

TWIST Dialogue Annotation Tool

User Guide

Brian Plüss
b.pluss@open.ac.uk

July 2012

Contents

1	Overview	2
2	Getting Started	3
2.1	Running the Annotation Tool	3
2.2	First Session	3
2.3	Annotation Procedure Overview	4
2.4	Support for the Annotation Workflow	6
3	Annotating Dialogues	7
3.1	First Stage: Segmenting Turns	8
3.2	Second Stage: Annotating Content Features	10
4	Additional Features	12
4.1	Converting Dialogues in Text Format to XML	12
4.2	Changing the Annotation Stage	13
4.3	Modifying the Annotator Profile	14
4.4	Modifying the Annotator Familiarity	14
5	Getting Help	15

1 Overview

The annotation tool consists of two main windows:

- The Dialogue window (Figure 1) is the main window in the application. It shows the dialogue being annotated, a description of the the context in which it took place and the annotations for each turn.
- The Turn Annotator window (Figure 2) opens from the main window by clicking on one of the annotation cells. It shows a single dialogue turn and allows adding or removing segments, and creating or modifying annotations for each segment in the turn.

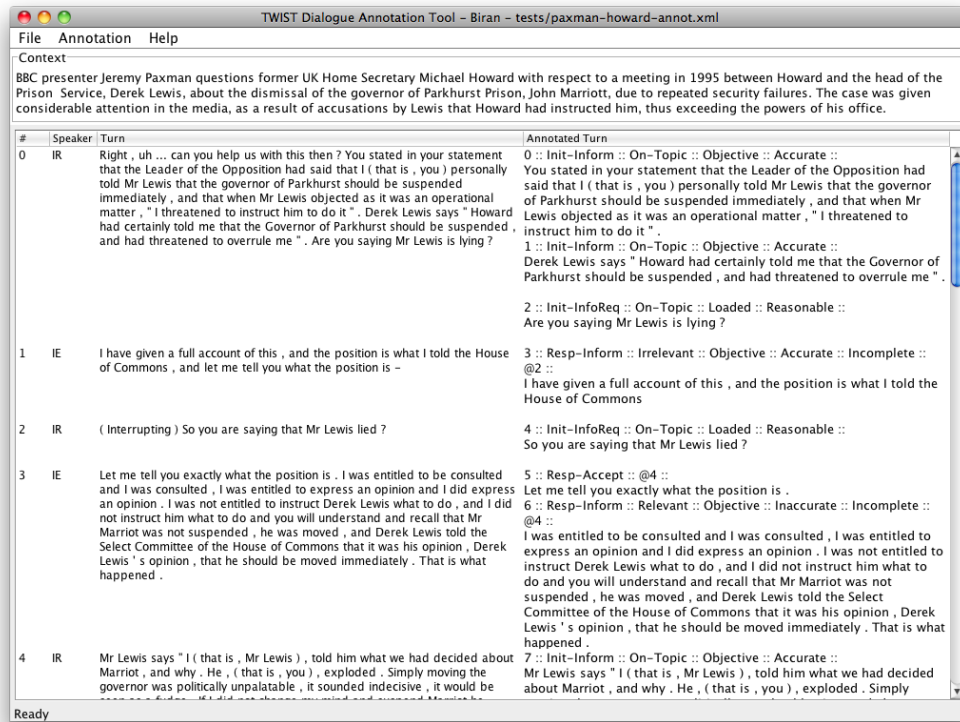


Figure 1: Main Dialogue Window

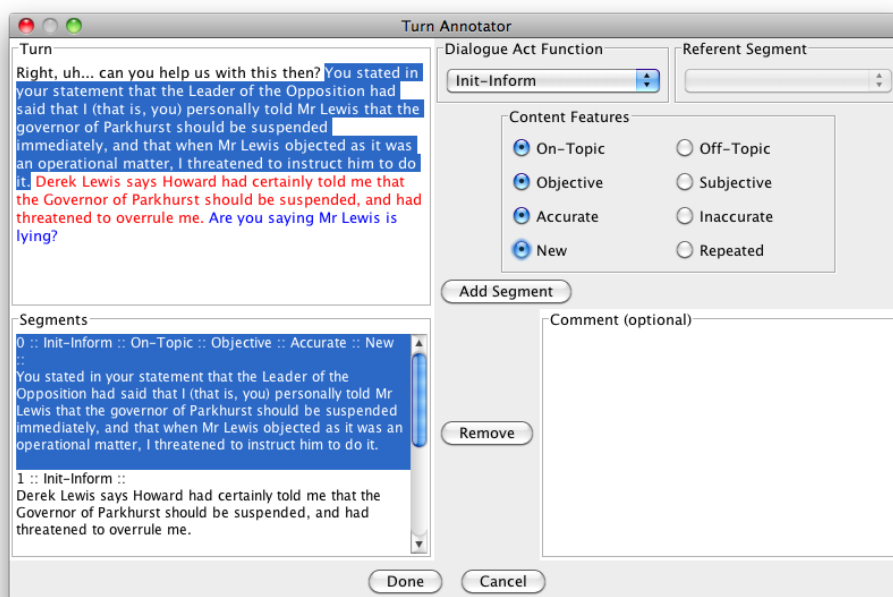


Figure 2: Turn Annotator Window

2 Getting Started

2.1 Running the Annotation Tool

There are three scripts to launch the tool, depending on your operating system:

- In Windows: double click on `runTool-Windows.bat`
- In MacOS: double click on `runTool-MacOS.command`
- In Linux: in a terminal run `./runTool-Linux.sh`

2.2 First Session

The first time you use the annotation tool, you will be asked to provide your name and to answer a few questions about your background (Figure 3). This information is important for the analysis of your annotations, so please answer every question¹. It will take just a few seconds!

¹The background information can be changed at any time by using the menu option **Annotation | Annotator Profile...** (see details in Section 4.3).



The image shows a macOS-style dialog box titled "Annotator Profile". It contains a small icon of a coffee cup and a pen on the left. The text "Please answer the questions below:" is at the top. There are five questions:

