Annotation Guideline:
Entity-Type-Oriented Sentiment Analysis (ETOSA)
in Natural Environment Topics

1. Task and Label Explanation

In this annotation task, we ask you to annotate (giving labels) a collection of tweets. In general, there are two label types that need to be annotated i.e. **Span** and **Relation**. **Span** labeling means you give entity labels in several words and/or phrases. Here is the **Span** labels list used in the annotation:

a. Holder

Holder is the entity (people, organization, etc.) that gives the expression (sentiment). In this annotation task, there are seven Holder types as follows:

- **Hol_Citizen**, which means the holder of the expression is a citizen, i.e. an ordinary person/group that is not affiliated with any official community/ organization.
- **Hol_Government**, which means the holder of the expression is a government (whether central or sub-unit) or its stakeholders.
- **Hol_PoliticalParty**, which means the holder of the expression is a political party or its stakeholders.
- **Hol_Media**, which means the holder of the expression is a mass media or its stakeholders.
- **Hol_Company**, which means the holder of the expression is a company or its stakeholders.
- **Hol_PrivateFondation**, which means the holder of the expression is a private foundation or its stakeholders
- **Hol_NGO**, which means the holder of the expression is a non-governmental organization (NGO).

b. Expression

Expression is a word/ phrase that contains sentiment polarity. In this annotation task, there are two Expression types as follows:

- **Exp_Positive**, which means the sentiment of the expression is positive, like supporting, giving a good rating, or appreciating an act or policy.
- **Exp_Negative**, which means the sentiment of the expression is negative, like refusing, giving a bad rating, or criticizing an act or policy.

c. Target

Target is the entity (people, organization, etc.) that becomes the objective of the expression (sentiment). Similar to Holder, in this annotation task, there are also seven Target types as follows:

- **Tar_Citizen**, which means the target of the expression is a citizen, i.e. an ordinary person/group that is not affiliated with any official community/ organization.
- **Tar_Government**, which means the target of the expression is a government (whether

central or sub-unit) or its stakeholders.

- **Tar_PoliticalParty**, which means the target of the expression is a political party or its stakeholders.
- **Tar_Media**, which means the target of the expression is the mass media or its stakeholders.
- **Tar_Company**, which means the target of the expression is a company or its stakeholders.
- **Tar_PrivateFondation**, which means the target of the expression is a private foundation or its stakeholders.
- **Tar_NGO**, which means the target of the expression is a non-governmental organization (NGO).

d. Topic

Topic is the natural environment theme discussed in the text. In this annotation task, there are ten Topic types as follows:

- **Top_Environment**, which means the topic discussed is about the environment in general.
- **Top_Green**, which means the topic discussed is about a green environment.
- **Top_Sustainability**, which means the topic discussed is about a sustainable environment.
- **Top_Food**, which means the topic discussed is about food issues related to the environment.
- **Top_Organism**, which means the topic discussed is about organism issues related to the environment.
- **Top_ClimateChange**, which means the topic discussed is about climate change issues.
- **Top_Carbon**, which means the topic discussed is carbon issues related to the environment.
- **Top_Energy**, which means the topic discussed is energy issues related to the environment.
- **Top_Waste**, which means the topic discussed is about waste.
- **Top_Pollution**, which means the topic discussed is pollution.

Meanwhile, **Relation** labeling means you give a relation label between two entities. In this annotation task, there are four **Relation** types as follows:

- **Exp2Hol**, which means the relation is used to connect the sentiment expression to the correspondence holder.
- **Exp2Tar**, which means the relation is used to connect the sentiment expression to the correspondence target.
- **Exp2Top**, which means the relation is used to connect the sentiment expression to the correspondence topic.
- **Coreference**, which means the relation is used to connect pronouns (I, We, They, etc.) to the correspondence noun (holder or target).

