

Phrase Tagging with Doccano

Doccano is an open-source data labeling tool intended for machine learning practitioners. It allows you to tag words and phrases in texts with a very easy-to-use drag and select user interface.

[doccano-ux.webm](https://github.com/nzilbb/doccano)

You can use Doccano to tag phrases and import your tags into phrase layers in LaBB-CAT. The broad steps of the process are:

1. Export a selected set of transcripts from LaBB-CAT to the Doccano JSONL format
2. Import the resulting file into Doccano
3. Tag the texts as desired
4. Export the tagged texts from Doccano to a JSONL file
5. Import the tagged JSONL file into LaBB-CAT

Installation of the Doccano Formatter

LaBB-CAT uses ‘formatter’ modules to import and export files in the formats of different annotation tools.

If you find that ‘Doccano JSONL Dataset’ is not an option for exporting or importing Doccano files, it’s because the Doccano module is not installed on your LaBB-CAT instance.

To install the Doccano formatter:

1. Download the format conversion module here:
<https://github.com/nzilbb/ag/blob/main/bin/nzilbb.formatter.doccano.jar>
2. In LaBB-CAT, select the *converters* menu option
3. Press *Choose File* at the bottom, and select the `nzilbb.formatter.doccano.jar` file you downloaded in 1.
4. Press *Upload*
5. Press *Install*

Doccano JSONL Dataset should now be an option for selection on the transcripts page.

1. Export from LaBB-CAT

1. In LaBB-CAT, open the *transcripts* page.
2. Use the filters at the top to narrow the list down to the transcripts you want to export, and/or tick the target transcripts.

3. Click *Export Format*.

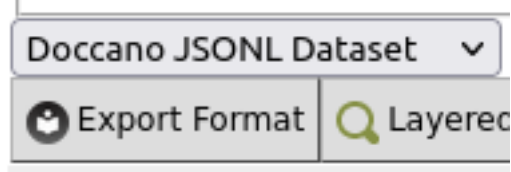
A list of layers will appear, with a list of formats below.

4. If you wish to include any existing phrase/span layers in Doccano, tick the corresponding layers in the list.

Span	Phrase	Word
<input type="checkbox"/> topic	<input type="checkbox"/> turn	<input checked="" type="checkbox"/> w
<input type="checkbox"/> comment	<input type="checkbox"/> utterance	<input type="checkbox"/> o
<input type="checkbox"/> noise	<input type="checkbox"/> language	<input type="checkbox"/> le
<input type="checkbox"/> type	<input type="checkbox"/> entity	<input type="checkbox"/> p
<input type="checkbox"/> place	<input type="checkbox"/> htk	<input type="checkbox"/> w
<input type="checkbox"/> cons count	<input type="checkbox"/> speaker speech rate	<input type="checkbox"/> p
<input type="checkbox"/> reaper	<input type="checkbox"/> word count	<input type="checkbox"/> fr
<input type="checkbox"/> audio_quality	<input type="checkbox"/> duration	<input type="checkbox"/> st
<input type="checkbox"/> emotion	<input type="checkbox"/> speaker articulation rate	<input type="checkbox"/> st
<input checked="" type="checkbox"/> narrative-structure	<input type="checkbox"/> utterance speech rate	<input type="checkbox"/> c

NB: Annotations on the layers you select here will be displayed in Doccano but cannot be edited; any changes to these annotations will be ignored when re-importing the dataset into LaBB-CAT.

5. Below the list of layers, there's a dropdown list of export formats. Select Doccano JSONL Dataset.¹



The image shows a web interface with a dropdown menu set to 'Doccano JSONL Dataset'. Below the dropdown are two buttons: 'Export Format' with a gear icon and 'Layered' with a magnifying glass icon.

6. Click *Export Format*
7. Save the resulting ...*jsonl* file.

2. Import into Doccano

1. In Doccano, you will need to create a project to import your texts into. Click *Projects* on the top right.
2. Press *Create* on the top left.

