Introduction

Interlinear morpheme-by-morpheme glosses are common in linguistic texts to give information about the meanings of individual words and morphemes in the language being studied. A set of conventions called the **Leipzig Glossing Rules** was developed to give linguists a general set of standards and principles for how to format these glosses. The most recent version of these rules can be found in PDF form at **this link**, provided by the Department of Linguistics at the Max Planck Institute for Evolutionary Anthropology.

There is a staggering variety of LaTex packages designed to properly align and format glosses (including `gb4e`, `ling-macros`, `linguex`, `expex`, and probably even more). These modules vary in the complexity of their syntax and the amount of control they give to the user of various aspects of formatting. The `typst-leipzig-glossing` module is designed to provide utilities for creating aligned Leipzig-style glosses in Typst, while keeping the syntax as intuitive as possible and allowing users as much control over how their glosses look as is feasible.

This PDF will show examples of the module's functionality and detail relevant parameters. For more information or to inform devs of a bug or other issue, visit the module's Github repository **neunenak/typst-leipzig-glossing**.

Basic glossing functionality

As a first example, here is a gloss of a text in Georgian, along with the Typst code used to generate it:

> from "Georgian and the Unaccusative Hypothesis", Alice Harris, 1982
>
> ბავშვ-ი   ატირდა
> bavšv-i   aṭirda
> child-ɴᴏᴍ   3S/cry/ɪɴᴄʜᴏ/II
> "The child burst out crying"

```
#gloss(
    header_text: [from "Georgian and the Unaccusative Hypothesis", Alice Harris,
1982],
    source_text: ([ბავშვ-ი], [ატირდა]),
    transliteration: ([bavšv-i], [aṭirda]),
    morphemes: ([child-#smallcaps[nom]], [3S/cry/#smallcaps[incho]/II]),
    translation: [The child burst out crying],
)
```

And an example for English which exhibits some additional styling, and uses imports from another file for common glossing abbreviations:

> I'm   eat-ing   your   head
> 1ꜱɢ.ꜱʙᴊ=to.be   eat-ᴘʀᴏɢ   2ꜱɢ.ᴘᴏꜱꜱ   head
> **"I'm eating your head!"**

```
#gloss(
  source_text: ([I'm], [eat-ing], [your], [head]),
  source_text_style: (item) => text(fill: red)[#item],
  morphemes: ([1#sg.#sbj\=to.be], [eat-#prog], [2#sg.#poss], [head]),
  morphemes_style: text.with(fill: blue),
  translation: text(weight: "semibold")[I'm eating your head!],
)
```

The #gloss function has three pre-defined parameters for glossing levels: source_text, transliteration, and morphemes. It also has two parameters for unaligned text: header_text for text that precedes the gloss, and translation for text that follows the gloss.

The morphemes param can be skipped, if you just want to provide a source text and translation, without a gloss:

> *Trato de entender, debo comprender, qué es lo que ha hecho conmigo*
> "I try to understand, I must comprehend, what she has done with me"

```
#gloss(
    source_text: ([Trato de entender, debo comprender, qué es lo que ha hecho
conmigo],),
    translation: [I try to understand, I must comprehend, what she has done with
me],
)
```

Note that it is still necessary to wrap the source_text argument in an array of length one.

To add more than three glossing lines, there is an additional parameter additional_gloss_lines that can take a list of arbitrarily many more glossing lines, which will appear below those specified in the aforementioned parameters:

> Hunzib (van den Berg 1995:46)
> *ождиг*   *хоᵸхе*   *мукъер*
> oʒdig   χõχe   muqʼer
> ož-di-g   xõxe   m-uqʼe-r
> boy-OBL-AD   tree(G4)   G4-bend-PRET
> at boy   tree   bent
> ""Because of the boy, the tree bent.""

```
#gloss(
    header_text: [Hunzib (van den Berg 1995:46)],
    source_text: ([ождиг],[хо#super[ᵸ]хе],[мукъер]),
    transliteration: ([oʒdig],[χõχe],[muqʼer]),
    morphemes: ([ož-di-g],[xõxe],[m-uqʼe-r]),
    additional_gloss_lines: (
        ([boy-#smallcaps[obl]-#smallcaps[ad]], [tree(#smallcaps[g4])],
[#smallcaps[g4]-bend-#smallcaps[pret]]),
        ([at boy], [tree], [bent]),
    ),
    translation: ["Because of the boy, the tree bent."]
)
```

To number gloss examples, use #numbered_gloss in place of gloss. All other parameters remain the same.