1. What is your name? (text input field)
2. What is your first language? (radio buttons for English, Other; text input field for Other)
3. What is your nationality? (radio buttons for British, Other; text input field for Other)
4. How many years have you lived in the UK? (spin box with 0)
5. Previous experience in dialogue annotation? (radio buttons for Yes, No)

 At the bottom are "OK" and "Cancel" buttons.

Figure 3: Annotator Profile

After filling in this information, you can open a dialogue file and start your annotation.

2.3 Annotation Procedure Overview

The annotation is carried out in two stages. Most likely, you will be asked to carry out only one of them. The general steps to annotate a dialogue file are as follows:

- **First Stage: Turn Segmentation**

1. Open a dialogue file
2. Click on a cell under the **Annotated Turn** column
 - a. Highlight a segment (part of a turn)
 - b. Select the **Function** of the segment
 - c. If it is a responsive segment, select a **Referent Segment**
 - d. Click **Add Segment** to add the new segment
 - e. Repeat the steps above until the turn is fully segmented
 - f. Click **Done** to complete the segmentation of the turn
3. Repeat step 2. until all the turns are segmented
4. Save the annotation: **File | Save Dialogue**

- **Second Stage: Content Feature Annotation**

1. Open a dialogue file
2. Click on a cell under the **Annotated Turn** column

- a. Click on a segment from the **Segments** list
 - b. For each row in **Content Features**, select the option that applies
 - c. Repeat the steps above until every segment is annotated
 - d. Click **Done** to complete the annotation of the turn
3. Repeat step 2. until all the turns have been annotated
 4. Save the annotation: **File | Save Dialogue**

Regardless of the stage, the first time you open a dialogue file, you will be asked a few questions about your familiarity with the dialogue, its context and the participants (Figure 4). This will happen only once for each file you annotate².