¹If Doccano JSONL Dataset is not an option, then you need to install the Doccano JSONL Dataset formatter - see instructions on Installation of the Doccano Formatter

3. Select the *Sequence Labelling* option.

After bowling Somerset out for 83 on the opening
•ORG

morning at Grace Road, Leicestershire extended their
•LOC •ORG

first innings by 94 runs before being bowled out for
296 with England discard Andy Caddick taking three
•LOC •PER

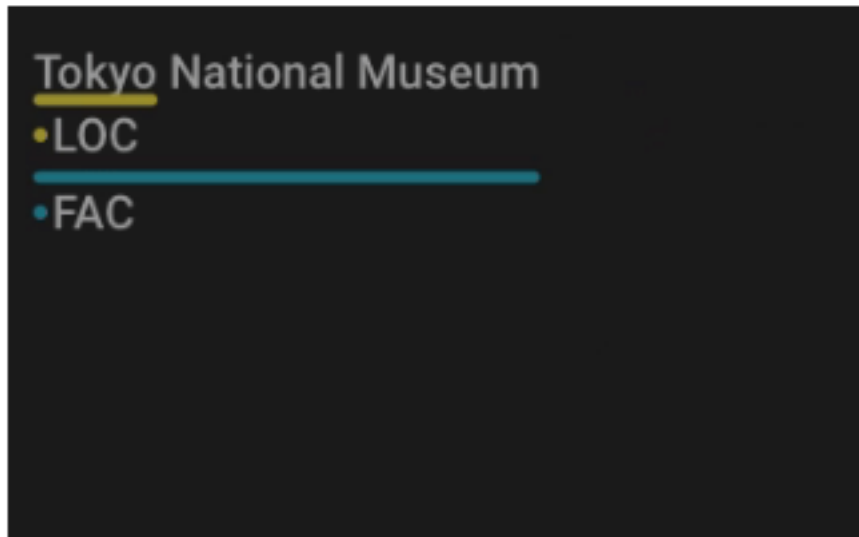
✓ **Sequence Labeling**

Sequence

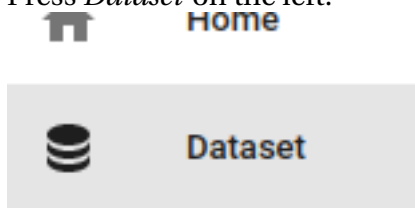
Labelling option in Doccano is ticked

4. Enter a name and description for your project.
5. Tick the *Allow overlapping entity* option.

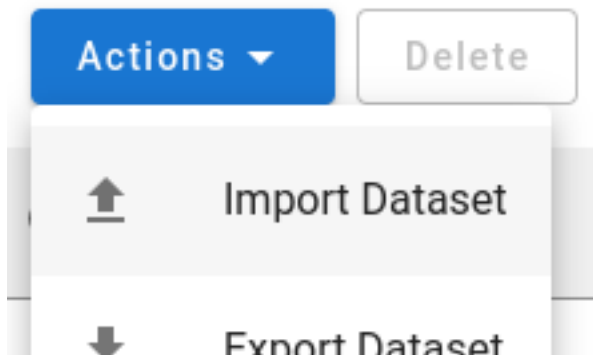
☒ Allow overlapping entity



6. Press *Create* at the bottom.
This will create the project and take you to its Home page.
7. Press *Dataset* on the left.



8. Move the mouse over the *Actions* button at the top, and select the *Import Dataset* option.



9. Select *JSONL* as the *File format*.
You can leave the other options that appear with their default values.
10. Find the *...jsonl* file you exported from LaBB-CAT earlier, and drag/drop it on to the grey area labelled *Drop files here...*
(Alternatively you can click on the *Drop files here...* area, and find/select the *...jsonl* file.)

Import Dataset

File format

JSONL

Column Data

text

Column Label

label

Encoding

utf_8

```
{"text": "EU rejects German call to boycott Brit  
{"text": "Peter Blackburn", "label": [[0, 15, "P  
{"text": "President Obama", "label": [[10, 15, "
```

Drop files here...

EG503_KimberleyColeman-etc.jsonl
100 KB

Upload complete
tap to undo



Powered by PQINA

Import

11. Press *Import*.

Once the import is complete, you will see a list of texts on the *Dataset* page. The *Metadata* column will be full of text and numbers - this is normal; LaBB-CAT includes information in the *Metadata* that it needs to import the text back into LaBB-CAT correctly.

