

***FLEXTrans Rule Assistant* User Documentation**

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1 Introduction

FLEXTrans Rule Assistant is a tool that enables you to write some *FLEXTrans* transfer rules in a more linguist-friendly manner.

FLEXTrans Rule Assistant is currently only available on 64-bit Windows computers.

Each rule defined in *FLEXTrans Rule Assistant* describes a pattern that is used to match a source language structure and then map it to a transfer language structure.

1.1 Installation

To install *FLEXTrans Rule Assistant*, obtain the installer from <https://drive.google.com/file/d/1sFHyqW5gs-bLzAJS9lDTi09uagKf9z-n/view>.

Note that *FLEXTrans Rule Assistant* needs to be invoked from within *FLEXTrans*.

1.2 Invocation

You use a command line to invoke *FLEXTrans Rule Assistant*. The arguments are as in (1).

- (1) `FLEXTransRuleAssistant < rule-file > < source/target-FLEX-category/features > (< max vars >)`

`< rule-file >` Specifies the FLEXTrans transfer rule file.

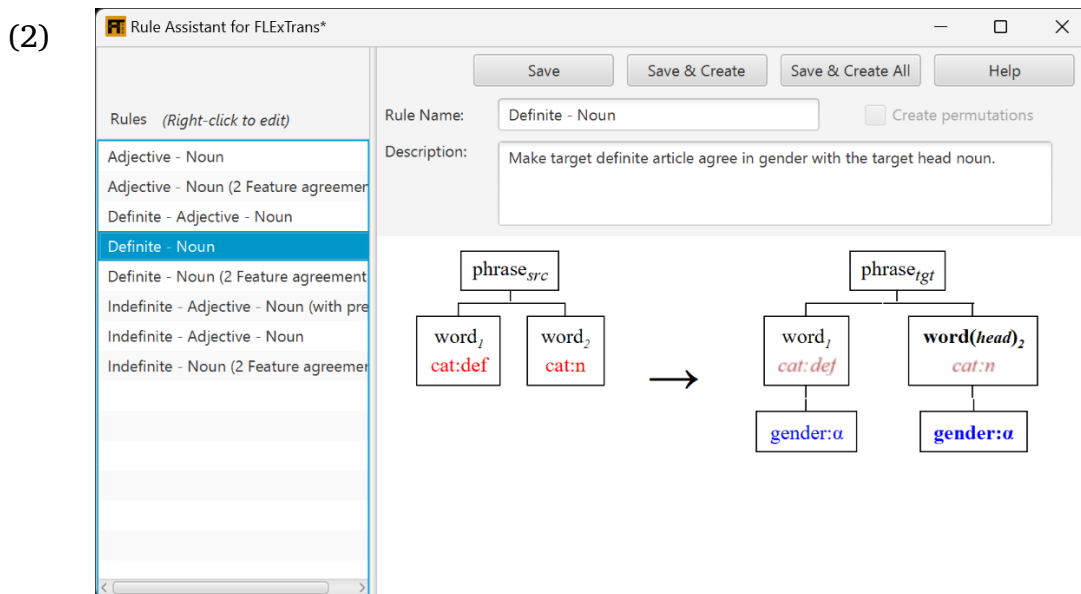
`< source/target-FLEX-category/features >` Specifies the XML file with both source and target categories and features.

`(max vars >)` Specifies the optional max number of variables to show in values (default is 4)

If the `< rule-file >` does not already exist, then *FLEXTrans Rule Assistant* will create it.

1.3 Appearance

FLEXTrans Rule Assistant looks something like what is shown in (2).



There are two panes. The left one contains one transfer rule per line. The right pane shows a tree diagram of the selected rule. The right pane has two phrases.

The left one is the source phrase and the right is the target phrase. In the source phrase, when a word has a category, it is shown in red immediately below the word. In the target phrase, a word with a category is shown in a grayed out red and in italics. While one can edit the category of a word in the source phrase, one cannot edit the category of a word in the target phrase.