For example, the visualization of a complete annotation of Span and Relation labels can be seen in the figure below.
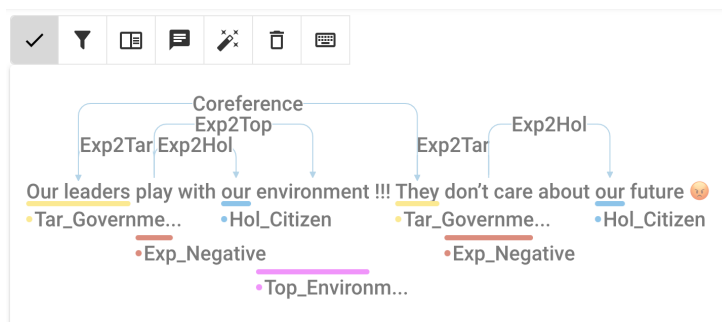
Note that, a tweet may not contain a particular entity type, i.e. may not contain Holder, Target, Expression, or Topic. Moreover, a tweet may contain more than one Expression which is contrary. For more examples, you can see them in Section 4 (Examples and Notes for Annotation Process) on this long version of the annotation guideline: bit.ly/LongGuideline

2. How to Annotate

2a. Log in and Go To Project

1. In the Prolific platform, click **Open study link in a new window**. You will be redirected to our annotation platform. Click on the project name to go to the annotation project. The project name may a little different from the figure below but it should only contain one project that you need to annotate. If you see more than one project or not at all, please contact us immediately through the Prolific messaging feature or email (see the footer of this guideline).

2. On the left sidebar, click **Start Annotation**.
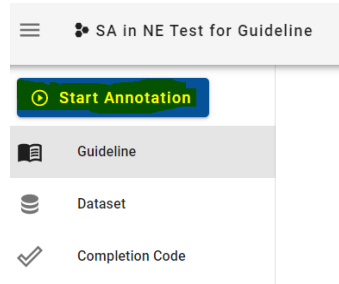
2b. Annotate the Span Label

1. Block the word/phrase with your mouse/trackpad that you want to annotate. For example, in this sentence, we block the word "you". Search the appropriate span label either by scrolling down or typing the entity class name.
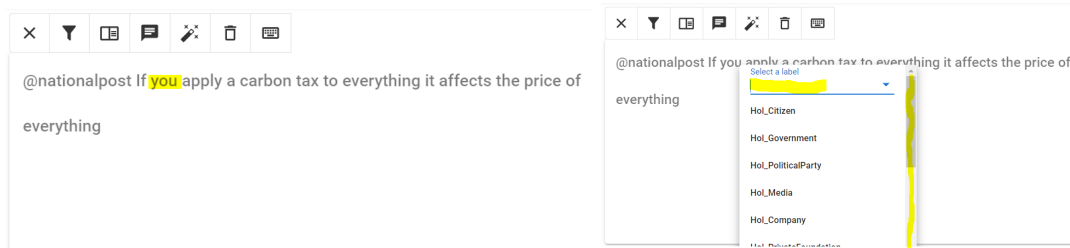

2. Click the chosen entity class and the entity class label will appear on the text.
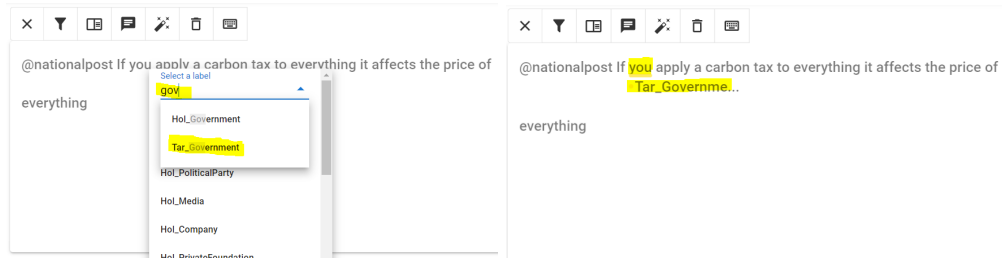
2c. Annotate the Relation Label