<input type="checkbox"/>	ID	Text	Metadata
<input type="checkbox"/>	1	EG503_KimberleyColeman: in September . um . ahh my husband and I . and our newborn son and my . two year old daughter were living out in Sumner on Nayland Street . and um . we were awoken obviously by...	{ "transcript": "EG503_K 31.597], [31.597, 34.8 77.93900000000001, 8 104.96300000000001 141.897], [141.897, 15], [185.449, 188.911], [1 215.953, 221.391], [22 249.567, 253.739], [25 282.07800000000003, [317.464, 323.212], [3 354.872, 361.265], [36 381.372, 385.531], [38 427.414], [427.414, 43 467.76, 473.607], [473 502.97200000000004, 529.85800000000001], 543.148, 550.971], [55 582.052], [582.052, 58

Figure 1: The imported dataset includes metadata to aid re-import into LaBB-CAT





3. Tag the texts

Before adding annotations to the texts, you need to create *Labels* in Doccano. These are the annotations you'll be able to add to words/phrases in the texts.

1. In Doccano, click *Labels* on the left-hand menu.

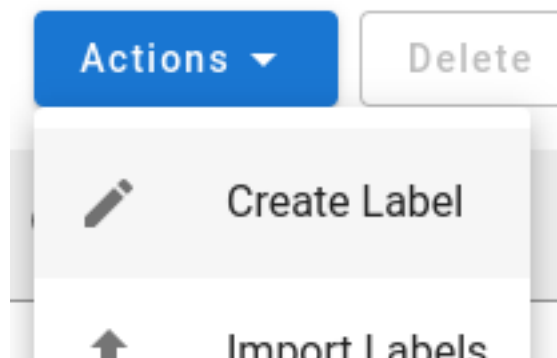
If you exported any additional phrase/span layers from LaBB-CAT, you will see labels

for the resulting annotations already listed here.

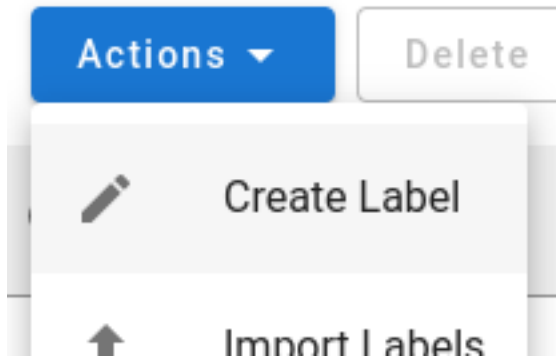
<div> <div>Actions ▾</div> <div>Delete</div> </div>				
<div> <div>🔍</div> <div>Search</div> </div>				
<input type="checkbox"/>	Name	Shortcut	Color	Actions
<input type="checkbox"/>	narrative-structure:orientation		#40d653	
<input type="checkbox"/>	narrative-structure:complicating action		#890305	
<input type="checkbox"/>	narrative-structure:resolution		#ce8891	
<input type="checkbox"/>	narrative-structure:abstract		#e52ecc	

Each imported label is prefixed with the ID of the LaBB-CAT layer it came from, followed by a colon. This is the pattern you must follow with the labels you create.

2. Move the mouse over the *Actions* button at the top and click the *Create Label* option.



3. Enter the label. This should be using the format:
 {LaBB-CAT-Layer-ID}:{LaBB-CAT-Label}
 e.g if you intend for your new annotations to be added to a LaBB-CAT layer called “narrative-action” and one of the possible labels in LaBB-CAT will be “complicating action”, then the Label you create in Doccano should be: narrative-action:complicating action



4. Pick a colour for the label if you wish.
5. Assuming you want to add more than one label, click *Save and add another*.
6. Repeat the above steps for each label you would like to annotate with.
7. Once you've finished, click the *Labels* option on the left-hand menu.
You should see the label's you've added, listed after the imported ones.

<div> <div>Actions ▾</div> <div>Delete</div> </div>				
<div> <div>🔍 Search</div> </div>				
<input type="checkbox"/>	Name	Shortcut	Color	Actions
<input type="checkbox"/>	narrative-structure:orientation		#40d653	
<input type="checkbox"/>	narrative-structure:complicating action		#890305	
<input type="checkbox"/>	narrative-structure:resolution		#ce8891	
<input type="checkbox"/>	narrative-structure:abstract		#e52ecc	
<input type="checkbox"/>	narrative-action:complicating action		#FB9E00	
<input type="checkbox"/>	narrative-action:high point action		#73D8FF	
<div> <div>Rows per Page</div> <div>10 ▾</div> <div>1-6 of 6</div> <div> <div> <</div> <div><</div> <div>></div> <div>> </div> </div> </div>				

Annotating Texts

Now that you've configured the labels you're going to use, you can annotate the texts you imported:

In Doccano click *Start Annotation* at the top left.

