LaTeX for Linguists!

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Abstract

Here is the abstract blurb. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

1 Introduction

1.1 Linguistic Examples

I use the `linguex` package for linguistic examples. Here are some simple cases in (1).

(1) You are reading an English example.

```
\ex. \label{ex:simple:1}
    You are reading an English example.
```

Note You need an empty line following any `\ex.` code, otherwise the document will not compile. Always check if there is an empty line after examples in the code.

Slightly more complicated examples can have sub-items like (2-a) and (2-b)

(2) *Gapping*

a. I like coffee, and you like$_{\text{i}}$ tea.
b. I like coffee, and you __$_{\text{i}}$ tea.

```
\ex. \label{ex:simple:2}
    \textit{Gapping}
    \a. \label{ex:simple:2:A}
        I like coffee, and you like\textsubscript{i} tea.
    \b. \label{ex:simple:2:B}
        I like coffee, and you \gap{i} tea.
```

You can embed further with `\a.` and go to a lower indentation with `\z.` as in (3).

(3) *main level*

  a. *2nd level*

    (i) *3rd level*

    (ii) *3rd level*

  b. *2nd level*

  c. *2nd level*

    (i) *3rd level*

    (ii) *3rd level*

    (iii) *3rd level*

  d. *2nd level*

```
\ex. \label{ex:embedding}
    \textit{main level}
    \a. \textit{2nd level}
        \a. \textit{3rd level}
        \b. \textit{3rd level}
        \z.
    \b. \textit{2nd level}
    \b. \textit{2nd level}
        \a. \textit{3rd level}
        \b. \textit{3rd level}
        \c. \textit{3rd level}
        \z.
    \b. \textit{2nd level}
```

Note Adding indented stuff with `\b.` is the same as `\c.`, `\d.`, etc., **except** for `\z.` which deindents to the higher level.

1.2 Glossed Examples

Here is how to do glossed examples.

(4) Bu da başka bir cümle.
this also another one sentence
'And this is another sentence.'

```
\exg.
    Bu da başka bir cümle.\\
    this also another one sentence\\
    'And this is another sentence.'\\
```

You can also have glossed embedded examples

(5) a. Bu bir-inci cümle.
this one-ORD sentence
'This is the first sentence.'

b. Bu iki-nci cümle.
this two-ORD sentence
'This is the second sentence.'

```
\ex.
\ag.
    Bu bir-inci cümle.\\
    this one-\textsc{ord} sentence\\
    'This is the first sentence.'\\
\bg.
    Bu iki-nci cümle.\\
    this two-\textsc{ord} sentence\\
    'This is the second sentence.'\\
```

Note The glossed examples like `\exg.`, `\ag.`, and `\bg.` require at least two lines ending in `\\` otherwise you'll have a compilation error.

(6) *Glossed examples without a free translation line*

a. Bu bir-inci cümle.
this one-ORD sentence

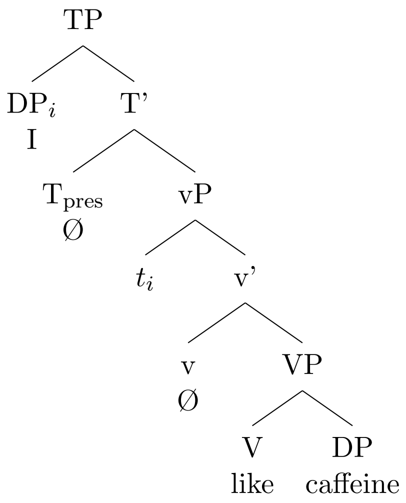
b. Bu iki-nci cümle.
this two-ORD sentence

```
\ex. \textit{Glossed examples without a free translation line}
\ag.
    Bu bir-inci cümle.\\
    this one-\textsc{ord} sentence\\
\bg.
    Bu iki-nci cümle.\\
    this two-\textsc{ord} sentence\\
```

2 Syntactic Trees

Here is the simple way to do trees. I have set up the tree package `forest` for my favorite tree style in the preamble, so I think any tree you make will be fancy. If you don't like it, you can return to the default look by just commenting that part in the preamble.

