Use PC-PATR with FLEx User Documentation

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Contents

1 Introduction

Use PC-PATR with FLEx is a tool that works as a utility in *FieldWorks Language Explorer* (aka *FLEx*). *Use PC-PATR with FLEx* can use a PC-PATR grammar to disambiguate a text or a portion of a text that has been analyzed in a *FLEx* project. You tell *Use PC-PATR with FLEx* the PC-PATR grammar file to use. Then you can choose a text or a portion of that text and ask *Use PC-PATR with FLEx* to try and disambiguate it.

Use PC-PATR with FLEx works with version 9.0.4 Beta or higher of *FLEx* and is only available on 64-bit Windows computers.

While you can use any PC-PATR grammar file, *Use PC-PATR with FLEx* expects that you will have used the *PAWS* program to create the PC-PATR grammar file. See https://software.sil.org/paws/ for more on *PAWS*.

1.1 Installation

To install *Use PC-PATR with FLEx*, obtain the installer from https://github.com/sillsdev/pcpatrflex/tree/master/Installer/Output/UsePcPatrWithFLExDllSetup.exe. The installer will check to see if you have installed *FieldWorks Language Explorer* version 9. If not, it will abort.

We recommend that you close *FieldWorks Language Explorer* before running the *Use PC-PATR with FLEx* installer.

1.2 Invoking *Use PC-PATR with FLEx* from within *FLEx*

While running *FLEx*, use Tools menu item / Utilities.... Find the "Use PC-PATR with FLEx" item, check it, and then click on the "Run Checked Utilities Now" button.

1.3 Initial invocation

The first time you invoke *Use PC-PATR with FLEx* on a *FLEx* database, it will automatically add to your *FLEx* database the following:
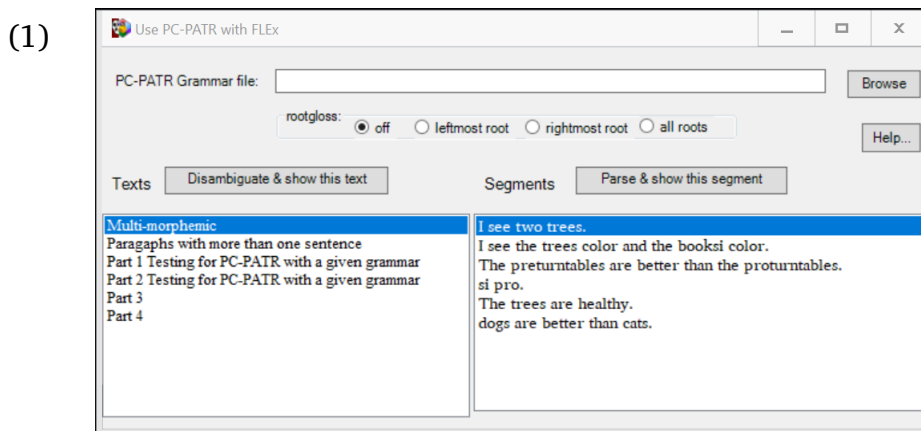
1. a custom field to each sense (called "PCPATR") and
2. a custom list (called "PCPATR Feature Descriptors") containing the template names that the PC-PATR grammar generated by the *PAWS* program expects.

The names shown above are always in the English analysis writing system and English is the only writing system containing these names.

You can find the custom list by clicking on the "Lists" button in *FLEx*.

1.4 Appearance

Use PC-PATR with FLEx looks like what is shown in (1).

(1)

The texts in the *FLEx* database are shown in the left pane and the segments of the first text are shown in the right pane.

There are buttons you can click. Each is discussed in section 2 below.

2 Buttons

You control *Use PC-PATR with FLEx* by using the various buttons. This section briefly describes them. See sections 3–4 for more on what happens for the segment and text buttons, respectively.