(Alternatively, you can click *Dataset* and then press the *Annotate* button on a text of your choice)

You will see one of the texts you imported.

twenty . third uh twentieth? February twentieth . yup . so . um . that was really crazy .
•narrative-structure:abstract
•narrative-structure:orientation

I'd been in hospital for two weeks . with the baby living with me

um not knowing what was going on there was something . happening in my tummy .

and then . um - I was actually walking to the toilet with these two

EG503_KimberleyColeman: you know like what the bags hang off with the fluid bags

? -- and then I'd got inside the toilet and I shut the door and next thing . these . these
•narrative-structure:complicating action

poles started like smashing into the roof

and I was like oh my g~ I thought I was on too much morphine . I was like oh my god

what's happening and there was dadadadadada~

Figure 2: Transcript including annotations exported from LaBB-CAT

The participant ID of the speaker appears at the beginning of each speaker turn, and if you exported phrase/span annotations from LaBB-CAT, they will appear tagging the corresponding regions of the text.

To tag a phrase in the text, simply click and drag over the phrase to select it. A menu of tags will appear.

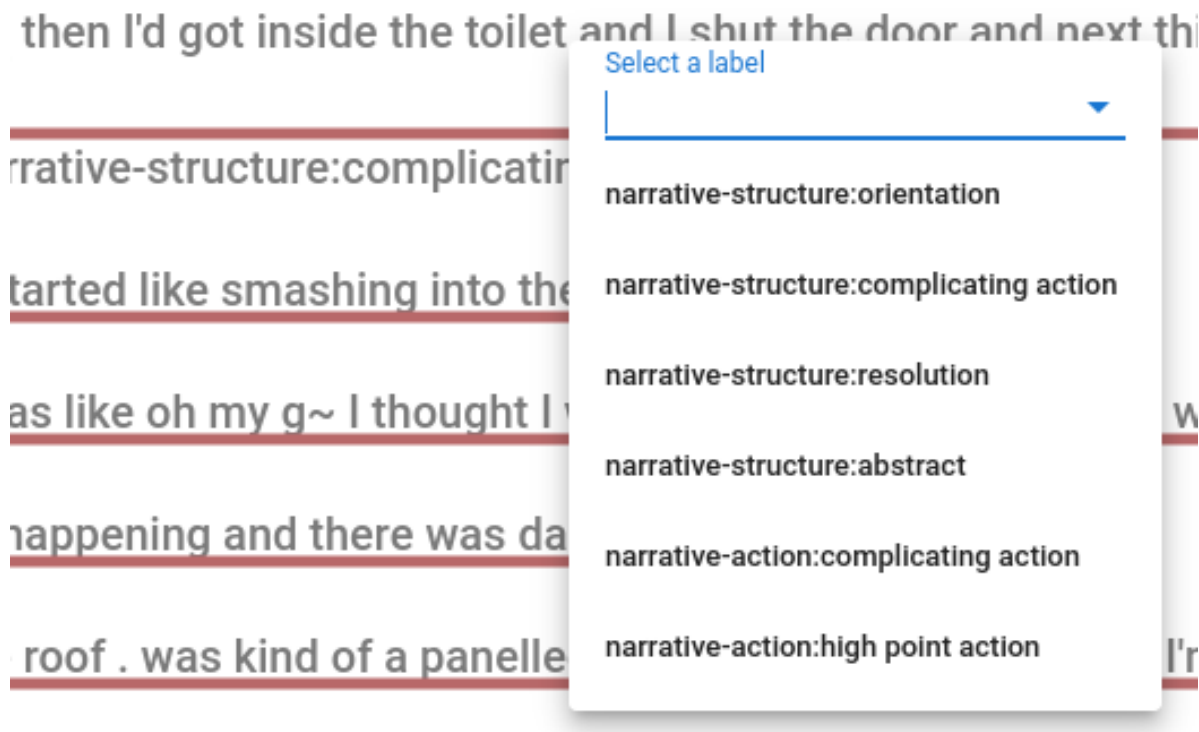


Figure 3: Click/drag for label menu

When you click the desired tag, it will be added to the text.