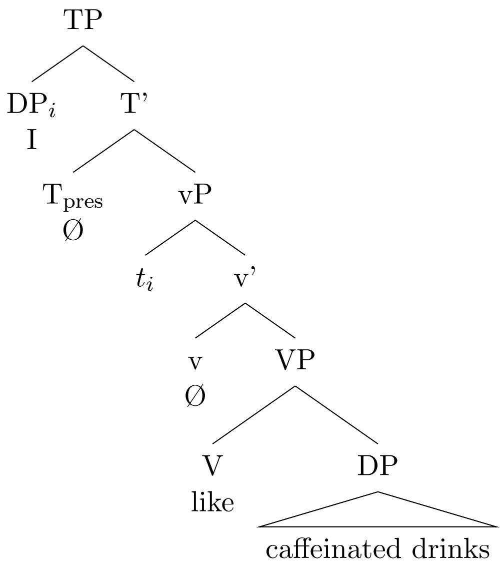
(7)



```
\ex. \label{tree:simple}
\begin{forest}
[TP
    [DP$_i$\\I]
    [T'
        [T\textsubscript{pres}\\\O]
        [vP
            [$t_i$]
            [v'
                [v\\\O]
                [VP
                    [V\\like]
                    [DP\\caffeine]
                ]
            ]
        ]
    ]
]
\end{forest}
```

You can have the ‘lazy triangles’ if you don’t want to draw the internal structure of a phrase.

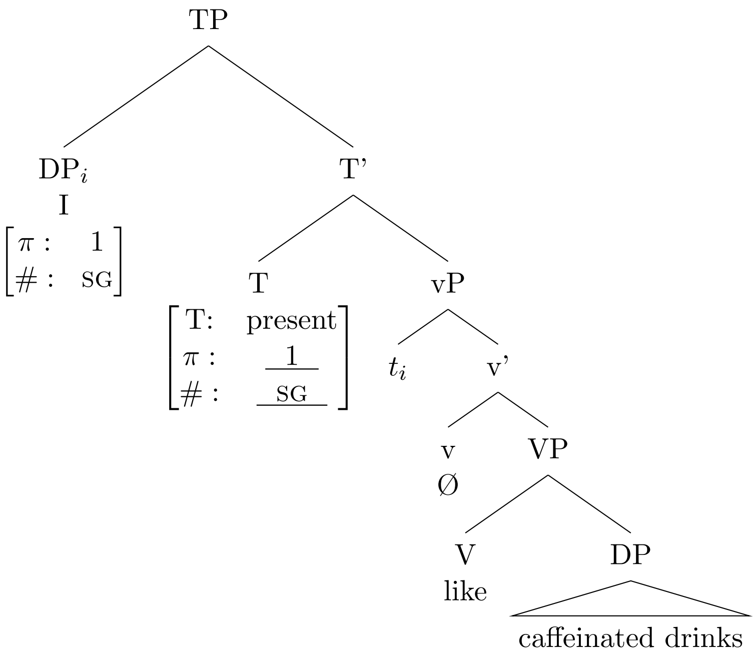
(8)



```
\ex. \label{tree:roof}
\begin{forest}
[TP
    [DP$_i$\\I]
    [T'
        [T\textsubscript{pres}\\\O]
        [vP
            [$t_i$]
            [v'
                [v\\\O]
                [VP
                    [V\\like]
                    [DP
                        [caffeinated drinks, roof]
                    ]
                ]
            ]
        ]
    ]
]
\end{forest}
```

You can add feature matrices below nodes, but you should add curly brackets around them in the code.

(9)