1. Before annotating the relation label, it is better to annotate all span labels first. On the **Label Types** (right sidebar), switch the label from **Span** to **Relation** by clicking the **Span** or the switcher button. Then, check the relation class label that you want to annotate by clicking it. For example, in this sentence, we want to annotate the **Exp2Tar** class label.
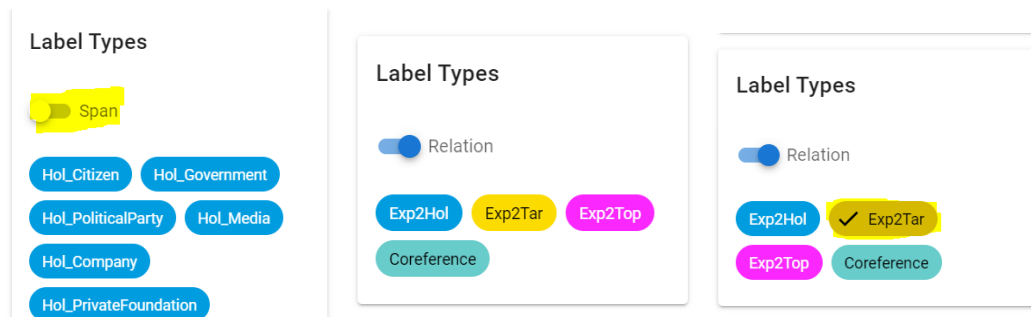
2. For **Exp2Tar** or **Exp2Hol** or **Exp2Top** relation, click on the appropriate expression entity first and then click on the target, holder, or topic that wants to be connected through the chosen relation (the order of the clicks cannot be reversed, look at the arrows in the relation annotation results).