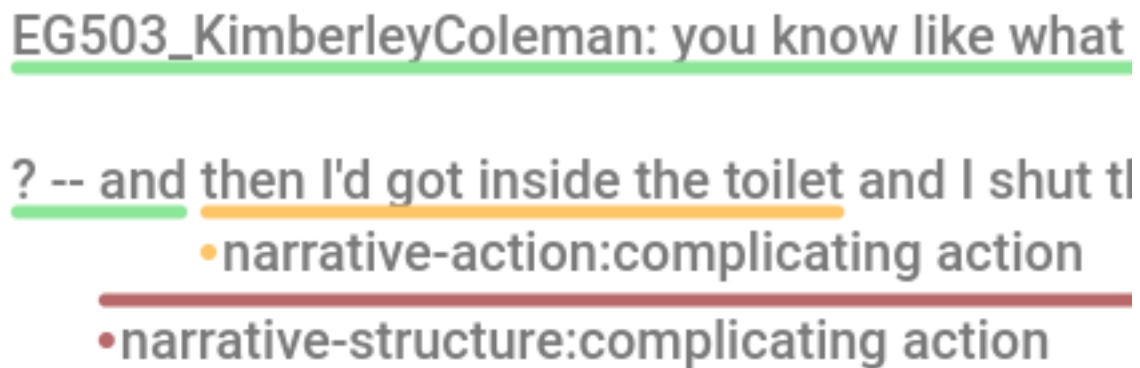


Figure 4: New tags appear in the text

Preselect Label for Tagging

Doccano includes a mode for tagging in which you can pre-select the *Label* you want to use, and then the selected *Label* is automatically used whenever you click/drag a phrase. This mode may be quicker as it involves fewer clicks overall.

To use this method of tagging, scroll to the top of the text, and click the desired *Label* in the list on the top right.

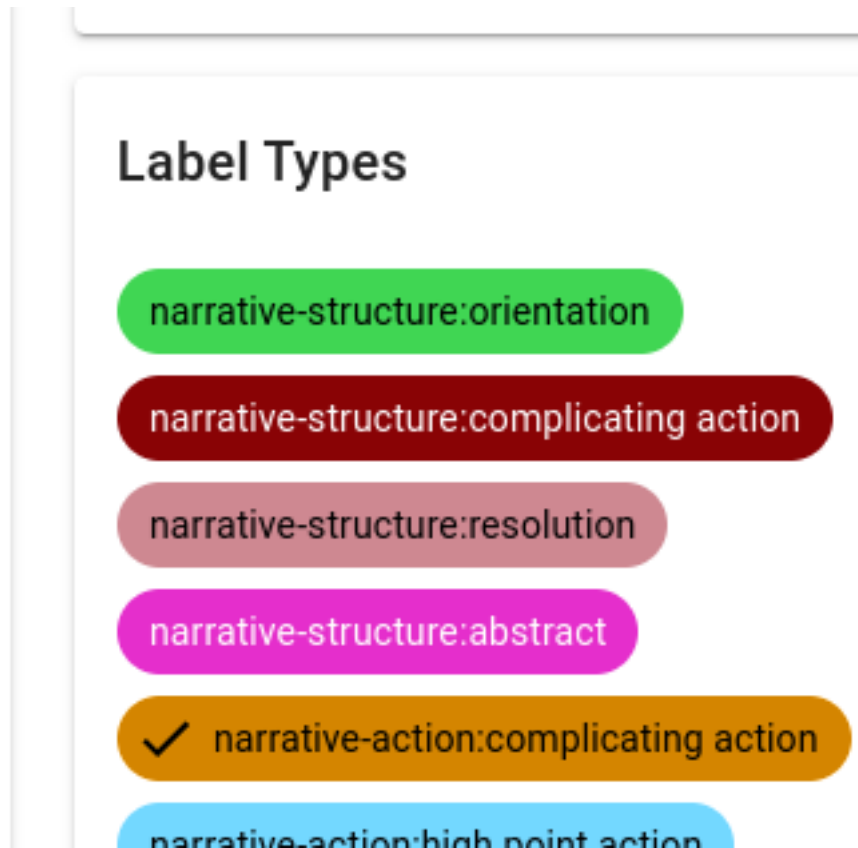


Figure 5: Pre-select a label in the label Types list at the top right of the text

Now, whenever you click/drag a phrase in the text, it will immediately be tagged with the selected *Label*.

Changes are automatically saved. Once you've added all the tags you want in this text, you can move to the next by using the navigation buttons at the top right of the text.