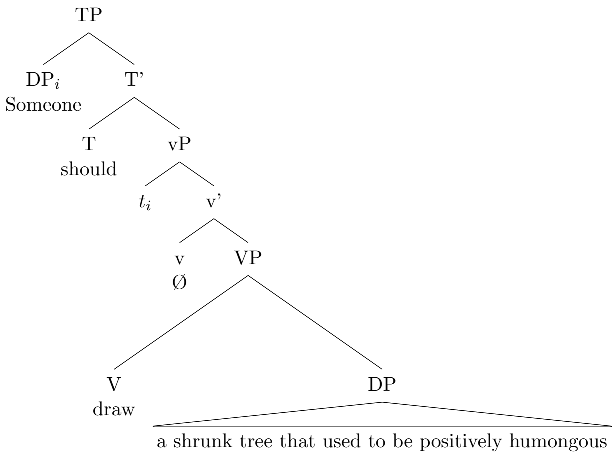

TP
DP$_i$
I
$\begin{bmatrix} \pi: & 1 \\ \#: & \textsc{sg} \end{bmatrix}$
T'
T
$\begin{bmatrix} \text{T:} & \text{present} \\ \pi: & \underline{~~1~~} \\ \#: & \underline{~~\textsc{sg}~~} \end{bmatrix}$
vP
$t_i$
v'
v
Ø
VP
V
like
DP
caffeinated drinks

```
\ex. \label{tree:featmat}
\begin{forest}
[TP
    [DP$_i$\\I\\
        {$\begin{bmatrix}
            \pi: & 1\\
            \#: & \textsc{sg}
        \end{bmatrix}$}
    ]
    [T'
        [T\\
            {$\begin{bmatrix}
                \text{T:} & \text{present}\\
                \pi: & \underline{~~1~~}\\
                \#: & \underline{~~\textsc{sg}~~}
            \end{bmatrix}$}
        ]
        [vP
            [$t_i$]
            [v'
                [v\\\O]
                [VP
                    [V\\like]
                    [DP
                        [caffeinated drinks, roof]
                    ]
                ]
            ]
        ]
    ]
]
\end{forest}
```

2.1 Sizing

If you want to shrink your trees to fit somewhere, using `\resizebox{}{}{}` is the simplest way I have found. You can either set an absolute width value like `1.5in` or a width relative to the page like `0.5\textwidth`.

(10)

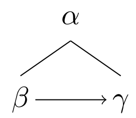


```
\ex. \label{tree:shrinking}
\resizebox{0.5\textwidth}{!}{
    \begin{forest}
    [TP
        [DP$_i$\\Someone]
        [T'
            [T\\should]
            [vP
                [$t_i$]
                [v'
                    [v\\\O]
                    [VP
                        [V\\draw]
                        [DP
                            [a shrunk tree that used to be positively  humongous, roof]
                        ]
                    ]
                ]
            ]
        ]
    ]
    \end{forest}
}
```

2.2 Arrows

Adding movement arrows is not hard. You just need to name the nodes by adding `, name=INSERT-NAME`, and add a draw command after the tree inside the `\begin{forest}...\end{forest}` environment. Here is a simple straight arrow example.

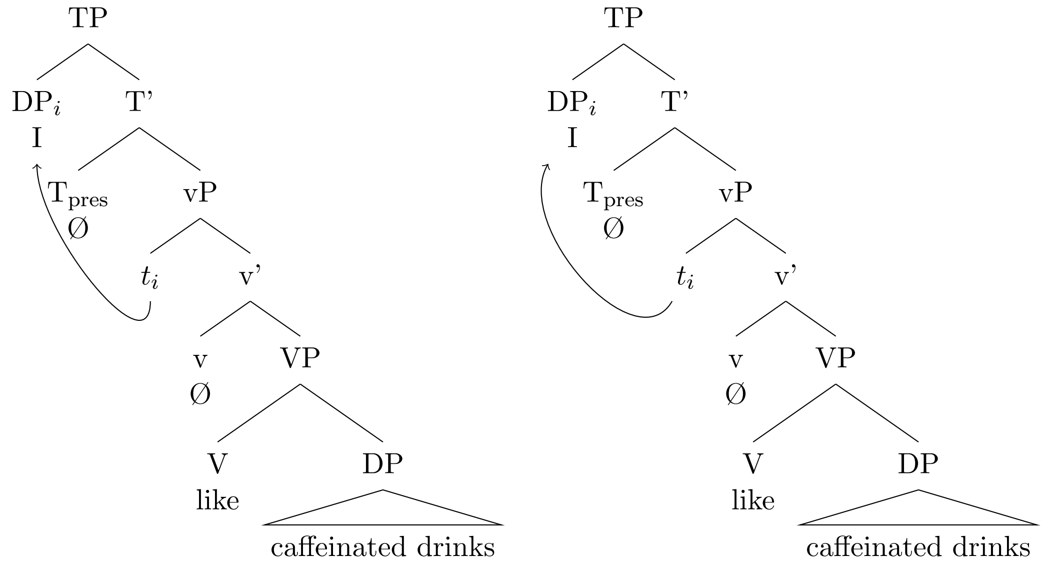
(11)



```
\ex. \label{tree:straight-arrow}
\begin{forest}
[$\alpha$
    [$\beta$, name=beta]
    [$\gamma$, name=gamma]
]
\draw[->] (beta) to (gamma);
\end{forest}
```