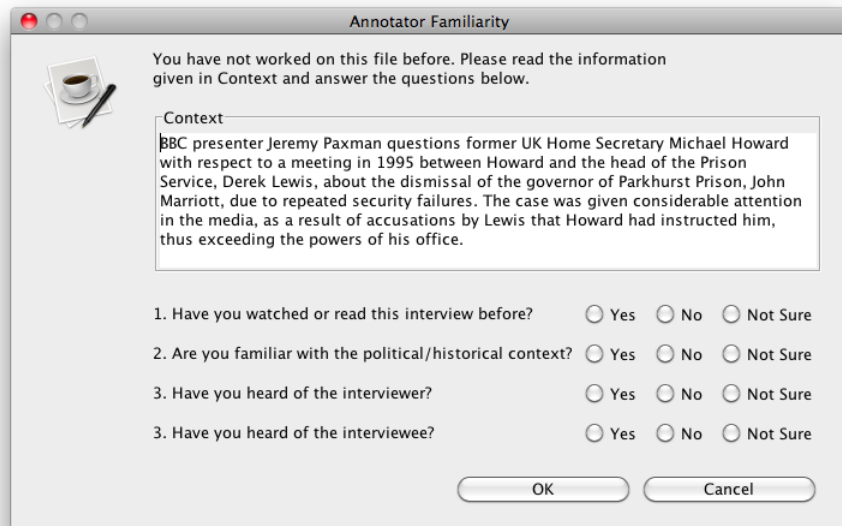


Figure 4: Familiarity of the annotator with the dialogue and its context

Dialogue files are found in the folder called “**data**”. They are named following the convention `<interviewer>-<interviewee>.xml` (e.g. `paxman-howard.xml`). The first time you save an annotated dialogue, you will be asked for a new filename. The annotation tool automatically suggests appending the suffix “-annot” to the original name (e.g. `paxman-howard-annot.xml`). It is strongly recommended that you follow this convention

²This information can be changed at any time by using the menu option **File | Annotator Familiarity...** (see details in Section 4.4).

when first saving annotated files. This preserves the original file in case you need to start the annotation from scratch.

When annotating longer dialogues, you should save your work often. Once you have saved the annotated file with a new name, you can quickly save changes by using the **File | Save Dialogue** menu option or the keyboard short-cut **Ctrl+S** (**Command+S** in MacOS).

2.4 Support for the Annotation Workflow

The annotation tool is configured to open one of the files in the “data” folder after being launched for the first time, and to operate according to the annotation stage you have been asked to carry out. Once you have annotated the first dialogue, the menu option **File | Open Next Dialogue** will automatically save the current annotated file and open the next one in the dataset (see Figure 5).

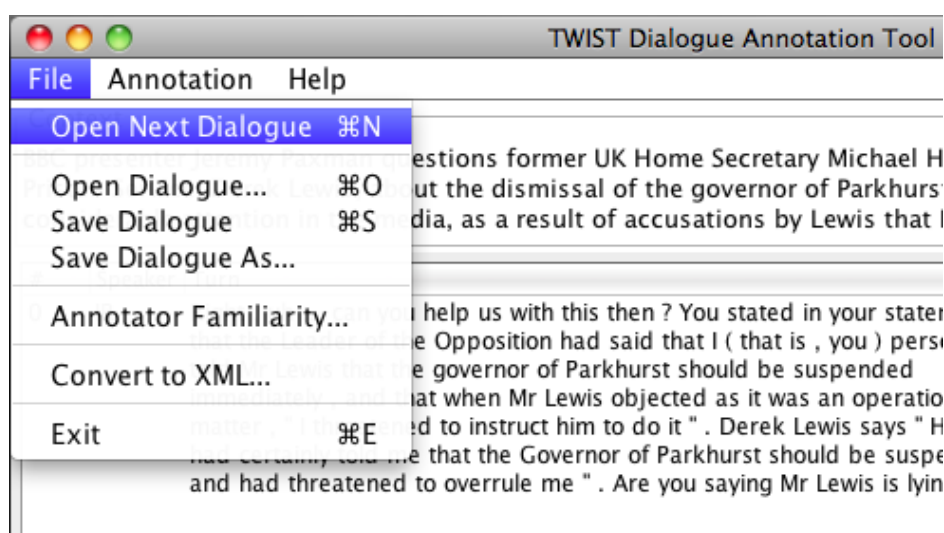


Figure 5: Opening the next dialogue in the dataset

Once all the dialogues have been annotated, this option will invite you to submit the annotated data (see Figure 6). Your computer needs to be connected to the internet in order to send the data. If that is not the case, you can submit the data later by using the menu option **Annotation | Submit Data...**, shown in Figure 7.

If you have to go back to one of the files you have annotated earlier in the workflow, you will need to use the **File | Open Dialogue...** menu option and look for the annotated file in the “data”. Note that this will move