2.1 PC-PATR grammar Browse button

To choose which PC-PATR grammar file to use, click on the Browse button. By convention, PC-PATR grammar files have an extension of ".grm" so this is what the file browser uses.

2.2 Rootgloss choices

PC-PATR allows you to have "rootglosses" in rules. This section allows you to set one of four options with respect to how rootglosses are handled. See section 3.2.14.22 "set rootgloss" in the PC-PATR Reference Manual.[1] The four options are:

1. off: rootglosses are not used; this is the default;
2. leftmost root: the first / leftmost root is used;
3. rightmost root: the last / rightmost root is used;
4. all: every root is used.

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[1]Use the Help menu item / PC-PATR Reference Manual to see this document.

2.3 Help button

The "Help…" button is used to get this user documentation file, show the PC-PATR Reference Manual, or to show the "About" dialog box.

2.4 Disambiguate button

Above the pane containing the texts is a button labeled "Disambiguate & show this text." You use this button to try and use the PC-PATR grammar to disambiguate this entire text. See section 4 for more.

2.5 Parse button

Above the pane containing the segments of the selected text is a button labeled "Parse & show this segment." You use this button to try and use the PC-PATR grammar to parse this particular segment. See section 3 for more.

3 Parsing a segment

When you use the "Parse & show this segment" button for a segment, *Use PC-PATR with FLEx* will pass the parsing information that you entered in *FLEx* to *PC-PATR*, along with the PC-PATR grammar, and process that segment. The result will be shown in a slightly newer version of the *PcPatr Browser* tool (https://software.sil.org/carla/pc-patr-browser/). See appendix A for more information on this tool.

You use this tool to see all the parses the *PC-PATR* program produced for this segment using the PC-PATR grammar file. When there are two or more parses, you can show the correct one and then use Parse / Use This Parse menu item (or click on the ✔ tool bar button) to have this analysis be recorded in the *FLEx* database for this segment. That is, this segment will be disambiguated, using the information from this parse.

If you are using the TreeTran program, you can save the results of the disambiguated parses in a file called Invoker.xml in the %TEMP% directory. You do this by using File / Save for TreeTran to make sure there is a check mark before it. Alternatively, you can click on the 🖼 item in the tool bar.

When you are done looking at the results, close the *PcPatr Browser* tool and you will return to *Use PC-PATR with FLEx*.

4 Disambiguating a text

When you use the "Disambiguate & show this text" button, *Use PC-PATR with FLEx* will pass the parsing information for all segments in the text to *PC-PATR*, along with the PC-PATR grammar, and process all those segments. Since all the segments are processed, this will probably take a while. So please be patient. The result will be shown in the slightly newer version of the *PcPatr Browser* tool. See appendix A for more information on this tool.

Unlike with parsing a segment (see section 3), the result will have as many "sentences" as there are segments in the text.

By default, *Use PC-PATR with FLEx* will disambiguate a segment in the *FLEx* database whenever the result of the parsing uniquely identifies the analysis of each word in the segment. For those cases where there are still ambiguities, you can use the *PcPatr Browser* tool to select a given parse to use. Like with parsing a segment, you show the correct parse and then use Parse / Use This Parse menu item (or click on the ✔ tool bar button) to have this analysis be recorded in the *FLEx* database for this segment. That is, this segment will be disambiguated, using the information from this parse.

When you are done looking at the results, close the *PcPatr Browser* tool and you will return to *Use PC-PATR with FLEx*.

5 Restarting *Use PC-PATR with FLEx*

Whenever you exit and restart *Use PC-PATR with FLEx*, it will do the following:

1. remember which PC-PATR grammar file you last chose;
2. remember which text in that project you last selected; and
3. remember which segment in that text you last selected.

6 Error messages

In certain situations,*Use PC-PATR with FLEx* will issue an error message.

Example (2) lists the errors *Use PC-PATR with FLEx* reports along with a brief description of what the error might mean.