3. For **Coreference** relation, click on the pronoun entity first and then click on the referred noun entity. (the order of the clicks cannot be reversed, look at the arrows in the relation annotation results).
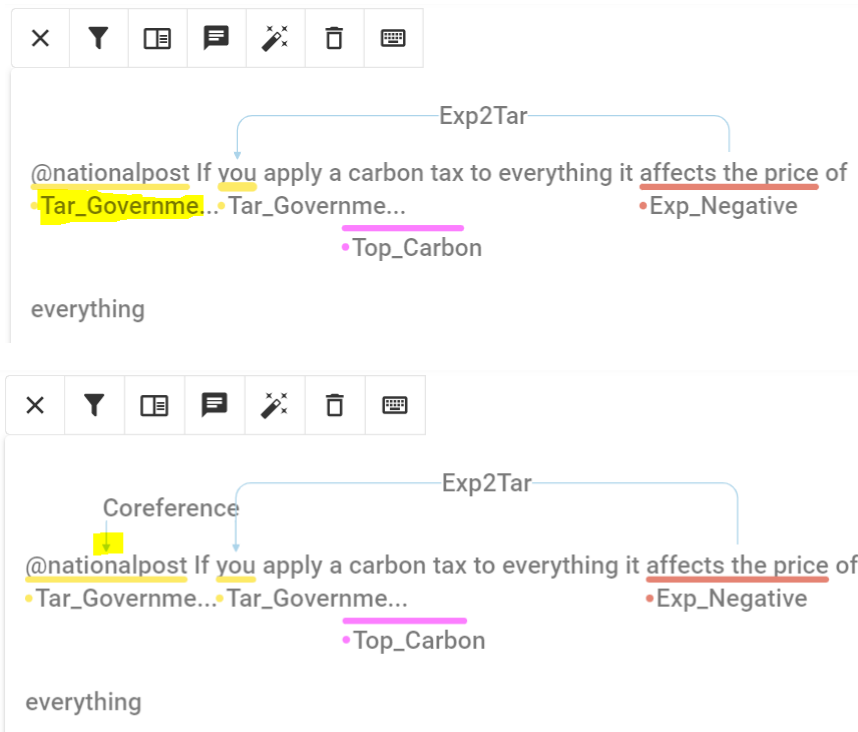
4. Repeat until all relations are annotated.
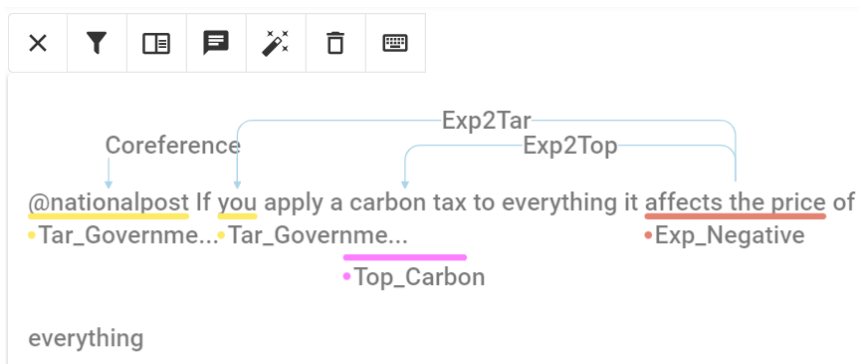
5. After all span and relation labels are annotated, uncheck the last checked relation by clicking it.
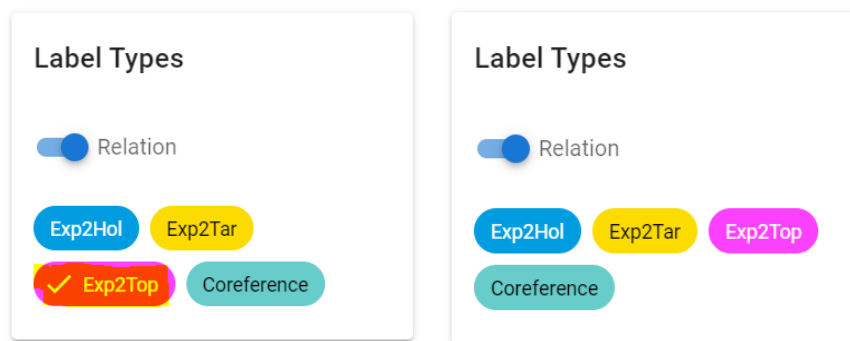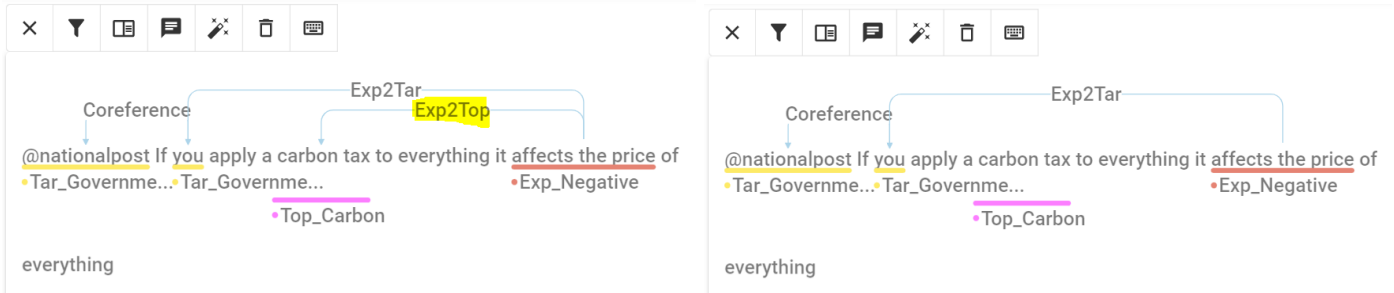
2d. Remove/Change Annotation

1. To remove the span annotation, right-click on the span class label that you want to remove. Note that removing the span annotation will also remove the relation annotation which connects to the span class label.
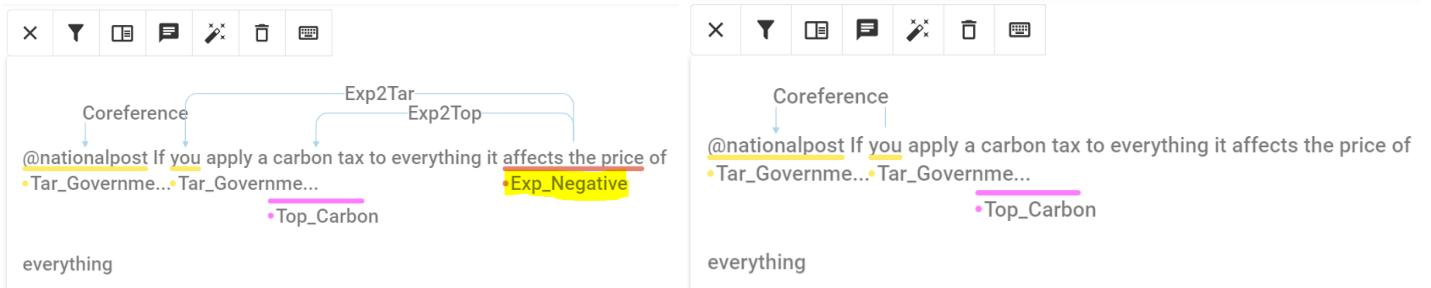
2. To remove the relation annotation, right-click on the relation class label that you want to remove.


