Relation Guidelines

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February 27, 2024

1 Annotation of relations between arguments

Each debate starts with one candidate answering the question from the moderator (or from a panelist or from the audience), and the debate continues with the opposing candidate's response and rebuttal on arguments put forward by the first candidate. In this setting, we distinguish two different levels of relations based on components position: *i)* **intra-speech**, if the components linked by the relation are located in the same speech (answered by one candidate in one speech), or *ii)* **inter-speech**, if the components link two different speeches uttered by different speakers. We annotate arguments relations on both levels (intra and inter speech levels). We consider an argument as a structure consisting of claims and premises linked by support and attack relations inside a speech (intra-speech) made by a candidate, as a micro-level argument. It is also possible to have relations linking components from two different speeches (inter-speech), either by support or attack relations.

Support relation links two components from a supporting argument component to a supported argument component. The argument component can either be a claim or a premise on both sides.

$$Arg1 \xrightarrow{\text{support}} Arg2, \quad \text{i.e., } Arg1 \text{ supports } Arg2 \tag{1}$$

In some cases, more than one premise may separately support a certain claim, i.e., two or more components can support another argument component, as shown in Example 1 and visualized in Figure 1, where three premises are supporting one claim. In the figures visualizing argument graph structures, white boxes represent claims, gray boxes represent premises, dashed arrows represent attack relation and straight arrows denote support relations. Due to the complexity of the argument relation annotation task, after the first round of annotations and the reconciliation phase, we decided that a component can only support one other component. In order to ensure the consistency of the annotation process, we asked annotators in the case they identify a component which supports more than one component to add a support relation targeting only the closest supported component in the debate.

1. **Kennedy-Nixon, September 26, 1960**: **NIXON:** But let's not put it there; let's put it in terms of the average family. What has happened to you? We find that [*your wages have gone up five times as much in the Eisenhower Administration as they did in the Truman Administration*]$_{\text{Premise1}}$. What about the prices you pay? We find that [*the prices you pay went up five times as much in the Truman Administration as they did in the Eisenhower Administration*]$_{\text{Premise2}}$. What's the net result of this? This means that [*the average family income went up fifteen per cent in the Eisenhower years as against two percent in the Truman years*]$_{\text{Premise3}}$. Now, [**this is not standing still**]$_{\text{Claim1}}$.

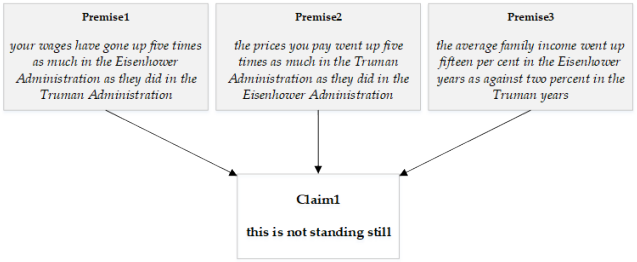

Figure 1: Argument graph of Example 1

In other cases (such as in Example 1) several premises are collectively supporting the claim. This argumentative structure, called linked argument, introduces further complexity in the annotation process. We decided to annotate it by adding two support relations linking each of the premises to the target claim (see Figure 2).

1. **Nixon-Kennedy, September 26, 1960 NIXON:** We often hear gross national product discussed, and in that respect may I say that [*when we compare the growth in this Administration with that of the previous Administration that then there was a total growth of eleven percent over seven years*]$_{\text{Premise1}}$; [*in this Administration there has been a total growth of nineteen percent over seven years*]$_{\text{Premise2}}$. [**That shows that there's been more growth in this Administration than in its predecessor**]$_{\text{Claim1}}$.

Premises may also support other premises in many cases. In Example 1, Carter is supporting his premise by giving an example as another premise. He is trying to justify the power of the force of nuclear weapons.

1. **Carter-Reagan, October 28, 1980: CARTER:** [**This is a formidable force**]$_{\text{Claim1}}$. [*Some of these weapons have 10 megatons of explosion*]$_{\text{Premise1}}$. [*If you put 50 tons of TNT in each one of railroad cars, you would have a*

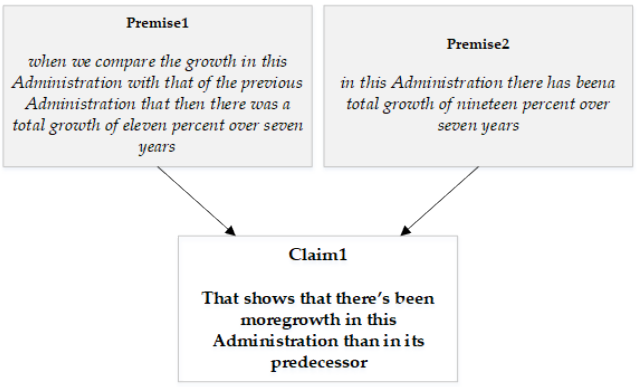

Figure 2: Argument graph of Example 1.

carload of TNT - a trainload of TNT stretching across this nation]$_{\text{Premise2}}$. [*That's one major war explosion in a warhead*]$_{\text{Premise3}}$. [*We have thousands, equivalent of megaton, or million tons, of TNT warheads*]$_{\text{Premise4}}$. [**The control of these weapons is the single major responsibility of a President, and to cast out this commitment of all Presidents, because of some slight technicalities that can be corrected, is a very dangerous approach**]$_{\text{Claim2}}$.

Attack relation holds when one argument component is in contradiction with another argument component. In an attack relation from argument A to argument B, A is trying to refute B.

$$Arg1 \xrightarrow{\text{attack}} Arg2, \text{ i.e., } Arg1 \text{ attacks } Arg2 \tag{2}$$

A claim may attack another claim from one candidate, however the argumentative structure is not always "aligned" with the sentences put forward in the debate. Differently from the support relation, we have asked annotators to annotate every possible attack relation they identify between components, meaning that one component may attack more than one other component. This decision was based on the relative under-representation of attack relations in the dataset.

An attack relation can also hold between two components from speeches made by different candidates. For instance, in Example 1 Biden is justifying the new changes to the medicare program by mentioning that more people signed up for it, Ryan interrupts him by attacking his premise and mentions that the source of statistics Biden is using as justification is their own actuaries, and therefore not reliable.

1. **Biden-Ryan, 11 Oct, 2012:**
   BIDEN: [*More people signed up.*]$_{\text{Premise1}}$
   RYAN: [*These are from your own actuaries.*]$_{\text{Premise2}}$