When a target word is marked as being the head, it is shown in bold, as are any of its features.

The “Save” button is used to save changes made to rules or newly added rules.

The “Save & Create” button is used to save changes made to rules or newly added rules and then create the currently selected rule in the *FLExTrans* rule file.¹ A validity check will also be applied to this rule. If any issue is found, an error dialog message will be shown with an explanation of what the issue is. The program will not exit until all validity checks pass.

The “Save & Create All” button is used to save changes made to rules or newly added rules and then create all the rules in the *FLExTrans* rule file.² A validity check will also be applied to every rule. If any issue is found, an error dialog message will be shown with an explanation of what the issue is. It will also indicate which rule had the problem. The program will not exit until all validity checks pass.

The “Help” button is used to get this user documentation file or to show the “About” dialog box.

Whenever you use eit

2 Editing rules

You can create new rules, rearrange them, or delete them by right-clicking on one. You will then see a context menu like what is in (3).

(3)



Use the "Rule Name:" text box to add or edit the name of a rule.

Use the “Description” text box to more thoroughly describe the rule, indicate what motivated the rule, and/or give some examples.

¹There will be two numbers separated by a space output to stdout with this option. The first will always be a 1. The second will be the zero-based index of the currently selected rule.

²The number 2 will be output to stdout.

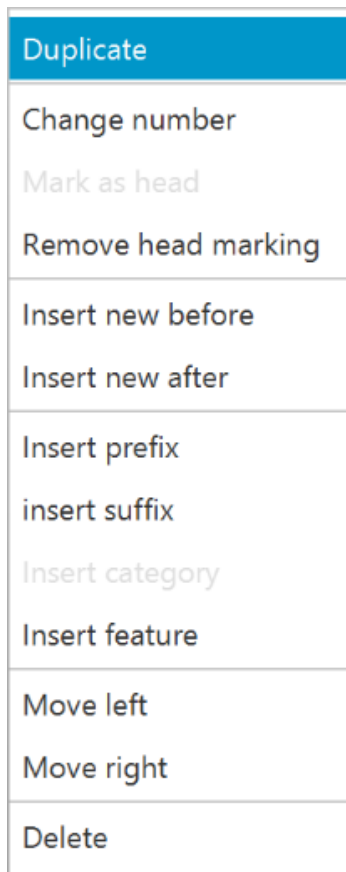
3 Editing trees

The right pane contains a simplified tree diagram. Each such diagram has two parts: a source phrase is on the left and the corresponding target phrase is on the right. Every phrase will always have at least one word in it.

3.1 Editing a word

When you click on a word item in the tree, the context menu shown in (4) appears.

(4)



Select the item you wish to use. They are as follows:

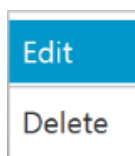
- **Duplicate:** creates a complete copy of the current word.
- **Change number:** modifies the word's number. If you choose a number of another word, then that other word will be set to the original number of the word you are changing.
- **Mark as head:** labels this word as being the head of the phrase. This is only available for target words. If another word had been marked as being the head, then that other word will no longer be marked as the head. That is, only one word can be marked as the head.
- **Remove head marking:** removes any head marking on this word. This is only available for target words.

- **Insert new before:** inserts a new word item before the selected word.
- **Insert new after:** inserts a new word item after the selected word.
- **Insert prefix:** inserts an affix item labeled as a prefix. This is available only if the selected word has no affix items yet.
- **Insert suffix:** inserts an affix item labeled as a suffix. This is available only if the selected word has no affix items yet.
- **Insert category:** inserts a category item. This is available only if the selected word has no category item yet and is a source word.
- **Insert feature:** inserts a feature item. This is only available when a category has been set. The list of available features depends on the set of valid features defined in *FLEX* for the category of the word.
- **Move left:** moves the selected word to the left.
- **Move right:** moves the selected word to the right.
- **Delete:** removes the selected word.