3. To change the annotation (whether it is **Span** or **Relation**), you need to remove the annotation that you want to change first, and then re-annotate with the new class label.
4. To remove all annotations (reset annotation), click the delete symbol on the annotation tab and click **yes** to confirm.
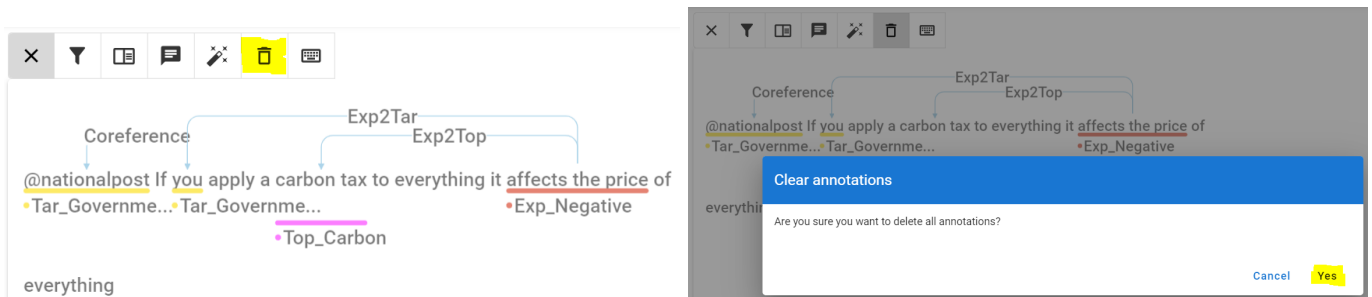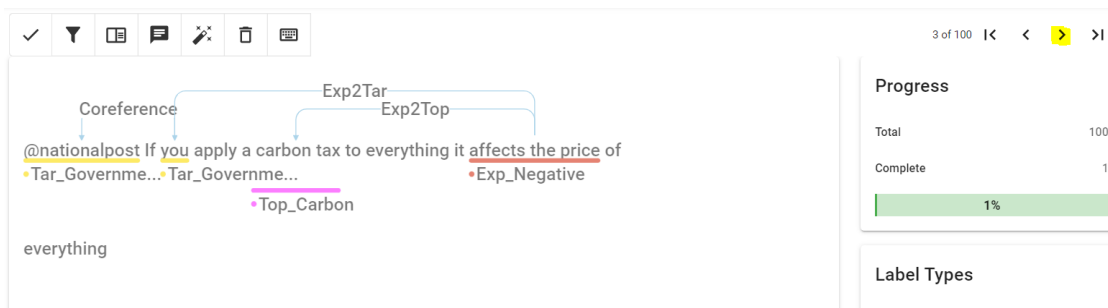
2e. Confirm Annotation

1. To confirm that you have annotated all span and relation labels on the given text, mark **Checked** by clicking the **Not Checked** symbol on the annotation bar.
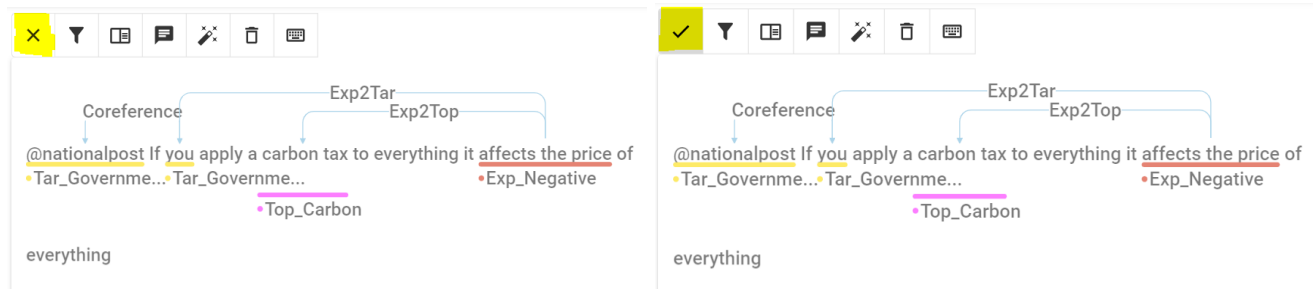