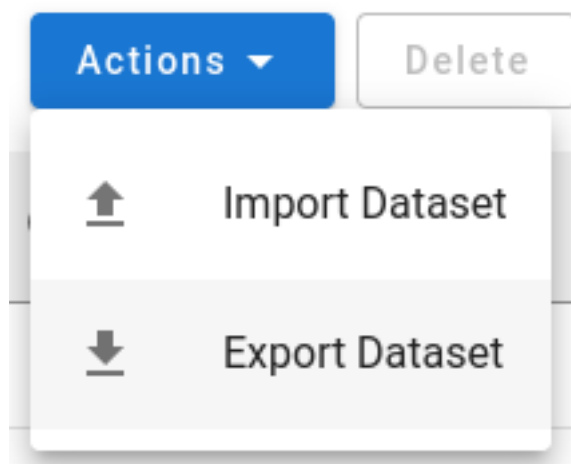


Figure 6: Buttons for navigating to the first, previous, next, and last text

4. Export from Doccano

Once you've finished annotating all texts, you need to export them with the new tags so they can be imported into LaBB-CAT.

1. In Doccano, click the *Dataset* option on the left-hand menu.
2. Move the mouse over *Actions* at the top and select *Export Dataset*.



3. Select *JSONL* as the File format
4. Press *Export*.
5. Save the resulting *...zip* file.
6. Extract the *...jsonl* file that is contained in the *...zip* file you just saved.

5. Import into LaBB-CAT

Ensure phrase/span layers exist in LaBB-CAT

When you import the *...jsonl* file into LaBB-CAT, it will extract the new Labels you've added, and assume that each Label is in the format:

{LaBB-CAT-Layer-ID} : {LaBB-CAT-Label}

Each label will be split on the colon, and the left part will be assumed to be a layer ID, and the right part will be assumed to be the label for annotations on that layer.

If you have added layer ID prefixes for layers that don't exist yet in LaBB-CAT, you have to create the LaBB-CAT layers before importing the *...jsonl* file, so that the new annotations have somewhere to go.

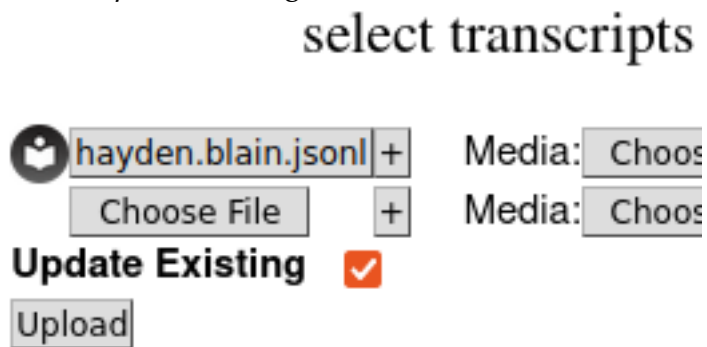
If the new annotations always tag phrases within the same speaker turn (i.e. never cross turn boundaries), then you can add a phrase layer. Otherwise, you must add a span layer.

1. In LaBB-CAT, select *phrase layers* or *span layers* from the menu as appropriate.
2. At the top of the list of layers, fill in the details of the blank row for the layer to add:
 - *Layer ID*: the Doccanno Label's prefix (i.e. the part before the colon)
 - *Type*: *Text*
 - *Alignment*: *Intervals*
 - *Manager*: no manager should be selected
 - *Generate*: *Never*
 - *Project*: select a project if desired, or none if not
 - *Description*: An informative description of the layer, perhaps including a list of all labels included.
3. Click *New* to add the layer

If you have included *Labels* corresponding to multiple LaBB-CAT layers, ensure all the layers have been created in LaBB-CAT before continuing with the import.

Import Dataset

1. In LaBB-CAT, select the *upload* menu option at the top and then the *upload transcripts* option.
2. Press the first *Choose File* button on the left.
3. Select the *...jsonl* file you extracted from the *...zip* file above.
4. Tick the *Update Existing* checkbox.



5. Press *Upload*.
You will see a list of all the new *Label* prefixes, with a dropdown box for each for selecting

the LaBB-CAT layer that the annotations should be imported into.

new transcripts

For each transcript uploaded below, please select layer

hayden.blain.jsonl

narrative-action

narrative-action ▼

Next

6. Ensure all *Label* prefixes are matched to the correct LaBB-CAT layer
7. Pres *Next*

Your new annotations will be merged into the existing transcript in LaBB-CAT.

You can double check this by opening on of the transcripts you tagged in LaBB-CAT and ticking the layer(s) of the new annotations. Your annotations will appear, lined up with the phrases as you specified in Doccano.