Though, if you are doing syntax, you probably want to do curvy arrows. You just need to set the angles that the arrow attaches to each node.

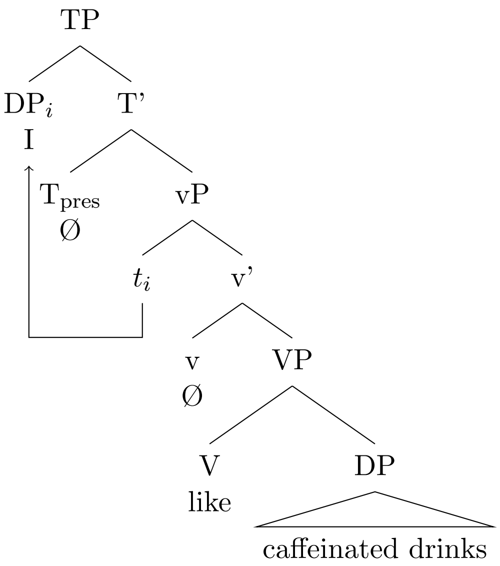
(12)



```
\ex. \label{tree:curvy-arrow}
\begin{forest}
    [TP
        [DP$_i$\\I, name=high-subj]
        [T’
            [T\textsubscript{pres}\\\O]
            [vP
                [$t_i$, name=low-subj]
                [v’
                    [v\\\O]
                    [VP
                        [V\\like]
                        [DP
                            [caffeinated drinks, roof]
                        ]
                    ]
                ]
            ]
        ]
    ]
    \draw[->] (low-subj) to[in=-90, out=-90] (high-subj);
\end{forest}
\begin{forest}
    [TP
        [DP$_i$\\I, name=high-subj]
        [T’
            [T\textsubscript{pres}\\\O]
            [vP
                [$t_i$, name=low-subj]
                [v’
                    [v\\\O]
                    [VP
                        [V\\like]
                        [DP
                            [caffeinated drinks, roof]
                        ]
                    ]
                ]
            ]
        ]
    ]
    \draw[->] (low-subj) to[in=-120, out=-120] (high-subj);
\end{forest}
```

You can also do blocky arrows.

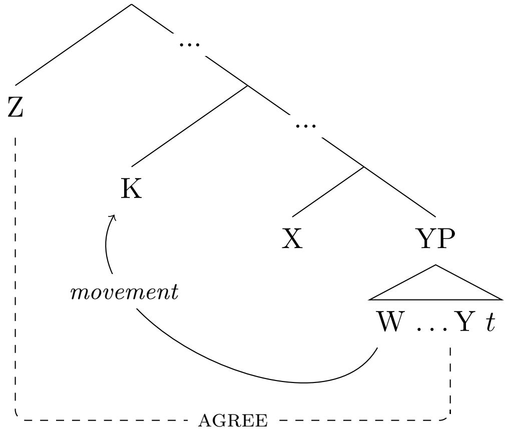
(13)



```
\ex. \label{tree:blocky-arrows}
\begin{forest}
    [TP
        [DP$_i$\\I, name=high-subj]
        [T'
            [T\textsubscript{pres}\\\O]
            [vP
                [$t_i$, name=low-subj]
                [v'
                    [v\\\O]
                    [VP
                        [V\\like]
                        [DP
                            [caffeinated drinks, roof]
                        ]
                    ]
                ]
            ]
        ]
    ]
    \draw[->] (low-subj) |- +(0, -2em) -| (high-subj);
\end{forest}
```

You can also select which side or corner of the node any arrow originates from or offset it by `yshift` or `xshift`.