(1) გვ-ფრცქვნ-ი
gv-prtskvn-i
1PL.OBJ-peel-FMNT
"You peeled us"

```
#numbered_gloss(
    source_text: ([გვ-ფრცქვნ-ო],),
    source_text_style: none,
    transliteration: ([gv-prtskvn-i],),
    morphemes: ([1#pl.#obj\-peel-#fmnt],),
    translation: "You peeled us",
)
```

The displayed number for numbered glosses is iterated for each numbered gloss that appears throughout the document. Unnumbered glosses do not increment the counter for the numbered glosses.

The gloss count is controlled by the Typst counter variable `gloss_count`. This variable can be imported from the `leipzig-gloss` package and reset using the standard Typst counter functions to control gloss numbering.

Styling lines of a gloss

Each of the aforementioned text parameters has a corresponding style parameter, formed by adding `_style` to its name: `header_text_style`, `source_text_style`, `transliteration_style`, `morphemes_style`, and `translation_style`. These parameters allow you to specify formatting that should be applied to each entire line of the gloss. This is particularly useful for the aligned gloss itself, since otherwise one would have to modify each content item in the list individually.

In addition to these parameters, Typst's usual content formatting can be applied to or within any given content block in the gloss. Formatting applied in this way will override any contradictory line-level formatting.

This text is about eating your head.
I'm　　　*eat-ing*　　　*your*　　　*head*
1SG.SBJ=to.be　　eat-PROG　　2SG.POSS　　head
"I'm eating your head!"

```
#gloss(
    header_text: [This text is about eating your head.],
    header_text_style: text.with(weight: "bold", fill: green),
    source_text: (text(fill:black)[I'm], [eat-ing], [your], [head]),
    source_text_style: text.with(style: "italic", fill: red),
    morphemes: ([1#sg.#sbj\=to.be], text(fill:black)[eat-#prog], [2#sg.#poss],
[head]),
    morphemes_style: text.with(fill: blue),
    translation: text(weight: "bold")[I'm eating your head!],
)
```

Further Example Glosses

These are the first twelve example glosses given in **https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf**. along with the Typst markup needed to generate them:

(1) Indonesian (Sneddon 1996:237)
Mereka　di　Jakarta　sekarang.
they　　in　Jakarta　now
"They are in Jakarta now"

(2) Lezgian (Haspelmath 1993:207)

Gila   abur-u-n   ferma   hamišaluǧ   güǧüna   amuq'-da-č.
now   they-OBL-GEN   farm   forever   behind   stay-FUT-NEG
"Now their farm will not stay behind forever."

(3) West Greenlandic (Fortescue 1984:127)

palasi=lu   niuirtur=lu
priest=and   shopkeeper=and
"both the priest and the shopkeeper"

(4) Hakha Lai

a-nii -láay
3SG-laugh-FUT
"s/he will laugh"

(5) Russian

My   s   Marko   poexa-l-i   avtobus-om   v   Peredelkino
1PL   COM   Marko   go-PST-PL   bus-INS   ALL   Peredelkino
we   with Marko   go-PST-PL   bus-by   to   Peredelkino
"Marko and I went to Perdelkino by bus"

(6) Turkish

çık-mak
come.out-INF
"to come out"

(7) Latin

insul-arum
island-GEN-PL
"of the islands"

(8) French

aux   chevaux
to-ART-PL   horse.PL
"to the horses"

(9) German

unser-n   Väter-n
our-DAT-PL   father.PL-DAT.PL
"to our fathers"

(10) Hittite (Lehmann 1982:211)

n=an   apedani   mehuni   essandu.
CONN=him   that.DAT.SG   time.DAT.SG   eat.they.shall
"They shall celebrate him on that date"

(11) Jaminjung (Schultze-Berndt 2000:92)

nanggayan   guny-bi-yarluga?
who   2DU.A.3SG.P-FUT-poke
"Who do you two want to spear?"