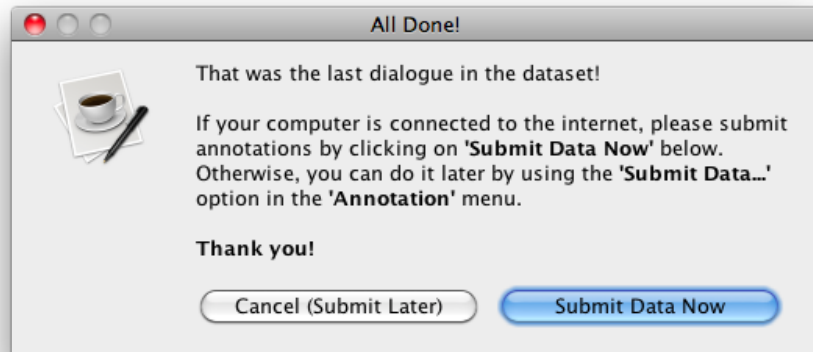


Figure 6: Completing the annotation workflow

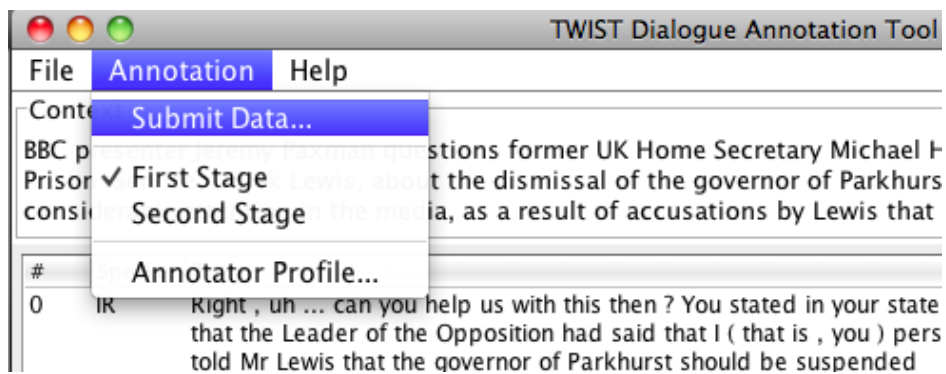


Figure 7: Submitting the annotated data

you backwards in the annotation workflow, so you might need to use the menu option **File | Open Next Dialogue** several times to go back to your last annotated dialogue file.

3 Annotating Dialogues

After opening a file, the context of the dialogue will be shown at the top of the main window and the transcript will appear on the table, as shown in Figure 1. Dialogues are divided in turns. The number of each turn is on the first column and the speaker on the second (IR for the interviewer and IE for the interviewee).

The third column shows the annotations for each turn. Depending on the

stage of annotation you were asked to perform, this column can be initially empty or contain information. The annotations of a turn are organised in segments and have the following structure:

```
<Segment ID> :: <Function Label> :: @<Referent Segment ID> ::  
<Content Feature 1> :: ... :: <Content Feature N> ::  
<Segment Transcript>
```

If you were asked to do the first stage of the annotation, the annotations column will be initially empty. The annotations you produce will only have a segment ID, a function label, an optional referent segment ID (only for responsive segments) and the segment transcript.

If you were asked to do the second stage of the annotation, the annotations column will already have segments annotated with dialogue act functions, referent segment IDs and the segment transcript. Your job will be to annotate the content features for each segment.

In either case, clicking on the cell under **Annotated Turn** for a turn’s row opens the **Turn Annotator** window (Figure 2) which allows you to add or edit annotations for that turn.

3.1 First Stage: Segmenting Turns

To segment a turn, click on the cell under **Annotated Turn** on the row of the turn. This opens the **Turn Annotator** window (Figure 8):

- To **create a new segment**, in the **Turn** text area, select the stretch of the turn that constitutes a segment, choose the corresponding value in **Function** and, if it is a responsive dialogue act, choose a previously annotated segment in **Referent Segment**³. Then click on the **Add Segment** button. This will add a new entry under **Segments** with ID “–1” and the values you selected for function and referent segment, separated with “::” (unique segment IDs are generated once you save the annotation for this turn). The stretch of text for the new segment will be painted in blue or red in the **Turn** text area, as shown in Figure 2. This will help in segmenting the rest of the turn, as segments can not overlap.
- To **modify an existing segment**, select it from the list of segments. The corresponding stretch will be highlighted in the **Turn** text area and

³For details on how to select segments and adequate values for dialogue act function and referent segments, see the *Annotation Guidelines*.