(2)

Error	Meaning
The PC-PATR grammar file had an error in it and failed to load. We will show the error log after you click on OK. Please fix all errors in the grammar file and then try again.	The PC-PATR grammar file being used has at least one error it it so the *PC-PATR* program could not load and use it. The list of errors (and any warning messages, too) will be shown as soon as you click on the OK button. Note that in the error message file, the grammar file's location may look odd, but it is the same as what is showing before the "Browse" button.[2] Also, the error messages and warnings may be a bit cryptic. See the PC-PATR Reference Manual for (some possible) help on this. (The manual is available via the "Help" button; see section 2.3.)

If you get an error message not in the list above, please report it. See section 8.

7 Known problems

The following items are known to be less than desirable with this version of *Use PC-PATR with FLEx*:

- *Use PC-PATR with FLEx* only works with version 9.0.4 Beta or higher of *FLEx*.
- *Use PC-PATR with FLEx* assumes that the comment character in the PC-PATR grammar file is a vertical bar |. If you use something else, the parser will fail every segment.
- When a word in *FLEx* does not have the "Word Cat" field filled out for a word in the interlinear, *Use PC-PATR with FLEx* will try and guess what the category of the word should be. It does this as follows:
  1. If there is only one morpheme, use its category.
  2. If there are two or more morphemes and only one stem/root, find the stem and use its category. (This could be incorrect if one of the affixes is derivational and changes the category.)
  3. If there are two or more stems, use the category of the left-most one. (This could be incorrect if some other stem is the correct category to use or if the stem compounding results in a different category or if one of the affixes is derivational and changes the category.)

  Therefore, it is always a good idea to overtly fill out the "Word Cat" field in *FLEx*.
- The user interface is in English only.

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[2]This happens for long file names or folder names. *PC-PATR* is a "DOS" program and uses this cryptic format.

8 Support

If you have any questions with *Use PC-PATR with FLEx* or find bugs in it, please send an email to blackhandrew@gmail.com.

A. The *PcPatr Browser* tool

This appendix briefly covers the various parts of the *PcPatr Browser* tool.

A.1 Overview

Example (3) is a screen shot of what it looks like for one segment using one PC-PATR grammar.

(3)

There are four panes:

1. the segment in an interlinear form (at the top);
2. the syntactic tree, if any (left, middle);
3. the feature structure of the selected node in the tree (right, middle); and
4. the PC-PATR grammar file used (bottom)

When a node in the tree is selected, the bottom pane will show the rule in the PC-PATR grammar file that produced that node. In addition, the features for that

selected node will appear in the right, middle pane. For example, when clicking on the IP node, it looked like example (4).

(4)

When there is more than one segment, you can use the Sentence menu item options or the first set of arrow buttons on the tool bar to navigate from one sentence to another. (Please note that with *Use PC-PATR with FLEx*, "sentence" is the same as "segment.")

When there is more than one parse for a given segment, you can use the Parse menu item options or the second set of arrow buttons on the tool bar to navigate from one parse to another.

A.2 Right-to-left script

If the vernacular language of your *FLEx* project is a right-to-left script, *Use PC-PATR with FLEx* will try to tell the *PcPatr Browser* this. You may need to use the Language menu item, though, and uncheck and then check the "Use right-to-left orientation in parse tree and interlinear" option.

B. Another way to edit a PC-PATR grammar file

One challenge with editing a PC-PATR grammar file is that it is a plain text file. If one wants to try and debug a grammar, one has to comment off a large amount of lines. It can get to be tricky.

Some tentative work has been done on a tool that will take a PC-PATR grammar file and convert it to a form that can be used in a tool like the *XMLmind XML Editor*. Some advantages of this are that one can:

1. Quickly enable/disable given rules
2. Quickly enable/disable given templates

A major disadvantage is that once converted to this form, large PC-PATR grammar files are quite slow to load into the *XMLmind XML Editor*.s

If you are interested in trying this, please contact blackhandrew@gmail.com.