EST.tener.3SG (EST).picud@
   'Tiene cinco esquinas picudas'

Source Document:

Interlinear examples (4/4)

Abbreviations are hyperlinks to their definition.

XeLaTeX-produced PDF after clicking on the LOC abbreviations:

- irrealis, IRRSBD = irrealis subordinado, LOC = locativo, MD = medial, NEG = negativo, PSV = pasivo, PFV = perfectivo, PL = plural, PROG = progresivo, RAZÓN = razón, RR = reflexivo/recíproco, SBD:ANIM = subordinador animado, SBD:INAN = subordinador inanimado, TOT = totalidad.
Automatic wrapping in interlinear text (1/2)

Text as in XLingPaper:
Automatic wrapping in interlinear text (2/2)

XeLTEx-produced PDF:

Rikha

FC: 1
Ríkhâ\textsuperscript{2} rig\textsuperscript{1} najm\textsuperscript{3} ná\textsuperscript{3} yúoo\textsuperscript{3} r\textsuperscript{1} kh\textsuperscript{4} ká\textsuperscript{5} gu\textsuperscript{2} á\textsuperscript{3} suan\textsuperscript{4} khamí ná\textsuperscript{3} yúoo\textsuperscript{3} r\textsuperscript{1} kh\textsuperscript{4} májin\textsuperscript{5} y LOC gu\textsuperscript{2} á\textsuperscript{3} chilacayote

'La flor de calabaza se da en la guía de la calabaza de Castilla, de la "calabaza espina" y del chilacayote.'

FC: 2
Rí rikhoo r\textsuperscript{1} kh\textsuperscript{4} suan\textsuperscript{4} nagf\textsuperscript{2} du\textsuperscript{2} namj\textsuperscript{1} rí
SBD:INAN flor.de.calabaza.3SG calabaza.especie IMPF.empezar.3SG.FM IMPF.florear SBD:INAN
gun\textsuperscript{1} agóst\textsuperscript{1}.
luna agosto.*

'La flor de la "calabaza espina" empieza a abrir en el mes de agosto.'

FC: 3
Mba\textsuperscript{2} j\textsuperscript{2} muj\textsuperscript{2} r\textsuperscript{1} ji.\textsuperscript{1}
(EST).grandes:PL (EST).amarillas flor.3SG

'Sus flores son grandes y amarillas.'

FC: 4
Typesetting Tasks XLingPaper Users Often Encounter

- Tables
- Font rendering
- Hyphenation for non-English languages
- Author contact information
- Vertical fill
- Blank page
XeLaTeX font rendering (1/2)

In XLingPaper:

(pattern is exemplified in the Mbo data in \textcolor{red}{\langle xATR-zmw \rangle}):

\begin{itemize}
  \item \textcolor{red}{\langle xATR-zmw \rangle} \textcolor{orange}{\langle xi-zmw \rangle} [ex[ko-sis-o]pr] [ex[tPitch \textcolor{gray}{

\begin{tabular}{c}
\hline
\langle xi-zmw \rangle [ex[ko-sis-o]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘move
forward’

\item \textcolor{orange}{\langle xia-zmw \rangle} [ex[ko-kij-a]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘act’

\item \textcolor{orange}{\langle xuo-zmw \rangle} [ex[ko-bund-o]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘break’

\item \textcolor{orange}{\langle xhe-zmw \rangle} [ex[ko-bun-a]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘become
long’

\item \textcolor{orange}{\langle xeo-zmw \rangle} [ex[ko-ben-o]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘wink’

\item \textcolor{orange}{\langle xea-zmw \rangle} [ex[ko-kak-a]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘decorate’

\item \textcolor{orange}{\langle xoo-zmw \rangle} [ex[ko-sok-o]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘cackle’

\item \textcolor{orange}{\langle xo-a-zmw \rangle} [ex[ko-mv\textcolor{red}{\circ}d-a]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘suck’

\item \textcolor{orange}{\langle xaa-zmw \rangle} [ex[ko-bab-a]pr] [ex[tPitch \textcolor{gray}{
\end{tabular}}] pr ‘carry’
\end{itemize}
Bantu D30 canonical infinitive verb pattern is exemplified in the Mbo data in (11):

(11)  a. [ex[ko-sis-o]ex] [ex[−−−]ex] move forward  
b. [ex[ko-kij-α]ex] [ex[−−−]ex] act  
c. [ex[ko-bund-o]ex] [ex[−−−]ex] break  
d. [ex[ko-but-α]ex] [ex[−−−]ex] become long  
e. [ex[ko-beŋ-o]ex] [ex[−−−]ex] wink  
f. [ex[ko-kek-α]ex] [ex[−−−]ex] decorate  
g. [ex[ko-sok-o]ex] [ex[−−−]ex] cackle  
h. [ex[ko-mvɔd-α]ex] [ex[−−−]ex] suck  
i. [ex[ko-bab-α]ex] [ex[−−−]ex] carry
XLingPaper website

https://software.sil.org/xlingpaper/