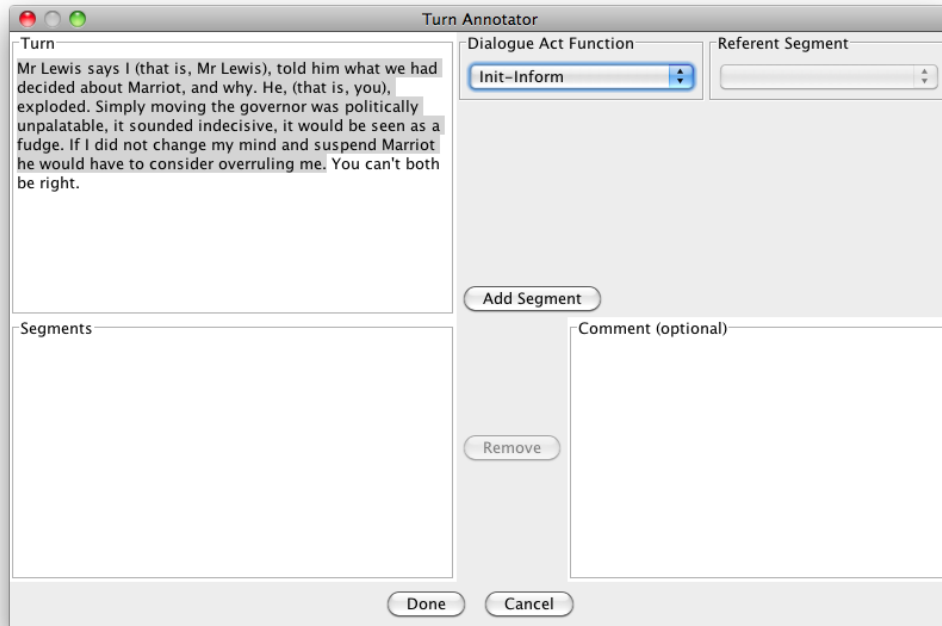


Figure 8: The turn annotator window for segmenting turns (First Stage)

the annotation values will appear in **Function** and, when applicable, in **Referent Segment** (see Figure 2). You can change these values to update the annotation. To modify the stretch of the segment within the turn, you will have to remove the segment and create a new one.

- To **remove an existing segment**, select it from the list and click on **Remove**. When you remove a segment that is referenced by other segments, a warning will pop up and you will be asked to confirm the operation (Figure 9). If you confirm the removal, the lost references will be shown as “@??”. As all responsive segments must have a referent, you will have to edit any segment with missing referents after the removal.

Adding or removing segments in the middle of an annotated dialogue automatically adjusts the numbering of subsequent segments and of any references.

Adding a segment fails when the new segment overlaps with an existing one and an error message is displayed. Also, adding and changing segments fail when none of the values in **Function** have been selected, or when the

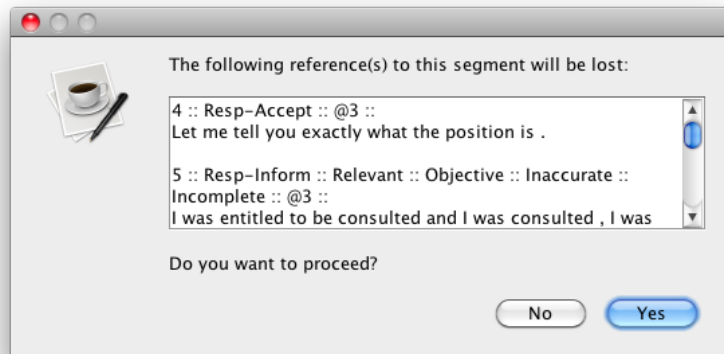


Figure 9: Confirmation request when removing a segment with references.

segment was classified as responsive, but none of the options in **Referent Segment** have been chosen.

If you have any observations regarding the segmentation of a turn, you can write a comment in the **Comment (optional)** text area.

Once you have identified all the segments in the turn, confirm the annotation by clicking on **Done**. This closes the turn annotation window and the segments will appear next to the turn, under the column **Annotated Turns** in the main window.

If you wish to discard the annotation (of if you have not made any changes on an existing annotation), click on **Cancel**. This will close the **Turn Annotator** window. Note that any changes or new annotations made since last opening the annotator window will be lost if you close it with the **Cancel** button.

3.2 Second Stage: Annotating Content Features

In this stage, turns in the dialogue are already segmented and each segment is annotated with a function label and, if applicable, a referent segment. To annotate the content features in a turn, click on the cell under **Annotated Turn** on the row for the turn. This opens the **Turn Annotator** window (Figure 10):

- To **annotate the content features in a segment**, select the segment from the list. The corresponding stretch will be highlighted in the **Turn** text area and the annotation values will appear in **Function** and, when applicable, in **Referent Segment**. These fields will be disabled and their values can not be modified.