2. To go to the next text, click the next symbol on the top right sidebar.

3. Tips: If you doubt your annotation, you can directly click next without marking **Checked** your annotation. Your annotation is automatically saved whether you mark **Checked** or not. You can take a second look at your annotation that you still doubt and then edit and/or confirm it later.

2f. Take a Second Look at the Annotation Result

1. On the **Dataset** menu, click **Annotate** on the data text that you want to take a second look at. After taking a second look at the annotation that you doubt, you can directly mark it as Checked or edit/change the annotation first before marking Checked. Then, click the next button on the right sidebar.
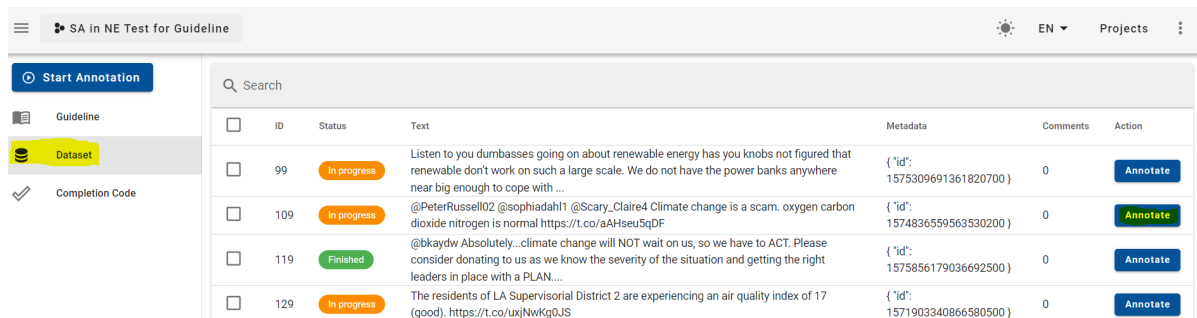
2. If you only want to take a look at the annotations that you doubt, you can filter them by clicking the filter symbol on the annotation bar and then clicking Undone.

3. Get the Completion Code

1. Once you finish the annotation task (all data already confirmed by marking it Checked), you can get your completion code by clicking the Completion Code menu in the left sidebar, copy the code by clicking Copy button, and then paste it into your Prolific account to confirm on there that your task is finished. After that, you can close this annotation tab/window in your browser.
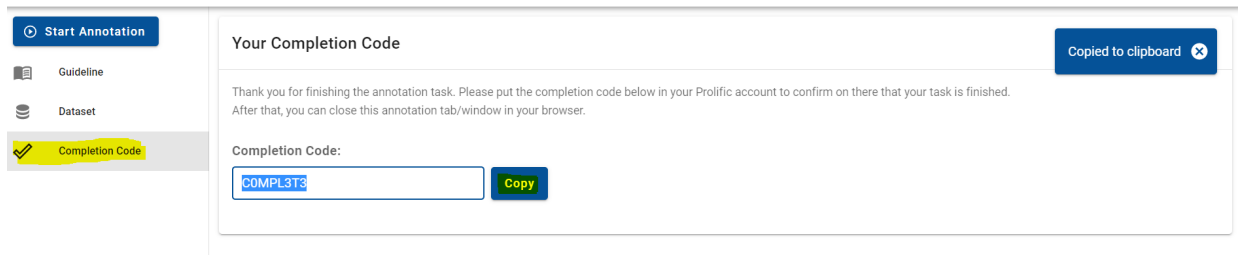
2. If you feel you have finished the annotation task but still did not get the code like the figure below, make sure that you have confirmed all the data annotations by marking Checked. Please refer to step **2f** to solve this issue.