(14)

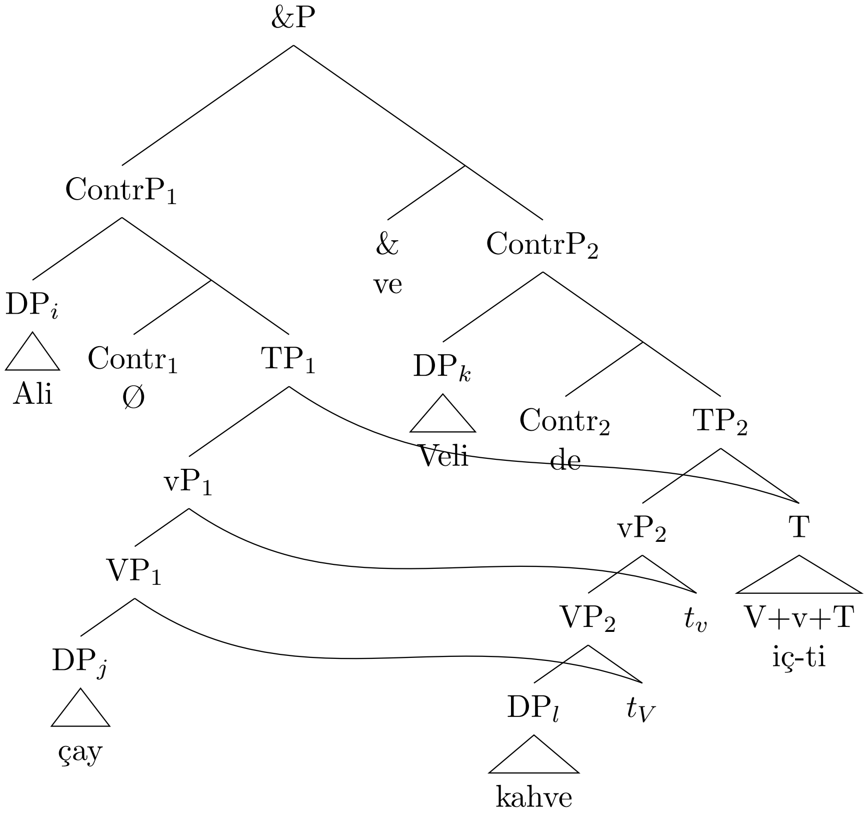


```
\ex.
\begin{forest}
    [
        [Z, name=Z]
        [, edge label={node[midway,fill=white]{...}}
            [K, name=K]
            [, edge label={node[midway,fill=white]{...}}
                [X]
                [YP
                    [W \ldots Y $t$, roof, name=YP]
                ]
            ]
        ]
    ]
    \draw[dashed, rounded corners] ([xshift=0.5em]YP.south) |- +(0, -2.5em) -|
        node[near start, fill=white, font=\footnotesize] {\textsc{agree}} (Z.south);
    \draw[->] ([xshift=-2em]YP.south) to[out=-120, in=-120] node[near end,
        fill=white, font=\footnotesize\it] {movement} (K.south west);
\end{forest}
```

2.3 Multidominance

You can also use arrows to create multidominance structures.

(15)