You must select one option for each row under **Content Features**. Selecting these values automatically updated the annotation of the segment. Note that some segments might not have associated content features, in which case no annotation is required⁴.

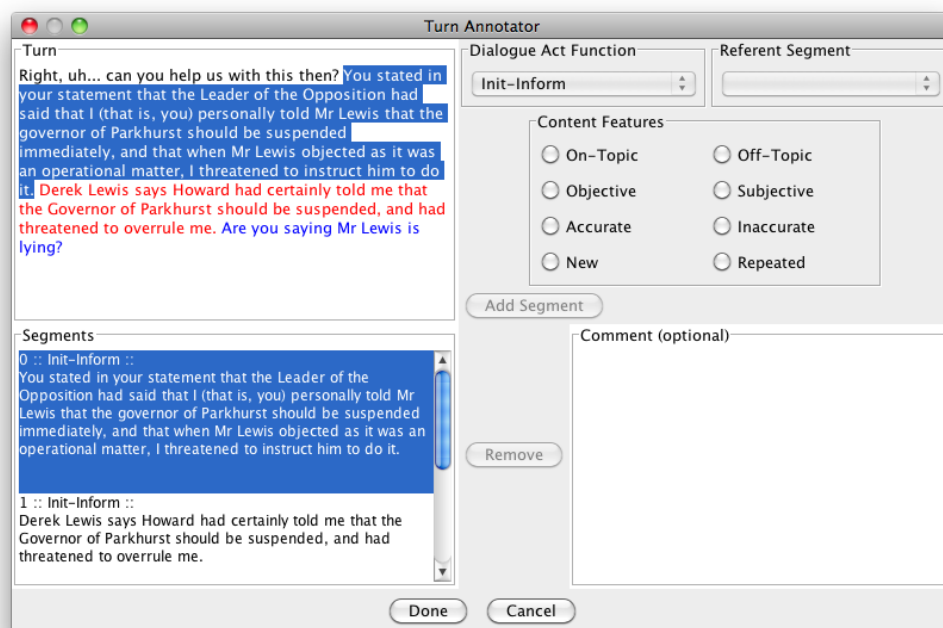


Figure 10: The turn annotator window for content features (Second Stage)

The annotation of content features for a segment fails if a choice has not been made for any of the rows under **Content Features** has not been .

If you have any observations regarding the annotation, you can write a comment in the **Comment (optional)** text area.

Once you have annotated the content features for all the segments in the turn, confirm the annotation by clicking on **Done**. This will close the turn annotation window and the updated segments will appear next to the turn, under the column **Annotated Turn** in the main window.

If you wish to discard the annotation (of if you have not made any changes on an existing annotation), click on **Cancel**. This will close the **Turn Annotator** window. Note that any changes or new annotations made since last opening the annotator window will be lost if you close it with the **Cancel** button.

⁴For details on how to select adequate values for content features, see the *Annotation Guidelines*.

4 Additional Features

4.1 Converting Dialogues in Text Format to XML

The annotation tool includes a function for converting dialogues in text format to the XML files used as input to the annotation. To access this feature, use the menu option **File | Convert to XML...** (Figure 11). This will open a window in which you can select one or more files for conversion. The files must have extension “.txt” and converted files will have the same name and extension “.xml”.

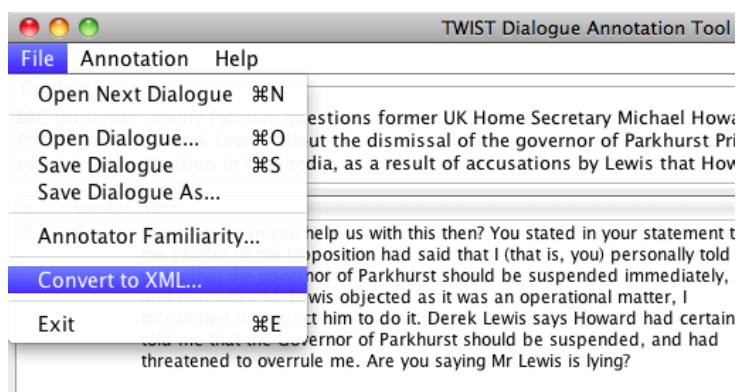


Figure 11: Converting dialogue in text files to XML format

The text files should follow the structure below, with the speakers being either IR or IE:

```
CONTEXT<Blank Space><Text>
<Empty Line>
<Speaker 1><Blank Space><Text>
<Empty Line>
<Speaker 2><Blank Space><Text>
<Empty Line>
<Speaker 1><Blank Space><Text>
<Empty Line>
<Speaker 2><Blank Space><Text>
...
<End of File>
```