3.2 Editing a category

When you click on a category item in a word in the source phrase, the context menu shown in (5) appears.

(5)



The Category chooser appears if you choose “Edit.” Which categories are listed in the chooser depends on whether the category is in the source or the target portion of the tree diagram. *FLEXTrans* gives *FLEXTrans Rule Assistant* the list of categories for the source *FLEX* project and the target *FLEX* project. In one case, the category chooser looked like what is in example (6).

(6)



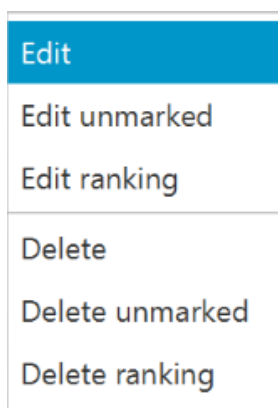
If you choose “Delete,” the category item will be deleted.

When you click on a category item in a word in the target phrase, the context menu shown in (4) appears. This is the same as if you had clicked on the word item.

3.3 Editing a feature

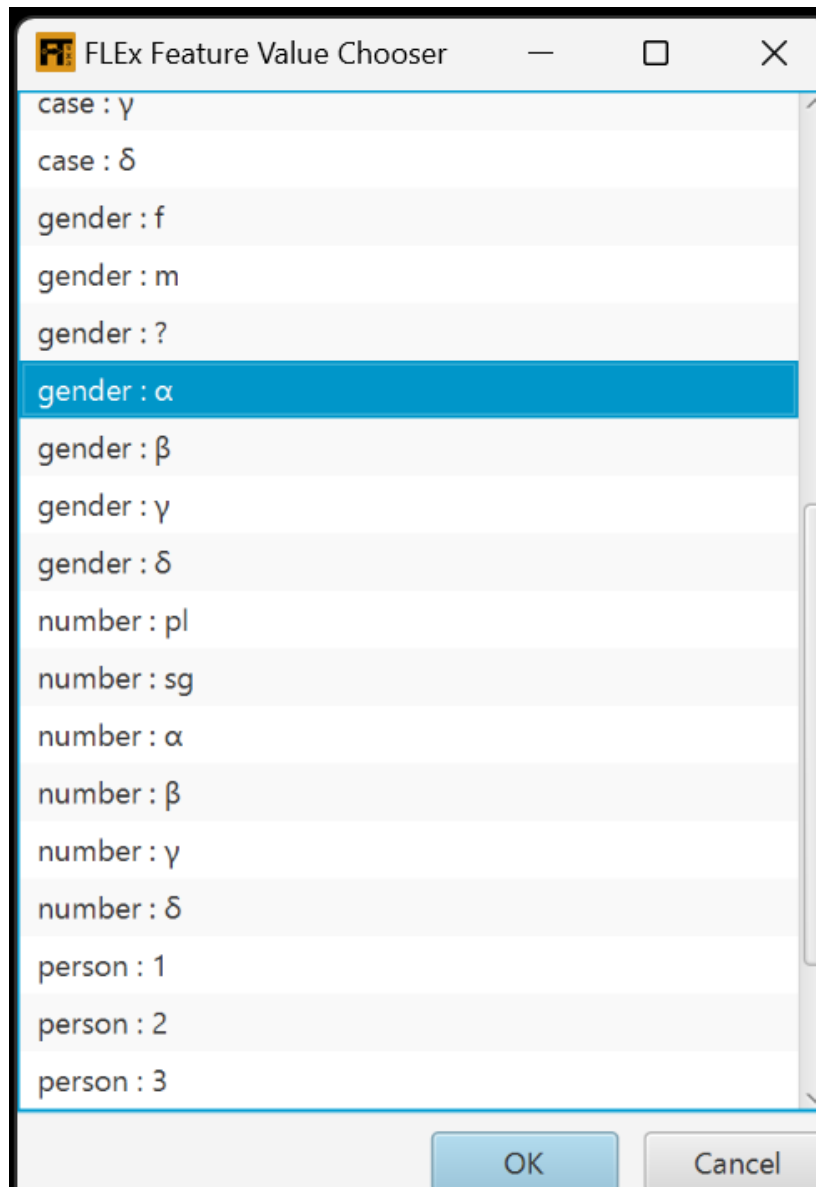
When you click on a feature item in the tree, the context menu shown in (7) appears.