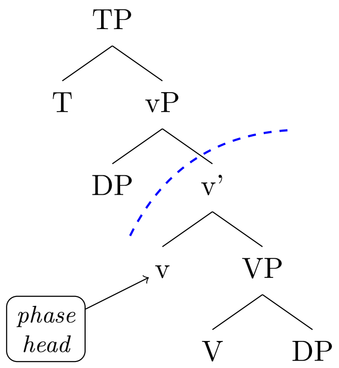
```
\ex.
\resizebox{0.9\textwidth}{!}{
\begin{forest}
,wide
[\&P
    [ContrP$_1$
        [DP$_i$[Ali,roof]]
        [%Foc'$_1$
            [Contr$_1$\\\O]
            [TP$_1$
                % [$t_i$]
                % [
                    % T'$_1$
                    ,name=T1
                    [vP$_1$
                        %[$t_i$]
                        %[v'$_1$
                        ,name=v1
                            [VP$_1$,name=V1
                                [DP$_j$[çay,roof]]
                                [,phantom]
                            ]
                            [,phantom]
                        %]
                    ]
                    [,phantom]
                % ]
            ]
        ]
    ]
    [%\&'
        [\&\\ve]
        [ContrP$_2$
        [DP$_k$[Veli,roof]]
            [%Foc'$_2$
                [Contr$_2$\\de]
                [TP$_2$
                    % [$t_k$]
                    % [T'$_2$
                        [vP$_2$
                            % [$t_k$]
                            %[v'$_2$
                                [VP$_2$
                                    [DP$_1$[kahve,roof]]
                                    [$t_V$,name=V2]
                                ]
                                [$t_v$,name=v2]
                            %]
                        ]
                        [T,name=T2 [V+v+T\\iç-ti,roof] ]
                    % ]
                ]
            ]
        ]
    ]
]
\draw[-] (V1.south) to[out=-35, in=160] (V2.north);
\draw[-] (v1.south) to[out=-35, in=160] (v2.north);
\draw[-] (T1.south) to[out=-35, in=160] (T2.north);
\end{forest}}
```

2.4 Labeling & Cosmetics

You can also add labels if you learn how to create nodes relative to other nodes.[1]

[1] Modified from Karlos Arregui & Andrew Murphy's LaTeXguide with tikz. Theirs worked just as well, but I still find the forest syntax easier, so here is the forest version.

(16)



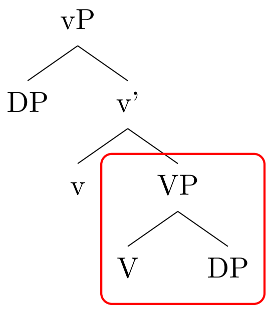
```
\ex.
\begin{forest}
    [TP
        [T]
        [vP
            [DP]
            [v', name=vp
                [v, name=v]
                [VP
                    [V]
                    [DP]
                ]
            ]
        ]
    ]
    \node[] at ([xshift=-3em,yshift=-2em]vp) (ph1) {};
    \node[] at ([xshift=3em,yshift=2em]vp) (ph2) {};
    \draw[dashed,thick,color=blue](ph1) to [bend left=30] (ph2);
    \node[align=center,draw,rounded corners,font=\footnotesize\it] at ([xshift=-4em,yshift=-2em
  \draw[->] (ph-label) to (v);
\end{forest}
```

The previous tree not only shows how to create a node, but also some decorative touches you can do. There are many things you can do: `draw` makes a rectangular border around a node, `draw, circle` makes the border circular, `rounded corners` rounds corners on shapes and arrows, `dashed` makes it a dashed line, `thick` makes lines bold, and so forth.

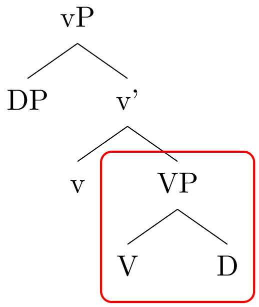
Here is a very fancy one where you can put a border around a set of nodes or a constituent in your tree.[2]

(17) a. *selecting nodes manually*

[2] Also adapted from Karlos Arregui & Andrew Murphy's tutorial.



b. *selecting a subtree*



```
\ex.
\a. \textit{selecting nodes manually}\\
\begin{forest}
    [vP
        [DP]
        [v’
            [v]
            [VP, name=VP
                [V, name=V]
                [DP, name=DP]
            ]
        ]
    ]
    \node[draw, rounded corners, color=red, thick, fit= (VP) (V) (DP)];
\end{forest}\\
\b. \textit{selecting a subtree}\\
\begin{forest}
    [vP
        [DP]
        [v’
            [v]
            [VP, tikz={\node [draw, rounded corners, color=red, thick,fit to=tree];}
                [V]
                [D]
            ]
        ]
    ]
\end{forest}
```

3 Conclusive Remarks

This was a short guide on what I do in LaTeXas a linguist. There are many topics I didn't touch, but this should do for a start right now. I will update this document if I find new useful tools or better alternatives. Until then, I hope this helps some people.