The text in CONTEXT and in each turn can span several lines, with an empty line marking the change of turn (and speaker). An example follows:

```
CONTEXT During the American Presidential campaign in January 2008,
Fox News host Bill O'Reilly interviews Hermene Hartman, the editor
of an African-American newspaper in Chicago, about Obama's pastor
Jeremiah Wright and his connections with Nation of Islam's leader
Louis Farrakhan.
```

```
IR How would you describe Dr Wright's church?
```

IE It's a middle-class church. It is a superb church. Reverend Wright started a church with 87 people; today, has 8,000 in that particular congregation. United Church of Christ is basically a white denomination. And I think there's been just a lot of miscasting here. Seventy ministries within the church, to include Girl Scouts, prison outreach, marital counselling, education, children's counselling, a lot of Adopt-A-School. They have done a lot to empower that community and to improve that community.

IR OK. But you could make the same argument about Louis Farrakhan, that he's done, you know, some good things, yet you know, he's anti-Semitic in his rhetoric and sometimes anti-white or whatever. And-

IE (Interrupting) But that is, that is not Jeremiah Wright.

IR No, but it is association there. And the association, you can draw your own conclusion.

The result of the converting this dialogue is an XML file with the following content:

```
<DIALOGUE>
  <!--automatically generated by the TWIST Annotation Tool-->
  <CONTEXT DESCRIPTION="During the American Presidential campaign in January
    2008, Fox News host Bill O'Reilly interviews Hermene Hartman, the
    editor of an African-American newspaper in Chicago, about Obama's
    pastor Jeremiah Wright and his connections with Nation of Islam's
    leader Louis Farrakhan. "/>
  <TURN SPEAKER="IR" SPEECH="How would you describe Dr Wright ' s church ? "/>
  <TURN SPEAKER="IE" SPEECH="It ' s a middle - class church . It is a superb
    church . Reverend Wright started a church with 87 people ; today ,
    has 8,000 in that particular congregation . United Church of
    Christ is basically a white denomination . And I think there ' s
    been just a lot of miscasting here . Seventy ministries within the
    church , to include Girl Scouts , prison outreach , marital
    counselling , education , children ' s counselling , a lot of
    Adopt - A - School . They have done a lot to empower that
    community and to improve that community . "/>
  <TURN SPEAKER="IR" SPEECH="OK . But you could make the same argument
    about Louis Farrakhan , that he ' s done , you know , some good
    things , yet you know , he ' s anti - Semitic in his rhetoric and
    sometimes anti - white or whatever . And - "/>
  <TURN SPEAKER="IE" SPEECH="( Interrupting ) But that is , that is not
    Jeremiah Wright . "/>
  <TURN SPEAKER="IR" SPEECH="No , but it is association there . And the
    association , you can draw your own conclusion . "/>
</DIALOGUE>
```

4.2 Changing the Annotation Stage

Your version of the annotation tool will come configured by default for the annotation stage you were asked to perform. However, this can be changed by using the options in the **Annotation** menu (Figure 12):

- **Annotation | First Stage** allows enabling and disabling turn segmentation and the annotation of dialogue act functions and referents.

- **Annotation | Second Stage** allows enabling and disabling the selection of content features for segments.

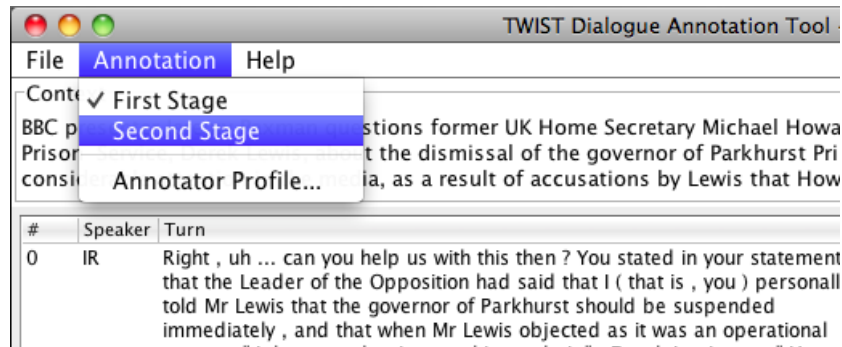


Figure 12: Enabling and disabling annotation stages

4.3 Modifying the Annotator Profile

You can modify the information you provided for the annotator profile the first time you run the annotation tool. This is useful in case you have made a mistake or skipped one of the answers. To re-enter the information, use the option **Annotation | Annotator Profile...** from the menu bar (Figure 13).