(7)



The Feature chooser appears if you choose “Edit.” Which features are listed in the chooser depends on whether the feature is in the source or the target portion of the tree diagram. *FLEXTrans* gives *FLEXTrans Rule Assistant* the list of features for the source *FLEX* project and the target *FLEX* project. In one case, the category chooser looked like what is in example (8).

(8)



The number of Greek letter variable values shown defaults to four. You can set the number via the optional third command line parameter. See section 1.2.

If you choose “Delete,” the feature item will be deleted.

If the word this feature is for (whether the feature is on the word or one of the word's affixes) is marked as the head, then the context menu has an “Edit unmarked” option. This option allows you to choose an overt value (not a Greek variable) for this feature. Doing this indicates what the unmarked or default value is for this feature. “Delete unmarked” is enabled only when there is already an

unmarked feature value. You can use this to remove or delete this unmarked value.

Further, if the word is in the target phrase and the total number of features specified in the word and any of its affixes is greater than one, then you can use the “Edit ranking” option to specify the relative ranking of the feature for when the value for a feature may be missing in a given instance. When you click on “Edit ranking,” it brings up a chooser dialog showing which ranking values are available. The maximum number allowed is five. You can use “Delete ranking” to remove a ranking from a feature.

3.4 Editing an affix

When you click on an affix item in the tree, the context menu shown in (9) appears.

(9)

Duplicate
Toggle affix type
Insert feature
Insert new prefix before
Insert new prefix after
Insert new suffix before
Insert new suffix after
Move left
Move right
Delete

Select the item you wish to use. They are as follows:

- **Duplicate:** creates a complete copy of the current affix.
- **Toggle affix type:** changes the type from prefix to suffix or from suffix to prefix.
- **Insert feature:** inserts a feature item. This is only available when a category has been set for the word this affix is a part of. The list of available features depends on the set of valid features defined in *FLEX* for the category of the word.
- **Insert new prefix before:** inserts a new affix item labeled as a prefix before the selected affix.
- **Insert new prefix after:** inserts a new affix item labeled as a prefix after the selected affix.

- **Insert new suffix before:** inserts a new affix item labeled as a suffix before the selected affix.
- **Insert new suffix after:** inserts a new affix item labeled as a suffix after the selected affix.
- **Move left:** moves the selected affix to the left.
- **Move right:** moves the selected affix to the right.
- **Delete:** removes the selected affix.

3.5 Create permutations check box

To the right of the rule name is a check box labeled "Create permutations." This check box is enabled only when the target portion has at least three words and one of them is marked as the head. If you want *FLExTrans* to create separate rules for each possible combination of the three or more word items, check this box.

4 Restarting *FLExTrans Rule Assistant*

Whenever you exit and restart *FLExTrans Rule Assistant*, it will do the following:

1. remember its window size, location, and layout;
2. remember which rule you last chose;
3. remember the category chooser size, location, and layout;
4. remember feature chooser size, location, and layout;.

5 Known problems

The following items are known to be less than desirable with this version of *FLExTrans Rule Assistant*:

1. *FLExTrans Rule Assistant* only works on Windows.
2. The user interface is in English only (but can potentially be translated into other languages).

6 Support

If you have any questions with *FLExTrans Rule Assistant* or find bugs in it, please send an email to blackhandrew@gmail.com.