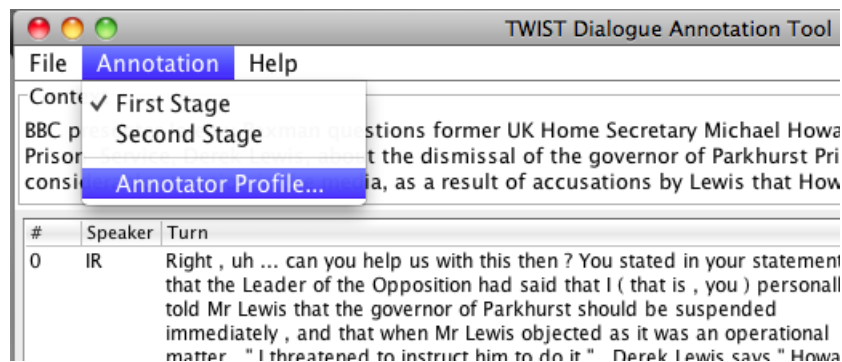


Figure 13: Re-entering the annotator profile information

4.4 Modifying the Annotator Familiarity

You can modify the information you provided regarding your familiarity with the context of the dialogue the first time you opened a file. This is useful, for instance, in case you have made a mistake. To re-enter the information, use the option **File | Annotator Familiarity...** from the menu bar (Figure 14).

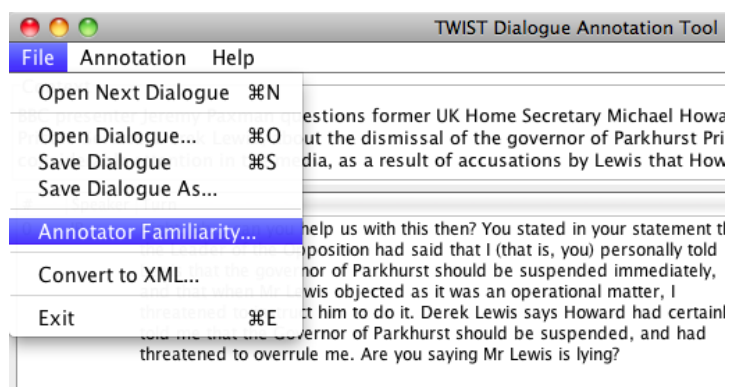


Figure 14: Re-entering the annotator familiarity information

5 Getting Help

The **Help** menu gives you access to a quick set of instructions via **Help | Instructions** (Figure 15).

The menu also has options for opening this guide (**Help | User Guide**), the annotation guidelines (**Help | Annotation Guidelines**), and for showing the credits and contact information (**Help | About**).

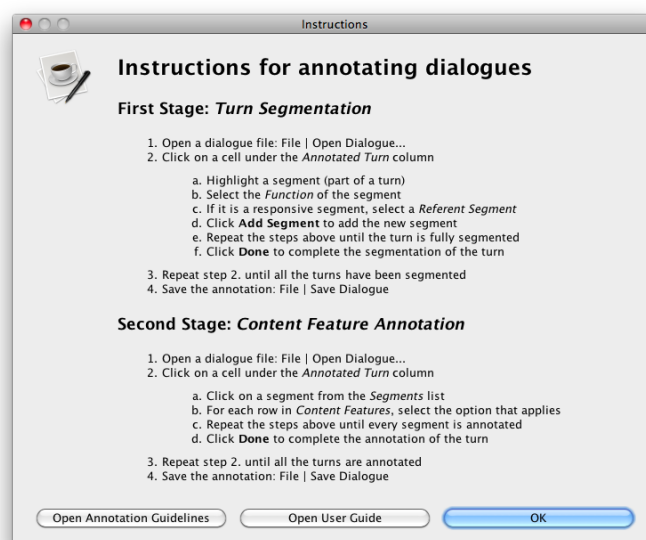


Figure 15: Overview of instructions for annotating dialogues

To report any problems and bugs, or if you have questions or suggestions, please send an email to b.pluss@open.ac.uk.